CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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ATTACHMENT F – FACT SHEET

FOR

ORDER R4-2012-0175
(as amended by Order WQ 2015-0075 and Order R4-2012-0175-A01)
NPDES PERMIT NO. CAS004001

WASTE DISCHARGE REQUIREMENTS FOR
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISCHARGES
WITHIN THE COASTAL WATERSHEDS OF LOS ANGELES COUNTY, EXCEPT
THOSE DISCHARGES ORIGINATING FROM THE CITY OF LONG BEACH MS4

November 8, 2012

(amended on June 16, 2015 and September 8, 2016)

ATTACHMENT F – FACT SHEET

Table of Contents

I. Permit Information 4
II. Facility Description 5
A. Description of the Los Angeles County MS4 5
B. The Need to Regulate Discharges from MS4s 7
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data 11
III. Applicable Statutes, Regulations, Plans, and Policies 14
A. Legal Authorities – Federal Clean Water Act and California Water Code 14
B. Federal and California Endangered Species Acts 14
C. California Environmental Quality Act (CEQA) 14
D. State and Federal Regulations, Policies, and Plans 14
E. Impaired Water Bodies on CWA section 303(d) List 22
F. Other Plans, Policies and Regulations 23
IV. Rationale For Discharge Specifications 23
A. Discharge Prohibitions – Non-Storm Water Discharges 23
B. Technology-Based Effluent Limitations 33
C. Water Quality-Based Effluent Limitations (WQBELs) 34
D. Final Effluent Limitations 37
E. Interim Effluent Limitations 37
V. Rationale for Receiving Water Limitations 37
A. Receiving Water Limitations 37
VI. Rationale for Provisions 41
A. Standard Provisions 41
B. Watershed Management Programs 42
C. Storm Water Management Program Minimum Control Measures (MCMs) 50
1. General Requirements 50
2. Progressive Enforcement 59
3. Modifications/Revisions 59
4. Public Information and Participation Program 59
5. Industrial/Commercial Business Program 61
6. Planning and Land Development Program 66
7. Development and Construction Program 75
8. Public Agency Activities Program 79
9. Illicit Connection and Illicit Discharge Elimination Program 83
D. Total Maximum Daily Load Provisions 86
E. Special Provisions: Miscellaneous Provisions 119
XIII. Rationale for Monitoring and Reporting Requirements 120
A. Integrated Monitoring Plans 121
B. TMDL Monitoring Plans 121
C. Receiving Water Monitoring 122
D. Outfall Based Monitoring 122
E. Storm Water Outfall Based Monitoring 123
F. Non-Stormwater Outfall-Based Screening and Monitoring Program 124
G. New Development/Re-Development Effectiveness Monitoring 139

H. Regional Studies 141
I. Aquatic Toxicity Monitoring Methods 141
J. Special Studies 143
K. Annual Reporting 143
L. Watershed Summary Information, Organization and Content 144
M. Jurisdictional Assessment and Reporting 144
N. TMDL Reporting 144
XIV. California Water Code Section 13241 144
XV. State Mandates 162
XVI. Public Participation 165

List of Tables

Table F-1. Facility and Discharger Information 4
Table F-2. Extent of Select Permittees' MS4s 6
Table F-3. Basin Plan Beneficial Uses 15
Table F-3B. Ocean Plan Beneficial Uses 19
Table F-4. State and Regional Water Board General Permits Referenced in this Permit ... 26
Table F-5. Timeline for the Implementation of Permit Requirements 51
Table F-7. Compliance Schedule for final compliance dates. 108
Table F-8. State-Adopted TMDLs with Past Final Implementation Deadlines 111
Table F-9. USEPA Established TMDLs with WLAs Assigned to MS4 Discharges 112
Table F-10. Summary of LA County Watersheds and Frequency of Receiving Water Exceeding Criteria - 2005 to 2011- Dry Season Data Analysis 130
Table F-11: Calculations of Freshwater Action Levels 136
Table F-12: Calculations of Saltwater Action Levels 137

ATTACHMENT F – FACT SHEET

As described in Part II of this Order, this Fact Sheet sets forth the significant factual, legal, methodological, and policy rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility and the Dischargers.

Table F-1. Facility and Discharger Information

WDID	Various (See Table 4 of Order)
Dischargers	The Los Angeles County Flood Control District, the County of Los Angeles, and 84 incorporated cities within the coastal watersheds of Los Angeles County with the exception of the City of Long Beach (See Table 4 of Order)
Name of Facility	Municipal Separate Storm Sewer Systems (MS4s) within the Coastal Watersheds of Los Angeles County with the exception of the City of Long Beach MS4
Facility Address	Various
Facility Contact, Title and Phone	Various (See Table 4 of Order)
Mailing Address	Various (See Table 4 of Order)
Billing Address	Same as above
Type of Facility	Large Municipal Separate Storm Sewer System (MS4)[1]
Major or Minor Facility	Major
Watersheds	(1) Santa Clara River Watershed; (2) Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; (3) Los Angeles River Watershed; (4) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (5) Los Cerritos Channel and Alamitos Bay Watershed Management Area;(6) San Gabriel River Watershed; and (7) Santa Ana River Watershed

[1] According to 40 CFR § 122.26(b)(8), "[a] municipal separate storm sewer system (MS4) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):
(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
(ii) Designed or used for collecting or conveying storm water;
(iii) Which is not a combined sewer; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

Receiving Water	Surface waters identified in Tables 2-1, 2-1a, 2-3, and 2-4, and Appendix 1, Table 1 of the Water Quality Control Plan - Los Angeles Region (Basin Plan), and other unidentified tributaries to these surface waters within the following Watershed Management Areas: (1) Santa Clara River Watershed; (2) Santa Monica Bay Watershed Management Area, including Malibu Creek Watershed and Ballona Creek Watershed; (3) Los Angeles River Watershed; (4) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (5) Los Cerritos Channel and Alamitos Bay Watershed Management Area; (6) San Gabriel River Watershed; and (7) Santa Ana River Watershed[2].
Receiving Water Type	Inland surface waters, estuarine waters, and marine waters, including wetlands, lakes, rivers, estuaries, lagoons, harbors, bays, and beaches

The Los Angeles County Flood Control District, Los Angeles County, and the 84 municipalities listed in Table F-2 above are the owners and/or operators[3] of Municipal Separate Storm Sewer Systems within the Coastal Watersheds of Los Angeles County (hereinafter Facility).

For the purposes of this Order, the entities listed in Table 4 of the Order are hereinafter referred to separately as “Permittees” and jointly as the “Dischargers.” References to “discharger” or “permittee” or “co-permittee” or “municipality” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Dischargers or Permittees herein.

II. FACILITY DESCRIPTION

A. Description of the Permittees’ MS4s

The Permittees’ MS4s, like many MS4s in the nation, are based on regional floodwater management systems that use both natural and altered water bodies to achieve flood management goals. The Permittees’ MS4s comprise a large interconnected system, controlled in large part by the Los Angeles County Flood Control District (LACFCD), among others, and used by multiple cities along with Los Angeles County. This extensive system conveys storm water and non-storm water across municipal boundaries where it is commingled within the MS4 and then discharged to receiving water bodies.

[2] Note that the Santa Ana River Watershed lies primarily within the boundaries of the Santa Ana Regional Water Quality Control Board. However, a portion of the Chino Basin subwatershed lies within the jurisdictions of Pomona and Claremont in Los Angeles County. The primary receiving water within the Los Angeles County portion of the Chino Basin subwatershed are San Antonio Creek and Chino Creek.

[3] Owner or operator means the owner or operator of any facility or activity subject to regulation under the NPDES program (40 CFR § 122.2).

In 1915, the California Legislature enacted the Los Angeles County Flood Control Act, establishing the Los Angeles County Flood Control District (LACFCD). The objects and purposes of the Act are to provide for the control and conservation of the flood, storm and other waste waters within the flood control district. Among its other powers, the LACFCD also has the power to preserve, enhance, and add recreational features to lands or interests in lands contiguous to its properties for the protection, preservation, and use of the scenic beauty and natural environment for the properties or the lands. The LACFCD is governed, as a separate entity, by the County of Los Angeles Board of Supervisors.

The area covered under this Order encompasses more than 3,000 square miles. This area contains a vast drainage network that serves incorporated and unincorporated areas in every Watershed Management Area within the Los Angeles Region. Maps depicting the major drainage infrastructure within the area covered under this Order are included in Attachment C of this Order.

The total length of the Permittees' MS4s, and the locations of all storm drain connections, are not known exactly, as a comprehensive map for the MS4 does not exist. Rough estimates, based on information from the LACFCD and large municipalities (population > 100,000), indicate that the length exceeds 4,300 miles, as shown below. The LACFCD's system includes the majority of drainage infrastructure within incorporated and unincorporated areas in every watershed, including approximately 500 miles of open channel, 3,500 miles of underground drains, and an estimated 88,000 catch basins, and several dams. Portions of the LACFCD's current system were originally unmodified natural rivers and water courses.

Table F-2. Extent of Select Permittees' MS4s

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length	Open Channel Length
LACFCD/ LA County	3,100	88,000	3,500 miles	500 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
Torrance	20	2,000	20 miles	3 miles
TOTAL	**approx. 3,672.9**	**approx. 109,473**	**approx. 4,323**	**approx. 484.4**

Unlike other Permittees, the LACFCD does not own or operate any municipal sanitary sewer systems, public streets, roads, or highways, and has no planning, zoning, development permitting or other land use authority over industrial or commercial facilities, new developments or re-development projects, or development construction sites located in any incorporated or unincorporated areas within its service area. Nonetheless, as an owner and operator of MS4s, the LACFCD is required by federal regulations to control pollutant discharges into and from its MS4, including the ability to control through interagency agreements among co-permittees and other owners of a MS4 the contribution of pollutants from one portion of the MS4 to another portion of the MS4. Additionally, the Los Angeles County Flood Control District does own the County of Los Angeles Department of Public Works headquarters building and Los Angeles County Flood Control District maintenance yards to support its field operations.

Storm water and non-storm water are conveyed through the MS4s and ultimately discharged into receiving waters of the Los Angeles Region. MS4s subject to this Order receive storm water and non-storm water flows from various sources. These flows come from MS4s owned by the Permittees covered by this Order and other public agencies, NPDES permitted discharges, discharges authorized by the USEPA (including discharges subject to a decision document approved pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)), groundwater, and natural flows.

The requirements contained in this Order apply to the Los Angeles County Flood Control District, 84 cities within the coastal watersheds of Los Angeles County, and the unincorporated areas of Los Angeles County under County jurisdiction, with the exception of the City of Long Beach. Under the previous Order, Order No. 01-182, the Los Angeles County Flood Control District was designated the Principal Permittee, and the County of Los Angeles and the 84 incorporated cities were designated co-Permittees. However, in this Order, the role of Principal Permittee has been eliminated. This Order divides Los Angeles County into seven Watershed Management Areas (WMAs).

B. The Need to Regulate Discharges from MS4s

The quality of storm water and non-storm water discharges from MS4s is fundamentally important to the health of the environment and the quality of life in Southern California. Polluted storm water and non-storm water discharges from MS4s are a leading cause of water quality impairment in the Los Angeles Region. Storm water and non-storm water discharges are often contaminated with pesticides, fertilizers, fecal indicator bacteria and associated 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 MS4 directly into the receiving waters of the Region. The water quality impacts, ecosystem impacts, and increased public health risks from MS4 discharges that affect receiving waters nationwide and throughout Los Angeles County, including 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. Many studies continue to support the conclusions of the NURP Study. The NURP Study also 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" as well as in a regional study, "Sources, Patterns and Mechanisms of storm Water Pollutant Loading from Watersheds and Land Uses of the Greater Los Angeles Area, California," SCCWRP Technical Report 510 (2007), funded in large part by the Regional Water Board.

Some of the conclusions of the 2007 regional study were as follows.

Storm water runoff from watershed and land use based sources is a significant contributor of pollutant loading and often exceeds water quality standards. High pollutant concentrations were observed throughout the study at both mass emission (ME) and land use (LU) sites. Pollutant concentrations frequently exceeded water quality standards.

Storm water Event Mean Concentrations (EMCs), fluxes and loads were substantially lower from undeveloped open space areas when compared to developed urbanized watersheds. Storms sampled from less developed watersheds produced pollutant EMCs and fluxes that were one to two orders of magnitude lower than comparably sized storms in urbanized watersheds. Furthermore, the higher fluxes from developed watersheds were generated by substantially less rainfall than the lower fluxes from the undeveloped watersheds, presumably due to increased impervious surface area in developed watersheds.

The Los Angeles region contributed a similar range of storm water runoff pollutant loads as that of other regions of the United States. Comparison of constituent concentrations in storm water runoff from land use sites from this study reveal median EMCs that are comparable to U.S. averages reported in the National Storm water Quality Database (NSQD; Pitt et al., 2003). Comparison to the NSQD data set provides insight to spatial and temporal patterns in constituent concentrations in urban systems. Similarities between levels reported in the NSQD and this study suggest that land-based concentrations in southern California storm water are generally comparable to those in other parts of the country.

Peak concentrations for all constituents were observed during the early part of the storm. Constituent concentrations varied with time over the course of storm events. For all storms sampled, the highest constituent concentrations occurred during the early phases of storm water runoff with peak concentrations usually preceding peak flow. Although the pattern of an early peak in concentration was comparable in both large and small developed watersheds, the peak concentration tended to occur later in the storm and persist for a longer duration in the smaller developed watersheds. Therefore monitoring programs must capture the early portion of storms and account for intra-

storm variability in concentration in order to generate accurate estimates of EMC and contaminant loading. Programs that do not initiate sampling until a flow threshold has been surpassed may severely underestimate storm EMCs.

Highest constituent loading was observed early in the storm season with intra-annual variability driven more by antecedent dry period than amount of rainfall. Seasonal differences in constituent EMCs and loads were consistently observed at both ME and LU sites. In general, early season storms (October – December) produce significantly higher constituent EMCs and loads than late season storms (April-May), even when rainfall quantity was similar. This suggests that the magnitude of constituent load associated with storm water runoff depends, at least in part, on the amount of time available for pollutant build-up on land surfaces. The extended dry period that typically occurs in arid climates such as southern California maximizes the time for constituents to build-up on land surfaces, resulting in proportionally higher concentrations and loads during initial storms of the season.

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 dry weather urban runoff. The 2004 National Water Quality Inventory (305(b) Report) showed that urban runoff/storm water discharges contribute 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, Community Responses to Runoff Pollution" 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:

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.

The concentration of pollutants in the runoff. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the MS4.

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) 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. 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:

- increased peak discharges compared to predevelopment levels;
- increased volume of storm water runoff with each storm compared to pre-development levels;
- decreased travel time to reach receiving water;
- increased frequency and severity of floods;
- reduced stream flow during prolonged periods of dry weather due to reduced levels of infiltration;
- 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
- decreased infiltration and diminished groundwater recharge.

The Los Angeles County MS4 program has conducted monitoring to:

- quantify mass emissions for pollutants;
- identify critical sources for pollutants of concern in storm water;
- evaluate BMP effectiveness; and
- 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 water quality standards. 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 water quality standards by as much as two orders of magnitude. The results are consistent with a limited term study conducted by the Regional Water Board to characterize storm water runoff in the Los Angeles region in 1988 before the issuance of first MS4 permit. 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 attributable to heavy metals. Bioassessments 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. Other studies have documented concentrations of pollutants that exceed water quality standards in storm drains flowing to the ocean during dry weather, and adverse health impacts from swimming near flowing storm drains.

Trash is also a serious and pervasive water quality problem in Los Angeles County. The Regional Water 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 many surface waters. Regional Water Board staff regularly observes trash in surface waters throughout the Los Angeles region. 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. 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. Significant strides have been made by a number of Permittees in addressing this problem through the implementation of control measures to achieve wasteload allocations established in trash TMDLs.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

The Los Angeles County MS4 Permit was last reissued in 2001 as Order No.01-182. Order No. 01-182 expired in 2006, but has been administratively extended pursuant to federal regulations. Order No. 01-182 was reopened by the Regional Water Board in 2006, 2007 and 2009 to incorporate provisions to implement three TMDLs. It was further amended in 2010 and 2011 pursuant to a peremptory writ of mandate issued by the Los Angeles County Superior Court.

Order No. 01-182 is organized under the following seven parts and includes several attachments. The description below summarizes key permit parts and attachments in Order No. 01-182:

<u>Part 1 – Discharge Prohibitions</u>
As required by section 402(p)(3)(B)(ii) of the Clean Water Act, Part 1 requires permittees to “effectively prohibit non-storm water discharges into the MS4 and watercourses, except where such discharges” are covered by a separate NPDES permit or fall within one of thirteen categories of flows that are conditionally exempted from the discharge prohibition. These exempted flows fall under the general categories of natural flows, fire fighting flows, and flows incidental to urban activities (i.e. landscape irrigation, sidewalk rinsing). These non-storm water flows may be exempted so long as: (i) they are not a source of pollutants, (ii) their effective prohibition is not necessary to comply with TMDL provisions, and (iii) they do not violate antidegradation policies. Part 1 also authorizes the Regional Water Board Executive Officer to impose conditions on these types of discharges and to add or remove categories of conditionally exempted non-storm water discharges based on their potential to contribute pollutants to receiving waters.

Part 2 – Receiving Water Limitations

Part 2 prohibits discharges from the MS4 that cause or contribute to the violation of water quality standards. In addition, discharges from the MS4 of storm water or non-storm water, for which a Permittee is responsible, may not cause or contribute to a condition of nuisance. Part 2.3 states that permittees shall comply with these prohibitions "through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with [the Los Angeles Stormwater Quality Management Program (SQMP)] and its components and other requirements of [the LA County MS4 Permit]." Part 2.3 establishes an "iterative process" whereby certain actions are required when exceedances of water quality standards or objectives occur. This iterative process includes submitting a Receiving Water Limitations Compliance Report; revising the SQMP and its components to include modified BMPs, an implementation schedule and additional monitoring to address the exceedances; and implementing the revised SQMP. These provisions are consistent with the receiving water limitations language required by State Water Board Order WQ 99-05.

Part 2 also includes provisions implementing the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL (summer dry weather provisions only). During summer dry weather, Part 2.6 prohibits discharges of bacteria from MS4s into Marina del Rey Harbor Basins D, E, or F, including Mothers' Beach that cause or contribute to exceedance of the applicable bacteria water quality objectives.

Part 2 also included similar TMDL provisions relating to the Santa Monica Bay summer dry weather bacteria TMDL. However, as a result of a legal challenge by Los Angeles County and the LACFCD, the Regional Water Board was required to void and set aside those provisions, which the Regional Water Board did in 2011.

Part 3 – Stormwater Quality Management Program (SQMP) Implementation

Under Part 3, each Permittee shall, at a minimum, implement the SQMP, which is an enforceable element of the Los Angeles County MS4 Permit. The SQMP, at a minimum, shall also comply with the applicable storm water program requirements of 40 CFR section 122.26(d)(2). The SQMP and its components shall be implemented so as to reduce the discharges of pollutants in storm water to the maximum extent practicable (MEP) and effectively prohibit non-storm water discharges to the MS4. Each Permittee shall also implement additional controls, where necessary, to reduce the discharge of pollutants from the MS4.

Part 3 also sets forth specific responsibilities of the Principal Permittee, which under Order No. 01-182 is the LACFCD, and co-permittees. In addition, Part 3 sets forth requirements for Watershed Management Committees (WMCs) which, among other tasks, prioritize pollution control efforts and evaluate the effectiveness of and recommend changes to the SQMP and its components. Each Permittee must also have the necessary legal authority to prohibit non-storm water discharges to the MS4, as well as possess adequate legal authority to develop and enforce storm water and non-storm water ordinances for its jurisdiction.

Part 4 – Special Provisions

Part 4 sets forth provisions for public information and participation, industrial/commercial facilities control program, development planning, development construction, public agency activities, and illicit connections and illicit discharges elimination. These programs are termed "minimum control measures" and have been in place since the inception of the MS4 NPDES permitting program, as required by federal regulations.

Part 5 – Definitions

Part 5 includes definitions for terms used within Order No. 01-182.

Part 6 – Standard Provisions

Part 6 includes standard provisions relating to implementation of the programs required by the permit. Such provisions include, but are not limited to, the duty to comply, the duty to mitigate, inspection and entry requirements, proper operation and maintenance requirements, monitoring and reporting requirements, and the duty to provide information. Most of these provisions are required by 40 CFR sections 122.41 or 122.42 and apply to all NPDES permits.

Part 7 – TMDL Provisions

In 2009, Order No. 01-182 was amended to include provisions that are consistent with the assumptions and requirements of waste load allocations from the Los Angeles River Trash TMDL. Appendix 7-1 identifies the permittees subject to the Los Angeles River Trash TMDL and sets forth the interim and final numeric effluent limitations for trash that the permittees must comply with. Part 7 also sets forth how permittees can demonstrate compliance with the numeric effluent limitations. Permittees have the option to employ three general compliance strategies to achieve the numeric effluent limitations. Depending on the strategy selected, the Permittee may demonstrate compliance either by documenting the percentage of its area addressed by full capture systems ("action-based" demonstration) or by calculating its annual trash discharge to the MS4 and comparing that to its effluent limitation. This approach allows the Permittee the flexibility to comply with the numeric effluent limitations using any lawful means, and establishes appropriate and enforceable compliance metrics depending on the method of compliance and level of assurance provided by the Permittee that the selected method will achieve the numeric effluent limitations derived from the TMDL WLAs.

Attachment U – Monitoring and Reporting Program

Order No. 01-182 has both self-monitoring and public reporting requirements, which include: (1) monitoring of "mass emissions" at seven mass emission monitoring stations; (2) Water Column Toxicity Monitoring; (3) Tributary Monitoring; (4) Shoreline Monitoring; (5) Trash Monitoring; (6) Estuary Sampling; (7) Bioassessment; and (8) Special Studies. The purpose of mass emissions monitoring is to: (1) estimate the mass emissions from the MS4; (2) assess trends in the mass emissions over time; and (3) determine if the MS4 is contributing to exceedances of water quality standards by comparing results to the applicable standards in the Basin Plan. Order No. 01-182 established that the Principal Permittee shall monitor the mass emissions stations. The permit required mass emission sampling five times per year.

III. APPLICABLE STATUTES, REGULATIONS, PLANS, AND POLICIES

The provisions contained in this Order are based on the requirements and authorities described below.

A. Legal Authorities – Federal Clean Water Act and California Water Code

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It serves as an NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).

B. Federal and California Endangered Species Acts

This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2115.5) or the Federal Endangered Species Act (16 U.S.C.A., §§ 1531 to 1544). This Order requires compliance with requirements to protect the beneficial uses of waters of the United States. Permittees are responsible for meeting all requirements of the applicable Endangered Species Act.

C. California Environmental Quality Act (CEQA)

This action to adopt an NPDES Permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code, § 21100, et seq.) pursuant to California Water Code section 13389. (*County of Los Angeles v. Cal. Water Boards* (2006) 143 Cal.App.4th 985.)

D. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The CWA requires the Regional Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. On June 13, 1994, the Regional Water Board adopted a *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (hereinafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Los Angeles Region. The Regional Water Board has amended the Basin Plan on multiple occasions since 1994. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the surface water bodies that receive discharges from the Los Angeles County MS4 generally include those listed below:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within the coastal watersheds of Los Angeles County with the exception of those originating in the City of Long Beach	Multiple surface water bodies of the Los Angeles Region	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Industrial Process Supply (PROC); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Navigation (NAV); Hydropower Generation (POW); Water Contact Recreation (REC-1); Limited Contact Recreation (LREC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Preservation of Areas of Special Biological Significance (BIOL); Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Marine Habitat (MAR); Wetland Habitat (WET); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL)

Pursuant to California Water Code sections 13263(a) and 13377, the requirements of this Order implement the Basin Plan.

a. Permit Structure: Watershed Management Approach and Total Maximum Daily Load (TMDL) Implementation

One of the fundamental issues for this Order was a reconsideration of the basic permit structure. The previous Order, Order No. 01-182, was structured as a single permit whereby all 86 Permittees were assigned uniform requirements, with additional requirements for the Principal Permittee. Through Order No. 01-182, the Regional Water Board began to implement a Watershed Management Approach to address water quality protection in the region. The Watershed Management Approach intended to provide a comprehensive and integrated strategy toward water resource protection, enhancement, and restoration while considering economic and environmental impacts within a hydrologically defined drainage basin or watershed.

On June 12, 2006, prior to the expiration date of Order No. 01-182, all of the Permittees filed Reports of Waste Discharge (ROWD) applying for renewal of their waste discharge requirements. Specifically, the Los Angeles County Flood Control District submitted an 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. On June 12, 2006, the cities of Downey and Signal Hill each submitted an individual ROWD application requesting an individual MS4 permit; and the Upper San Gabriel River Watershed Coalition (comprised of the cities of Azusa, Claremont, Glendora, Irwindale, and Whittier) also submitted an individual ROWD application requesting a separate MS4 permit for these cities. In 2010, the LACFCD withdrew from its 2006 ROWD and submitted a new ROWD also

requesting an individual MS4 permit. The LACFCD also requested that it no longer be designated as the Principal Permittee and that it is relieved of Principal Permittee responsibilities.

The Regional Water Board evaluated each of the 2006 ROWDs and 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). The Regional Water Board also found that the information presented in the ROWDs did not reflect the current status of program elements for MS4 permits developed over the past decade or the new information specific to this MS4. Because each ROWD did not satisfy federal requirements, the Regional Water Board deemed all four 2006 ROWDs incomplete. The Regional Water Board also evaluated the LACFCD's 2010 ROWD and found that it too did not satisfy federal requirements nor reflect the current status for MS4s.

Though five separate ROWDs were submitted, the Regional Water Board retains the discretion as the permitting authority to determine whether to issue permits for discharges from MS4s on a system-wide or jurisdiction-wide basis. Clean Water Act section 402(p)(3)(B)(i) and implementing regulations at 40 CFR section 122.26, subdivisions (a)(1)(v), (a)(3)(ii), and (a)(3)(iv) allow the permitting authority to issue permits for MS4 discharges on a system-wide or jurisdiction-wide basis taking into consideration a variety of factors. Such factors include the location of the discharge with respect to waters of the United States, the size of the discharge, the quantity and nature of the pollutants discharged to waters of the United States, and other relevant factors. Federal regulations at 40 CFR section 122.26(a)(3)(ii) identify a variety of possible permitting structures, including one system-wide permit covering all MS4 discharges or distinct permits for appropriate categories of MS4 discharges including, but not limited to, all discharges owned or operated by the same municipality, located within the same jurisdiction, all discharges within a system that discharge to the same watershed, discharges within a MS4 that are similar in nature, or for individual discharges from MS4s.

In evaluating the five separate ROWDs and the structure for this Order, the Regional Water Board considered a number of factors:

i. The nature of the Permittees' MS4s, which comprise a large interconnected system, controlled in large part by the Los Angeles County Flood Control District, among others, and used by multiple cities along with Los Angeles County. The discharges from these entities frequently commingle in the MS4 prior to discharge to receiving waters.

ii. The requirement to implement 33 largely watershed-based TMDLs in this Order. A number of Permittees have already established jurisdictional groups on a watershed or subwatershed basis for TMDL implementation. (See Attachment K of this Order for a matrix of these TMDLs and Permittees by

Watershed Management Area (WMA)). Many of the TMDLs apply to multiple watersheds and the jurisdictional areas of multiple Permittees. Having separate permits would make implementation of the TMDLs more cumbersome.

iii. The passage of Assembly Bill 2554 in 2010, which amended the Los Angeles County Flood Control Act. This statute allows the LACFCD to assess a property-related fee or charge for storm water and clean water programs. Funding is subject to voter approval in accordance with Proposition 218. Fifty percent of funding is allocated to nine "watershed authority groups" to implement collaborative water quality improvement plans. (See Attachments B and C of this Order for maps of WMAs.)

iv. Results of the on-line survey administered to Permittees by Regional Water Board staff regarding permit structure. The results indicated that a majority of Permittees support a single MS4 permit for Los Angeles County. A significant minority support multiple watershed-based permits. Overall, 85 percent of the permittees that responded to the on-line survey support either a single MS4 permit or several individual watershed-based permits. A small number of permittees support alternative groupings of adjacent municipalities instead of watershed-based groupings. Only four permittees expressed a preference for individual MS4 permits.

v. The 2006 and 2010 ROWDs. Eight Permittees submitted individual or small group ROWDs, including the cities of Signal Hill and Downey; five cities in the upper San Gabriel River watershed; and the Los Angeles County Flood Control District. The LACFCD has also requested that it is no longer designated as Principal Permittee and relieved of Principal Permittee responsibilities.

Based on an evaluation of these factors, the Regional Water Board again determined that, because of the complexity and networking of the MS4 within Los Angeles County, that one system-wide permit is appropriate. In order to provide individual Permittees with more specific requirements, this Order regulates the MS4 discharges of 86 Permittees with some sections devoted to universal requirements for all Permittees and others devoted to requirements specific to each Watershed Management Area (WMA), including TMDL implementation provisions. This structure is supported by section 402(p) of the Clean Water Act and 40 CFR sections 122.26, subdivisions (a)(1)(v), (a)(3)(ii), and (a)(3)(iv). A single permit will ensure consistency and equitability in regulatory requirements within Los Angeles County, while watershed-based sections within the single permit will provide flexibility to tailor permit provisions to address distinct watershed characteristics and water quality issues. Additionally, an internal watershed-based structure comports with the Regional Water Board's Watershed Management Initiative, its watershed-based TMDL requirements, and the LACFCD's funding initiative passed in Assembly Bill 2554. Watershed-based sections will help promote watershed-wide solutions to address water quality problems, which in many cases are the most efficient and cost-effective means to address storm water and urban runoff pollution. Further, watershed-based

sections may encourage collaboration among permittees to implement regional integrated water resources approaches such as storm water capture and re-use to achieve multiple benefits.

The Regional Water Board determined that the cities of Signal Hill and Downey, the five upper San Gabriel River cities, and the LACFCD are included as Permittees in this Order. In making that determination, the Regional Water Board distinguished between the permitting status of those cities and the permitting status of the City of Long Beach at this time because the City of Long Beach has a proven track record in implementing an individual permit and developing a robust monitoring program under that individual permit, as well as in cooperation with other MS4 dischargers on watershed based implementation. While all other incorporated cities with discharges within the coastal watersheds of Los Angeles County, as well as Los Angeles County and the Los Angeles County Flood Control District, are permitted under this Order, individually tailored permittee requirements are provided in this Order, where appropriate.

The Regional Water Board also determined that because the LACFCD owns and operates large portions of the MS4 infrastructure, including but not limited to catch basins, storm drains, outfalls and open channels, in each coastal watershed management area within Los Angeles County, the LACFCD should remain a Permittee in the single-system wide permit; however, this Order relieves LACFCD of its role and responsibilities as Principal Permittee. Additionally, given the LACFCD's limited land use authority, it is appropriate for the LACFCD to have a separate and uniquely-tailored storm water management program. Accordingly, the storm water management program minimum control measures imposed on the LACFCD in Part VI.D of this Order differ in some ways from the minimum control measures imposed on other Permittees. Namely, aside from its own properties and facilities, the LACFCD is not subject to the Industrial/Commercial Facilities Program, the Planning and Land Development Program, and the Development Construction Program. However, as a discharger of storm and non-storm water, the LACFCD remains subject to the Public Information and Participation Program and the Illicit Connections and Illicit Discharges Elimination Program. Further, as the owner and operator of certain properties, facilities and infrastructure, the LACFCD remains subject to requirements of a Public Agency Activities Program.

2. **Ocean Plan.** In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (hereinafter Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on September 15, 2009. The Office of Administration Law approved it on March 10, 2010. On October 8, 2010, USEPA approved the 2009 Ocean Plan. The Ocean Plan is applicable, in its entirety, to ocean waters of the State. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to California Water Code sections 13263(a) and 13377, the requirements of this Order implement the Ocean Plan. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table F-3B. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
All Municipal Separate Storm Sewer Systems (MS4s) discharge points within the coastal watersheds of Los Angeles County with the exception of those originating within the City of Long Beach	Pacific Ocean	Industrial Water Supply (IND); Water Contact (REC-1) and Non-Contact Recreation (REC-2), including aesthetic enjoyment; Navigation (NAV); Commercial and Sport Fishing (COMM); Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS); Rare and Endangered Species (RARE); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPWN) and Shellfish Harvesting (SHELL)

3. **Antidegradation Policy.** 40 CFR section 131.12[4] requires that the state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Resolution No. 68-16 and 40 CFR section 131.12 require the Regional Water Board to maintain high quality waters of the State unless degradation is justified based on specific findings. First, the Board must ensure that "existing instream uses and the level of water quality necessary to protect the existing uses" are maintained and protected. Second, if the baseline quality of a water body for a given constituent exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected through the requirements of the Order unless the Board makes findings that (1) any lowering of the water quality is necessary to accommodate important economic or social development in the area in which the waters are located; (2) water quality adequate to protect existing uses fully is assured; and (3) the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved. The Board must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy. In particular, the Board must find that not only present, but also anticipated future uses of water are protected, and must ensure best practicable treatment or control of the discharges. The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of the adoption of Resolution No. 68-16, or a lower

[4] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

level if that lower level was allowed through a permitting action that was consistent with the federal and state antidegradation policies.

The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution 68-16 as set out in the Findings below:

a. Many of the waters within the area covered by this Order are impaired for multiple pollutants discharged through MS4s and are not high quality waters with regard to these pollutants. In most cases, there is insufficient data to determine whether these water bodies were impaired as early as 1968, but the limited available data shows impairment dating back for more than two decades. Many such water bodies are listed on the State's CWA Section 303(d) List and either the Regional Water Board or USEPA has established TMDLs to address the impairments. This Order ensures that existing instream (beneficial) water uses and the level of water quality necessary to protect the existing uses is maintained and protected. This Order requires the Permittees to comply with permit provisions to implement the WLAs set forth in the TMDLs in order to restore the beneficial uses of the impaired water bodies consistent with the assumptions and requirements of the TMDLs. This Order further requires compliance with receiving water limitations to meet water quality standards in the receiving water either by demonstrating compliance pursuant to Part V.A and the Permittee's monitoring and reporting program pursuant to Part VI.B or by implementing Watershed Management Programs/EWMPs with a compliance schedule. This Order includes requirements to develop and implement storm water management programs, achieve water quality-based effluent limitations, and effectively prohibit non-storm water discharges through the MS4.

b. To the extent that some of the water bodies within the jurisdiction are high quality waters with regard to some constituents, this Order finds as follows:

    i. Allowing limited degradation of high quality water bodies through MS4 discharges is necessary to accommodate important economic or social development in the area and is consistent with the maximum benefit to the people of the state. The discharge of storm water in certain circumstances is to the maximum benefit to the people of the state because it can assist with maintaining instream flows that support beneficial uses, may spur the development of multiple-benefit projects, and may be necessary for flood control, and public safety as well as to accommodate development in the area. The alternative – capturing all storm water from all storm events – would be an enormous opportunity cost that would preclude MS4 permittees from spending substantial funds on other important social needs. The Order ensures that any limited degradation does not affect existing and anticipated future uses of the water and does not result in water quality less than established standards. The Order requires compliance with receiving water limitations that act as a floor to any limited degradation.

ii. The Order requires the highest statutory and regulatory requirements and requires that the Permittees meet best practicable treatment or control. The Order prohibits all non-storm water discharges, with a few enumerated exceptions, through the MS4 to the receiving waters. As required by 40 CFR section 122.44(a), the Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p), and implement extensive minimum control measures in a storm water management program. Recognizing that best practicable treatment or control may evolve over time, the Order includes new and more specific requirements as compared to Order No. 01-182. The Order incorporates options to implement Watershed Management Programs or EWMPs that must specify concrete and detailed structural and non-structural storm water controls that must be implemented in accordance with an approved time schedule. The Order contains provisions to encourage, wherever feasible, retention of the storm water from the 85th percentile 24-hour storm event.

4. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. While this Order allows implementation of Watershed Management Plans/EWMPs to constitute compliance with receiving water limitations under certain circumstances, the availability of that alternative and the corresponding availability of additional time to come into compliance with receiving water limitations, does not violate the anti-backsliding provisions. The receiving water limitations provisions of this Order are imposed under section 402(p)(3)(B) of the Clean Water Act rather than based on best professional judgment, or based on section 301(b)(1)(C) or sections 303(d) or (e), and are accordingly not subject to the anti-backsliding requirements of section 402(o). Although the non-applicability is less clear with respect to the regulatory anti-backsliding provisions in 40 Code of Federal Regulations section 122.44(l), the regulatory history suggests that USEPA's intent was to establish the anti-backsliding regulations with respect to evolving technology standards for traditional point sources. (See, e.g., 44 Fed.Reg. 32854, 32864 (Jun. 7, 1979)). It is unnecessary, however, to resolve the ultimate applicability of the regulatory anti-backsliding provisions, because the WMP/EWMP provisions qualify for an exception to backsliding as based on new information. The Watershed Management Plan/EWMP provisions of this Order were informed by new information available to the Board from experience and knowledge gained through the process of developing 33 watershed-based TMDLs and implementing several of the TMDLs since the adoption of the previous permit. In particular, the Board recognized the significance of allowing time to plan, design, fund, operate and maintain watershed-based BMPs necessary to attain water quality improvements and additionally recognized the potential for municipal storm water to benefit water supply. Thus, even if the

receiving water limitations are subject to anti-backsliding requirements, they were revised based on new information that would support an exception to the anti-backsliding provisions. (33 U.S.C. § 1342(o)(2)(B)(i); 40 C.F.R. § 122.44(l)(1); 40 C.F.R. §122.44(l)(2)(i)(B)(1)).

E. Impaired Water Bodies on CWA section 303(d) List

Section 303(d)(1) of the CWA requires each state to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after implementation of technology-based effluent limitations on point sources. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "303(d) List". Periodically, USEPA approves the State's 303(d) List. Most recently, USEPA approved the State's 2010 303(d) List of impaired water bodies on October 11, 2011, which includes certain receiving waters in the Los Angeles region. For each listed water body, the state or USEPA is required to establish a total maximum daily load (TMDL) of each pollutant impairing the water quality standards in that water body. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the allowable pollutant loadings for a water body and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards. A TMDL is the sum of the allowable pollutant loads of a single pollutant from all contributing point sources (the waste load allocations or WLAs) and non-point sources (load allocations or LAs), plus the contribution from background sources and a margin of safety. (40 CFR section 130.2(i).) MS4 discharges are considered point source discharges. For 303(d)-listed water bodies and pollutants in the Los Angeles Region, the Regional Water Board or USEPA develops and adopts TMDLs that specify these requirements.

Over the last decade, the Regional Water Board and USEPA have established 33 TMDLs to remedy water quality impairments in various water bodies within Los Angeles County. (See Attachment K of this Order for a list of TMDLs by Watershed Management Area for Los Angeles County.) These TMDLs identify MS4 discharges as a source of pollutants to these water bodies and, as required, establish WLAs for MS4 discharges to reduce the amount of pollutants discharged to receiving waters. Section 402(p)(3)(B)(iii) of the Clean Water Act requires the Regional Water Board to impose permit conditions, including: "management practices, control techniques and system, design and engineering methods, and *such other provisions as the Administrator of the State determines appropriate for the control of such pollutants*." (emphasis added.) Section 402(a)(1) of the Clean Water Act also requires states to issue permits with conditions necessary to carry out the provisions of the Clean Water Act. Federal regulations also require that NPDES permits contain effluent limits consistent with the assumptions and requirements of all available WLAs (40 CFR § 122.44(d)(1)(vii)(B)). California Water Code section 13377 also requires that NPDES permits include limitations necessary to implement water quality control plans. Therefore, this Order includes effluent limitations and other provisions to implement the TMDL WLAs assigned to permittees regulated by the LA County MS4 Permit.

The Regional Water Board has previously established numeric effluent limitations to implement TMDL WLAs when it reopened Order No. 01-182 in 2009 to incorporate permit provisions to implement the Los Angeles River Watershed Trash TMDL WLAs. In that case, Permittees have the option to employ three general compliance strategies to achieve the numeric effluent limitations. Depending on the strategy selected, the Permittee may demonstrate compliance either by documenting the percentage of its area addressed by full capture systems ("action-based" demonstration) or by calculating its annual trash discharge to the MS4 and comparing that to its effluent limitation. This approach allows the Permittee the flexibility to comply with the numeric effluent limitations using any lawful means, and establishes appropriate and enforceable compliance metrics depending on the method of compliance and level of assurance provided by the Permittee that the selected method will achieve the numeric effluent limitations derived from the TMDL WLAs. A similar approach is used for the 32 other TMDLs incorporated into this Order, where appropriate.

F. Other Plans, Policies and Regulations

This Order implements all other applicable federal regulations and State plans, policies and regulations, including the California Toxics Rule at 40 CFR section 131.38.

IV. RATIONALE FOR DISCHARGE SPECIFICATIONS

A. Discharge Prohibitions – Non-Storm Water Discharges

1. Regulatory Background

The CWA employs the strategy of prohibiting the discharge of any pollutant from a point source into waters of the United States unless the discharger of the pollutant(s) obtains an NPDES permit pursuant to CWA section 402. The 1987 amendment to the CWA included section 402(p) that specifically addresses NPDES permitting requirements for municipal discharges from MS4s. Section 402(p) prohibits the discharge of pollutants from specified MS4s to waters of the United States except as authorized by an NPDES permit and identifies the substantive standards for MS4 permits. MS4 permits (1) "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers[ ]" and (2) "shall require [i] controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and [ii] such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." (CWA § 402(p)(3)(B)(ii-iii).)

On November 16, 1990, USEPA published regulations to implement the 1987 amendments to the CWA. (55 Fed.Reg. 47990 et seq. (Nov. 16, 1990)). The regulations establish minimum requirements for MS4 permits. The regulations address both storm water and non-storm water discharges from MS4s; however, the minimum requirements for each are significantly different. This is evident from USEPA's preamble to the storm water regulations, which states that "Section 402(p)(B)(3) [of the CWA] requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal storm sewer … Ultimately, such non-storm

water discharges through a municipal separate storm sewer system must either be removed from the system or become subject to an NPDES permit." (55 Fed.Reg. 47990, 47995 (Nov. 16, 1990).[5] USEPA states that MS4 Permittees are to begin to fulfill the "effective prohibition of non-storm water discharges" requirement by: (1) conducting a screening analysis of the MS4 to provide information to develop priorities for a program to detect and remove illicit discharges, (2) implementing a program to detect and remove illicit discharges, or ensure they are covered by a separate NPDES permit, and (3) to control improper disposal into the storm sewer. (40 CFR § 122.26(d)(2)(iv)(B).) These non-storm water discharges therefore are not subject to the MEP standard.

"Illicit discharges" defined in the regulations is the most closely applicable definition of "non-storm water" contained in federal law and the terms are often used interchangeably. In fact, "illicit discharge" is defined by USEPA in its 1990 rulemaking, as "any discharge through a municipal separate storm sewer that is not composed entirely of storm water and that is not covered by an NPDES permit [other than the permit for the discharge from the MS4]." (55 Fed.Reg. 47990, 47995).

2. Definition of Storm Water and Non-Storm Water

Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 C.F.R. § 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, USEPA's preamble to the federal regulations demonstrates that the term is related to precipitation events such as rain and/or snowmelt. (55 Fed.Reg. 47990, 47995-96 (Nov. 16, 1990)). For example, USEPA states:

> In response to the comments [on the proposed rule] which requested EPA to define the term 'storm water' broadly to include a number of classes of discharges which are not in any way related to precipitation events, EPA believes that this rulemaking is not an appropriate forum for addressing the appropriate regulation under the NPDES program of such non-storm water discharges . . . . Consequently, the final definition of storm water has not been expanded from what was proposed.

(*Ibid.*) The storm water regulations themselves identify numerous categories of discharges including landscape irrigation, diverted stream flows, discharges from drinking water supplier sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, and street wash water as "non-storm water." While these types of discharges may be regulated under storm water permits, they are not considered storm water discharges. (40 CFR § 122.26(d)(2)(iv)(B)). USEPA states that, "in general, municipalities will not be held responsible for prohibiting some specific components of discharges or flows … through their municipal separate storm sewer system, *even though such components may be considered non-storm water discharges*…" (emphasis added). However, where certain categories of non-storm water discharges are identified by

[5] USEPA further states that, "[p]ermits for such [non-storm water] discharges must meet applicable technology-based and water-quality based requirements of Sections 402 and 301 of the CWA." (55 Fed. Reg. 47990, 48037 (Nov. 16, 1990)).

the Permittee (or the Regional Water Board) as needing to be addressed, they are no longer exempt and become subject to the effective prohibition requirement in CWA section 402(p)(3)(B)(ii). This review of the storm water regulations and USEPA's discussion of the definition of storm water in its preamble to these regulations strongly supports the interpretation that storm water includes only precipitation-related discharges. Therefore, non-precipitation related discharges are not storm water discharges and, therefore, are not subject to the MEP standard in CWA section 402(p)(3)(B)(iii). Rather, non-storm water discharges shall be effectively prohibited pursuant to CWA section 402(p)(3)(B)(ii).

3. Non-Storm Water Regulation

Non-storm water discharges from the MS4 that are not authorized by separate NPDES permits, nor specifically exempted, are subject to requirements under the NPDES program, including discharge prohibitions, technology-based effluent limitations and water quality-based effluent limitations (40 CFR § 122.44). USEPA's preamble to the storm water regulations also supports the interpretation that regulation of non-storm water discharges through an MS4 is not limited to the MEP standard in CWA section 402(p)(3)(B)(iii):

"*Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the Clean Water Act. Section 402(p(3)(B) requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer…Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit.*" (55 Fed.Reg. 47990, 47995.)

In its 1990 rulemaking, USEPA explained that the illicit discharge detection and elimination program requirement was intended to begin to implement the Clean Water Act's provision requiring permits to "effectively prohibit non-storm water discharges." (55 Fed.Reg. 47990, 47995.)

4. Authorized and Conditionally Exempt Non-Storm Water Discharges

The previous permit, Order No. 01-182, contained provisions exempting several categories of non-storm water discharges from the discharge prohibition, including discharges covered by a separate individual or general NPDES permit for non-storm water discharges, natural flows, flows from emergency fire fighting activity, and flows incidental to urban activities. This Order retains these same categories, but with several enhancements. Natural flows specified in this Order include natural springs and rising ground water; flows from riparian habitats and wetlands; diverted stream flows authorized by the State or Regional Water Board; and uncontaminated ground water infiltration. Flows incidental to urban activities specified in this Order include landscape irrigation; dechlorinated/debrominated swimming pool discharges; dewatering of lakes and decorative fountains; non-commercial car washing by

residents or by non-profit organizations; and street/sidewalk washwater. This Order separately identifies flows from non-emergency fire fighting activities and discharges from drinking water supplier distribution systems as "essential" non-storm water discharges rather than combining them into the same category as the other non-storm water discharges incidental to urban activities. In doing so, the Regional Water Board recognizes that these discharges are essential public service discharge activities and are directly or indirectly required by other state or federal statute and/or regulation. This Order continues to unconditionally exempt emergency fire fighting discharges from the discharge prohibition.

Like Order No. 01-182, this Order contains a provision that the Regional Water Board Executive Officer may add or remove categories of exempt non-storm water discharges. In addition, in the event that any of the categories of non-storm water discharges are determined to be a source of pollutants by the Executive Officer then the discharges will no longer be exempt unless the Permittee implements conditions approved by the Executive Officer to ensure that the discharge is not a source of pollutants. Also the Executive Officer may impose additional prohibitions of non-storm water discharges in consideration of antidegradation policies and TMDLs.

5. BMPs for Non-Storm Water Discharges

In this Order, no changes have been made to the types of non-storm water discharges included in the non-storm water discharge prohibition exemptions, with one exception related to temporary discharges authorized by USEPA pursuant to sections 104(a) or 104(b) of CERCLA. However, the non-storm water discharge provisions in this Order have been reworded to clarify the requirements for addressing authorized and conditionally exempt non-storm water discharges that are not prohibited. In particular, language has been added to explicitly identify State and Regional Water Board permits that are applicable to some of the exempted non-storm water discharges. The State and Regional Water Board general permits referenced in this Order and their applicability to the different types of non-storm water discharges that are routinely discharged through the MS4 is contained in Table F-4 below.

Table F-4. State and Regional Water Board General Permits Referenced in this Permit

Order/NPDES Permit No.	Applicable Types of Discharges
NPDES Permit No. CAG994003 – Discharges of Nonprocess Wastewater to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Ground water seepage • Uncontaminated pumped ground water • Gravity flow from foundation drains, footing drains, and crawl space pumps • Air conditioning condensate • Discharges of cleaning wastewater and filter backwash

Order/NPDES Permit No.	Applicable Types of Discharges
NPDES Permit No. CAG994004 – Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Uncontaminated pumped ground water • Discharges from activities that occur at wellheads, such as well construction, well development (e.g., aquifer pumping tests, well purging), or major well maintenance • Gravity flow from foundation drains, footing drains, and crawl space pumps • Discharges of ground water from construction and project dewatering[6]
NPDES Permit No. CAG990002 – Discharges from Utility Vaults and Underground Structures to Surface Waters	• Uncontaminated pumped ground water • Gravity flow from foundation drains, footing drains, and crawl space pumps
NPDES Permit No. CAG674001 – Discharges From Hydrostatic Test Water to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of low threat hydrostatic test water[7]
NPDES Permit No. CAG914001 – Discharges of Treated Groundwater from Investigation and/or Cleanup of Volatile Organic Compounds Contaminated-Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of treated ground water from investigation and/or cleanup of volatile organic compound (VOC) contaminated sites
NPDES Permit No. CAG994005 – Discharges of Ground Water from Water Supply Wells to Surface Waters in Los Angeles and Ventura Counties	• Discharges of ground water from potable water supply wells[8]

[6] Discharges of ground water from construction and project dewatering include treated or untreated wastewater from permanent or temporary construction dewatering operations; ground water pumped as an aid in the containment and/or cleanup of a contaminant plume; ground water extracted during short-term and long-term pumping/aquifer tests; ground water generated from well drilling, construction or development and purging of wells; equipment decontamination water; subterranean seepage dewatering; incidental collected storm water from basements; and other process and non-process wastewater discharges that meet the eligibility criteria and could not be covered under another specific general NPDES permit.

[7] Low threat hydrostatic test water means discharges resulting from the hydrostatic testing or structural integrity testing of pipes, tanks, or any storage vessels using domestic water or from the repair and maintenance of pipes, tanks, or reservoirs.

[8] Discharges covered by this permit include ground water from potable water supply wells generated during the following activities: ground water generated during well purging for data collection purposes; ground water extracted from major well rehabilitation and redevelopment activities; and ground water generated from well drilling, construction, and development.

Order/NPDES Permit No.	Applicable Types of Discharges
NPDES Permit No. CAG834001 – Waste Discharge Requirements for Treated Groundwater and Other Wastewaters from Investigation and/or Cleanup of Petroleum Fuel-Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties	• Discharges of treated ground water and other waste waters from investigation and/or cleanup of petroleum fuel contaminated sites

This Order explicitly adds another category of authorized non-storm water discharge for discharges authorized by USEPA pursuant to sections 104(a) or 104(b) of the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). These discharges typically consist of short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or USEPA or State-required compliance testing of potable water treatment plants, as part of a USEPA authorized groundwater remediation action under CERCLA. These discharges through the MS4 are only authorized if: (i) the discharge will comply with water quality standards identified as applicable or relevant and appropriate requirements ("ARARs") under section 121(d)(2) of CERCLA; or (ii) the discharge is subject to either (a) a written waiver of ARARs by USEPA pursuant to section 121(d)(4) of CERCLA or (b) a written determination by USEPA that compliance with ARARs is not practicable considering the exigencies of the situation, pursuant to 40 CFR section 300.415(j). Additionally, a decision to authorize a discharge through the MS4 to surface waters will not be made by USEPA without first conducting a comprehensive evaluation of containment, treatment, reinjection, or re-use options for the water generated from the subject wells. If a decision to discharge through the MS4 is made, USEPA's authorization of the discharge under CERCLA will require that the discharger shall:

(1) Implement BMPs to minimize the rate and duration of the discharge and remove excessive solids, and implement other on-site physical treatment where feasible.

(2) Promote infiltration of discharged water in locations that will prevent or minimize degradation of groundwater quality.

(3) Notify the affected MS4 Permittees, including the LACFCD and the MS4 Permittee with land use authority over the discharge location, and the Regional Water Board at least one week prior to a planned discharge (unless USEPA determines in writing that exigent circumstances require a shorter notice period) and as soon as possible (but no later than 24 hours after the discharge has occurred) for unplanned discharges;

(4) Monitor any pollutants of concern in the discharge[9]; and

(5) Maintain records for all discharges greater than 100,000 gallons.[10]

In addition to requiring NPDES permit coverage for applicable categories of non-storm water discharges, this Order contains language that specifies certain conditions, including implementation of BMPs, for each category of conditionally exempt non-storm water discharge that must be met in order for the non-storm water discharge to be exempted from the non-storm water prohibition and thus allowed through the MS4.

The California Recycled Water Policy, adopted by the State Water Board in Resolution No. 2009-0011, calls for an increase in the use of recycled water from municipal wastewater sources that meet the definition in California Water Code section 13050(n), in a manner that implements state and federal water quality laws. In support of the California Recycled Water Policy, a provision has been added requiring that alternative means of disposal or opportunities for capture, reclamation, and reuse must be evaluated prior to discharging any of the non-storm water discharge categories to the MS4. In addition, to ensure the protection of receiving water quality all non-storm water discharges must be segregated from potential sources of pollutants to prevent the introduction of pollutants to the discharge.

In establishing provisions specific to different non-storm water discharge types, the Regional Water Board reviewed non-storm water discharge provisions and BMPS included in other area MS4 permits. MS4 permits reviewed included the Ventura County MS4 permit (R4-2009-0057), the Orange County MS4 permit (Order No. R9-2009-0002), the Riverside County MS4 permit (R9-2010-0016), and the San Diego County MS4 permit (R9-2007-0001). Conditions established in this permit for each of the non-storm water discharge categories ensure the protection of receiving water quality and are considered common practices.

Dischargers permitted under NPDES Permit No. CAG990002 are required to contact the appropriate Permittee(s) with jurisdiction over the MS4, including but not limited to the Los Angeles County Flood Control District, within 24 hours, whenever there is a discharge of 50,000 gallons or more from utility vaults and underground structures to the MS4.

The conditions for landscape irrigation have been split into potable and reclaimed landscape irrigation categories. As identified in the Orange County MS4 permit

[9] Pollutants of concern include, at a minimum, trash and debris, including organic matter, TSS, any pollutant being addressed by the groundwater remediation action under CERCLA, and any pollutant for which there is a Water Quality Based Effluent Limitation in Part VI.E applicable to discharges from the MS4 to the receiving water.

[10] Records shall be maintained, as appropriate, on the: name of CERCLA authorized discharger, date and time of notification (for planned discharges), method of notification, location of discharge, discharge pathway, receiving water, date of discharge, time of the beginning and end of the discharge, duration of the discharge, flow rate or velocity, estimated total number of gallons discharged, type of pollutant removal equipment used, type of dechlorination equipment used if applicable, type of dechlorination chemicals used if applicable, concentration of residual chlorine if applicable, type(s) of sediment controls used, and field and laboratory monitoring data. Records shall be retained for three years, unless the Regional Water Board requests a longer record retention period and shall be made available upon request by the MS4 Permittee or the Regional Water Board.

incidental runoff from landscape irrigation projects including over irrigation and overspray have the potential to contribute landscape derived pollutants such as bacteria, nutrients, and pesticides to receiving waters. In addition, the California Recycled Water Policy identifies the need for control of incidental runoff from landscape irrigation projects, particularly as it relates to recycled water use. The BMPs incorporated into the permit for potable landscape irrigation ensure that water is conserved, overspray and over irrigation causing incidental runoff is minimized, and exposure to landscape related pollutants is minimized.

State Water Board Water Quality Order No. 2009-0006-DWQ, General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water, is a general permit for producers and distributors of recycled water for landscape irrigation uses. As part of this general permit, the producers and distributors of recycled water for landscape irrigation are required to develop an Operations and Maintenance Plan (O&M Plan) that includes an Operations Plan and an Irrigation Management Plan. Therefore, any reclaimed landscape irrigation discharges to the MS4 must comply with the relevant portion of the O&M Plan including the Irrigation Management Plan. By explicitly referencing the O&M requirement in this permit, it centralizes the requirements for reclaimed landscape irrigation and helps to ensure that procedures are in place for conserving water, minimizing incidental runoff, and minimizing exposure to landscape related pollutants.

Non-storm water discharge provisions have been added for the dewatering of lakes to the MS4. The provisions for the dewatering of lakes including removing and legally disposing of all visible trash on the shoreline or on the surface of the lake and the cleaning of the MS4 inlet and outlet where the water will be discharged to the receiving water have been consistently incorporated into Regional Water Board authorizations to discharge non-storm water from lakes, reservoirs, and ponds. In addition provisions for volumetrically and velocity controlling discharges as well as taking measurements to stabilize lake bottom sediments are incorporated into the provisions of this Order to ensure that turbidity in receiving waters are maintained at an acceptable level. The permit provisions for the dewatering of lakes ensure the protection of receiving water quality.

Basin plan requirements for residual chlorine have been explicitly included in the conditions for drinking water supplier distribution system releases, dechlorinated/debrominated swimming pool/spa discharges, and dewatering of decorative fountains. Related to swimming pool discharges, discharges of cleaning wastewater and filter backwash are specifically mentioned as being allowed only if authorized under a separate NPDES permit. The Regional Water Board has a general permit for discharges of nonprocess wastewater to surface waters in coastal watersheds of Los Angeles and Ventura counties (NPDES Permit No. CAG994003) that may address discharges of cleaning wastewater and filter backwash.

Specific BMPs for discharges of swimming pools/spas and the dewatering of decorative fountains have been added to this Order including prohibiting the dewatering of swimming pools/spas or decorative fountains containing copper-based

algaecides and requiring the implementation of controls to prevent introduction of pollutants prior to discharge. Swimming pool/spa discharges and decorative fountain water must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate and if necessary shall be pH adjusted to within the range of 6.5 and 8.5. The MS4 inlet and outlet must be inspected and cleaned out immediately prior to discharge to protect receiving water quality. In addition provisions for volumetrically and velocity controlling discharges are incorporated into the provisions of this Order to ensure that turbidity in receiving waters are maintained at an acceptable level.

In addition to the specific inclusion of Basin Plan water quality objectives for residual chlorine, this Order allows discharges of drinking water supplier distribution system releases as long as specified BMPs are implemented. BMPs must be implemented to prevent introduction of pollutants to drinking water supplier distribution system releases prior to discharge to the receiving water. BMPs must be consistent with the American Water Works Association (California – Nevada Section) BMP Manual for Drinking Water System Releases and other applicable guidelines. Similar to discharges of swimming pools/spas and dewatering of decorative fountains, drinking water supplier distribution system releases must be dechlorinated or debrominated using holding time, aeration, and/or sodium thiosulfate and if necessary shall be pH adjusted to within the range of 6.5 and 8.5. The MS4 inlet and outlet must be inspected and cleaned out immediately prior to discharge to protect receiving water quality. BMPs such as sand bags or gravel bags, or other appropriate means shall be utilized to prevent sediment transport and all sediment shall be collected and disposed of in a legal and appropriate manner. In addition provisions for volumetrically and velocity controlling discharges are incorporated into the provisions of this Order to ensure that turbidity in receiving waters are maintained at an acceptable level.

The permit provisions for drinking water supply and distribution system releases, dechlorinated/debrominated swimming pool/spa discharges, and dewatering of decorative fountains ensures the protection of receiving water quality.

The Regional Water Board evaluated and established a list of approved BMPs for various programs and activities through Regional Water Board Resolution 98-08 that serves as appropriate BMPs for inclusion in the Discharger and Permittees' regulatory programs. Requirements for street/sidewalk wash water contained in Resolution 98-08 have also been explicitly incorporated into this Order. The inclusion of the requirements contained in Resolution 98-08 helps to ensure that Permittees are aware of the requirements and ensures the protection of receiving water quality.

Specific BMPs for discharges from non-commercial car washing have been incorporated into this Order to prevent the introduction of pollutants prior to discharge. BMPs that must be implemented for the discharge of non-commercial vehicle wash water include minimizing the amount of water used by turning off nozzles or kinking the hose when not spraying a vehicle and by using a pressure washer; using biodegradable, phosphate free detergents and non-toxic cleaning

products; where possible, washing vehicles on permeable surfaces where wash water can percolate into the ground; creating a temporary berm or block off the storm drains; using pumps or vacuums to direct water to pervious areas; and emptying buckets of soapy water or rinse water into the sanitary sewer system. These BMPs are common practice and ensure the protection of receiving water quality.

The inclusion of conditions for flows related to non-emergency fire-fighting activities is new to this iteration of the permit. Conditions for discharges related to fire fighting activities have been incorporated into other MS4 permits including both Orange County and Riverside County. Flows resulting from emergency fire fighting activities necessary for the protection of life or property do not require implementation of specific BMPs.

The specific BMPs for discharges associated with non-emergency fire fighting activities that have been incorporated into this Order have been incorporated into other California MS4 permits. Both the Riverside County and Orange County MS4 permits require the development and implementation of a program to address pollutants from non-emergency fire fighting flows. Rather than develop a program to address non-emergency fire fighting flows, common BMPs used in association with non-emergency fire fighting discharges have been incorporated into this Order. Guidance on BMPs contained in this Order for non-emergency fire fighting activities is available in the Best Management Practices Plan for Urban Runoff Management for Participating Riverside County Fire Fighting Agencies.

The inclusion of specific conditions for exempted non-storm water discharges in this Order centralizes the requirements for non-storm water discharges. Conditions established in this permit for each of the conditionally exempt non-storm water discharge categories are common practice and have been incorporated into other area MS4 permits.

6. Permittee Requirements for Non-Storm Water Discharges

This Order includes specific requirements for Permittees related to more targeted screening of MS4 outfalls for non-storm water discharges, and monitoring and evaluation of significant non-storm water discharges. Permittees are required to develop and implement procedures to ensure that all conditions required for conditionally exempt non-storm water discharges are being implemented. These requirements also help to clarify the responsibilities of the Permittees versus the responsibilities of the non-MS4 Permittee dischargers to the MS4. The development and implementation of these procedures helps to ensure compliance with the non-storm water discharge prohibition and ensure that the non-storm water discharges are not sources of pollutants.

B. Technology-Based Effluent Limitations

Section 301(b)(1)(A) of the CWA and 40 CFR section 122.44(a) require that NPDES permits include technology based effluent limitations.[11] In 1987, the CWA was amended to require that municipal storm water discharges "reduce the discharge of pollutants to the maximum extent practicable." (CWA § 402(p)(3)(B)(iii).) The "maximum extent practicable" (MEP) standard is the applicable federal technology based standard that MS4 owners and operators must attain to comply with their NPDES permits.[12] The corresponding regulatory provisions that further detail the MEP standard can be found in 40 CFR sections 122.26(d)(2)(iv) and 122.44(k)(2).

Neither Congress nor the USEPA has specifically defined the term "maximum extent practicable." Rather, the MEP standard is a flexible and evolving standard. Congress established this flexible MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of storm water pollution."[13] This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits.[14] The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of storm water management programs in reducing pollutant loading to receiving waters. This is consistent with USEPA's interpretation of storm water management programs. As explained by USEPA in its 1990 rulemaking, "EPA anticipates that storm water management programs will evolve and mature over time" (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990)). There is ample evidence of this evolution in storm water management. Two local examples include the development of full capture trash control devices in response to the Los Angeles Region Trash TMDLs, and the development of innovative media filters for use in outfalls at the Boeing Santa Susana Field Laboratory that have potential municipal applications.

To provide clarification to the Regional Water Boards, the State Water Board's Office of Chief Counsel issued a memorandum dated February 11, 1993 regarding the "Definition of 'Maximum Extent Practicable'". In the memorandum, the State Water Board interpreted the MEP standard to entail "a serious attempt to comply," and that under the MEP standard, "practical solutions may not be lightly rejected." The memorandum states, "[i]n selecting BMPs which will achieve MEP, it is important to remember that municipalities will be responsible to reduce the discharge of pollutants in storm water to *the maximum extent practicable*. This means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive." The memorandum further states that, "[a]fter selecting a menu of BMPs, it is of course the responsibility of the discharger to insure that all BMPs are implemented."

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[11] A technology based effluent limitation is based on the capability of a model treatment method to reduce a pollutant to a certain concentration (NPDES Permit Writer's Manual, Appendix A). Technology based requirements represent the minimum level of control that must be imposed in a permit issued under CWA § 402.

[12] Note that the MEP standard only applies to storm water discharges from the MS4. Non-storm water discharges are subject to a different standard – specifically, non-storm water discharges through the MS4 must be effectively prohibited.

[13] Building Industry Ass'n of San Diego County v. State Water Resources Control Board (2004) 124 Cal.App.4th 866, 884.

[14] In re City of Irving, Texas, Municipal Storm Sewer System, (July 16, 2001), 10 E.A.D. 111 (E.P.A.), *6.

This Order includes programmatic requirements in six areas pursuant to 40 CFR section 122.26(d)(2)(iv) as well as numeric design standards for storm water runoff from new development and redevelopment consistent with the federal MEP standard (see State Water Board Order WQ 2000-11, the "LA SUSMP Order"). This Order also includes protocols for periodically evaluating and modifying or adding control measures, consistent with the concept that MEP is an evolving and flexible standard.

This Order also provides for the use of municipal action levels ("MALs") derived from the National Stormwater Quality Database (NSQD), as a means of evaluating the overall effectiveness of a Permittee's storm water management program in reducing pollutant loads from a particular drainage area and in order to assess compliance with the MEP standard. Finally, this Order includes BMP Performance Standards derived from the International BMP Database as a guide for BMP selection and design, and as a tool for evaluating the effectiveness of individual post-construction BMPs in reducing pollutant loads and assessing compliance with the MEP standard. USEPA recommends the use of numeric benchmarks for BMPs to estimate BMP effectiveness and as triggers for taking additional actions such as evaluating the effectiveness of individual BMPs, implementing and/or modifying BMPs, or providing additional measures to protect water quality.[15]

C. Water Quality-Based Effluent Limitations (WQBELs)

In addition to requiring that MS4 permits include technology based requirements consistent with the MEP standard, section 402(p)(3)(B)(iii) of the CWA authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants."[16] This requirement gives USEPA or the State permitting authority discretion to determine what permit conditions are necessary to control pollutants. Generally, permit requirements designed to achieve water quality standards are referred to as water quality based effluent limitations (WQBELs). A WQBEL is a restriction on the quantity or concentration of a pollutant that may be discharged from a point source into a receiving water that is necessary to achieve an applicable water quality standard in the receiving water.[17] WQBELs may be expressed narratively or numerically.

In its Phase I Stormwater Regulations, Final Rule, USEPA elaborated on these requirements, stating that, "permits for discharges from municipal separate storm sewer systems must require controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary water quality-based controls" (see 55 Fed.Reg.

[15] See USEPA November 22, 2002 memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs."

[16] The first and second iterations of the Los Angeles County MS4 Permit relied solely upon requirements consistent with the MEP standard to work toward achieving water quality standards. Note that the MEP standard is distinct from a water quality based standard; each has a different basis. Therefore, while from a practical point of view, the goal of all MS4 permit conditions is to control pollutants in discharges to ultimately achieve certain water quality outcomes, water quality based standards are directly derived from this desired outcome, while the MEP standard is anticipated to be a way of working toward the desired outcome, but is not directly derived from it.

[17] See 40 CFR § 122.2; NPDES Permit Writer's Manual, Appendix A. A WQBEL is distinguished from a technology based effluent limitation (TBEL) in that the basis for the WQBEL is the applicable water quality standard for the receiving water, while the basis for the TBEL is generally the performance of the best available technology.

47990, 47994 (Nov. 16, 1990). In December 1999, USEPA reiterated in its Phase II Stormwater Regulations, Final Rule that MS4 "permit conditions must provide for attainment of applicable water quality standards (including designated uses), allocations of pollutant loads established by a TMDL, and timing requirements for implementation of a TMDL."[18] The State Water Board has affirmed that MS4 permits must include requirements necessary to achieve compliance with the applicable technology based standard of MEP and to achieve water quality standards.[19]

WQBELs are required for point source discharges that have the reasonable potential to cause or contribute to an excursion of water quality standards and technology based effluent limitations or standards are not sufficient to achieve water quality standards.[20]

The State Water Board has previously concluded that sole reliance in MS4 permits on BMP based requirements is not sufficient to ensure attainment of water quality standards. (See State Water Board Order 2001-015). The Regional Water Board concurs with this conclusion. This conclusion is amply supported by Regional Water Board and USEPA established TMDLs for impaired waters in the Los Angeles Region, indicating that MS4 discharges are a continuing source of pollutants to the impaired receiving waters notwithstanding the implementation of storm water management programs that have been driven by the MEP standard by Permittees for the last two decades.

In this Order, WQBELs are included where the Regional Water Board has determined that discharges from the MS4 have the reasonable potential to cause or contribute to an excursion above water quality standards.[21] Reasonable potential can be demonstrated in several ways, one of which is through the TMDL development process. Where a point source is assigned a WLA in a TMDL, the analysis conducted in the development of the TMDL provides the basis for the Regional Water Board's determination that the discharge has the reasonable potential to cause or contribute to an exceedance of water quality standards in the receiving water. This approach is affirmed in USEPA's Permit Writer's Manual, which states, "[w]here there is a pollutant with a WLA from a TMDL, a permit writer must develop WQBELs." Therefore, WQBELs are included in this Order for all pollutants for which a WLA is assigned to MS4 discharges.

Federal regulations further require that, "when developing water quality-based effluent limits…the permitting authority shall ensure that effluent limits … are consistent with the assumptions and requirements of any available wasteload allocation for the discharge…" (40 CFR § 122.44(d)(1)(vii)(B)).

The Regional Water Board interprets this to mean that the final WQBEL must be expressed in similar terms as the underlying WLA; for example, where a TMDL includes WLAs for MS4 discharges that provide numeric pollutant load objectives, the WLA should be translated into numeric WQBELs in the permit, and at a level to achieve the same expected water quality outcome. USEPA also recommends the use of numeric WQBELs to meet water quality standards where MS4 discharges have the reasonable

[18] *See, e.g.,* Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.
[19] See, e.g., State Water Board Orders WQ 99-05 and 2001-15.
[20] 40 CFR §§ 122.44(d)(1)(i); 122.44(d)(1)(iii)
[21] 40 CFR §§ 122.44(d)(1)(i)-(iii); 122.44(d)(1)(vii)(B)

potential to cause or contribute to a water quality standard excursion. Numeric WQBELs will help clarify MS4 permit requirements and improve accountability in this permit term.

While BMPs[22] are central to MS4 permits, permit requirements may only rely upon BMP based limitations in lieu of water quality based effluent limitations if: (1) the BMPs are adequate to achieve water quality standards, and (2) numeric effluent limitations are infeasible.[23] As discussed earlier, the State and Regional Water Boards have concluded that sole reliance on MEP based permit requirements is not sufficient to ensure the achievement of water quality standards. Further, there is insufficient data and information available at this time on the prospective implementation of BMPs throughout Los Angeles County to provide the Regional Water Board reasonable assurance that the BMPs would be sufficient to achieve the WQBELs.[24]

Regarding the feasibility of numeric effluent limitations, the Regional Water Board concludes that numeric WQBELs are feasible. While a lack of data may have hampered the development of numeric effluent limitations for MS4 discharges in earlier permit cycles, in the last decade, 33 TMDLs have been developed for water bodies in Los Angeles County in which WLAs are assigned to MS4 discharges. In each case, part of the development process entailed analyzing pollutant sources and allocating loads using empirical relationships or modeling approaches. As a result, it is possible to use these numeric WLAs to derive numeric WQBELs for MS4 discharges. USEPA has also acknowledged that its expectations regarding the application of numeric WQBELs to municipal storm water discharges have changed as the storm water permit program has continued to mature over the last decade.[25]

The inclusion of numeric WQBELs is also consistent with the Ninth Circuit Court of Appeal's ruling in *Defenders of Wildlife v. Browner* (191 F.3d 1159, 1166 (1999)) that the permitting authority has discretion regarding the nature and timing of requirements that it includes as MS4 permit conditions to attain water quality standards, and that these requirements may include numeric effluent limitations.

Further, given the variability in implementation of storm water management programs across Permittees, numeric WQBELs create an objective, equitable and accountable means of controlling MS4 discharges, while providing the flexibility for Permittees to comply with the WQBELs in any lawful manner.

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[22] Note that best management practices and effluent limitations are two different types of permit requirements (see 40 CFR §§ 122.2; 122.44(k), which distinguish the two terms and describe their relationship to each other).

[23] 40 CFR §§ 122.44(d)(1); 122.44(k)(3); see also State Water Board Order 91-03; Memorandum from Elizabeth Miller Jennings, Office of Chief Counsel to Bruce Fujimoto, Division of Water Quality, "Municipal Storm Water Permits: Compliance with Water Quality Objectives," October 3, 1995.

[24] USEPA states in its 2002 memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs" that, "[w]hen a non-numeric water quality-based effluent limit is imposed, the permit's administrative record, including the fact sheet when one is required, needs to support that the BMPs are expected to be sufficient to implement the WLA in the TMDL," citing 40 CFR §§ 124.8, 124.9, and 124.18. See also USEPA's 2010 memorandum revising the 2002 memorandum.

[25] See USEPA 2010 memorandum, "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 WLAs'" in which USEPA states, "where the NPDES permitting authority determines that MS4 discharges…have the reasonable potential to cause or contribute to water quality standards excursions, permit for MS4s…should contain numeric effluent limitations where feasible to do so." USEPA further states, "[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant load…objectives, the WLA should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits."

D. Final Effluent Limitations

Final WQBELs are included in this Order based on the final WLAs assigned to discharges from the Los Angeles County MS4 in all available TMDLs.

MS4 permits can include compliance schedules for achieving final WQBELs derived from TMDL WLAs, so long as the compliance schedule is consistent with a TMDL implementation plan adopted by the Regional Water Board and approved through the State's basin plan amendment process. If a compliance schedule exceeds one year, it must include interim requirements pursuant to 40 CFR section 122.47.

Section 402(o) of the CWA and 40 CFR section 122.44(l) require that effluent limitations in reissued orders be at least as stringent as those in the existing order. This Order carries over the final receiving water limitations and WQBELs that were included to implement the Marina del Rey Harbor Back Basins and Mothers' Beach Bacteria TMDL and the Los Angeles River Trash TMDL, respectively, in the 2007 and 2009 amendments to Order No. 01-182.

E. Interim Effluent Limitations

Where there is a TMDL implementation plan adopted by the Regional Water Board and approved through the State's basin plan amendment process, interim WQBELs are included in this Order based on interim WLAs established for MS4 discharges.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Receiving Water Limitations

Receiving water limitations are included in all NPDES permits issued pursuant to CWA section 402. Section 402(p)(3)(B)(iii) of the CWA authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants." This requirement gives USEPA or the State permitting authority discretion to determine what permit conditions are necessary to control pollutants. In its Phase I Stormwater Regulations, Final Rule, USEPA elaborated on these requirements, stating that, "permits for discharges from municipal separate storm sewer systems must require controls to reduce the discharge of pollutants to the maximum extent practicable, and where necessary water quality-based controls" (see 55 Fed. Reg. 47990, 47994 (Nov. 16, 1990)). USEPA reiterated in its Phase II Stormwater Regulations, Final Rule, that MS4 "permit conditions must provide for attainment of applicable water quality standards (including designated uses), allocations of pollutant loads established by a TMDL, and timing requirements for implementation of a TMDL."[26] USEPA Region IX has also affirmed the agency's position that MS4 discharges must meet water quality standards in a series of comment letters on MS4 permits issued by various California regional water boards.[27] California Water Code section 13377 also requires that NPDES permits include limitations necessary to implement water quality control plans. Both the State Water Board and Regional Water Board have previously concluded that

[26] *See, e.g.,* Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.
[27] See, e.g., letter from Alexis Strauss, Acting Director, Water Division, USEPA Region IX, to Walt Pettit, Executive Director, State Water Board, re: SWRCB/OCC File A-1041 for Orange County, dated January 21, 1998.

discharges from the MS4 contain pollutants that have the reasonable potential to cause or contribute to excursion above water quality standards. As such, inclusion of receiving water limitations is appropriate to control MS4 discharges.

The inclusion of receiving water limitations is also consistent with the Ninth Circuit Court of Appeal's ruling in *Defenders of Wildlife v. Browner* (191 F.3d 1159, 1166 (1999)) that the permitting authority has discretion regarding the nature and timing of requirements that it includes as MS4 permit conditions to attain water quality standards.

The Ninth Circuit Court of Appeals recently explained that, "[w]ater quality standards are used as a supplementary basis for effluent limitations [guidelines] so that numerous dischargers, despite their individual compliance with technology based effluent limitations, can be regulated to prevent water quality from falling below acceptable levels" (*NRDC v. County of Los Angeles* (2011) 673 F.3d 880, 886). Receiving water limitations are included in this Order to ensure that individual and collective discharges from the MS4 do not cause or contribute to exceedances of water quality standards necessary to protect the beneficial uses of the receiving waters.

The receiving water limitations in this Order consist of all applicable numeric or narrative water quality objectives or criteria, or limitations to implement the applicable water quality objectives or criteria, for receiving waters as contained in Chapters 3 and 7 of the Basin Plan, or in water quality control plans or policies adopted by the State Water Resources Control Board, including Resolution No. 68-16, or in federal regulations, including but not limited to, 40 CFR sections 131.12 and 131.38. The water quality objectives in the Basin Plan and other State Water Board plans and policies have been approved by USEPA and combined with the designated beneficial uses constitute the water quality standards required under federal law.

The receiving water limitations provisions in this Order are the same as those included in the previous Los Angeles County MS4 Permit provisions, and are based on precedential State Water Board Orders WQ 98-01 and WQ 99-05. This Order includes three main provisions related to receiving water limitations. First, consistent with CWA section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1), it includes a provision stating that discharges from the MS4 that cause or contribute to an exceedance of receiving water limitations are prohibited. This is also in accord with the State Water Board's finding in Order WQ 98-01 ("The [State Water Board] agrees that the NPDES permit must prohibit discharges that "cause" or "contribute" to violations of water quality standards."). Second, it includes a provision stating that discharges from the MS4 of stormwater or non-stormwater, for which a Permittee is responsible, shall not cause or contribute to a condition of nuisance.[28]

Third, it includes a provision that states that Permittees shall achieve these two prohibitions "through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any

[28] Wat. Code, § 13377 ("the state board or the regional boards shall . . . issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the [CWA], thereto, together with any more stringent effluent standards or limitations necessary to implement waste quality control plans, or for the protection of beneficial uses, or to prevent nuisance").

modifications." This third provision elucidates the process by which Permittees are expected to achieve the first two provisions and then outlines the so-called "iterative process" whereby certain actions are required when exceedances of receiving water limitations occur and discharges from the MS4 are implicated. This iterative process includes submitting a Receiving Water Limitations Compliance Report; revising the storm water management program and its components to include additional BMPs, an implementation schedule and additional monitoring to address the exceedances; and implementing the revised storm water management program. The inclusion of this protocol for estimating BMP effectiveness and taking additional actions such as implementing additional BMPs and/or modifying BMPs to improve their effectiveness when monitoring demonstrates that they are necessary to protect water quality is consistent with USEPA's expectations for MS4 permits.[29]

The State and Regional Water Boards have stated that each of the three provisions are independently applicable, meaning that compliance with one provision does not provide a "safe harbor" where there is non-compliance with another provision (i.e., compliance with the third provision does not shield a Permittee who may have violated the first or second provision from an enforcement action). Rather, the third provision is intended to ensure that the necessary storm water management programs and controls are in place, and that they are modified by Permittees in a timely fashion when necessary, so that the first two provisions are achieved as soon as possible. USEPA expressed the importance of this independent applicability in a series of comment letters on MS4 permits proposed by various regional water boards. At that time, USEPA expressly objected to certain MS4 permits that included language stating, "permittees will not be in violation of this [receiving water limitation] provision …" (if certain steps are taken to evaluate and improve the effectiveness of the Drainage Area Management Plan (DAMP)), concluding that this phrase would not comply with the CWA.[30]

The Receiving Water Limitations provisions of Order No. 01-182 have been litigated twice, and in both cases the courts have upheld the language and the State and Regional Water Board's interpretation of it. Both courts ruled that the first two provisions are independently applicable from the third provision that establishes the "iterative process" requirements and no "safe harbor" exists.

The provisions were first litigated in 2005 where the Los Angeles County Superior Court stated, "In sum, the Regional [Water] Board acted within its authority when it included Parts 2.1 and 2.2 in the Permit without a 'safe harbor,' whether or not compliance therewith requires efforts that exceed the 'MEP' standard." (*In re L.A. Cnty. Mun. Storm Water Permit Litig.* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005) Statement of Decision from Phase I Trial on Petitions for Writ of Mandate, pp. 4-5, 7.).

The provisions were again litigated in 2011. In that case, the Ninth Circuit Court of Appeal in *NRDC v. County of Los Angeles* (673 F.3d 880, 886) affirmed that the iterative process (in Part 2.3 of the 2001 Order) does not "forgive" violations of the discharge prohibitions (in Parts 2.1 and 2.2 of the 2001 Order). The court acknowledged

[29] See, e.g., USEPA 2002 memorandum, "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs."
[30] See note 20.

that Part 2.3 clarifies that Parts 2 and 3 interact, but the court concluded that Part 2.3 "offers no textual support for the proposition that compliance with certain provisions shall forgive non-compliance with the discharge prohibitions." The Ninth Circuit further concluded that, "[a]s opposed to absolving noncompliance or exclusively adopting the MEP standard, the iterative process ensures that if water quality standards 'persist,' despite prior abatement efforts, a process will commence whereby a responsible Permittee amends its SQMP. Given that Part 3 of the [2001] Permit states that SQMP implementation is the 'minimum' required of each Permittee, the discharge prohibitions serve as additional requirements that operate as enforceable water-quality-based performance standards required by the Regional Board."

Nonetheless, the Regional Water Board is in a unique position to be able to offer multiple paths to compliance with receiving water limitations in this MS4 permit. The Regional Board has worked closely with the US EPA in implementing the requirements of the 1999 consent decree between EPA and the environmental groups. The requirements of the consent decree are nearly complete and 33 of these TMDLs addressing hundreds of waterbody-pollutant combinations covering every coastal watershed in Los Angeles County will be implemented in this Order. The number of TMDLs, and hundreds of water quality issues that the TMDLs address, is unprecedented anywhere else in California. These extensive and enforceable implementation programs for addressing myriad water quality issues throughout the County, coupled with more robust core provision requirements, and commitments to implement watershed solutions to address all impairments in regional waters, allows this Board to consider the compliance mechanisms described below. These compliance mechanisms provide an incentive and robust framework for Permittees to craft comprehensive pathways to achieve compliance with receiving water limitations – both those addressed by TMDLs and those not addressed by TMDLs. This compliance mechanism is contingent upon participating Permittees being in full compliance with all requirements articulated in the permit and approved Watershed Management Program or EWMP in order to take advantage of these provisions.

This Order includes requirements in Part VI.E of this Order to implement WLAs assigned to MS4 discharges from 33 TMDLs. Those TMDLs adopted through the State's basin planning process include programs of implementation pursuant to California Water Code section 13242, including implementation schedules, for attaining water quality standards. The TMDL provisions in Part VI.E and attachments include compliance schedules for TMDLs adopted by the Regional Water Board consistent with the TMDL implementation schedule to achieve the final receiving water limitations. The Regional Water Board recognizes that, in the case of impaired waters subject to a TMDL, the permit's receiving water limitations for the pollutants addressed by the TMDL may be exceeded during the period of TMDL implementation. Therefore, this Order provides, in Part VI.E.2.c, that a Permittee's full compliance with the applicable TMDL requirements pursuant to the compliance schedules in this Order constitutes a Permittee's compliance with the receiving water limitations provisions in Part V.A. of this Order for the particular pollutant addressed by the TMDL.

For water body-pollutant combinations not addressed by a TMDL, the Regional Water Board has included provisions in Part VI.C. to allow Permittees to develop a Watershed

Management Program or EWMP to address receiving water limitations not otherwise addressed by a TMDL. The Watershed Management Program must include a Reasonable Assurance Analysis (RAA) that is quantitative and performed using a peer-reviewed model in the public domain. Models to be considered for the RAA, without exclusion, are the Watershed Management Modeling System (WMMS), Hydrologic Simulation Program-FORTRAN (HSPF), and the Structural BMP Prioritization and Analysis Tool (SBPAT). The RAA shall commence with assembly of all available, relevant subwatershed data collected within the last 10 years, including land use and pollutant loading data, establishment of quality assurance/quality control (QA/QC) criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. Data on performance of watershed control measures needed as model input shall be drawn only from peer-reviewed sources. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. The objective of the RAA shall be to demonstrate the ability of Watershed Management Programs and enhanced Watershed Management Programs (where retention of the 85th percentile, 24-hour event is not technically feasible) to ensure that Permittees' MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.

A Permittee's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or enhanced Watershed Management Program constitutes compliance with the receiving water limitations provisions in Part V.A. of the Order for the specific water body-pollutant combinations addressed by an approved Watershed Management Program or enhanced Watershed Management Program. However, if a Permittee fails to meet any requirement or date for its achievement beginning with notification of a Permittee's intent to develop a Watershed Management Program or EWMP, and continuing with implementation of an approved Watershed Management Program or enhanced Watershed Management Program, the Permittee is subject to the provisions of Part V.A. for the waterbody-pollutant combination(s) that were to be addressed by the requirement. Permittees that do not elect to develop a Watershed Management Program or EWMP are required to demonstrate compliance with receiving water limitations pursuant to Part V.A. For water body-pollutant combinations that are not addressed by a TMDL, final compliance with receiving water limitations is determined by verification through monitoring that the receiving water limitation provisions in Part V.A.1 and 2 have been achieved.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. Dischargers must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR section 122.42.

B. Watershed Management Programs

The purpose of the Watershed Management Programs is to provide a framework for Permittees to implement the requirements of this Order in an integrated and collaborative fashion to address water quality priorities on a watershed scale, including complying with the requirements of Part V.A. (Receiving Water Limitations), Part VI.E (Total Maximum Daily Load Provisions) and Attachments L through R, by customizing the control measures in Parts III.A.4 (Prohibitions – Non-Storm Water Discharges) and VI.D (Minimum Control Measures). This watershed management paradigm is consistent with federal regulations that support the development of permit conditions, as well as the implementation of storm water management programs, at a watershed scale (40 CFR §§ 122.26(a)(3)(ii), 122.26(a)(3)(v), and 122.26(d)(2)(iv)). USEPA later issued a Watershed-Based NPDES Permitting Policy Statement (USEPA, 2003) that defines watershed-based permitting as an approach that produces NPDES permits that are issued to point sources on a geographic or watershed basis. In this policy statement, USEPA explains that, "[t]he utility of this tool relies heavily on a detailed, integrated, and inclusive watershed planning process." USEPA identifies a number of important benefits of watershed permitting, including more environmentally effective results; the ability to emphasize measuring the effectiveness of targeted actions on improvements in water quality; reduced cost of improving the quality of the nation's waters; and more effective implementation of watershed plans, including TMDLs, among others.

There are several reasons for this shift in emphasis from Order No. 01-182. A watershed based structure for permit implementation is consistent with TMDLs developed by the Los Angeles Water Board and USEPA, which are established at a watershed or subwatershed scale and are a prominent new part of this Order. Many of the Permittees regulated by this Order have already begun collaborating on a watershed scale to develop monitoring and implementation plans required by TMDLs. Additionally, a watershed based structure comports with the recent amendment to the Los Angeles County Flood Control Act (Assembly Bill 2554 in 2010), which allows the LACFCD to assess a parcel tax for storm water and clean water programs. Funding is subject to voter approval in accordance with Proposition 218. Fifty percent of funding is allocated to nine "watershed authority groups" to implement collaborative water quality improvement plans.

An emphasis on watersheds is appropriate at this stage in the region's MS4 program to shift the focus of the Permittees from rote program development and implementation to more targeted, water quality driven planning and implementation. Addressing MS4 discharges on a watershed scale focuses on water quality results by emphasizing the receiving waters within the watershed. The conditions of the receiving waters drive management actions, which in turn focus on the measures to address pollutant contributions from MS4 discharges.

The ultimate goal of the Watershed Management Programs is to ensure that discharges from the Los Angeles County MS4: (i) achieve applicable WQBELs that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-storm water discharges from the MS4, are not a source of pollutants to receiving waters.

After more than 20 years of program implementation, it is critical that the Permittees design and implement their programs based on their improved knowledge of storm water and its impacts on local receiving waters and by employing BMPs and other control measures that have been developed and refined over the past two decades. The Watershed Management Programs are driven by strategic planning and implementation, which will ultimately result in more cost effective implementation. The Watershed Management Programs will provide permittees with the flexibility to prioritize and customize control measures to address the water quality issues specific to the watershed management area (WMA), consistent with federal regulations (40 CFR § 122.26(d)(2)(iv)).

Focusing on watershed implementation does not mean that the Permittees must expend funds outside of their jurisdictions. Rather, the Permittees within each watershed are expected to collaborate to develop a watershed strategy to address the high priority water quality problems within each watershed. They have the option of implementing the strategy in the manner they find to be most effective. Each Permittee can implement the strategy individually within its jurisdiction, or the Permittees can group together to implement the strategy throughout the watershed.

While this Order includes a new emphasis on addressing MS4 discharges on a watershed basis, this Order includes recognition of the importance of continued program implementation on jurisdictional levels. This Order also acknowledges that jurisdictional and watershed efforts may be integrated to achieve water quality outcomes.

In this Order, the watershed requirements serve as the mechanism for this program integration. Since jurisdictional activities also serve watershed purposes, such activities can be integrated into the Permittees' watershed management programs. Such opportunities for program integration inherently provide flexibility to the Permittees in implementing their programs. Program integration can be expanded or minimized as the Permittees see fit. Some Permittees may opt to continue jurisdiction-specific implementation for certain programs, while for other program areas more collaborative watershed scale implementation may be more effective. Permittees identify individual roles and responsibilities as part of the Watershed Management Program Plan.

Permittees can customize the BMPs to be implemented, or required to be implemented, for development, construction, and existing development areas. Flexibility to determine which industrial or commercial sites are to be inspected is also provided to the Permittees. Educational approaches are also to be determined by the Permittees under this Order. Significant leeway is also provided to the Permittees in using methods to assess the effectiveness of their various runoff management programs. This flexibility is further extended to the monitoring program requirements, which allow the Permittees to develop monitoring approaches to several aspects of the monitoring program.

The challenge in drafting this Order is to provide the flexibility described above, while ensuring that this Order provides baseline requirements and is still enforceable. To achieve this, this Order frequently prescribes baseline or default requirements, such as

for each of the six "minimum control measures" within a Permittee's baseline storm water management program, while providing the Permittees with flexibility to propose customized actions as part of their watershed management program.

Permittees that elect to develop a Watershed Management Program must submit a "Notice of Intent" to the Regional Water Board no later than six months after the effective date of this Order. The Notice of Intent must be signed by all Permittees electing to participate in the Watershed Management Program for the Watershed Management Area. Permittees that do not elect to develop a Watershed Management Program are subject to the baseline storm water management program requirements in this Order and must demonstrate compliance with applicable WQBELs through monitoring data collected from the Permittee's outfall(s).

Permittees electing to develop a Watershed Management Program must submit a draft plan for approval by the Regional Water Board or by the Executive Officer on behalf of the Regional Water Board no later than one year after the effective date of the Order, or if certain conditions are met, no later than 18 months or 30 months after the effective date of the Order. To encourage stakeholder involvement in the development of the Watershed Management Programs, the Order requires that the Permittees form a permit-wide technical advisory committee (TAC) that will advise and participate in the development of the Watershed Management Programs. The TAC must include at least one public representative from a non-governmental organization with public membership. Additionally, the Order requires that the draft Watershed Management Programs are made available for public review prior to approval by the Regional Water Board or Executive Officer on behalf of the Regional Water Board.

Permittees may request an extension of the deadlines for notification of intent to develop a Watershed Management Program or EWMP, submission of a draft plan, and submission of a final plan. The extension is subject to approval by the Regional Water Board or the Executive Officer. Permittees that are granted an extension for any deadlines for development of the WMP/EWMP shall be subject to the baseline requirements in Part VI.D and shall demonstrate compliance with receiving water limitations pursuant to Part V.A. and with applicable interim water quality-based effluent limitations in Part VI.E pursuant to subparts VI.E.2.d.i.(1)-(3) until the Permittee has an approved WMP/EWMP in place.

Each Watershed Management Program must:

1. Prioritize water quality issues resulting from storm water and non-storm water discharges to the MS4 and from the MS4 to receiving waters within each Watershed Management Area,
2. Identify and implement strategies, control measures, and BMPs to achieve applicable water quality based effluent limitations and/or receiving water limitations, consistent with applicable compliance schedules in this Order,
3. Execute an integrated monitoring and assessment program to determine progress towards achieving applicable limitations, and
4. Modify strategies, control measures, and BMPs as necessary based on analysis of monitoring data collected pursuant to the MRP to ensure that applicable water

quality-based effluent limitations and receiving water limitations and other milestones set forth in the Watershed Management Program will be achieved.

Watershed Management Programs must be developed using the Regional Water Board's Watershed Management Areas (see Attachments B and C of this Order). Where appropriate, Watershed Management Areas may be separated into subwatersheds to focus water quality prioritization and implementation efforts by receiving water, or to align Permittee groups with "watershed authority groups" designated in the Los Angeles County Flood Control Act, so long as the Permittees implement all TMDL provisions for which they are identified as a responsible Permittee.

Permittees must identify the water quality priorities within each Watershed Management Area that will be addressed by the Watershed Management Program consistent with 40 CFR section 122.26(d)(2)(iv). At a minimum, these priorities must include achieving applicable water quality based effluent limitations and/or receiving water limitations established pursuant to TMDLs and included in this Order.

Each plan must include an evaluation of existing water quality conditions, including characterization of storm water and non-storm water discharges from the MS4 and receiving water quality, consistent with 40 CFR §§ 122.26(d)(1)(iv) and 122.26(d)(2)(iii), to support identification and prioritization/sequencing of management actions.

On the basis of the evaluation of existing water quality conditions, water body-pollutant combinations must be classified into one of the following three categories:

- Category 1 (Highest Priority): Water body-pollutant combinations for which water quality based effluent limitations and/or receiving water limitations are included in this Order to implement TMDLs.
- Category 2 (High Priority): Pollutants for which data indicate water quality impairment in the receiving water according to the State's Listing Policy and for which MS4 discharges may be causing or contributing to the impairment.
- Category 3 (Medium Priority): Pollutants for which there are insufficient data to indicate water quality impairment in the receiving water according to the State's Listing Policy, but which exceed applicable receiving water limitations contained in this Order and for which MS4 discharges may be causing or contributing to the exceedance.

Utilizing existing information, potential sources within the watershed for the pollutants in Categories 1 and 2 must be identified, consistent with 40 CFR sections 122.26(d)(1)(iii) and 122.26(d)(2)(ii). Permittees must identify known and suspected storm water and non-storm water pollutant sources in discharges to the MS4 and from the MS4 to receiving waters and any other stressors related to MS4 discharges causing or contributing to the highest water quality priorities (Categories 1 and 2).

Based on the findings of the source assessment, the issues within each watershed must be prioritized and sequenced. Factors that must be considered in establishing watershed priorities include:

1. Pollutants for which there are water quality based effluent limitations and/or receiving water limitations with interim or final compliance deadlines within the permit term.
2. Pollutants for which there are water quality based effluent limitations and/or receiving water limitations with interim or final compliance deadlines between October 26, 2012 and October 25, 2017.
3. Pollutants for which data indicate impairment in the receiving water and the findings from the source assessment implicates discharges from the MS4, but no TMDL has been developed.

Permittees must identify strategies, control measures, and BMPs to implement through their jurisdictional storm water management programs, or collectively on a watershed scale, with the goal of creating an efficient program to focus individual and collective resources on watershed priorities.

The following provisions of this Order may be part of the Watershed Control Measures within a Watershed Management Program:

1. Minimum Control Measures. Permittees may assess the minimum control measures (MCMs) as defined in this Order to identify opportunities for focusing resources on the high priority issues in each watershed. For each of the following minimum control measures, Permittees may propose modifications that will achieve equivalent pollutant control given watershed priorities:

   a. Development Construction Program
   b. Industrial/Commercial Program
   c. Illicit Connection/Illicit Discharge Detection and Elimination Program
   d. Public Agency Activities Program
   e. Public Information and Participation Program

2. Non-Storm Water Discharge Measures. Where Permittees identify non-storm water discharges from the MS4 as a source of pollutants in the source assessment, the Watershed Control Measures must include strategies, control measures, and/or BMPs that will be implemented to effectively eliminate the source of pollutants. These may include measures to prohibit the non-storm water discharge to the MS4, additional BMPs to reduce pollutants in the non-storm water discharge or conveyed by the non-storm water discharge, or strategies to require the non-storm water discharge to be separately regulated under a general NPDES permit.

3. TMDL Control Measures. Permittees must compile control measures that have been identified in TMDLs and corresponding implementation plans. If not sufficiently identified in previous documents, or if implementation plans have not yet been developed (e.g., EPA promulgated TMDLs), the Permittees must evaluate and identify control measures to achieve water quality based effluent limitations and/or receiving water limitations established in this Order pursuant to these TMDLs.

   a. TMDL control measures must include, where necessary, control measures to address both storm water and non-storm water discharges from the MS4.

b. TMDL control measures may include activities covered under the MCMs as well as BMPs and other control measures covered under the non-stormwater discharge provisions of this Order.

c. TMDL control measures must include, at a minimum, those actions that will be implemented during the permit term to achieve interim and/or final water quality based effluent limitations and/or receiving water limitations with compliance deadlines within the permit term.

Pursuant to 40 CFR sections 124.8, 124.9, and 124.18, as part of the Watershed Management Program plan, Permittees must conduct a Reasonable Assurance Analysis for each TMDL that consists of an assessment (through quantitative analysis or modeling) to demonstrate that the activities and control measures (i.e. BMPs) identified in the Watershed Control Measures will achieve applicable water quality based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term.

Permittees must incorporate and, where necessary develop, numeric milestones and compliance schedules into the plan consistent with 40 CFR section 122.47(a). Numeric milestones and schedules shall be used to measure progress towards addressing the highest water quality priorities and achieving applicable water quality based effluent limitations and/or receiving water limitations. Where the TMDL Provisions do not include interim or final water quality based effluent limitations and/or receiving water limitations with compliance deadlines during the permit term, Permittees must identify interim numeric milestones and compliance schedules to ensure significant progress toward achieving interim and final water quality based effluent limitations and/or receiving water limitations with deadlines beyond the permit term (40 CFR § 122.47(a)(3)).

Schedules must be developed for both the strategies, control measures and BMPs to be implemented by each individual Permittee within its jurisdiction and for those that will be implemented by multiple Permittees on a watershed scale. Schedules must be adequate for measuring progress at least twice during the permit term. Schedules must incorporate the following:

1. Compliance deadlines occurring within the permit term for all applicable interim and/or final water quality based effluent limitations and/or receiving water limitations to implement TMDLs,

2. Interim deadlines and numeric milestones within the permit term for any applicable final water quality based effluent limitation and/or receiving water limitation to implement TMDLs, where deadlines within the permit term are not otherwise specified,

3. For watershed priorities related to addressing exceedances of receiving water limitations in Part V.A and not otherwise addressed by Part VI.E:

a. Numeric milestones based on measureable criteria or indicators, to be achieved in the receiving waters and/or MS4 discharges,

b. A schedule with interim and final dates for achieving the numeric milestones, and
c. Final dates for achieving the receiving water limitations as soon as possible, consistent with Parts VI.C.2.a.ii.(4) & VI.C.2.a.iii.(2)(c).

Each Permittee must implement the Watershed Management Program immediately after determination by the Regional Water Board Executive Officer that the Watershed Management Program meets the requirements of this Order.

Permittees may request an extension of deadlines for achievement of interim milestones and final compliance deadlines established pursuant to Part VI.C.45.c.iii.(3) only, with the exception of those final compliance deadlines established in a TMDL. Permittees shall provide requests in writing at least 90 days prior to the deadline and shall include in the request the justification for the extension. Extensions shall be subject to approval by must be affirmatively approved by the Regional Water Board Executive Officer, notwithstanding Part VI.C.8.a.iii.

Where a Permittee believes that additional time to comply with a final receiving water limitation compliance deadline set within a WMP/EWMP is necessary, and the Permittee fails to timely request or is not granted an extension by the Executive Officer, a Permittee may, no less than 90 days prior to the final compliance deadline, request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

Clean Water Act section 402(a)(2) requires the permitting authority to prescribe conditions for MS4 permits to assure compliance, including conditions on data and information collection, reporting, and such other requirements as appropriate. Consistent with this requirement, Permittees in each Watershed Management Area must develop an integrated program to assess the progress toward achieving the water quality based effluent limitations and/or receiving water limitations per the compliance schedules, and the progress toward addressing the highest water quality priorities for each Watershed Management Area. The integrated watershed monitoring and assessment program may be customized, but must contain the basic elements (receiving water monitoring, storm water outfall monitoring, non-storm water outfall monitoring, new development/re-development effectiveness tracking and regional studies), and achieve the objectives of, the Monitoring and Reporting Program (MRP) (Attachment E of this Order).

Permittees in each Watershed Management Area must implement an adaptive management process, at least twice during the permit term, adapting the Watershed Management Program to become more effective, based on, but not limited to the following:

1. Progress toward achieving the outcome of improved water quality in MS4 discharges and receiving waters through implementation of the watershed control measures;

2. Progress toward achieving interim and/or final water quality based effluent limitations and/or receiving water limitations, or other numeric milestones where specified, according to established compliance schedules;

3. Re-evaluation of the highest water quality priorities identified for the Watershed Management Area based on more recent water quality data for discharges from the MS4 and the receiving water(s) and a reassessment of sources of pollutants in MS4 discharges;

4. Availability of new information and data from sources other than the Permittees' monitoring program(s) within the Watershed Management Area that informs the effectiveness of the actions implemented by the Permittees;

5. Regional Water Board recommendations; and

6. Recommendations for modifications to the Watershed Management Program solicited through a public participation process, consistent with 40 CFR section 122.26(d)(2)(iv).

Based on the results of the iterative process, Permittees are required to report any modifications necessary to improve the effectiveness of the Watershed Management Program in the Annual Report, and as part of the Report of Waste Discharge (ROWD). Permittees must implement any modifications to the Watershed Management Program upon acceptance by the Regional Water Board Executive Officer.

Permittees shall report the following information to the Regional Water Board concurrently with the reporting for the adaptive management process:

a. On-the-ground structural control measures completed;
b. Non-structural control measures completed;
c. Monitoring data that evaluates the effectiveness of implemented control measures in improving water quality;
d. Comparison of the effectiveness of the control measures to the results projected by the RAA;
e. Comparison of control measures completed to date with control measures projected to be completed to date pursuant to the Watershed Management Program or EWMP;
f. Control measures proposed to be completed in the next two years pursuant to the Watershed Management Program or EWMP and the schedule for completion of those control measures;
g. Status of funding and implementation for control measures proposed to be completed in the next two years.

Watershed Management Program Resubmittal Process

In addition to adapting the Watershed Management Program or EWMP every two years as described in Part VI.C.8.a., Permittees must submit an updated Watershed Management Program or EWMP with an updated Reasonable Assurance Analysis by June 30, 2021, or sooner as directed by the Regional Water Board Executive Officer or as deemed necessary by Permittees through the Adaptive Management Process, for review and approval by the Regional Water Board Executive Officer.

The updated Reasonable Assurance Analysis must incorporate both water quality data and control measure performance data, and any other information informing the two-year adaptive management process, gathered through December 31, 2020. As appropriate, the Permittees must consider any new numeric analyses or other methods developed for the reasonable assurance analysis. The updated Watershed Management Program or EWMP must comply with all provisions in Part VI.C. The Regional Water Board Executive Officer will allow a 60-day public review and comment period with an option to request a hearing. The Regional Water Board Executive Officer must approve or disapprove the updated Watershed Management Program or EWMP by June 30, 2022. The Executive Officer may waive the requirement of this provision, following a 60-day public review and comment period, if a Permittee demonstrates through water quality monitoring data that the approved Watershed Management Program or EWMP is meeting appropriate water quality targets in accordance with established deadlines.

C. Storm Water Management Program Minimum Control Measures (MCMs)

1. General Requirements

a. Basis for MCMs. 40 CFR section 122.26(d)(2)(iv) establishes required elements of the Permittees' storm water management program. The previous permit, Order No. 01-182, included six categories of minimum control measures that are considered to be baseline or default requirements for meeting the requirements of 40 CFR section 122.26(d)(2)(iv). These requirements were determined appropriate within Order No. 01-182 and again appropriate for this Order. The minimum control measures require Permittees to implement BMPs that are considered necessary to reduce pollutants in storm water to the MEP and to effectively prohibit non-storm water discharges. In lieu of implementing the MCMs as described in Part VI of this Order, this Order allows for Permittees to develop alternative BMPs to comply with 40 CFR section 122.26(d)(2)(iv), when implemented through a Watershed Management Program approved by the Executive Officer of the Regional Water Board.

b. Timelines for Implementation

The timelines for implementation of most MCMs contained in Part VI.D of this Order is provided in Table F-5 below. Where implementation dates for minimum control measures are not provided in the Table, Part VI.D.1.b requires implementation within 6 months of the effective date this Order. Unless otherwise noted in Part VI.D of the Order, each Permittee that does not elect to develop a Watershed Management Program or enhanced Watershed Management Program per Part VI.C must implement the requirements contained in Part VI.D within 6 months after the effective date of this Order. In the interim, a Permittee shall continue to implement its existing storm water management program, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv).

Permittees that elect to develop a Watershed Management Program or enhanced Watershed Management Program shall continue to implement their existing storm water management programs, including actions within each of the six categories of minimum control measures consistent with 40 CFR section 122.26(d)(2)(iv) until the Watershed Management Program or enhanced Watershed Management Program is approved by the Regional Water Board Executive Officer. The Table below denotes the timeframe for requirements as well as the basis of those timeframes. The majority of the timeframes are consistent with Order No. 01-182 as well as other area permits including the Ventura County MS4 Permit and the State Water Board's Construction General NPDES Permit. The timeframe for notifications, submittals, and attaining compliance with permit requirements are determined to be the earliest practicable periods and ensure timely measures for protection of water quality.

Table F-5. Timeline for the Implementation of Permit Requirements

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
Discharge Prohibitions			
III.A.2.a.ii	Drinking water suppliers must notify MS4 Permittee if intend to discharge to the Permittee's MS4.	At least 72 hours prior to a planned discharge and as soon as possible after an unplanned discharge.	Allows for advanced notice and sampling, if warranted.
III.A.4.e	If the Permittee determines that any of the authorized or conditionally exempt essential non-storm water discharges identified in Parts III.A.1.a through III.A.1.c, III.A.2.a or III.A.3 is a source of pollutants, notify the Regional Water Board if the non-storm water discharge has coverage under a separate NPDES permit or subject to a Record of Decision (ROD) approved under section 121 of CERCLA, or a conditionally exempt essential non-storm water discharge or emergency non-storm water discharge.	Within 30 days of determination.	The language in the previous LA MS4 permit, Order No. 01-182, states "promptly." The specification of a 30 day deadline is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
Table III.A	Dewatering of Lakes – Ensure procedures for advanced notification by the lake owner/operator to the Permittee(s).	At least 72 hours in advance of discharge.	Allows for advanced notice and sampling, if warranted.
Table III.A	Dechlorinated/debrominated swimming pool/spa discharges – Ensure procedures for advanced notification by the pool owner to the Permittee(s) prior to planned discharges of 100,000 gallons or more.	At least 72 hours in advance of discharge.	Allows for advanced notice and sampling, if warranted.
Table III.A	Dewatering of decorative fountains – Ensure procedures for advanced notification by the fountain owner to the Permittee(s) prior to planned discharges of 100,000 gallons or more.	At least 72 hours in advance of discharge.	Allows for advanced notice and sampling, if warranted.

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
Receiving Water Limitations			
V.A.3.a	Upon determination by either the Permittee or the Regional Water Board that discharges from the MS4 are causing or contributing to an exceedance of an applicable Receiving Water Limitation, the Permittee shall notify the Regional Water Board within 30 days of analytical results and thereafter submit an Integrated Monitoring Compliance Report within the next Annual Report.	Within 30 days of receipt of analytical results from the sampling event.	The language in the current LA MS4 permit reads “promptly.” The specification of a 30 day deadline is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
V.A.3.b	Submit any modifications to the Integrated Monitoring Compliance Report required by the Regional Water Board	Within 30 days notification from the Regional Water Board.	This is consistent with Order No. 01-182
V.A.3.c	Permittee shall revise its control measures and monitoring program to incorporate the improved modified BMPs that will be implemented, an implementation schedule, and any additional monitoring required.	Within 30 days following Regional Water Board Executive Officer’s approval of the Integrated Monitoring Report.	Allows for adequate time to make modifications.
Provisions			
VI.A.2.j	Discharger shall file with the Regional Water Board a report of waste discharge before making any material change or proposed change in the character, location, or volume of the discharge.	At least 120 days prior to any change.	Standard language.
Special Provisions: Watershed Management Programs			
VI.C.2.b	Permittees that elect to develop a Watershed Management Program must notify the Regional Water Board.	No later than 6 months after the date this Order is adopted.	This provides a reasonable amount of time to determine participation in a WMP, but also ensure adequate time for implementation of watershed scale control measures during the term of this Order.
VI.C.2.c	Permittees that elect to develop a Watershed Management Program shall submit a draft plan to the Regional Water Board Executive Officer.	No later than 18 months after the date this Order is adopted.	This provides a reasonable amount of time to complete the plan but also ensure effective monitoring during the term of this Order.
VI.C.6.a.i	Permittees in each Watershed Management Area shall implement an adaptive management process adapting the Watershed Management Program to become more effective.	At least twice during the permit term.	This encourages application of the iterative approach.
VI.C.6.b.i	Permittees in the Watershed Management Area shall implement the adaptive management process	At least annually.	This encourages application of the iterative approach.

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	with regard to its jurisdictional storm water management program to improve its effectiveness.		
Special Provisions: Minimum Control Measures			
VI.D.2.a.i	Progressive Enforcement and Interagency Coordination – In the event that a Permittee determines that a facility or site operator has failed to adequately implement all necessary BMPs, that Permittee shall take progressive enforcement which shall include a follow-up inspection.	Follow-up inspection within 4 weeks from the date of the initial inspection and/or investigation.	This is consistent with the current LA MS4 permit.
VI.D.2.b	Progressive Enforcement and interagency Coordination – Each Permittee shall initiate investigation of complaints from facilities within its jurisdiction.	Initiate investigation within one business day of complaint.	This is consistent with Order No. 01-182.
VI.D.5.b.ii	Public Information and Participation Program – If participating in a County-wide or Watershed Group PIPP, provide contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes.	No later than 30 days after a change occurs.	This is consistent with Order No. 01-182 for contact changes, which directs contact changes be sent to Los Angeles County by May 1, 2002. However, with the elimination of the Principal Permittee in this Order, it is more appropriate to direct any contact information changes directly to the PIPP coordinator.
VI.D.6.b.iii	Industrial/Commercial Business Program – Each Permittee shall update its inventory of critical sources.	Update at least annually.	Business turn-over can be significant thus an active inventory is required.
VI.D.6.c.i	Industrial/Commercial Business Program – Each Permittee shall notify the owner/operator of each of its inventoried commercial and industrial sites identified in Part VI.D.5.b of this Order of the BMP requirements applicable.	Notify at least once during the five-year period of this Order.	This is required so that the owner/operator remains informed and vigilant about BMP implementation.
VI.D.6.d.i	Industrial/Commercial Business Program – Each Permittee shall inspect all commercial facilities identified in Part VI.D.5.b of this Order twice during the 5-year term of this Order with a minimum interval of 6 months between the first and second mandatory compliance inspection required.	Provided that the first mandatory compliance inspection occurs no later than 2 years after the date this Order is adopted.	Order No. 01-182 required initial implementation by August 2004 (or a little over 2.5 years), however the 2 year requirement contained in this Order is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
VI.D.6.e.i.(1)	Industrial/Commercial Business Program – Each Permittee shall perform an initial compliance inspection of all industrial facilities	No later than 2 years after the date this Order is adopted.	Order No. 01-182 required initial implementation by August 2004 (or a little over 2.5 years). However,

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	identified in Part VI.D.5.b.of this Order		the 2 year requirement contained in this Order is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
VI.D.6.e.i.(2)	Industrial/Commercial Business Program – Each Permittee shall review the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) database at defined intervals to determine if an industrial facility has been recently inspected by the Regional Water Board. The Permittee does not need to inspect the facility if it is determined that the Regional Water Board conducted an inspection of the facility within the prior 24 month period.	The first interval shall occur approximately 2 years after the date this Order is adopted. The second interval shall occur approximately 4 years after the date this Order is adopted.	This specific requirement for inspecting facilities within certain intervals is a new requirement, but is considered consistent with Order No. 01-182.
VI.D.6.e.i.(3)	Industrial/Commercial Business Program – Each Permittee shall evaluate its inventory of industrial facilities and perform a second mandatory compliance inspection at a minimum of 25% of the facilities identified to have filed a No Exposure Certification.	Approximately 3 to 4 years after the date this Order is adopted.	This is consistent Order No. 01-182.
VI.D.7.c.iii.(5).(f)	Planning and Land Development Program – Each Permittee shall develop a schedule for the completion of offsite projects, including milestone dates to identify, fund, design, and construct the projects.	Offsite projects shall be completed as soon as possible, and at the latest within 4 years of the certificate of occupancy for the first project that contributed funds toward the construction of the offsite project.	This requirement is consistent with the provisions contained in the Ventura County Redevelopment Project Area Master Plan (RPAMP).
VI.D.7.d.iv.(1).(c)	Planning and Land Development Program – Each Permittee shall maintain a database providing key information for each new development/re-development subject to the requirements of Part VI.D.6 of this Order.	Each Permittee shall implement a tracking system and an inspection and enforcement program for new development and redevelopment post-construction storm water no later than 60 days after Order adoption date.	Effectiveness tracking of the treatment system is warranted and will also help to ensure adequate maintenance.
VI.D.7.d.i	Planning and Land Development Program – A local LID ordinance that fully incorporated the applicable requirements of this Order shall be submitted to the Executive Officer of the Regional Water Board for approval.	Within 180 days after the date this Order is adopted.	The requirement is deemed acceptable due to the large number of existing LID ordinances within the Permittees and the varied number of templates available nationally.
VI.D.7.d.iii.(1).(a).(ii)	Planning and Land Development Program – Written conditions in the	At least once a year.	This is consistent with the current Ventura County

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	sales or lease agreement, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection.		MS4 permit.
VI.D.7.d.iv	Planning and Land Development Program – Each Permittee shall implement a tracking system and an inspection and enforcement program from new development and redevelopment post-construction storm water BMPs.	No later than 60 days after the date this Order is adopted.	A tracking system is deemed critical to the success of this MCM. Additionally, a tracking system need not be complex and can, and has, been developed using spreadsheets or equivalent.
VI.D.7.d.iv.(1).(c).(ii)	Planning and Land Development Program – Inspection of post-construction BMPs to assess operation conditions with particular attention to criteria and procedures for post-construction treatment control and hydromodification control BMP repair, replacement, or re-vegetation.	Inspection at least once every 2 years after project completion.	This is consistent with the current Ventura County MS4 permit.
VI.D.8.j.ii.(1)	Development Construction Program – Inspect public and private construction sites 1 acre or larger that discharge to a tributary listed by the state as an impaired water for sediment or turbidity under CWA § 303(d).	When two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA, within 48 hours of a ½-inch rain event, and at least once every two weeks.	This requirement is consistent with the current State Water Board's General NPDES Construction Permit Requirements.
VI.D.8.j.ii.(1)	Development Construction Program – Inspect public and private construction sites 1 acre or larger determined to be a significant threat to water quality.	When two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA, within 48 hours of a ½-inch rain event, and at least once every two weeks.	This requirement is consistent with the current State Water Board's General NPDES Construction Permit Requirements.
VI.D.8.j.ii.(1)	Development Construction Program – Inspect public and private construction sites 1 acre or larger that do not meet other criteria in Part VI.D.7.j.ii.(1) of this Order.	At least monthly.	This requirement is consistent with the current General Construction Permit Requirements.
VI.D.9.c.iii	Public Agency Activities Program – Each Permittee shall update its facility inventory.	At least once during the term of this Order.	This requirement is deemed reasonable because site conditions can change at existing facilities.
VI.D.9.h.iii.(2)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, each Permittee shall inspect Priority A catch basins.	A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.	This is consistent with Order No. 01-182.
VI.D.9.h.iii.(2)	Public Agency Activities Program – In areas that are not subject to a	A minimum of once during the wet season	This is consistent with Order No. 01-182.

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	trash TMDL, each Permittee shall inspect Priority B catch basins.	and once during the dry season every year.	
VI.D.9.h.iii.(2)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, each Permittee shall inspect Priority C catch basins.	A minimum of once per year.	This is consistent with Order No. 01-182.
VI.D.9.h.iv.(1).(c)	Public Agency Activities Program – Provide clean out of catch basins, trash receptacles, and grounds in the event area.	Within one business day subsequent to the event.	This is consistent with the current Ventura County MS4 permit.
VI.D.8.h.vi.(2)	Public Agency Activities Program – Each Permittee shall inspect the legibility of the stencil or label nearest each inlet.	Prior to the wet season every year.	This is consistent with Order No. 01-182.
VI.D.9.h.vi.(3)	Public Agency Activities Program – Each Permittee shall record all catch basins with illegible stencils and re-stencil or re-label.	Within 180 days of inspection.	This is consistent with Order No. 01-182.
VI.D.9.h.vii.(1)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, each Permittee shall install trash excluders, or equivalent devices, on or in catch basins or outfalls, except at sites where the application of such BMPs alone will cause flooding.	No later than 4 years after the date this Order is adopted in areas specified as Priority A.	This is based on the current Ventura County MS4 permit, but due to the significant number of catch basins in Los Angeles County compared to Ventura County the time frame was lengthened.
VI.D.9.h.viii.(1)	Public Agency Activities Program – Visual monitoring of Permittee-owned open channels and other drainage structures, including debris basins, for debris.	At least annually.	This is consistent with Order No. 01-182.
VI.D.9.h.viii.(2)	Public Agency Activities Program – Removal of trash and debris from open channels.	A minimum of once per year before the wet season.	This is consistent with Order No. 01-182.
VI.D.9.i.ii	Public Agency Activities Program – Each Permittee shall perform street sweeping of curbed streets for Priority A areas.	Swept at least two times per month.	This is consistent with Order No. 01-182.
VI.D.9.i.ii	Public Agency Activities Program – Each Permittee shall perform street sweeping of curbed streets for Priority B areas.	Swept at least once per month.	This is consistent with Order No. 01-182.
VI.D.9.i.ii	Public Agency Activities Program – Each Permittee shall perform street sweeping of curbed streets for Priority C areas.	Swept as necessary but in no case less than once per year.	This is consistent with Order No. 01-182.
VI.D.9.i.iv.(1)	Public Agency Activities Program – Permittee-owned parking lots exposed to storm water shall be kept clear of debris and excessive oil buildup and cleaned.	No less than 2 times per month and/or inspected no less than 2 times per month to determine if cleaning is necessary. In no case shall a Permittee-owned parking lot be cleaned less than once a month.	This is consistent with Order No. 01-182.
VI.D.9.j.i.(2)	Public Agency Activities Program –	No later than 30 business	This is consistent with the

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	Where the self-waiver has been invoked, the Permittee shall submit to the Regional Water Board Executive Officer a statement of the occurrence of the emergency, an explanation of the circumstances, and the measures that were implemented to reduce the threat to water quality.	days after the situation of emergency has passed.	current Ventura County MS4 permit.
VI.D.9.k.i	Public Agency Activities Program – Each Permittee shall train or ensure training of all of their employees and contractors in targeted positions on the requirements of the overall storm water management program.	No later than 1 year after the date this Order is adopted and annually thereafter before June 30.	Order No. 01-182 allowed for this to be initially completed by August 2002. However, since this implementation of this requirement is continuing from the previous LA MS4 permit, implementation within a year is considered reasonable and the earliest practicable period for implementation. This is consistent with Order No. 01-182 and the current Ventura County MS4 permit.
VI.D.9.k.ii	Public Agency Activities Program – Each Permittee shall train all of their employees and contractors or ensure training for all who use or have the potential to use pesticides or fertilizers.	No later than 1 year after the date this Order is adopted and annually thereafter before June 30.	This is consistent with the current Ventura County MS4 permit.
VI.D.10.b.ii	Illicit Connections and Illicit Discharges Elimination Program – Each Permittee shall initiate investigation(s) to identify and locate the source of an illicit discharge.	Within 72 hours of becoming aware of the illicit discharge.	Order No. 01-182 and the current Ventura County MS4 permit require illicit discharge investigations be initiated within 1 business day. However, the 72 hour requirement takes into account the possibility of weekend spills.
VI.D.10.b.iv.(2)	Illicit Connections and Illicit Discharges Elimination Program – If the source of the illicit discharge has been determined to originate within an upstream jurisdiction, the Permittee shall notify the upstream jurisdiction and the Regional Water Board.	Within 30 days of such determination.	This ensures the ID is addressed in a reasonable period of time by the upstream jurisdiction.
VI.D.10.b.v	Illicit Connections and Illicit Discharges Elimination Program – In the event the Permittee is unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement	Notify the Regional Water Board within 30 days of such determination and provide a written plan for review and comment.	This ensures the Regional Water Board is effectively engaged in the ultimate disposition of ongoing illicit discharges.

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	Policy, or other circumstances prevent the full elimination of an ongoing illicit discharge, the Permittee shall work with the Regional Water Board to provide a diversion of the entire flow to the sanitary sewer or provide treatment.		
VI.D.10.c.ii	Illicit Connections and Illicit Discharges Elimination Program – Each Permittee, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation.	Initiate investigation within 21 days of discovery.	This is consistent with Order No. 01-182 and the current Ventura County MS4 permit.
VI.D.10.c.iii.(2)	Illicit Connections and Illicit Discharges Elimination Program – Each Permittee, upon confirmation of an illicit MS4 connection, shall ensure that the connection is eliminated.	Within 180 days of completion of the investigation.	This is consistent with Order No. 01-182 and the current Ventura County MS4 permit.
VI.D.10.e.i.(2)	Illicit Connections and Illicit Discharges Elimination Program – Initiate investigation of all public and employee illicit discharge and spill complaints.	Within 1 business day of receiving the complaint.	This is consistent with Order No. 01-182 and the current Ventura County MS4 permit.
VI.D.10.e.i.(3)	Illicit Connections and Illicit Discharges Elimination Program – Response to spills for containment.	Within 4 hours of becoming aware of the spill, except where such spills occur on private property, in which case should be within 2 hours of gaining legal access to the property.	The requirement that spills be responded to within 4 hours of becoming aware of the spill, except where such spills occur on private property, in which case should be within 2 hours of gaining legal access to the property is the earliest practicable period for implementation and ensures the protection of water quality.
VI.D.10.f.iv	Illicit Connections and Illicit Discharges Elimination Program – Each Permittee must create a list of applicable staff and contractors which require IC/ID training and ensure that training is provided.	At least twice during the term of this Order.	This requirement is new and twice during the term of this Order is considered reasonable and the earliest practicable period for implementation.
VI.D.10.f.v	Illicit Connections and Illicit Discharges Elimination Program – New Permittee staff members must be provided with IC/ID training.	Within 180 days of starting employment.	The current Ventura MS4 permit specifies that within 1 year all employees must be trained. However, the requirement that employees be trained within 180 days of starting employment is the earliest practicable period for implementation and ensures the protection of water quality.

2. Progressive Enforcement

Progressive enforcement is a series of defined and reproducible enforcement actions whereby consequences of non-compliance increase with each incremental enforcement steps. Progressive enforcement includes procedures to coordinate enforcement between the Regional Water Board and Permittees. As the Regional Water Board is the agency responsible for implementing the NPDES program, it has the authority to step in when enforcement actions of Permittee are unsuccessful in bringing dischargers into compliance with the permit. As such, progressive enforcement is an effective strategy to achieve timely compliance with permit requirements. Order No. 01-182 included requirements for a progressive enforcement strategy that are carried over to this Order, with some modifications. This Order includes supplemental documentation requirements for site acreage and Risk Factor rating, when making a referral to the Regional Water Board for MS4 permit non-compliance of a discharger under the construction general permit. This requirement is necessary information for the Regional Water Board consideration. Moreover, this Order eliminates the provision within Order No. 01-182 that allows the Regional Water Board and Permittees to form a storm water task force. This provision was removed because the ability for coordinated enforcement between the Regional Water Board and Permittees is adequately established through remaining provisions within Part VI.D.2 of this Order.

3. Modifications/Revisions

This Order requires each Permittee to modify its storm water management programs, protocols, practices, and municipal codes to be consistent with this Order. This provision is necessary to ensure that each Permittee takes all the steps necessary to update the core and ancillary programs that are required to ensure compliance with this Order. A significant change from Order No. 01-182 is that this obligation now rests with each individual Permittee rather than the Principal Permittee.

4. Public Information and Participation Program

a. Legal Authority

NPDES regulation 40 CFR section 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 section 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 implement a Public Information and Participation Program (PIPP) that has the following objectives: (1) measurably increase the knowledge of the target audiences about the MS4, the adverse impacts of storm water pollution of receiving waters and potential solutions to mitigate the impacts, (2) measurably change the waste disposal and storm water pollution generation behavior of target audiences by developing and encouraging implementation of appropriate activities, and (3) involve and engage a diversity of socio-economic groups and ethnic communities in Los Angeles County to participate in mitigating the impacts of storm water pollution.

b. Background

Implementation of a PIPP is a critical BMP and a necessary component of a storm water management program. The State Water 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."[31]

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.

[31] Storm Water Phase II Final Rule - Public Education and Outreach Minimum Control Measure. USEPA Fact Sheet 2.3, January 2000.

c. PIPP Implementation

It is generally more cost-effective to have numerous operators coordinate to use an existing program than each developing its own local programs. Therefore, Permittees are encouraged to participate in a County-wide PIPP or in one or more Watershed Group sponsored PIPPs supplemented with additional information specific to local needs.

Permittees are required to: (a) conduct storm water pollution prevention public service announcements and advertising campaigns; (b) provide public education materials on the proper handling or potential storm water pollutants; (c) distribute activity specific storm water pollution prevention public education materials to points of purchase; (d) maintain storm water websites or provide links to storm water websites via the Permittees website, which contain educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities; and (e) provide independent, parochial, and public schools within each Permittee's jurisdiction with materials, including, but not limited to videos, live presentations, and other information. Permittees are required to use effective strategies to educate and involve ethnic communities using culturally effective methods.

The intent of these changes is to provide an increase in public knowledge of storm water pollution prevention practices in an effective and cost efficient manner, while still providing flexibility for the Permittees to implement the requirements on a watershed group basis.

The Order requires outreach to ethnically diverse communities using culturally effective strategies. The USEPA, Tailoring Outreach Programs to Minority and Disadvantaged Communities and Children Fact Sheet finds that, "many residents of ethnically and culturally diverse communities don't speak English. English messages contained in public education outreach materials may not be effectively reaching a significant portion of some communities. The intent of this provision is to encourage behavior changes that reduce pollutants in storm water to a portion of the population who might otherwise be overlooked.

5. Industrial/Commercial Business Program

a. Legal Authority

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

> "A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:
>
> **i.** Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.
> **ii.** Describe a monitoring program for storm water discharges associated with industrial facilities […]"
>
> (40 CFR section 122.26(d)(2)(iv)(C))

The provisions contained in this Order pertaining to the inspection and facility control program requirements for industrial and commercial facilities, as well as construction sites (as discussed below in Part VI.7.b.) are also based on the requirements found in the previous permit, Order No. 01-182. Those requirements, among others, were the subject of litigation between several permittees and the Regional Water Board. In that case, the Los Angeles County Superior Court upheld the inspection and facility control program requirements for industrial/commercial facilities and construction sites in Order No. 01-182. The Court determined that "[t]he Permit contains reasonable inspection requirements for these types of facilities. [Citation.] The Permit requires each permittees to confirm that operators of these facilities have a current waste discharge identification number and is effectively implementing Best Management Practices (BMPs) in compliance with County and municipal ordinances, Regional Board Resolution 90-08 and the Stormwater Quality Management Plans (SQMPs). [Citation.] Addressing pollution after it has entered the storm sewer system is not working to meet legislative goals. More work is required at the source of pollution, and that is partially the basis on which this Court finds that the Permit's inspection requirements are reasonable, and not onerous and burdensome." (*In re L.A. Cnty. Mun. Storm Water Permit Litig. (*(L.A. Super. Ct., No. BS 080548, Mar. 24, 2005), Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, p. 17.)

The Court also addressed the permittees' claims that the requirements in Order No. 01-182 shifted the Regional Water Board's inspection responsibility under State Water Board issued general NPDES permits for these types of facilities onto the local agencies. The Court disagreed, stating: "The Court agrees with [the Regional Water Board] and Intervenors that the United States EPA considered obligations under state-issued general permits to be separate and distinct. Despite the similarity between the general permits and the local storm water ordinances, both must be enforced. [Citations.] EPA requires permittees to conduct inspections of commercial and industrial facilities, as well as of construction sites. [Citation.]…..This Court finds that the state-issued general permits do not preempt local enforcement of local storm water ordinances. (See

State Board Order No. 99-08, [citation].) [¶] Therefore, this Court finds that requiring permittees to inspect commercial and industrial facilities and construction sites is authorized under the Clean Water Act, and both the Regional Board and the municipal permittees or the local government entities have concurrent roles in enforcing the industrial, construction and municipal permits. The Court finds that the Regional Board did not shift its inspection responsibilities to Petitioners. [¶] … The Court further notes that the Permit issued to local entities, who are Petitioners here, does not refer to any inspection obligations related to state-issued permits. [Citation.] There is no duplication of efforts and no shifting of inspection responsibility in derogation of the Regional Board's responsibility here. The Regional Board is not giving up its won responsibilities, and there is nothing arbitrary or capricious about the Permit's inspection provisions." (*Id*. at 17-18.)

It is also important to note that similar controls for industrial/commercial facilities and constriction sites, including inspection activities, required by this Order were also required in the 2002 San Bernardino County MS4 permit issued by the Santa Ana Regional Water Quality Control Board (Santa Ana Regional Water Board). Like Order No. 01-182, that permit was also subject to litigation. In that case, the City of Rancho Cucamonga claimed that the Santa Ana Regional Water Board improperly delegated to it and other permittees the inspection duties of the State and Regional Water Boards and that it was being required to conduct inspections for facilities covered by other state-issued general NPDES permits. (*City of Rancho Cucamonga v. Regional Water Quality Control Board- Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389.) Like the Los Angeles County Superior Court, the California Court of Appeal rejected this argument. The Court of Appeal upheld the Santa Ana Regional Water Board's requirements, finding that "Rancho Cucamonga and the other permittees are responsible for inspecting construction and industrial sites and commercial facilities within their jurisdiction for compliance with and enforcement of local municipal ordinances and permits. But the Regional Board continues to be responsible under the 2002 NPDES permit for inspections under the general permits. The Regional Board may conduct its own inspections but permittees must still enforce their own laws at these sites. (40 C.F.R. § 122.26, subd. (d)(2) (2005).)" (*Id*. at 1390.)

b. Background

Municipalities are required to control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants through the implementation of a mandatory baseline minimum set of source control BMPs; performance of an inspection program to verify the adequacy of BMPs implementation in the field and compliance with the municipal ordinances; and assist the Regional Water Board in ensuring that industrial activities subject to regulations are covered by the general industrial stormwater permit. Regional Water Board will also assist the municipalities in case of instances of egregious non-compliance with the municipal ordinances and state and federal laws and regulations.

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 under an industrial storm water permit 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 Standard Industry Classification (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, 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), USEPA specified that MS4 applicants must demonstrate that they possess adequate legal authority to:

i. Control construction site and other industrial discharges to MS4s;
ii. Prohibit illicit discharges and control spills and dumping;
iii. Carry out inspection, surveillance, and monitoring procedures.

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

In the same Guidance Manual (Chapter 6.3.3), USEPA states 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:

i. Identify priority industries discharging to their systems;

ii. Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;

iii. Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and

iv. 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.

c. Industrial/Commercial Business Program Implementation

The requirements in this Order clarify the scope and frequency of inspections. For commercial facilities, in general, frequencies have been modified to require inspections of a facility twice during the five year permit tem provided that the first mandatory compliance inspection takes place no later than two years after the date this Order is adopted with a minimum interval of six months between the first and second inspection. The scope of the inspections for each of the facility types was clarified by specifying in tables what BMPs should be implemented at that facility to ensure that pollutant generating activity does not occur. The tables include a range of BMPs that are anticipated to be needed at select industrial and commercial facilities. The BMP categories are based on BMPs identified in the 2003 California Stormwater BMP Handbook, Industrial and Commercial as well as BMPs identified in Regional Water Board Resolution No. 98-08.

For industrial facilities, an initial mandatory compliance inspection must be completed at all industrial facilities no later than 2 years after the date this Order is adopted. If after the initial inspection, the facility was determined to as having exposure of industrial activities to storm water then the permit requires a second mandatory compliance inspection with a minimum interval of 6 months between the first and second mandatory compliance inspection. For facilities determined not to have exposure of industrial activities to storm water during the initial inspection, Permittees must conduct second compliance inspections yearly at a minimum of 20% of the facilities.

A provision was added to the Order relieving Permittees of the responsibility to inspect industrial facilities that the Regional Water Board has inspected within the previous 24 months.

In regards to the level of inspection, this Order clarifies that the Permittees are expected to check during inspections for a current Waste Discharge Identification (WDID) number for facilities discharging storm water associated with industrial activity, and that a SWPPP is available on site or that the owner/operator of the facility has applied for and has a current No Exposure Certification (and WDID number). In addition 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 in this Order provide greater clarification concerning the scope of enforcement. A progressive enforcement procedure was outlined including minimum steps that Permittees must take in their program to enforce their 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 Water Board, and for violations of the State Water Board's General Industrial Activities Storm Water NPDES permit, the referral can be expedited, referral can occur after a single inspection and one written notice rather than referral after two inspections and two written notices.

6. Planning and Land Development Program

a. Legal Authority

The permit application requirements described in 40 CFR section 122.26(d) have formed the basis for MS4 permits and remain applicable as elements in a storm water management program. Section 122.26(d)(2)(iv) requires in part, that the large and medium MS4 applicant develop a management program. Specifically, with regards to planning and land development and post-construction controls, the management program shall include the following:

"(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:

(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;

(2) A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment. Such plan shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed.

(3) A description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems

(4) A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible."

b. Background

Land development and urbanization have been linked to the impairment of aquatic life beneficial uses in numerous studies. Poorly planned new developments and re-development have the potential to impact the hydrology of the watershed and the water quality of the surface waters. Development without proper controls, often result in increased soil compaction, changes in vegetation and increased impervious surfaces. These conditions may lead to a reduction in groundwater recharge and changes in the flow regime of the surface water drainages. Historically, urban development has resulted in increased peak stream flows and flow duration, reduced base flows, and increased water temperatures. Pollutant loading in storm water runoff often increases due to post-construction use and because the storm water runoff is directly connected to the storm drain system or to the surface water body, without the benefit of filtration through soil and vegetation.

In a natural water body (i.e., a water body that has not been armored for flood control or channel stability), increased peak flows and flow duration can cause stream bank erosion, changes in channel geomorphology and bed sediment composition and stability.

When development infringes upon natural riparian buffers, the additional impacts may include further stream bank instability, increased nitrogen loadings to the water body—which would have been intercepted by native riparian vegetation, loss of shading resulting in further increase in water temperature, and a loss of woody debris and leaf litter, which provide food and habitat for some aquatic species.

Low Impact Development (LID) strategies are designed to retain storm water runoff on-site by minimizing soil compaction and impervious surfaces, and by disconnecting storm water runoff from conveyances to the storm drain system. This Order establishes criteria for the volume of storm water to be retained on-site as required to meet water quality goals and to preserve pre-development hydrology in natural drainage systems.

Monitoring studies conducted by the California Department of Public Health (CDPH) have documented that mosquitoes opportunistically breed in structural storm water Best Management Practices (BMPs), particularly those that hold standing water for over 96 hours. Certain Low Impact Development (LID) site design measures that hold standing water such as rainwater capture systems may similarly produce mosquitoes. BMPs and LID design features should incorporate design, construction, and maintenance principles to promote drainage within 96 hours to minimize standing water available to mosquitoes. This Order requires regulated MS4 Permittees to coordinate with other agencies necessary to successfully implement the provisions of this Order. These agencies may include CDPH and local mosquito and vector control agencies on vector-related issues surrounding implementation of post-construction BMPs.

This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Public Health or local vector agencies in accordance with CA Health and Safety Code, § 116110 et seq. and Water Quality Order No. 2012-0003-DWQ.

In California, hydromodification studies have focused on the erosive effects of storm water runoff flows and the resulting changes in geomorphology and bed sediment. As described in Hawley (2011), southern California streams may be especially susceptible to geomorphic changes due to steep topography, flashy flow regimes, high sediment loads and largely non-resistant stream bed material.[32] This recent study assessed the impact of urbanization on peak flow and the duration of lower flows capable of moving bed sediment. The results of the study showed that, urbanization resulted in proportionally-longer durations of all geomorphically-effective flows, with a more pronounced effect on the durations of low to moderate flows.

A study performed by United States Geological Survey (USGS) researchers at nine different metropolitan areas within the United States, found that adverse impacts to macroinvertebrate benthic communities were observed in drainages with 5 percent impervious area.[33] The authors concluded that there appears to be no percent impervious area threshold below which benthic communities are not adversely impacted

The Grand River (lower) Surrogate Flow Regime Total Maximum Daily Load (TMDL), prepared for the Ohio Environmental Protection Agency (OEPA), examined the impacts of impervious cover and flow regime changes on aquatic life beneficial uses.[34] The TMDL was approved by USEPA on April 12, 2012. The TMDL analysis showed that aquatic community health (as measured by biological indices) decreased as impervious cover increased. Flow alteration and impervious cover were determined to be the stressors impairing aquatic life. Riparian buffers were identified as a mitigating factor. Peak flow, runoff volume, and flashiness were considered as surrogates. However, for this watershed, flow regime was selected because it addresses the full spectrum of flow conditions (i.e., peak flow and flow duration and base flow). In this watershed, low flow and increased water temperature presented a threat to cold-water fish species. Increased peak flow and flow duration were linked to impairment of aquatic life beneficial uses due to increased pollutant loading and the impact of channel scouring. A flow duration curve was developed for a reference watershed, based on unit area to allow for comparison of varying-sized streams. The criteria for selecting the reference watershed were: (1) the water body was fully supporting aquatic life beneficial uses, (2) location (ecoregion), (3) size (4) land cover (5) riparian buffer and (6) soils. The flow regime TMDL compares flow duration curves for the impaired stream and the reference stream. The TMDL is expressed as the difference between the impaired stream's flow and the

[32] Hawley, Robert J. 2011. The effects of urbanization on the hydrologic stability of small streams in southern California.
[33] Cuffney, T.F., Brightbill, R.A., May, J.T., and Waite, I.R. 2010. Responses of benthic macroinvertebrates to environmental changes associated with urbanization in nine metropolitan areas. *Ecological Applications* 20(5):1384-1401.
[34] Ohio Environmental Protection Agency. Total Maximum Daily Loads for the Grand River (lower) Watershed. Draft Report. October 12, 2011.

reference stream's flow during all flow conditions. The TMDL report recommends protection strategy numeric targets of no more than 6 percent EIA with a forested (70 percent coverage) riparian buffer of 100 feet from the top of each stream bank (200 feet total).

In Los Angeles County, development has infringed upon or eliminated natural riparian buffers and existing development exceeds recommended percent impervious area in many watersheds. In addition, many water bodies have been armored or converted to engineered channels to manage flood hazards. Because of the hydrologic differences between engineered channels and natural water bodies, the Regional Water Board approaches each situation differently. Where development occurs in drainages to water bodies that have been converted to engineered channels, the Regional Water Board's regulatory approach is designed to reduce storm water runoff -- the most effective method for reducing pollutant loading. Alternatively, where development occurs in drainages to natural water bodies, the Regional Water Board regulatory approach aims to reduce pollutant loading conveyed by storm water runoff and to preserve or restore the pre-development hydrology. As a result of past development, it is likely that retrofitting of existing development will be necessary to restore watershed hydrology to pre-development conditions.

c. Applicability

New development and re-development projects subject to these requirements are described in Part VI.D.7.b. of this Order. Although not defined for large and medium MS4s, 40 CFR section 122.34 requires programs for small MS4s to include all projects that disturb an area equal to or greater than 1 acre of land and add more than 10,000 square feet of impervious surface area. The list of new development projects subject to requirements, specified in this Order in Parts VI.D.1.c.i(1)(a) through (k) were either carried over from Order No. 01-182 or were developed for the Ventura County MS4 and are appropriate for defining new developments and redevelopments in this Order. Clarification is provided for developments in progress during formulation of this Order (Part VI.D.c.i(1)(4)).

New development/re-development projects are subject to either the Water Quality/Flow Reduction Resource Management Criteria in Part VI.D.7.c.i or potentially more stringent Hydromodification (Flow/ Volume/ Duration) Control Criteria. Note that hydromodification controls apply only to projects that drain to a natural water body that is a stream, creek or a river. Hydromodification controls do not apply to discharges to lakes, estuaries, or to the ocean, which are not susceptible to channel erosion.

i. **Integrated Water Quality/ Flow Reduction /Resources Management Criteria (Part VI.D.7.c.i).** Projects located in drainages to water bodies that are now engineered channels are subject to Integrated Water Quality/Flow Reduction/Resources Management Criteria. These projects must be designed to minimize the footprint of the impervious area and to use low impact development (LID) strategies to disconnect the runoff from impervious area. The project must be designed to retain on-site the storm water runoff equal to

the storm water quality design volume (SWQDv), unless it is determined that it is technically infeasible or there is an opportunity to contribute to an off-site regional ground water replenishment project.

The SWQDv is defined as the storm water runoff resulting from either:

- the 0.75 inch per 24 hour storm or
- the 85th percentile storm as defined in the Los Angeles County 85th percentile, 24-hour storm isohyetal map, whichever is greater.

This Order establishes a minimum design volume based on the 0.75 inch, 24-hour storm event as defined in the previous Los Angeles County MS4 permit (Order No. 01-182). This requirement is to prevent backsliding from the previous Order. The 85th percentile storm is the design storm used throughout most of the State of California for storm water treatment and LID BMPs designed for water quality protection.

Using detailed local rainfall data, the County of Los Angeles Hydrologist has developed the 85th percentile storm event isohyetal map, which exhibits the size of the 85th percentile storm event throughout Los Angeles County. Since this map uses detailed local rainfall data, it is more accurate for calculating the 85th percentile storm event than other methods which were included in Order No. 01-182. The other methods found in Order No. 01-182 were included as options to be used in the event that detailed accurate rainfall data did not exist for various locations within Los Angeles County. Therefore, they have not been carried over into this Order.

Storm water runoff may be retained on-site by methods designed to intercept rain water via infiltration, bioretention, and harvest and use. Examples of LID Best Management Practices (BMPs) that may be employed to meet the storm water retention requirements include rain gardens, bioswales, pervious pavement, green roofs, and rainwater harvesting for use in landscape irrigation.

ii. Alternative Compliance for Technical Infeasibility or Opportunity for Regional Ground Water Replenishment (Part VI.D.7.c.ii). This Order defines conditions that may make on-site retention of the SWQDv technically infeasible. These conditions include measures to:

- Ensure that on-site soils (*in-situ* or amended) have adequate infiltration rates for successful operation of infiltration BMPs,
- Protect groundwater and drinking water wells from contamination,
- Prevent infiltration that might exacerbate potential geotechnical hazards,
- Accommodate smart growth and infill or redevelopment.

A determination that compliance with the Integrated Water Quality/Flow Reduction/Resources Management Criteria is technically infeasible at the

New Development/Re-development project site must be based on a site-specific hydrologic assessment or design analysis conducted and endorsed by a registered professional engineer, geologist, architect or landscape architect. This requirement is the same as contained in the Ventura County MS4 permit, and is necessary to ensure that a competent determination is conducted.

The criteria for technical infeasibility contained in Part VI.D.7.c.ii(2)(a) is necessary to ensure that the *in-situ* soil has adequate permeability to accommodate infiltration, and to ensure against premature failure of infiltration BMPs. A minimum infiltration rate of 0.3 inches per hour under saturated conditions is specified for infiltration BMPs (e.g., dry well, pervious pavement). Infiltration BMPs are restricted to Hydrologic Soil Groups A and B, by other California storm water regulatory agencies. For example, the Contra Costa County Program's Stormwater LID Design Guidebook prohibits routing storm water runoff to a dry (infiltration) well, developed in Hydrologic Soil Groups C and D[35]. Infiltration rates for the lower permeability B soil group ranges between 0.30 and 0.15 inches per hour (USEPA, 2009, Appendix A)[36]. This criterion is specified to ensure the viability of infiltration systems, which may be depended upon to meet the storm water design volume criteria.

Infiltration BMPs are distinguished from bioretention BMPs, which may be implemented in all soils types. Bioretention BMPs are constructed using a manufactured/imported media that must meet strict specifications. The media specification for bioretention facilities is the same as specified for biofiltration systems. The difference between bioretention and biofiltration is that biofiltration systems are designed with an underdrain, which may allow for the discharge of a significant portion of the design storm volume, as described below under Alternative Compliance Measures. Bioretention BMPs may not include an underdrain.

The criteria for determining Technical Infeasibility described in Part VI.D.7.c.ii.(2)(b)-(f) are the same as contained in the Ventura County MS4 permit , except that (2)(b) "locations where seasonal high ground water is *within 5 feet of the surface*", was expanded to "5 to 10 feet" of the surface, to be consistent with local LID Manuals developed by the City of Santa Monica and the City of Los Angeles.

iii. **Alternative Compliance Measures (Part VI.D.7.c.iii.).** This Order provides equally weighted alternatives to on-site retention of the SWQDv. One alternative is to employ infiltration at off-site locations, including regional groundwater replenishment projects. The Regional Water Board has included the alternative for regional ground water replenishment in

[35] Contra Costa County Clean Water Program. 2010. Stormwater C.3 Guidebook, Stormwater Quality Requirements for Development Applications. Fifth Ed. October 20, 2010. p. 18. < www.cccleanwater.org>.

[36] USEPA. 2009. (United States Environmental Protection Agency). Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy and Independence and Security Act. Office of Water. December 2009.

recognition of the multiple benefits it can provide. In addition to providing similar water quality benefits as compared to on-site retention, analysis by NRDC and UCSB found that implementing low impact development practices that emphasize retention at new and redeveloped residential and commercial properties in the urbanized areas of southern California and limited portions of the San Francisco Bay area has the potential to increase local water supplies by up to 405,000 acre-feet of water per year by 2030. This volume represents roughly two-thirds of the volume of water used by the entire City of Los Angeles each year. In addition, the same study notes potential energy savings and reductions in CO_2 emissions.[37]

In an effort to promote retrofitting of existing development, alternative compliance measures may include the use of infiltration, bioretention, rainfall harvest and/or biofiltration at an existing development with similar land uses and where storm water runoff is expected to exhibit pollutant event mean concentrations (EMCs) that are comparable to or higher than the proposed new development re-development project. As another alternative the project proponent may comply with the Integrated Water Quality/Flow Reduction/Resources Management Criteria using biofiltration on the project site. The volume of storm water to be treated with biofiltration is 1.5 times the difference between the SWQDv and the volume of storm water runoff that can be reliably retained on the project site. The 1.5 multiplier is based on the finding in the *Ventura County Technical Guidance Manual* that biofiltration of 1.5 times the design volume will provide approximately the same pollutant removal as retention of the design volume on an annual basis.[38]

The volume of storm water runoff to be intercepted at an off-site mitigation project is equal to the difference between the SWQDv and the volume of storm water runoff that can be *reliably retained* on the project site. The estimate of the volume that can be reliably retained on-site shall be based on conservative assumptions including permeability of soils under saturated conditions. When rainfall harvest and use is linked to irrigation demand, the demand shall be estimated based on conditions that exist during the wet weather, winter season.

Mitigation at off-site projects shall be designed to provide equal or greater water quality protection to the surface waters within the same subwatershed as the proposed project. Preferably, the mitigation site will be located within the same Hydrologic Unit Code (HUC)-12 drainage area as the proposed new development or re-development. However, the mitigation project may be located within the expanded HUC-10 drainage area, if approved by the Executive Officer of the Regional Water Board.

[37] NRDC Technical Report. A Clear Blue Future: How Greening California Cities Can Address Water Resources and Climate Change in the 21st Century. August 2009.

[38] Ventura Countywide Stormwater Management Program. 2011. Ventura Technical Guidance Manual, Manual Update, 2011. Appendix D. July 13, 2011.

As described in the *Ventura County Technical Guidance Manual*, a biofiltration system as defined in this Order, including Attachment H, allows for incidental interception of approximately 40 percent of the treatment volume and treatment of the remaining volume through filtration, and aerobic and anaerobic degradation. The effectiveness of the biofiltration system is greatly impacted by the volume of storm water runoff that is intercepted through incidental infiltration. For this reason, biofiltration as defined in this Order, does not include flow-through planter box or vault type systems with impervious bottom layers, unless Executive Officer approval is obtained. In addition, biofiltration systems as defined in this Order, must meet the specifications for drain placement and planting media provided in Attachment L if they are to be credited as meeting the water quality/flow reduction requirements of the Alternative Compliance Measures of this Order, unless Executive Officer approval is obtained. Attachment H provides a compilation of recent information contained in the Contra Costa County C3 Guidebook and Order R2-2011-083, adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 28, 2011. These specifications are based on experiences in the San Francisco Bay Region and are designed to ensure optimum pollutant removal and to prevent premature failure of infiltration components of the biofiltration system.

iv. **Water Quality Mitigation Criteria (Part VI.D.7.c.iii.(7).)** When off-site mitigation is performed, the storm water runoff from the project site must be treated prior to discharge. Volume-based treatment BMPs are to be sized to treat the runoff from the 85th percentile, 24-hour storm event, as described above for storm water retention BMPs. Flow through treatment BMPs are to be sized based on a rainfall intensity of 0.2 inches per hour or the one year, one-hour rainfall intensity as determined from the Los Angeles County isohyetal map, whichever is greater. A minimum flow design of 0.2 inches per hour is consistent with Order No. 01-182 and is included to prevent back sliding. The one year, one-hour rainfall intensity is the flow requirement specified in the Los Angeles River Trash Total Maximum Daily Loads (TMDL) and other Trash TMDLs established in the Region. The Los Angeles County isohyetal map of the one-year, one-hour storm intensity provides an accurate measure of variable storm intensity throughout the County. The one-year, one-hour rain intensity within the County ranges from approximately 0.2 inch/hour to 1.1 inches per hour.

v. **Hydromodification (Flow/ Volume/ Duration Control Criteria (Part VI.D.7.iv.).** New development/re-development projects located in a drainage to a natural stream/creek/river water body shall be required to meet the water quality/flow reduction criteria and/or hydromodification control criteria, whichever are more stringent. (Hydromodification controls do not apply to discharges to lakes, estuaries or to the Pacific Ocean as these types of water bodies are not susceptible to hydromodification

impacts.) This Order provides Hydromodification Control Criteria to be employed. The purpose of the hydromodification controls is to preserve or restore pre-development hydrology.

Part VI.D.7.iv.(b) of this Order describes New Development/Re-development projects that are exempted from hydromodification controls. These projects include maintenance and replacement activities and other projects that do not increase EIA within the subwatershed and therefore are not expected to add to the hydromodification effects. Also exempted are projects located within drainages to waterbodies that are not susceptible to channel erosion or other hydromodification effects.

This Order offers four options for meeting the hydromodification controls for projects that will disturb greater than 1 acre but less than 50 acres:

- The project is designed to retain the storm water runoff from the 95th percentile, 24-hour-hour storm. This criterion is based on the recommendations from the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* (USEPA, 2009).
- The runoff flow rate, volume, velocity and duration does not exceed the pre-development condition for the 2-year, 24-hour rainfall event. Research has determined that the maximum point of the effective work curve occurs in the 1 to 2-year frequency (Leopold, 1964, as cited in the South Orange County Hydromodification Plan, 2011)[39]. Furthermore, the effects of development are greatest during smaller storm events. Under natural conditions, the storm water runoff from smaller storms would have been largely intercepted by vegetation, canopy, infiltration and/or evapotranspiration. During large storms, the soils become saturated and runoff occurs even under natural conditions.
- The Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by the Hydromodification Analysis Study and the Equation presented in Attachment J. This provision is the same as the requirement in the Ventura County MS4 permit (Order No. R4-2010-0108). By maintaining an Ep of approximately 1, the bed sediment of the channel is in an equilibrium state. Alternatively, Permittees can opt to use other work equations to calculate Erosion Potential with Executive Officer approval.
    - Permittees may also satisfy the requirement for Hydromodification Controls by implementing the hydromodification requirements in the

[39] South Orange County. 2011. South Orange County Hydromodification Management Plan. < http://www.waterboards.ca.gov/sandiego/water_issues/programs/stormwater/docs/oc_permit/updates_031212/South_Orange_County%20HMP.pdf > Accessed April 25, 2012.

County of Los Angeles Low Impact Development Manual (2009) for all projects disturbing an area greater than 1 acre within natural drainage systems.

For projects disturbing more than 50 acres, compliance with the controls may be achieved by similar means. However, the plans must be supported by more comprehensive hydrologic modeling. The final Subwatershed Hydromodification Plan must be completed within one year after the effective date of the Order.

The elements of the Subwatershed Hydromodification Plan are:

- Screening to assess which subwatersheds exhibit changes in geomorphology.
- Identify natural drainage systems within the subwatershed that are susceptible to hydromodification impacts,
- Identify areas critical to the hydrology (e.g., groundwater recharge areas, riparian buffers and wetlands) of the subwatershed and identify potential protection strategies for such areas,
- Conduct or access bioassessment monitoring data to assess whether aquatic life uses are being fully supported,
- Prepare preliminary protection strategies for subwatersheds that are fully supporting aquatic life beneficial uses,
- Prepare preliminary retrofit strategies for subwatersheds that exhibit the effects of hydromodification and are not fully supporting aquatic life beneficial uses,
- Identify candidate reference sub-watersheds that are supporting aquatic life beneficial uses and develop a flow duration curve that may serve as a standard for flow duration controls in water bodies that have aquatic life impairments linked to changes in the flow regime. This approach is as described in the recently approved OEPA, Grand River (lower) Flow Regime TMDL.

7. Development and Construction Program

a. Introduction

Soil disturbing activities during construction and demolition exacerbate sediment losses. Sediment is a primary pollutant impacting beneficial uses of watercourses. Sediments, and other construction activity pollutants must be properly controlled to reduce or eliminate adverse impacts.

b. Legal Authority

40 CFR section 122.34(b)(4) states that with respect to construction site storm water runoff control for small MS4s, which is analogous to that for large MS4s:

> "(i) [the permittee] must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to your small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre. Reduction of storm water discharges from construction activity disturbing less than one acre must be included in your program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. If the NPDES permitting authority waives requirements for storm water discharges associated with small construction activity in accordance with § 122.26(b)(15)(i), you are not required to develop, implement, and/or enforce a program to reduce pollutant discharges from such sites. (ii) Your program must include the development and implementation of, at a minimum: (A) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal, or local law; (B) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices; (C) Requirements for construction site operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality; (D) Procedures for site plan review which incorporate consideration of potential water quality impacts; (E) Procedures for receipt and consideration of information submitted by the public, and (F) Procedures for site inspection and enforcement of control measures."

The inspection requirements for construction sites contained in this Order are also based on the requirements found in Order No. 01-182. As noted above in Part VI.C.5.a, the inspection requirements contained in Order No. 01-182 for construction sites were the subject of litigation between several permittees and the Regional Water Board. As provided in more detail above, the Los Angeles County Superior Court upheld the inspection requirements for industrial/commercial facilities and construction sites in Order No. 01-182, finding that the "[t]he Permit contains reasonable inspection requirements for these types of facilities." (*In re L.A. Cnty. Mun. Storm Water Permit Litig.* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005), Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, p. 17.) As also noted above, the Superior Court also rejected the permittees' claims that the requirements in Order No. 01-182 shifted the Regional Water Board's inspection responsibility under State Water Board issued general NPDES permits for these types of facilities onto the local agencies, finding that "[r]equiring permittees to inspect commercial and industrial facilities and construction sites is authorized under the Clean Water Act, and both the Regional Board and the municipal permittees or the local government entities have concurrent roles in enforcing the industrial, construction and municipal permits. The Court finds that the Regional Board did not shift its inspection responsibilities to Petitioners." (*Id*. at 17-18.)

As previously noted for inspections of commercial/industrial facilities, the California Court of Appeal also rejected arguments pertaining to similar inspection requirements for construction sites prescribed by the Santa Ana Regional Water Board. (*City of Rancho Cucamonga v. Regional Water Quality Control Board- Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389.) In that case, the City of Rancho Cucamonga claimed that the Santa Ana Regional Water Board improperly delegated to it and other permittees the inspection duties of the State and Regional Water Boards and that it was being required to conduct inspections for facilities covered by other state-issued general NPDES permits. The Court of Appeal upheld the Santa Ana Regional Water Board's requirements, finding that "Rancho Cucamonga and the other permittees are responsible for inspecting construction and industrial sites and commercial facilities within their jurisdiction for compliance with and enforcement of local municipal ordinances and permits. But the Regional Board continues to be responsible under the 2002 NPDES permit for inspections under the general permits. The Regional Board may conduct its own inspections but permittees must still enforce their own laws at these sites. (40 C.F.R. § 122.26, subd. (d)(2) (2005).)" (*Id*. at 1390.)

c. Construction Activity Applicability

Any construction or demolition activity, including, but not limited to, clearing, grading, grubbing, or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre.

Construction activity that results in land surface disturbances of less than one acre if the construction activity is part of a larger common plan of development or sale of one or more acres of disturbed land surface.

Construction activity related to residential, commercial, or industrial development on lands currently used for agriculture including, but not limited to, the construction of buildings related to agriculture that are considered industrial pursuant to USEPA regulations, such as dairy barns or food processing facilities.

Construction activity associated with linear underground/overhead project (LUPs) including, but not limited to, those activities necessary for the installation of underground and overhead linear facilities (e.g., conduits, substructures, pipelines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities) and include, but are not limited to, underground utility mark-out, potholing, concrete and asphalt cutting and removal, trenching, excavation, boring and drilling, access road and pole/tower pad and cable/wire pull station, substation construction, substructure installation, construction of tower footings and/or foundations, pole and tower installations, pipeline installations, welding, concrete and/or pavement repair or replacement, and stockpile/borrow locations.

Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities.

Storm water discharges from dredge spoil placement that occur outside of U.S. Army Corps of Engineers jurisdiction[40] (upland sites) and that disturb one or more acres of land surface from construction activity are covered by this General Permit. Construction projects that intend to disturb one or more acres of land within the jurisdictional boundaries of a CWA section 404 permit should contact the appropriate Regional Water Board to determine whether this permit applies to the project.

d. Development Construction Program Implementation

Permittees must implement a construction program that applies to all activities involving soil disturbance with the exception of agricultural activities. Minimum requirements have been established for construction activity less than one acre and for those activities equal or greater than one acre. Activities covered by the permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving, and LUPs. The construction program should be designed to: (1) prevent illicit construction-related discharges of pollutants into the MS4 and receiving waters; (2) implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites; (3) reduce construction site discharges of pollutants to the MS4 to the MEP; and (4) prevent construction site discharges to the MS4 from causing or contributing to a violation of water quality standards.

Each permittee shall use an site system to track grading permits, encroachment permits, demolition permits, building permits, or construction permits (and any other municipal authorization to move soil and/ or construct or destruct that involves land disturbance) issued by each permittee. To satisfy this requirement, the use of a database or GIS system is recommended.

For construction activity equal or greater than one acre, the Permittee must establish review procedures for construction site plans to determine potential water quality impacts and ensure the proposed controls are adequate. These procedures should include the preparation and submission of an Erosion and Sediment Control Plan (ESCP) containing elements of a Storm Water Pollution Prevention Plan (SWPPP) prior to issuance of a grading or building permit as well as a review of individual pre-construction site plans to ensure consistency with local sediment and erosion control requirements. The requirement that ESCP/SWPPPs must be developed by a Qualified SWPPP Developer (QSD) is new for this iteration of the permit. This requirement ensures the development of high quality ESCP/SWPPPs that protect water quality to the MEP.

A ESCP/SWPPP must be appropriate for the type and complexity of a project and will be developed and implemented to address project specific conditions. Some projects may have similarities or complexities, yet each project is unique in its progressive state that requires specific description and selection of BMPs

[40] A construction site that includes a dredge and/or fill discharge to any water of the United States (e.g., wetland, channel, pond, or marine water) requires a permit from the U.S. Army Corps of Engineers pursuant to CWA section 404 and a Water Quality Certification from the Regional Water Board or State Water Board pursuant to CWA section 401.

needed to address all possible generated pollutants. The Permittee must ensure that construction site operators select and implement appropriate erosion and sediment control measures to reduce or eliminate the impacts to receiving waters. To help guide their Construction Program and ensure consistency regarding BMP selection, the Permit requires the Permittee to develop or adopt BMP standards for a range of construction related activities. The list of activities is based on California Stormwater Quality Association's (CASQA) Construction BMP handbook. The ESCP/SWPPP must include the rationale used for selecting or rejecting BMPs. The project architect, or engineer of record, or authorized qualified designee, must sign a statement on the ESCP/SWPPP to the effect:

"As the architect/ engineer of record, I have selected, appropriate BMPs to effectively minimize the negative impact of the project's construction activities on storm water quality. The project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness. The BMPs not selected for implementation are redundant or deemed not applicable to the proposed construction activity."

The Permittee is responsible for conducting inspection and enforcement of erosion and sediment control measures at specified times and frequencies during construction including prior to land disturbance, during grading and land development, during streets and utilities activities, during vertical construction, and during final landscaping and site stabilization. The Permittees' Municipal Inspectors must be adequately trained and Permittees are encouraged to offer opportunities for inspectors to enroll in the State Water Board sponsored Qualified Storm Water Pollution Prevention Plan (SWPPP) Practitioner (QSP) certification program. A progressive enforcement policy has been integrated into this iteration of the permit to ensure that adequate penalties are in place and to ensure the protection of receiving water quality.

Prior to approving and/ or signing off for occupancy and issuing the Certificate of Occupancy for all construction projects subject to post-construction controls, each permittee shall inspect the constructed site design, source control and treatment control BMPs to verify that they have been constructed in compliance with all specifications, plans, permits, ordinances, and this Order. The initial/ acceptance BMP verification inspection does not constitute a maintenance and operation inspection.

The Permittee must ensure that staff has proper training. In addition, the Permittee must develop and distribute training and educational material and conduct outreach to the development community. To ensure that the construction program is followed, construction operators must be educated about site requirements for control measures, local storm water requirements, enforcement activities, and penalties for non-compliance.

8. Public Agency Activities Program

a. Background

Publically-owned or operated facilities serve as hubs of activity for a variety of municipal staff from many different departments. Some municipalities will have one property at which all activities take place (e.g., the municipal maintenance yard), whereas others will have several specialized facilities such as animal control facilities, chemical storage facilities, composting facilities, equipment storage and maintenance facilities, fueling facilities, hazardous waste disposal facilities, incinerators, landfills, materials storage yards, pesticide storage facilities, public buildings, public parking lots, public golf courses, public swimming pools, public parks, public marinas, recycling facilities, solid waste handling and transfer facilities, and flood control facilities.

b. Program Implementation

i. Public Construction Activities Management

The Permittee is required to implement BMPs and comply with the Planning and Land Development Program requirements in Part VI.D.6 of this Order and the Development Construction Program requirements in Part VI.D.7 of this Order at applicable Permittee-owned or operated (i.e., public or Permittee sponsored) construction projects. These requirements ensure that Permittee-owned or operated construction and development occurs in an equally protective manner as private development. The Permittee is also required to implement an effective combination of erosion and sediment control BMPs from Table 13 (see Construction Development Program, minimum BMPs) at those public sites that disturb less than one acre of soil. Last, the Permittee is required to obtain separate coverage under the State Water Board's Construction General NPDES Permit for all Permittee-owned or operated construction sites that require coverage.

ii. Public Facility Inventory

A comprehensive list of publically-owned or operated facilities will help staff responsible for storm water compliance build a better awareness of their locations within the MS4 service area and their potential to contribute storm water pollutants. The inventory should include information on the location, contact person at the facility, activities performed at the facility, and whether the facility is covered under an industrial general storm water permit or other individual or general NPDES permit, or any applicable waivers issued by the Regional or State Water Board pertaining to storm water discharges. Incorporation of GIS into the inventory is encouraged. The facility inventory should be updated at least twice during the permit term and will serve as a basis for setting up periodic facility assessments and developing, where necessary, facility storm water pollution prevention plans. By developing an inventory of Permittee-owned facilities that are potential sources of storm water pollution helps to ensure that these facilities are monitored and receiving water quality is protected.

iii. Inventory of Existing Development for Retrofitting Opportunities

Each Permittee is required to maintain an updated inventory of all Permittee-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of storm water pollution. This requirement is similar to the requirement of Order No. 01-182. In this Order, the incorporation of facility information into a GIS is recommended as this has been proven effective for effectively inventory and management of facilities and associated BMPs. Given that facility operation, condition, and practices can change over a five year period, the Permittees are required to update its inventory at least twice during the term of this Order.

In addition to developing an inventory of publically-owned or operated facilities, in this Order, Permittees are required to develop an inventory of existing development for retrofitting opportunities. The intention of adding this requirement to the permit is to encourage the use of retrofit projects that reduce storm water pollutants into the MS4 that are a result of impacts from existing development. Permittees are also required to evaluate and rank these retrofitting opportunities.

iv. Public Agency Facility and Activity Management

Each Permittee is required to manage its facilities in accordance with the State Water Board's Industrial General NPDES Permit, where applicable, and shall ensure the implementation and maintenance of appropriate BMPs at all facilities with a potential to pollute stormwater. Therefore, Permittees shall obtain separate coverage under the State Water Board's Industrial General NPDES Permit for all Permittee-owned or operated facilities where industrial activities are conducted that require coverage under the Industrial General NPDES Permit and shall implement and maintain activity specific BMPs listed in Table 19 (BMPs for Public Agency Facilities and Activities).

Many municipalities use third-party contractors to conduct municipal maintenance activities in lieu of using municipal employees. Contractors performing activities that can affect storm water quality must be held to the same standards as the Permittee. Not only must these expectations be defined in contracts between the Permittee and its contractors, but the Permittee is responsible for ensuring, through contractually-required documentation or periodic site visits, that contractors are using storm water controls and following standard operating procedures. Therefore, the Permittee shall ensure all contractors hired by the Permittee to conduct Public Agency Activities including, but not limited to, storm and/or sanitary sewer system inspection and repair, street sweeping, trash pick-up and disposal, and street and right-of-way construction and repair shall be contractually required to implement and maintain the activity specific BMPs listed in Table 18.

v. Vehicle and Equipment Washing

Specific BMPs for all fixed vehicle and equipment washing; including fire fighting and emergency response vehicles have been incorporated into this

Order and must be implemented. In addition, specific BMPs for wash waters from vehicle and equipment washing. These requirements effectively prohibit the occurrence of illicit discharges resulting from unauthorized washing activities.

vi. Landscape, Park, and Recreational Facilities Management

Specific BMPs for public right-of-ways, flood control facilities and open channels, lakes and reservoirs, and landscape, park, and recreation facilities and activities have been included this Order, similar to those in Order No. 01-182 and the more recently adopted Ventura County MS4 Permit, and must be implemented. These requirements are reflective of current environmentally responsible practices.

vii. Storm Drain Operation and Maintenance

Specific BMPs for storm drain operations and maintenance have been carried over from Order No. 01-182 into this Order.

Permittees must prioritize catch basins for cleaning activities based on the volume of trash or debris.

The materials removed from catch basins may not reenter the MS4. The material must be dewatered in a contained area and the water treated with an appropriate and approved control measure or discharged to the sanitary sewer. The solid material will need to be stored and disposed of properly to avoid discharge during a storm event. Some materials removed from storm drains and open channels may require special handling and disposal, and may not be authorized to be disposed of in a landfill.

viii. Streets, Roads, and Parking Facilities Maintenance

Permittees must prioritize streets and/or street segments for sweeping activities based on the volume of trash generated on the street or street segments. Based on these established priorities, Permittees must conduct street sweeping twice per month on the highest priority streets (Priority A), once per month on the medium priority streets (Priority B), and as needed but not less than once per year on the lowest priority streets (Priority C). In addition parking facilities must be cleaned using street sweeping equipment no less than two times per month and inspect no less than two times per month to determine if cleaning is necessary.

Specific BMPs for road reconstruction have been incorporated into this Order and must be followed during road repaving activities.

ix. Emergency Procedures

Permittees are required to conduct repairs of essential public service systems and infrastructure in emergency situations. These requirements ensure the protection of water quality. BMPs must be implemented to reduce the threat to water quality and the Regional Water Board must be notified of the occurrence, an explanation of the circumstances and measures taken to reduce the threat to water quality within 30 business days after the emergency has passed.

x. Municipal Employee and Contractor Training

Permittees are required to ensure that training is provided for employees and contractors that have job duties or participate in activities that have the potential to affect storm water quality. The training should promote a general understanding of the potential for activities to pollute storm water and include information on the identification of opportunities to require, implement, and maintain BMPs associated with the activities they perform. In addition training specific to employees or contractors that use or have the potential to use pesticides or fertilizers should be provided. This training should instruct employees and contractors on the potential for pesticide-related surface water toxicity, the proper use, handling and disposal of pesticides, the least toxic methods of pest prevention and control, and the overall reduction of pesticide use.

Many municipalities use third-party contractors to conduct municipal maintenance activities in lieu of using municipal employees. Contractors performing activities that can affect storm water quality must be held to the same standards as the Permittee. Not only must these expectations be defined in contracts between the Permittee and its contractors, but the Permittee is responsible for ensuring, through contractually-required documentation or periodic site visits, that contractors are using storm water controls and following standard operating procedures.

9. Illicit Connection and Illicit Discharge Elimination Program

a. 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 section 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 federal regulation.

USEPA stormwater regulations define "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of stormwater" except discharges resulting from fire fighting activities and discharges from NPDES permitted sources (see 40 CFR section 122.26(b)(2)). The applicable

regulations state that the following non-stormwater discharges may be allowed if they are not determined to be a significant source of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR section 35.2005(20)), uncontaminated pumped ground water, discharges from drinking water supplier distribution systems, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water. If, however, these discharges are determined to be a significant source of pollution then they must be prohibited.

Examples of common sources of illicit discharges in urban areas include apartments and homes, car washes, restaurants, airports, landfills, and gas stations. These so called "generating sites" discharge sanitary wastewater, septic system effluent, vehicle wash water, washdown from grease traps, motor oil, antifreeze, gasoline and fuel spills, among other substances. Although these illicit discharges can enter the storm drain system in various ways, they generally result from either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the storm drain system, spills, or "midnight dumping"). Illicit discharges can be further divided into those discharging continuously and those discharging intermittently.

b. Illicit Discharge Source Investigation and Elimination

Section 402(p)(3)(B)(ii) of the CWA requires MS4 permits to “effectively prohibit non-stormwater discharges into the storm sewers.” The permit implements this requirement, in part by requiring the development of procedures to investigate and eliminate illicit discharges. The permittee must develop a clear, step-by-step procedure for conducting the investigation of illicit discharges. The procedure must include an investigation protocol that clearly defines what constitutes an illicit discharge and what steps shall be taken to identify and eliminate its source. In many circumstances, sources of intermittent, illicit discharges are very difficult to locate, and these cases may remain unresolved. The permit requires that each case be conducted in accordance with the procedures developed to locate the source and conclude the investigation, after which the case may be considered closed. These procedures should be completed per the Progressive Enforcement Policy identified in Part VI.D.2 of this Order and should include enforcement as necessary to ensure the elimination of the illicit discharge/connection.

Illicit discharges may also originate in upstream jurisdictions and therefore this Order establishes procedures for communicating with upstream entities and providing information that may prove helpful in their investigation of its source(s).

If a Permittee is unable to eliminate an ongoing illicit discharge following full execution of its legal authority and in accordance with its Progressive Enforcement Policy, or other circumstances prevent the full elimination of an

ongoing illicit discharge, including the inability to find the responsible party/parties, the Permittee shall require diversion of the entire flow to the sanitary sewer or treatment. In either instance, the Permittee shall notify the Regional Water Board in writing within 30 days of such determination and shall provide a written plan for review and comment that describes the efforts that have been undertaken to eliminate the illicit discharge, a description of the actions to be undertaken, anticipated costs, and a schedule for completion. The goal of these requirements is to provide a permanent solution for ongoing illicit discharges.

c. Identification and Response to Illicit Connections

Illicit connections to the MS4 can lead to the direct discharge or infiltration of sewage or other prohibited discharges into the MS4. Permittees have been conducting illicit connection screening throughout the term of Order No. 01-182 and this Order requires a continuation of response efforts once an illicit connection is identified. This Order establishes unique obligations for the LACFCD and for the individual Permittees. The requirements for LACFCD are based on the unique obligations and infrastructure of a regional flood control district. Requirements for the individual Permittees require the investigation and follow-up of all illicit connections within 21 days of identification and elimination within 180 days.

d. Public Reporting of Non-Storm Water Discharges and Spills

Each Permittee needs to promote a program to help in the identification and termination of illicit discharges. This Order establishes requirements for the Permittees, individually or as a group, to develop public education campaigns and reporting numbers which are intended to promote public reporting of illicit discharges. Specifically, a stormwater hotline can be used to help permittees become aware of and mitigate spills or dumping incidents. Spills can include everything from an overturned gasoline tanker to sediment leaving a construction site to a sanitary sewer overflow entering into a storm drain. Permittees must set up a hotline consisting of any of the following (or combination thereof): a dedicated or non-dedicated phone line, E-mail address, or website.

This Order also requires development of written procedures for receiving and responding to calls from the public and for maintaining documentation about reported illicit discharges and spills and their investigation and remedy. These requirements are intended to ensure that reliable and consistent practices are deployed to address this persistent problem.

e. Spill Response Plan

Spills, leaks, sanitary sewer overflows, and illicit dumping or discharges can introduce a range of stormwater pollutants into the storm system. Prompt response to these occurrences is the best way to prevent or reduce negative impacts to waterbodies. The permittee must develop a spill response plan that includes an investigation procedure similar to or in conjunction with the

investigation procedures developed for illicit discharges in general. Often, a different entity might be responsible for spill response in a community (i.e. fire department), therefore, it is imperative that adequate communication exists between stormwater and spill response staff to ensure that spills are documented and investigated in a timely manner.

f. Illicit Connection and Illicit Discharge Education and Training

The permit requires each Permittee to train field staff, who may come into contact or observe illicit discharges, on the identification and proper procedures for reporting illicit discharges. Field staff to be trained may include, but are not limited to, municipal maintenance staff, inspectors, and other staff whose job responsibilities regularly take them out of the office and into areas within the MS4 area. Permittee field staff are out in the community every day and are in the best position to locate and report spills, illicit discharges, and potentially polluting activities. With proper training and information on reporting illicit discharges easily accessible, these field staff can greatly expand the reach of the IDDE program.

10. Los Angeles County Flood Control District Section

Due to the unique characteristics of the Los Angeles County Flood Control District, a Minimum Control Measure Section unique to the Los Angeles County Flood Control District was included in the Order. Unlike other Permittees, the LACFCD does not own or operate any municipal sanitary sewer systems, public streets, roads, or highways. Additionally, The LACFCD has no planning, zoning, development permitting or other land use authority over industrial or commercial facilities, new developments or re-development projects, or development construction sites located in any incorporated or unincorporated areas within its service area. The Permittees that have such land use authority are responsible for implementing a storm water management program to inspect and control pollutants from industrial and commercial facilities, new development and re-development projects, and development construction sites within their jurisdictional boundaries. The requirements included in the Section are the same as those for other Permittees, but requirements that are not applicable due to the unique characteristic of the Los Angeles County Flood Control District were eliminated.

D. Total Maximum Daily Load Provisions

Clean Water Act section 303(d)(1)(A) requires each State to conduct a biennial assessment of its waters, and identify those waters that are not achieving water quality standards. These waters are identified as impaired on the State's Clean Water Act section "303(d) List" of water quality limited segments. The Clean Water Act also requires States to establish a priority ranking for waters on the 303(d) List and to develop and implement Total Maximum Daily Loads (TMDLs) for these waters. A TMDL specifies the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and allocates the acceptable pollutant load to point

and nonpoint sources. The elements of a TMDL are described in 40 CFR sections 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). Regulations further require that TMDLs must be set at "levels necessary to attain and maintain the applicable narrative and numeric water quality standards with seasonal variations and a margin of safety that takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality" (40 CFR section 130.7(c)(1)). The regulations at 40 CFR section 130.7 also state that TMDLs shall take into account critical conditions for stream flow, loading and water quality parameters. 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.

Upon establishment of TMDLs by the State or the USEPA, the State is required to incorporate, or reference, the TMDLs in the State Water Quality Management Plan (40 CFR sections 130.6(c)(1) and 130.7). The Regional Water Board's Basin Plan, and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Regional Water Board. When adopting TMDLs as part of its Basin Plan, the Regional Water Board includes, as part of the TMDL, a program for implementation of the WLAs for point sources and load allocations (LAs) for nonpoint sources.

TMDLs are not self-executing, but instead rely upon further Board orders to impose pollutant restrictions on discharges to achieve the TMDL's WLAs. Section 402(p)(3)(B)(iii) of the Clean Water Act requires the Regional Water Board to impose permit conditions, including: "management practices, control techniques and system, design and engineering methods, and *such other provisions as the Administrator of the State determines appropriate for the control of such pollutants*." (emphasis added.) Section 402(a)(1) of the Clean Water Act also requires states to issue permits with conditions necessary to carry out the provisions of the Clean Water Act. Federal regulations also require that NPDES permits must include conditions consistent with the assumptions and requirements of any available waste load allocation (40 CFR section 122.44(d)(1)(vii)(B)). Similarly, state law requires both that the Regional Water 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…" (Cal. Wat. Code §§ 13263, 13377).

An NPDES permit should incorporate the WLAs as numeric WQBELs, where feasible. Where a non-numeric permit limitation is selected, such as BMPs, 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 USEPA has published guidance for establishing WLAs for storm water discharges in TMDLs and their incorporation as numeric WQBELs in MS4 permits.[41]

[41] 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.

As required, permit conditions are included in this Order consistent with the assumptions and requirements of the available WLAs assigned to MS4 discharges, which have been established in thirty-three TMDLs. The Regional Water Board adopted twenty-five (25) TMDLs and USEPA established seven (7) TMDLs that assign WLAs to MS4 Permittees within the County of Los Angeles. In addition, the Santa Ana Regional Water Board adopted a TMDL that assigns WLAs to the Cities of Pomona and Claremont. The TMDLs included in this Order along with the adoption and approval dates are listed in the table below. Permit conditions for two of these TMDLs – the Marina del Rey Harbor Bacteria TMDL and the Los Angeles River Watershed Trash TMDL – were previously incorporated into Order No. 01-182 during re-openers in 2007 and 2009, respectively (Orders R4-2007-0042 and R4-2009-0130). TMDLs are typically developed on a watershed or subwatershed basis, which facilitates a more accurate assessment of cumulative impacts of pollutants from all sources. An overview of each Watershed Management Area, including the TMDLs applicable to it, is provided below.

TMDLs with Resolution Numbers, Adoption Dates and Effective Dates

TOTAL MAXIMUM DAILY LOAD	RESOLUTION NUMBER	ADOPTION DATE	STATE BOARD RESOLUTION NUMBER	STATE BOARD APPROVAL DATE	OAL APPROVAL DATE	EPA APPROVAL DATE	EFFECTIVE DATE
Santa Clara River Watershed Management Area							
Santa Clara River Nitrogen Compounds TMDL	2003-011	8/7/2003	2003-0073	11/19/2003	2/27/2004	3/18/2004	3/23/2004
Upper Santa Clara River Chloride TMDL	2008-012	12/11/2008	2009-0077	10/20/2009	1/26/2010	4/6/2010	4/6/2010
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)	2007-009	6/7/2007	2007-0073	12/4/2007	2/8/2008	2/27/2008	3/6/2008
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	R10-006	7/8/2010	2011-0048	10/4/2011	12/19/2011	1/13/2012	3/21/2012
Santa Monica Bay Watershed Management Area							
Santa Monica Bay Beaches Bacteria TMDL (Dry Weather)	2002-004	1/24/2002	2002-0149	9/19/2002	12/9/2002	6/19/2003	7/15/2003
Santa Monica Bay Beaches Bacteria TMDL (Wet Weather)	2002-022	12/12/2002	2003-0022	3/19/2003	5/20/2003	6/19/2003	7/15/2003
Santa Monica Bay Nearshore and Offshore Debris TMDL	R10-010	11/4/2010	2011-0064	12/6/2011	3/15/2012	3/20/2012	3/20/2012
Santa Monica Bay TMDL for DDTs and PCBs (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	N/A
Malibu Creek Subwatershed							
Malibu Creek and Lagoon Bacteria TMDL	2004-019R	12/13/2004	2005-0072	9/22/2005	12/1/2005	1/10/2006	1/24/2006
Malibu Creek Watershed Trash TMDL	2008-007	5/1/2008	2009-0029	3/17/2009	6/16/2009	6/26/2009	7/7/2009
Malibu Creek Watershed Nutrients TMDL (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/21/2003	N/A
Ballona Creek Subwatershed							
Ballona Creek Trash TMDL	2004-023	3/4/2004	2004-0059	9/30/2004	2/8/2005	N/A	8/11/2005
Ballona Creek Estuary Toxic Pollutants TMDL	2005-008	7/7/2005	2005-0076	10/20/2005	12/15/2005	12/22/2005	1/11/2006
Ballona Creek, Ballona Estuary and	2006-011	6/8/2006	2006-0092	11/15/2006	2/20/2007	3/26/2007	4/27/2007

TOTAL MAXIMUM DAILY LOAD	RESOLUTION NUMBER	ADOPTION DATE	STATE BOARD RESOLUTION NUMBER	STATE BOARD APPROVAL DATE	OAL APPROVAL DATE	EPA APPROVAL DATE	EFFECTIVE DATE
Sepulveda Channel Bacteria TMDL							
Ballona Creek Metals TMDL	2007-015	9/6/2007	2008-0045	6/17/2008	10/6/2008	10/29/2008	10/29/2008
Ballona Creek Wetlands TMDL for Sediment and Invasive Exotic Vegetation (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	N/A
Marina del Rey Subwatershed							
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	2003-012	8/7/2003	2003-0072	11/19/2003	1/30/2004	3/18/2004	3/18/2004
Marina del Rey Harbor Toxic Pollutants TMDL	2005-012	10/6/2005	2006-0006	1/13/2006	3/13/2006	3/16/2006	3/22/2006
Dominguez Channel and Greater Harbors Waters Watershed Management Area							
Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel)	2004-011	7/1/2004	2004-0071	10/21/2004	1/5/2005	3/1/2005	3/10/2005
Machado Lake Trash TMDL	2007-006	6/7/2007	2007-0075	12/4/2007	2/8/2008	2/27/2008	3/6/2008
Machado Lake Nutrient TMDL	2008-006	5/1/2008	2008-0089	12/2/2008	2/19/2009	3/11/2009	3/11/2009
Machado Lake Pesticides and PCBs TMDL	R10-008	9/2/2010	2011-0065	12/6/2011	2/29/2012	3/20/2012	3/20/2012
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL	R11-008	5/5/2011	2012-0008	2/7/2012	3/21/2012	3/23/2012	3/23/2012
Los Angeles River Watershed Management Area							
Los Angeles River Watershed Trash TMDL	2007-012	8/9/2007	2008-0024	4/15/2008	7/1/2008	7/24/2008	9/23/2008
Los Angeles River Nitrogen Compounds and Related Effects TMDL	2003-016	12/4/2003	2004-0014	3/24/2004	9/27/2004	N/A	9/27/2004
Los Angeles River and Tributaries Metals TMDL	R10-003	5/6/2010	2011-0021	4/19/2011	7/28/2011	11/3/2011	11/3/2011
Los Angeles River Bacteria TMDL	R10-007	7/9/2010	2011-0056	11/1/2011	3/21/2012	3/23/2012	3/23/2012
Legg Lake Trash TMDL	2007-010	6/7/2007	2007-0074	12/4/2007	2/5/2008	2/27/2008	3/6/2008

TOTAL MAXIMUM DAILY LOAD	RESOLUTION NUMBER	ADOPTION DATE	STATE BOARD RESOLUTION NUMBER	STATE BOARD APPROVAL DATE	OAL APPROVAL DATE	EPA APPROVAL DATE	EFFECTIVE DATE
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2012	N/A
Los Angeles Area Lakes TMDLs (USEPA established for Lake Calabasas, Echo Park Lake, Legg Lake and Peck Road Park Lake)	N/A	N/A	N/A	N/A	N/A	3/26/2012	N/A
San Gabriel River Watershed Management Area							
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2007	N/A
Los Angeles Area Lakes TMDLs (USEPA established for Puddingstone Reservoir)	N/A	N/A	N/A	N/A	N/A	3/26/2012	N/A
Los Cerritos Channel and Alamitos Bay Watershed Management Area							
Los Cerritos Channel Metals TMDL (USEPA established)	N/A	N/A	N/A	N/A	N/A	3/17/2010	N/A
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL	R09-005	10/1/2009	2010-0056	11/16/2010	5/6/2011	6/14/2011	7/28/2011
Middle Santa Ana River Watershed Management Area (Santa Ana Region TMDL)							
Middle Santa Ana River Watershed Bacterial Indicator TMDLs	R8-2005-0001	8/26/2005	2006-0030	5/15/2006	9/1/2006	5/16/2007	5/16/2007

Santa Clara River Watershed Management Area. The Santa Clara River and its tributaries drain a watershed area of 1,634 square miles (sq. miles) (Figure B-1). Santa Clara River Reaches 1, 2, 3, 4A, 4B and major tributaries Santa Paula, Sespe and Piru Creeks are in Ventura County. Santa Clara River Reaches 5, 6, 7, 8 and major tributaries Castaic, San Francisquito, and Bouquet Canyon Creeks are in Los Angeles County. About 40% of the watershed, the Upper Santa Clara River, is located in County of Los Angeles. Approximately, 75% of the Upper Santa Clara River watershed is open space used for recreation in the Angeles National Forest. The remainder of the upper portion of the watershed is characterized by a mixture of residential, mixed urban, and industrial land uses with low density residential more common in the uppermost areas of the watershed, while high density residential is more prevalent in the City of Santa Clarita.

Various reaches of the Santa Clara River are on the 2010 CWA Section 303(d) List of impaired water bodies for nitrogen, bacteria, chloride, and trash (in lakes), among other pollutants. The excess nitrogen compounds are causing impairments to the WARM, WILD, and GWR designated beneficial uses of the Santa Clara River in Reaches 3, 7 and 8. The elevated bacterial indicator densities are causing impairment of the REC-1 and REC-2 designated beneficial uses for the Santa Clara River Estuary and Reaches 3, 5, 6, and 7. The excessive levels of chloride are impairing the AGR and GWR designated beneficial uses of the Upper Santa Clara River Reaches 4A, 4B, 5 and 6. The trash in Lake Elizabeth is causing impairments to the WARM, WILD, RARE, REC-1 and REC-2 designated beneficial uses.

TMDLs have been adopted by the Regional Water Board to address the impairments due to nitrogen, bacteria and chloride in the Upper Santa Clara River Watershed and for trash in Lake Elizabeth. Each of these TMDLs identifies MS4 discharges as a source of pollutants and assigns allocations to MS4 discharges. In the nitrogen compounds TMDL, storm water discharges were identified as potentially contributing nitrogen loads. Data from land use monitoring conducting under the LA County MS4 Permit from 1994-1999 indicate some concentrations of ammonia from commercial land uses in excess of the 30-day average concentration based WLA of 1.75 mg/l, and potential concentrations of nitrate-N and nitrite-N from residential land uses in excess of the WLA of 6.8 mg/l. Recent data from the 2010-11 annual monitoring report indicate low levels of ammonia and nitrite at the mass emissions station (S29) in the Santa Clara River, and concentrations of nitrate-N ranging from 1.38-1.66 mg/l in dry weather and 0.015-1.86 mg/l in wet weather. In the chloride TMDL, major point sources are assigned a WLA of 100 mg/l. Data from land use monitoring conducted under the LA County MS4 Permit from 1994-99 indicate chloride concentrations ranging from 3.2-48 mg/l, while more recent data from the mass emissions station (S29) indicate concentrations ranging from 116-126 mg/l in dry weather, and 25.1-96.3 mg/l in wet weather. For the bacteria TMDL, the Regional Water Board found that the significant contributors of bacteria loading to the Santa Clara River are discharges of storm water and non-storm water from the MS4. For the trash TMDL, discharges from the MS4 are sources of trash discharged to Lake Elizabeth.

Santa Monica Bay Watershed Management Area. The Santa Monica Bay Watershed Management Area (WMA) encompasses an area of 414 sq. miles (Figure B-2). Its

borders reach from the crest of the Santa Monica Mountains on the north and from the Ventura-Los Angeles County line to downtown Los Angeles. From there it extends south and west across the Los Angeles plain to include the area east of Ballona Creek and north of the Baldwin Hills. A narrow strip of land between Playa del Rey and Palos Verdes drains to the Bay south of Ballona Creek. The WMA includes several subwatersheds, the two largest being Malibu Creek to the north (west) and Ballona Creek to the south. SCAG land use data from 2005 shows 62% of the area is open space, high density residential is 17% of the area, and low density residential is 2.3% of the area. Commercial and industrial land uses total 6% of the area and are found in all but a handful of the subwatersheds.

Many of the Santa Monica Bay beaches were identified on the 1998 CWA Section 303(d) List of impaired water bodies for high coliform counts and beach closures. Santa Monica Bay offshore and nearshore is on the 2010 CWA Section 303(d) List of impaired water bodies for debris, DDTs, PCBs and sediment toxicity. The elevated bacterial indicator densities during both dry and wet weather are causing impairments of the REC-1 and REC-2 designated beneficial uses of the Santa Monica Bay beaches. The debris and elevated concentrations of DDT and PCBs are causing impairments to the IND, NAV, REC-1, REC-2, COMM, EST, MAR, BIOL, MIGR, WILD, RARE, SPWN, SHELL, and WET designated beneficial uses of the Santa Monica Bay.

TMDLs have been adopted by the Regional Water Board and USEPA for bacteria at Santa Monica Bay Beaches, and for debris, DDTs, PCBs and sediment toxicity in Santa Monica Bay. In the bacteria TMDL, the Regional Water Board determined that discharges of storm water and non-storm water from the MS4 are the primary source of elevated bacterial indicator densities to Santa Monica Bay beaches during dry and wet weather. In the debris TMDL, the Regional Water Board determined that most of the land-based debris is discharged to the marine environment through the MS4. In the DDT and PCBs TMDL, USEPA determined that although DDT is no longer used, it persists in the environment, adhering strongly to soil particles. The manufacture of PCBs is no longer legal, but PCBs also persist in the environment and are inadvertently produced as a result of some manufacturing processes. Both DDT and PCBs are transported in contaminated sediments via urban runoff through the MS4 to Santa Monica Bay.

The Malibu Creek subwatershed drains an area of about 109 square miles (Figure B-2a). Approximately two-thirds of this subwatershed lies in Los Angeles County and the remaining third in Ventura County. Much of the land is part of the Santa Monica Mountains National Recreation Area and is under the purview of the National Parks Service. The watershed borders the eastern portion of Ventura County to the west and north and Los Angeles River watershed to the east. Major tributaries include Cold Creek, Lindero Creek, Las Virgenes Creek, Medea Creek, and Triunfo Creek. Located at the end of and receiving flows from Malibu Creek is the 40-acre Malibu Lagoon. The Malibu Creek subwatershed land uses are 88% open space, 3% commercial/light industry, 9% residential and less than 1% public.

The Malibu Creek Watershed is on the 2010 CWA Section 303(d) List of impaired water bodies for bacteria, nutrients, and trash. Elevated bacterial indicator densities are

causing impairment of the REC-1 and REC-2 designated beneficial uses of Malibu Creek, Malibu Lagoon, and the adjacent beaches. Excess nutrients are causing impairments to the REC-1, REC-2, WARM, COLD, EST, MAR, WILD, RARE, MIGR, and SPWN designated beneficial uses of waterbodies in the Malibu Creek Watershed. Trash is causing impairments to the MUN, GWR, REC-1, REC-2, WARM, COLD, MIGR, WILD, RARE, SPWN, and WET designated beneficial uses of the waterbodies in the Malibu Creek Watershed.

TMDLs have been adopted by the Regional Water Board for bacteria and trash in Malibu Creek. USEPA established a TMDL for nutrients in Malibu Creek. Fecal coliform bacteria may be introduced from a variety of sources including storm water and non-storm water discharges from the MS4. USEPA determined that high nitrogen and phosphorus loadings are associated with storm water discharges from commercial and residential land uses and also from undeveloped areas. During the summer non-storm water discharges add a significant portion of the load. The Regional Water Board determined in the trash TMDL that discharges from the MS4 are a source of trash to waterbodies in the Malibu Creek Watershed.

Ballona Creek and its tributaries drain a subwatershed of about 127 square miles (Figure B-2b). The watershed boundary extends in the east from the crest of the Santa Monica Mountains southward and westward to the vicinity of central Los Angeles and thence to Baldwin Hills. Tributaries of Ballona Creek include Centinela Creek, Sepulveda Canyon Channel, Benedict Canyon Channel, and numerous other storm drains. Ballona Creek is concrete lined upstream of Centinela Boulevard. All of its tributaries are either concrete channels or covered culverts. The channel downstream of Centinela Boulevard is trapezoidal composed of grouted rip-rap side slopes and an earth bottom. The urbanized areas of Ballona Creek, which consists of residential and commercial properties, accounts for 80% of the watershed; the partially developed foothill and mountains make up the other 20%.

Ballona Creek and Ballona Creek Estuary is on the 2010 CWA Section 303(d) List for trash, toxicity, bacteria, and metals. The Ballona Creek Wetlands is on the 2010 CWA Section 303(d) List for trash, exotic vegetation, habitat alterations and hydromodification. Trash is causing impairments to the REC-1, REC-2, WARM, WILD, EST, MAR, RARE, MIGR, SPWN, COMM, WET, and COLD designated beneficial uses of Ballona Creek. A suite of toxic pollutants, including cadmium, copper, lead, silver, zinc, chlordane, DDT, PCBs, and PAHs in sediments and dissolved copper, dissolved lead, total selenium, and dissolved zinc, are causing impairments to the REC-1, REC-2, EST, MAR, WILD, RARE, MIGR, SPWN, COMM, and SHELL designated beneficial uses of Ballona Creek Estuary and Ballona Creek and Sepulveda Channel, respectively. The elevated bacterial indicator densities are causing impairment of the REC-1, LREC-1, and REC-2 designated beneficial uses of Ballona Creek and Ballona Estuary. The excess sediment and invasive exotic vegetation is causing impairments to the EST, MIGR, RARE, REC-1, REC-2, SPWN, WET, and WILD designated beneficial uses of the Ballona Creek Wetlands.

TMDLs have been adopted by the Regional Water Board for trash, metals and toxic pollutants in Ballona Creek and Estuary, and bacteria. USEPA established a TMDL for

Sediment and Invasive Exotic Vegetation in the Ballona Creek Wetlands. Stormwater discharge is the major source of trash in Ballona Creek. Urban storm water has been recognized as a substantial source of metals. Storm drains convey a large percentage of the metals loadings during dry weather because although their flows are typically low, concentrations of metals in urban runoff may be quite high. Because metals are typically associated with fine particles in storm water runoff, they have the potential to accumulate in estuarine sediments where they may pose a risk of toxicity. Similar to metals, the majority of organic constituents in storm water are associated with particulates. There is toxicity associated with suspended solids in urban runoff discharged from Ballona Creek, as well as with the receiving water sediments. This toxicity is likely attributed to metals and organics associated with the suspended sediments. The major contributors of flows and associated bacteria loading to Ballona Creek and Ballona Estuary are storm water and non-storm water discharges from the MS4. The potential for sediment loading into the Ballona Creek Wetlands is associated with the flow coming down the watershed. Sediment moves from the watershed through the MS4 as a result of storms, wind and land based runoff. Major storms usually take place in winter and are responsible for major movements of sediment down the watershed into Ballona Creek and Ballona Wetland towards the coastal waterbodies. These activities can lead to discharge of large quantities of sediments in runoff.

The Marina del Rey subwatershed is approximately 2.9 square miles located adjacent to the mouth of Ballona Creek. The Marina del Rey subwatershed is highly developed at 80%, the remaining 20% is split between water and open/recreation land uses.

Marina del Rey is on the 2010 CWA Section 303(d) List for bacteria and sediment concentrations of copper, lead, zinc, DDT, PCBs, chlordane, and sediment toxicity. The elevated bacterial indicator densities are causing impairment of the REC-1 and REC-2 designated beneficial uses at Marina del Rey Harbor Mothers' Beach and back basins. The toxic pollutants are causing impairments to the REC-1, MAR, WILD, COMM, and SHELL designated beneficial uses of the Marina del Rey Harbor.

TMDLs have been adopted by the Regional Water Board for bacteria and toxic pollutants. Non-storm water and storm water discharges from the MS4 are the primary sources of elevated bacterial indicator densities to Marina del Rey Harbor Mothers' Beach and back basins during dry and wet weather. Urban storm water has been recognized as a substantial source of metals. Numerous researchers have documented that the most prevalent metals in urban storm water (i.e., copper, lead, and zinc) are consistently associated with suspended solids. Because metals are typically associated with fine particles in storm water runoff, they have the potential to accumulate in marine sediments where they may pose a risk of toxicity. Similar to metals, the majority of organic constituents in storm water are associated with particulates.

On June 7, 2012, the Regional Water Board adopted revised Basin Plan Amendments (BPAs) for the Santa Monica Bay Beaches Bacteria TMDL; the Malibu Creek and Lagoon Bacteria TMDL; the Ballona Creek, Ballona Estuary, and Sepulveda Channel Bacteria TMDL; and the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL. In the revised TMDLs the method of calculating the geometric mean was changed from the existing methods in the current Bacteria TMDLs and the

allowable winter dry weather exceedance days was redefined. Although, the revised BPAs are not in effect until approved by the State Board, OAL and USEPA these changes have been included in the Permit and will become effective upon the effective dates of the revised Bacteria TMDLs.

Dominguez Channel and Greater Harbor Waters Watershed Management Area. The Dominguez Channel and Los Angeles/Long Beach Harbors Watershed Management Area (Dominguez WMA) is located in the southern portion of the Los Angeles Basin (Figure B-3). Los Angeles Harbor is 7,500 acres and the Long Beach Harbor is 7,600 acres; together they have an open water area of approximately 8,128 acres. The 15 mile-long Dominguez Channel drains a densely urbanized area to Inner Los Angeles Harbor. Near the end of the 19th century and during the beginning of the next century, channels were dredged, marshes were filled, wharves were constructed, the Los Angeles River was diverted, and breakwaters were constructed in order to allow deep draft ships to be directly offloaded at the docks. The Dominguez Slough was completely channelized and became the drainage endpoint for runoff from a highly industrialized area. Eventually, the greater San Pedro Bay was enclosed by two more breakwaters and deep entrance channels were dredged to allow for entry of ships.

Various reaches of the Dominguez WMA are on the 2010 CWA Section 303(d) List of impaired water bodies for metals, DDT, PCBs, PAHs, historic pesticides, coliform, and sediment toxicity. The elevated bacteria indicator densities is causing impairments to the SHELL, REC-1, and REC-2 designated beneficial uses of Los Angeles Harbor. The elevated levels of metals and organics are causing impairments to beneficial uses designated in these waters to protect aquatic life, including MAR and RARE. In addition, the elevated levels are causing impairments in the estuaries, which are designated with SPWN, MIGR, and WILD beneficial uses. Dominguez Channel also has an existing designated use of WARM and the Los Angeles River Estuary has the designated use of WET. Beneficial uses associated with human use of these waters that are impaired due to the elevated concentrations of metals and organics include REC-1, REC-2, IND, NAV, COMM, and SHELL.

TMDLs have been adopted by the Regional Water Board for toxic pollutants in the Dominguez WMA and for bacteria at Inner Cabrillo Beach and the Main Ship Channel. Discharges from the MS4 are a source of elevated bacterial indicator densities to Inner Cabrillo Beach and the Main Ship Channel during dry and wet weather. The major point sources of organochlorine pesticides, PCBs, and metals into Dominguez Channel are storm water and non-storm water discharges. The contaminated sediments are a reservoir of historically deposited pollutants. Storm water runoff from manufacturing, military facilities, fish processing plants, wastewater treatment plants, oil production facilities, and shipbuilding or repair yards in both Ports have discharged untreated or partially treated wastes into Harbor waters. Current activities also contribute pollutants to Harbor sediments, in particular, storm water runoff.

On June 7, 2012, the Regional Water Board adopted a revised Basin Plan Amendment (BPA) for the Los Angeles Harbor Inner Cabrillo Beach and Main Ship Channel Bacteria TMDL. In the revised TMDL the method of calculating the geometric mean was changed from the existing methods in the current Bacteria TMDL and the allowable

winter dry weather exceedance days was redefined. Although, the revised BPA is not in effect until approved by the State Board, OAL and USEPA these changes have been included in the Permit and will become effective upon the effective date of the revised Bacteria TMDL.

Machado Lake is listed for trash, nutrients, PCBs and historic pesticides. Trash, nutrients and toxic pollutants are causing impairments to the WARM, WET, RARE, WILD, REC-1 and REC-2 designated beneficial uses of Machado Lake. TMDLs have been adopted by the Regional Water Board for trash, nutrients, PCBs and pesticides for Machado Lake. The point sources of trash and nutrients into Machado Lake are storm water and non-storm water discharges from the MS4. Storm water discharges occur through the following sub-drainage systems: Drain 553, Wilmington Drain, Project 77/510, and Walteria Lake.

Los Angeles River Watershed Management Area. The Los Angeles River Watershed Management Area (LAR WMA) drains a watershed of 824 square miles (Figure B-4). The LAR WMA is one of the largest in the Region and is also one of the most diverse in terms of land use patterns. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters, which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The remainder of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach. Due to major flood events at the beginning of the century, by the 1950s most of the LA River was lined with concrete. In the San Fernando Valley, there is a section of the river with a soft bottom at the Sepulveda Flood Control Basin. At the eastern end of the San Fernando Valley, the river bends around the Hollywood Hills and flows through Griffith and Elysian Parks, in an area known as the Glendale Narrows. Since the water table was too high to allow laying of concrete, the river in this area has a rocky, unlined bottom with concrete-lined or rip-rap sides. South of the Glendale Narrows, the river is contained in a concrete-lined channel down to Willow Street in Long Beach. The LA River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay. The channel has a soft bottom in this reach with concrete-lined sides. A number of lakes are also part of the LAR WMA, including Legg Lake, Peck Road Park, Belvedere Park, Hollenbeck Park, Lincoln Park, and Echo Park Lakes as well as Lake Calabasas.

Various reaches and lakes within the LAR WMA are on the 2010 CWA Section 303(d) List of impaired water bodies for trash, nitrogen compounds and related effects (ammonia, nitrate, nitrite, algae, pH, odor, and scum), metals (copper, cadmium, lead, zinc, aluminum and selenium), bacteria, and historic pesticides. Beneficial uses impaired by trash in the Los Angeles River are REC-1, REC-2, WARM, WILD, EST, MAR, RARE, MIGR, SPWN, COMM, WET and COLD. The excess nitrogen compounds

are causing impairments to the WARM and WILD designated beneficial uses of Los Angeles River. Excess metals are causing impairments to the WILD, RARE, WARM, WET, and GWR designated beneficial uses of the Los Angeles River and its tributaries. Elevated indicator bacteria densities are causing impairments to the REC-1 and REC-2 designated beneficial uses of Los Angeles River and the Los Angeles River Estuary. Beneficial uses impaired by trash in Legg Lake include REC1, REC2, and WILD.

TMDLs have been adopted by the Regional Water Board for trash, nitrogen, metals, and bacteria in the Los Angeles River. USEPA established TMDLs for bacteria in the Los Angeles River Estuary and for various pollutants in Los Angeles Area Lakes. The Los Angeles River Watershed Trash TMDL identifies discharges from the municipal separate storm sewer system as the principal source of trash to the Los Angeles River and its tributaries. The Regional Water Board determined that urban runoff and storm water may contribute to nitrate loads. Discharges from the MS4 contribute a large percentage of the metals loadings during dry weather because although non-storm water flows from the MS4 are typically low relative to other discharges during dry weather, concentrations of metals in urban runoff may be quite high. During wet weather, most of the metals loadings are in the particulate form and are associated with wet-weather storm water flow. On an annual basis, storm water discharges from the MS4 contribute about 40% of the cadmium loading, 80% of the copper loading, 95% of the lead loading, and 90% of the zinc loading. Discharges from the MS4 are the principal source of bacteria to the Los Angeles River, its tributaries and the Los Angeles River Estuary in both dry weather and wet weather.

A TMDL has been adopted by the Regional Water Board for trash in Legg Lake. The Legg Lake Trash TMDL identifies MS4 storm drains as the principal point source for trash discharged to Legg Lake.

The Los Angeles Water Board identified 10 lakes in the Los Angeles region as impaired by algae, ammonia, chlordane, copper, DDT, eutrophication, lead, organic enrichment/low dissolved oxygen, mercury, odor, PCBs, pH and/or trash and placed them on California's 303(d) list of impaired waters. For several lakes, USEPA concluded that ammonia, pH, copper and/or lead are currently meeting water quality standards and TMDLs are not required at this time. In other lakes, recent chlordane and dieldrin data indicate additional impairment. Associated with this WMA are: Lake Calabasas TMDLs for total nitrogen and total phosphorus; Echo Park Lake TMDLs for nutrients (total nitrogen and total phosphorus), total chlordane, dieldrin, total PCBs, and trash; Legg Lake TMDLs for total nitrogen and total phosphorus; and Peck Road Park Lake TMDLs for nutrients (total nitrogen and total phosphorus), total chlordane, total DDT, dieldrin, total PCBs, and trash.

In Lake Calabasas beneficial uses impaired by elevated levels of nutrients include REC1, REC2, and WARM. At high enough concentrations, WILD and MUN uses could also become impaired. MS4 discharges from the surrounding watershed to Lake Calabasas during dry and wet weather contributes 97.7 percent of the total phosphorus load and 74.4 percent of the total nitrogen load.

In Echo Park Lake beneficial uses impaired by elevated levels of nutrients, PCBs, chlordane, and dieldrin are currently impairing the REC1, REC2, and WARM uses. At high enough concentrations WILD and MUN uses could also become impaired. Beneficial uses impaired by trash in Echo Park Lake include REC1, REC2, WARM and WILD. The Echo Park Lake nutrient TMDL found that MS4 discharges from the northern and southern watershed to Echo Lake contribute 29 percent of the total phosphorus load and 28 percent of the total nitrogen load during wet weather with dry weather loading data unavailable due to the majority of runoff being diverted downstream of the lake. PCBs, chlordane, and dieldrin in Echo Park Lake are primarily due to historical loading and storage within the lake sediments, with some ongoing contribution by watershed wet weather loads. Dry weather loading is assumed to be negligible because hydrophobic contaminants primarily move with particulate matter that is mobilized by higher flows. Storm water loads from the watershed were estimated based on simulated sediment load and observed pollutant concentrations on sediment near inflows to the lake. MS4 discharges via storm drains are the principal point source for trash in Echo Park Lake.

In Legg Lake beneficial uses impaired due to elevated nutrient levels include REC1, REC2, WARM and COLD. At high enough concentrations the WILD, MUN, and GWR uses could also become impaired. The Legg Lake nutrient TMDL found that MS4 discharges from the surrounding watershed to Legg Lake during dry and wet weather contributes 69.1 percent of the total phosphorus load and 36 percent of the total nitrogen load.

In Peck Road Park Lake beneficial uses impaired by elevated levels of nutrients, PCBs, chlordane, DDT, dieldrin, and trash are currently impairing the REC1, REC2, and WARM uses. At high enough concentrations WILD and MUN uses could also become impaired. The Peck Road Park Lake nutrient TMDL found that MS4 discharges from the surrounding watershed including both wet and dry weather contribute 80.2 percent of the total phosphorus load and 55.5 percent of the total nitrogen load. PCBs, chlordane, DDT, and dieldrin in Peck Road Park Lake loads are primarily due to historical loading and storage within the lake sediments, with some ongoing contribution by watershed wet weather loads. Dry weather loading is assumed to be negligible because hydrophobic contaminants primarily move with particulate matter that is mobilized by higher flows. Stormwater loads from the watershed were estimated based on simulated sediment load and observed pollutant concentrations on sediment near inflows to the lake. MS4 discharges via storm drains are the principal point source for trash in Peck Road Park Lake.

San Gabriel River Watershed Management Area. The San Gabriel River Watershed (SGR WMA) receives drainage from a 689-square mile area of eastern Los Angeles County (Figure B-5). The main channel of the San Gabriel River is approximately 58 miles long. Its headwaters originate in the San Gabriel Mountains with the East, West, and North Forks. The river empties to the Pacific Ocean at the Los Angeles and Orange Counties boundary in Long Beach. The main tributaries of the river are Big and Little Dalton Wash, San Dimas Wash, Walnut Creek, San Jose Creek, Fullerton Creek, and Coyote Creek. Part of the Coyote Creek subwatershed is in Orange County and is under the authority of the Santa Ana Water Board. A number of lakes and reservoirs

are also part of the SGR WMA, including Puddingstone Reservoir. Land use in the watershed is diverse and ranges from predominantly open space in the upper watershed to urban land uses in the middle and lower parts of the watershed.

Various reaches of the SGR WMA are on the 2010 CWA Section 303(d) List of impaired water bodies due to trash, nitrogen, phosphorus, and metals (copper, lead, selenium, and zinc). USEPA established TMDLs for metals and selenium in the San Gabriel River and various pollutants in Los Angeles Area Lakes. Segments of the San Gabriel River and its tributaries exceed water quality objectives for copper, lead, selenium, and zinc. Metals loadings to San Gabriel River are causing impairments of the WILD, WARM, COLD, RARE, EST, MAR, MIGR, SPWN, WET, MUN, IND, AGR, GWR, and PROC beneficial uses. The San Gabriel River metals and selenium TMDL found that the MS4 contributes a large percentage of the metals loadings during dry weather because although their flows are typically low, concentrations of metals in urban runoff may be quite high. During wet weather, most of the metals loadings are in the particulate form and are associated with wet-weather storm water flow.

The Regional Water Board identified 10 lakes in the Los Angeles Region as impaired by algae, ammonia, chlordane, copper, DDT, eutrophication, lead, organic enrichment/low dissolved oxygen, mercury, odor, PCBs, pH and/or trash and placed them on California's 303(d) list of impaired waters. For several lakes, USEPA concluded that ammonia, pH, copper and/or lead are currently meeting water quality standards and TMDLs are not required at this time. In other lakes, recent chlordane and dieldrin data indicate additional impairment. Associated with this WMA is: Puddingstone Reservoir TMDLs for total nitrogen, total phosphorus, total chlordane, total DDT, total PCBs, total mercury, and dieldrin.

In Puddingstone Reservoir beneficial uses impaired due to elevated nutrient, mercury, PCBs, chlordane, dieldrin, and DDT levels include REC1, REC2, WARM, and COLD. At high enough concentrations the WILD, MUN, GWR, and RARE uses could also become impaired. The Puddingstone Reservoir nutrients TMDL found that MS4 discharges from the surrounding watershed to Puddingstone Reservoir during dry and wet weather contributes 79.8 percent of the total phosphorus and 74.1 percent of the total nitrogen load. Mercury, PCBs, chlordane, dieldrin, and DDT in Puddingstone Reservoir loads are primarily due to historical loading and storage within the lake sediments, with some ongoing contribution by watershed wet weather loads. Dry weather loading is assumed to be negligible because hydrophobic contaminants primarily move with particulate matter that is mobilized by higher flows. Stormwater loads from the watershed were estimated based on simulated sediment load and observed pollutant concentrations on sediment near inflows to the lake.

Los Cerritos Channel and Alamitos Bay Watershed Management Area. The Los Cerritos Channel is concrete-lined above the tidal prism and drains a small but densely urbanized area of east Long Beach (Figure B-6). The channel's tidal prism starts at Anaheim Road and connects with Alamitos Bay through the Marine Stadium; the wetlands connect to the Channel a short distance from the lower end of the Channel. Alamitos Bay is composed of the Marine Stadium, a recreation facility built in 1932; Long Beach Marina; a variety of public and private berths; and the Bay proper. A small

bathing lagoon, Colorado Lagoon located entirely in Long Beach, has a tidal connection with the Bay. The majority of land use in this WMA is high density residential.

Los Cerritos Channel is on the 2010 CWA Section 303(d) List of impaired water bodies for metals (copper, zinc, and lead). Beneficial uses impaired by metals in the Los Cerritos Channel include WILD, REC2 and WARM. USEPA established a TMDL for various metals in Los Cerritos Channel. The TMDL for metals in Los Cerritos Channel found that the MS4 contributes a large percentage of the metals loadings during dry weather because although their flows are typically low, concentrations of metals in urban runoff may be quite high. During wet weather, most of the metals loadings are in the particulate form and are associated with wet-weather storm water flow.

Middle Santa Ana River Watershed Management Area. The Middle Santa Ana River Watershed Management Area (MSAR WMA) covers approximately 488 square miles (mi^2) and lies mostly in San Bernardino and Riverside Counties; however, a small part of Los Angeles County is also included. The area of Los Angeles County, which lays in the MSAR WMA, includes portions of the Cities of Pomona (12.3 mi^2), Claremont (8.4 mi^2), and Diamond Bar (0.7 mi^2) and unincorporated Los Angeles County (12.3 mi^2) (Figure B-7). The MSAR WMA is comprised of three subwatersheds. The subwatershed that includes portions of Pomona and Claremont is the Chino Basin Subwatershed. Surface drainage from Pomona and Claremont is generally southward toward San Antonio Creek, which is tributary to Chino Creek, which feeds into the Prado Flood Control Basin.

Various reaches of the MSAR WMA, including Chino Creek, are listed on 2010 CWA Section 303(d) List for bacteria. Elevated bacterial indicator densities are causing impairments of the REC-1 and REC-2 designated beneficial for the Santa Ana River Reach 3; Chino Creek Reaches 1 and 2; Mill Creek (Prado Area); Cucamonga Creek Reach 1; and Prado Park Lake.

The Santa Ana Water Board adopted TMDLs for bacteria for the Middle Santa Ana River Watershed. The Basin Plan amendment incorporating the Middle Santa Ana River Watershed Bacterial Indicator TMDLs was approved by the Santa Ana Water Board on August 26, 2005 (Resolution No. R8-2005-0001), by the State Water Board on May 15, 2006, by the Office of Administrative Law on September 1, 2006, and by the USEPA on May 16, 2007. The TMDL was effective on May 16, 2007. The Santa Ana Water Board concluded based upon data and information collected in 1993, 1996-1998 and in 2002-2004, that urban runoff from the MS4 is a significant source of bacterial indicators year round to the Middle Santa Ana River and its tributaries (Rice, 2005). The TMDL specifies both dry weather and wet weather WLAs, with distinct implementation schedules. Compliance with the summer dry (April 1st through October 31st) WLAs is to be achieved as soon as possible, but no later than December 31, 2015. In recognition of the difficulties associated with the control of storm water discharges, compliance with the winter wet (November 1st through March 31st) WLAs is to be achieved as soon as possible, but no later than December 31, 2025. The MS4 permit allows for discharges of bacteria from the MS4s of the Cities of Claremont and Pomona to be regulated to ensure compliance with the wasteload allocations set forth in the Middle Santa Ana Bacterial Indicator TMDL and with the corresponding receiving water limitations by the

terms of an NPDES permit issued by the Santa Ana Regional Water Quality Control Board that is applicable to such MS4 discharges. The NPDES permit must be issued pursuant to a designation agreement between the Los Angeles and Santa Ana Regional Boards under Water Code § 13228. In the absence of such an NPDES permit, the MS4 permit includes specific provisions in Attachment R that are consistent with the assumptions and requirements of the wasteload allocations applicable to MS4 discharges as set forth in the Middle Santa Ana Bacterial Indicator TMDL.

Calleguas Creek Watershed Management Area. Calleguas Creek and its tributaries drain a watershed area of 343 square miles (sq. miles) in southern Ventura County and a small portion of western Los Angeles County. Approximately, 4.16 sq. miles of Los Angeles County is part of the Calleguas Creek Watershed. The land use of the 4.15 sq. miles is open space and recreation. The land use of the remaining 0.01 sq. miles is divided between low density residential, industrial, and agriculture (Southern California Association of Governments, 2008). Six TMDLs have been adopted and are in effect for the Calleguas Creek Watershed. None of the TMDLs assign waste load allocations to the Los Angeles County Flood Control District, County of Los Angeles or any incorporated city within Los Angeles County. Therefore, no water quality based effluent limitations were incorporated in this Order for TMDLs in the Calleguas Creek Watershed.

Manner of Incorporation of TMDL WLAs. The description of the permit conditions and the basis for the manner for incorporating requirements to implement the TMDLs' WLAs is discussed below.

WLAs may be expressed in different ways in a TMDL. In general, a WLA is expressed as a discharge condition that must be achieved in order to ensure that water quality standards are attained in the receiving water. The discharge condition may be expressed in terms of mass or concentration of a pollutant. However, in some cases, a WLA may be expressed as a receiving water condition such as an allowable number of exceedance days of the bacteria objectives.

In this Order, in most cases, TMDL WLAs have been translated into numeric WQBELs and, where consistent with the expression of the WLA in the TMDL, also as receiving water limitations. For each TMDL included in this Order, the WLA were translated into numeric WQBELs, which were based on the WLAs in terms of the numeric value and averaging period. For those TMDLs where the averaging period was not specific for the WLA, the averaging period was based on the averaging period for the numeric target.

For the bacteria TMDLs, where the WLA are expressed as an allowable number of exceedance days in the water body, the WLAs were translated into receiving water limitations. In addition to the receiving water limitations, WQBELs were established based on the bacteria water quality objectives. In the bacteria TMDLs, the numeric targets are based on the multi-part bacteriological water quality objectives; therefore, this approach is consistent with the assumptions of the bacteria TMDLs.

In the Ballona Creek Trash TMDL, the default baseline WLA for the MS4 Permittees is equal to 640 gallons (86 cubic feet) of uncompressed trash per square mile per year.

No differentiation is applied for different land uses in the default baseline WLA. The default baseline WLAs for the Permittees has been refined based on results from the baseline monitoring conducted by the City of Los Angeles. The City of Los Angeles provided trash generation flux data for five land uses: commercial, industrial, high density residential, low density residential and open space and recreation. The Baseline WLA for any single city is the sum of the products of each land use area multiplied by the WLA for the land use area, as shown below:

WLA = ∑ for each city (area by land uses x allocations for this land use)

The baseline was calculated using the City of Los Angeles trash generation flux data provided for the 2003-04 and 2004-05 storm years averaged for pounds of trash per acre and the 2003-04 storm year for gallons of trash per acre. The urban portion of the Ballona Creek watershed was divided into twelve types of land uses for every city and unincorporated area in the watershed. The land use categories are: (1) high density residential, (2) low density residential, (3) commercial and services, (4) industrial, (5) public facilities, (6) educational institutions, (7) military installations, (8) transportation, (9) mixed urban, (10) open space and recreation, (11) agriculture, and (12) water. The land use data used in the calculation is based on the Southern California Association of Governments 2005 data.

1. Compliance Determination

For TMDLs that establish individual mass-based WLAs or a concentration-based WLA such as the Trash TMDLs, Nitrogen TMDLs, and Chloride TMDL, this Order requires Permittees to demonstrate compliance with their assigned WQBELs individually.

A number of the TMDLs for Bacteria, Metals and Toxics establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL. TMDLs address commingled MS4 discharges by assigning a WLA to a group of MS4 Permittees based on co-location within the same subwatershed. Permittees with co-mingled storm water are jointly responsible for meeting the WQBELs and receiving water limitations assigned to MS4 discharges in this Order. "Joint responsibility" means that the Permittees that have commingled MS4 discharges are responsible for implementing programs in their respective jurisdictions, or within the MS4 for which they are an owner or operator, to meet the WQBELs and/or receiving water limitations assigned to such commingled MS4 discharges.

In these cases, federal regulations state that co-permittees need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators. (40 CFR § 122.26(a)(3)(vi).) Individual co-permittees are only responsible for their contributions to the commingled discharge. This Order does not require a Permittee to individually ensure that a commingled MS4 discharge meets the applicable WQBELs included in this Order, unless such Permittee is shown to be solely responsible for the exceedances.

Additionally, this Order allows a Permittee to clarify and distinguish their individual contributions and demonstrate that its MS4 discharge did not cause or contribute to exceedances of applicable WQBELs and/or receiving water limitations. In this case, though the Permittee's discharge may commingle with that of other Permittees, the Permittee would not be held jointly responsible for the exceedance of the WQBELs or receiving water limitation.

Individual co-permittees who demonstrate compliance with the WQBELs will not be held responsible for violations by non-compliant co-permittees.

Demonstrating Compliance with Interim Limitations. This Order provides Permittees with several means of demonstrating compliance with applicable interim WQBELs and interim receiving water limitations for the pollutant(s) associated with a specific TMDL. These include any of the following:

a. There are no violations of the interim WQBELs for the pollutant(s) associated with a specific TMDL at the Permittee's applicable MS4 outfall(s) or access points,[42] including an outfall to the receiving water that collects discharges from multiple Permittees' jurisdictions;

b. There are no exceedances of the applicable receiving water limitation for the pollutant(s) associated with a specific TMDL in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

c. There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the WQBEL and/or receiving water limitation for the pollutant(s) associated with a specific TMDL; or

d. The Permittee has submitted and is fully implementing an approved Watershed Management Program or Enhanced Watershed Management Program (EWMP), which includes analyses that provide the Regional Water Board with reasonable assurance that the watershed control measures proposed will achieve the applicable WQBELs and receiving water limitations consistent with relevant compliance schedules.

Demonstrating Compliance with Final Limitations. This Order provides Permittees with three general means of demonstrating compliance with an applicable *final* WQBEL and *final* receiving water limitation for the pollutant(s) associated with a specific TMDL.

These include any of the following:

a. There are no violations of the final WQBEL for the specific pollutant at the Permittee's applicable MS4 outfall(s)[43];

[42] An access point may include a manhole or other point of access to the MS4 at the Permittee's jurisdictional boundary.
[43] Ibid.

b. There are no exceedances of applicable receiving water limitation for the specific pollutant in the receiving water(s) at, or downstream of, the Permittee's outfall(s);

c. There is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the WQBEL and/or receiving water limitation for the pollutant(s) associated with a specific TMDL; or

d. In drainage areas where Permittees are implementing an EWMP, (i) all non-storm water and (ii) all storm water runoff up to and including the volume equivalent to the 85th percentile, 24-hour event is retained for the drainage area tributary to the applicable receiving water, and the Permittee is implementing all requirements of the EWMP, including, but not limited to, Parts VI.C.7 and VI.C.8 of this Order. This compliance mechanism does not apply to final trash WQBELs.

This Order provides the opportunity for Permittees to demonstrate compliance with *interim* effluent limitations through development and implementation of a Watershed Management Program or EWMP, where Permittees have provided a reasonable demonstration through quantitative analysis (i.e., modeling or other approach) that the control measures/BMPs to be implemented will achieve the interim effluent limitations in accordance with the schedule provided in this Order. It is premature to consider application of this action based compliance demonstration option to the final effluent limitations and final receiving water limitations that have deadlines outside the term of this Order. More data is needed to validate assumptions and model results regarding the linkage among BMP implementation, the quality of MS4 discharges, and receiving water quality.

During the term of this Order, there are very few deadlines for compliance with final effluent limitations applicable to storm water, or final receiving water limitations applicable during wet weather conditions. Most deadlines during the term of this Order are for interim effluent limitations applicable to storm water, or for final effluent limitations applicable to non-storm water discharges and final dry weather receiving water limitations.

There are only five State-adopted TMDLs for which the compliance deadlines for final water quality-based effluent limitations applicable to storm water occur during the term of this Order. These include: Santa Clara River Chloride TMDL, Santa Clara River Nitrogen TMDL, Los Angeles River Nitrogen TMDL, Marina del Rey Harbor Toxics TMDL, and LA Harbor Bacteria TMDL. In most of these five TMDLs, compliance with the final water quality-based effluent limitations assigned to MS4 discharges is expected to be achieved (e.g., Santa Clara River Chloride TMDL[44]), or a mechanism is in place to potentially allow additional time to come into compliance (e.g. reconsideration of the Marina del Rey Harbor Toxics TMDL implementation schedule).

[44] Data from land use monitoring conducted under the LA County MS4 Permit from 1994-99 indicate chloride concentrations ranging from 3.2-48 mg/L, while more recent data from the mass emissions station in the Santa Clara River (S29) indicate concentrations ranging from 116-126 mg/l in dry weather, and 25.1-96.3 mg/l in wet weather, suggesting that storm water has a diluting effect on chloride concentrations in the receiving water.

The Regional Water Board will evaluate the effectiveness of this action-based compliance determination approach in ensuring that interim effluent limitations for storm water are achieved during this permit term. If this approach is effective in achieving compliance with interim effluent limitations for storm water during this permit term, the Regional Water Board will consider during the next permit cycle whether it would be appropriate to allow a similar approach for demonstrating compliance with final water quality-based effluent limitations applicable to storm water. The Order includes a specific provision to support reopening the permit to include provisions or modifications to WQBELs in Part VI.E and Attachments L-R in this Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for storm water discharges based on the Regional Board's review of relevant research, including but not limited to data and information provided by Permittees, on storm water quality and control technologies

2. Compliance Schedules for Achieving TMDL Requirements

A Regional Water Board may include a compliance schedule in an NPDES permit when the state's water quality standards or regulations include a provision that authorizes such schedules in NPDES permits.[45] In California, TMDL implementation plans[46] are typically adopted through Basin Plan Amendments. The TMDL implementation plan, which is part of the Basin Plan Amendment, becomes a regulation upon approval by the State of California Office of Administrative Law (OAL).[47] Pursuant to California Water Code sections 13240 and 13242, TMDL implementation plans adopted by the Regional Water Board "shall include … a time schedule for the actions to be taken [for achieving water quality objectives]," which allows for compliance schedules in future permits. This Basin Plan Amendment becomes the applicable regulation that authorizes an MS4 permit to include a compliance schedule to achieve effluent limitations derived from wasteload allocations.

Where a TMDL implementation schedule has been established through a Basin Plan Amendment, it is incorporated into this Order as a compliance schedule to achieve interim and final WQBELs and corresponding receiving water limitations, in accordance with 40 CFR section 122.47. WQBELs must be consistent with the assumptions and requirements of any WLA, which includes applicable implementation schedules.[48] California Water Code sections 13263 and 13377 state that waste discharge requirements must implement the Basin Plan.[49] Therefore,

[45] See *In re Star-Kist Caribe, Inc.*, (Apr. 16, 1990) 3 E.A.D. 172, 175, modification denied, 4 E.A.D. 33, 34 (EAB 1992).

[46] TMDL implementation plans consist of those measures, along with a schedule for their implementation, that the Water Boards determine are necessary to correct an impairment. The NPDES implementation measures are thus required by sections 303(d) and 402(p)(3)(B)(iii) of the CWA. State law also requires the Water Boards to implement basin plan requirements. (See Wat. Code §§ 13263, 13377; *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.)

[47] See Gov. Code, § 11353, subd. (b). Every amendment to a Basin Plan, such as a TMDL and its implementation plan, requires approval by the State Water Board and OAL. When the TMDL and implementation plan is approved by OAL, it becomes a state regulation.

[48] See 40 C.F.R. § 122.44(d)(1)(vii)(B).

[49] Cal. Wat. Code, § 13263, subd. (a) ("requirements shall implement any relevant water quality control plans that have been adopted"); Cal. Wat. Code, § 13377 ("the state board or the regional boards shall . . . issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the [CWA], thereto,

compliance schedules for attaining WQBELs derived from WLAs must be based on a state-adopted TMDL implementation plan and cannot exceed the maximum time that the implementation plan allows.

In determining the compliance schedules, the Regional Water Board considered numerous factors to ensure that the schedules are as short as possible. Factors examined include, but are not limited to, the size and complexity of the watershed; the pollutants being addressed; the number of responsible agencies involved; time for Co-Permittees to negotiate memorandum of agreements; development of water quality management plans; identification of funding sources; determination of an implementation strategy based on the recommendations of water quality management plans and/or special studies; and time for the implementation strategies to yield measurable results. Compliance schedules may be altered based on the monitoring and reporting results as set forth in the individual TMDLs.

In many ways, the incorporation of interim and final WQBELs and associated compliance schedules is consistent with the iterative process of implementing BMPs that has been employed in the previous Los Angeles County MS4 Permits in that progress toward compliance with the final effluent limitations may occur over the course of many years. However, because the waterbodies in Los Angeles County are impaired due to MS4 discharges, it is necessary to establish more specific provisions in order to: (i) ensure measurable reductions in pollutant discharges from the MS4, 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 compliance schedules established in this Order are consistent with the implementation plans established in the individual TMDLs. The compliance dates for meeting the final WQBELs and receiving water limitations for each TMDL are listed below in Table F-7.

together with any more stringent effluent standards or limitations necessary to implement waste quality control plans, or for the protection of beneficial uses, or to prevent nuisance"); *see also, State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.

Table F-7. Compliance Schedule for final compliance dates.

TOTAL MAXIMUM DAILY LOADS (TMDL)	Final Compliance date has Passed	Final Compliance date within 5 years (2012-2017)	Final Compliance date between 5 and 10 years (2018-2022)	Final Compliance date after 10 years (2023)
Santa Clara River Nitrogen Compounds TMDL	March 23, 2004			
Upper Santa Clara River Chloride TMDL	April 6, 2010			
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)		March 6, 2016		
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL				
Dry Weather				March 21, 2023
Wet Weather				March 21, 2029
Santa Monica Bay Beaches Bacteria TMDL				
Summer Dry Weather	July 15, 2006			
Winter Dry Weather	July 15, 2009			
Wet Weather			July 15, 2021	
Santa Monica Bay Nearshore and Offshore Debris TMDL			March 20, 2020	
Santa Monica Bay TMDL for DDTs and PCBs (USEPA established)		March 26, 2012		
Malibu Creek and Lagoon Bacteria TMDL				
Summer Dry Weather	January 24, 2009			
Winter Dry Weather	January 24, 2012			
Wet Weather			July 15, 2021	
Malibu Creek Watershed Trash TMDL		July 7, 2017		
Malibu Creek Watershed Nutrients TMDL (USEPA established)	March 21, 2003			
Ballona Creek Trash TMDL		September 30, 2015		
Ballona Creek Estuary Toxic Pollutants TMDL			January 11, 2021	
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL				
Dry Weather		April 27, 2013		
Wet Weather			July 15, 2021	
Ballona Creek Metals TMDL				

TOTAL MAXIMUM DAILY LOADS (TMDL)	Final Compliance date has Passed	Final Compliance date within 5 years (2012-2017)	Final Compliance date between 5 and 10 years (2018-2022)	Final Compliance date after 10 years (2023)
Dry Weather		January 11, 2016		
Wet Weather			January 11, 2021	
Ballona Creek Wetlands TMDL for Sediment and Invasive Exotic Vegetation (USEPA established)		March 26, 2012		
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL				
Dry Weather	March 18, 2007			
Wet Weather			July 15, 2021	
Marina del Rey Harbor Toxic Pollutants TMDL		March 22, 2016	March 22, 2021*	
Los Angeles Harbor Bacteria TMDL	March 10, 2010			
Machado Lake Trash TMDL		March 6, 2016		
Machado Lake Nutrient TMDL			September 11, 2018	
Machado Lake Pesticides and PCBs TMDL			September 30, 2019	
Dominguez Channel and Greater LA and LB Harbor Waters Toxic Pollutants TMDL				March 23, 2032
Los Angeles River Watershed Trash TMDL		September 30, 2016		
Los Angeles River Nitrogen Compounds and Related Effects TMDL	March 23, 2004			
Los Angeles River and Tributaries Metals TMDL				
Dry Weather				January 11, 2024
Wet Weather				January 11, 2028
Los Angeles River Watershed Bacteria TMDL				
Dry Weather (Compliance dates range from 10 to 25 years)			March 23, 2022	March 23, 2037
Wet Weather				March 23, 2037
Legg Lake Trash TMDL		March 6, 2016		
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (USEPA established)		March 26, 2012		

TOTAL MAXIMUM DAILY LOADS (TMDL)	Final Compliance date has Passed	Final Compliance date within 5 years (2012-2017)	Final Compliance date between 5 and 10 years (2018-2022)	Final Compliance date after 10 years (2023)
Los Angeles Area Lakes TMDLs (USEPA established)		March 26, 2012		
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (USEPA established)	March 26, 2007			
Los Cerritos Channel Metals TMDL (USEPA established)	March 17, 2010			
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL			July 28, 2018	
Middle Santa Ana River Watershed Bacterial Indicator TMDLs				
Dry Weather		December 31, 2015		
Wet Weather				December 31, 2025

* If an Integrated Water Resources Approach is approved and implemented then Permittees have an extended compliance deadline.

3. State Adopted TMDLs with Past Final Compliance Deadlines

In accordance with federal regulations, this Order includes WQBELs necessary to achieve applicable wasteload allocations assigned to MS4 discharges. In some cases, the deadline specified in the TMDL implementation plan for achieving the final wasteload allocation has passed. (See Table F-8) This Order requires that Permittees comply immediately with WQBELs and/or receiving water limitations for which final compliance deadlines have passed.

Table F-8. State-Adopted TMDLs with Past Final Implementation Deadlines

TOTAL MAXIMUM DAILY LOADS (TMDL)	Final Compliance date has Passed
Santa Clara River Nitrogen Compounds TMDL	March 23, 2004
Upper Santa Clara River Chloride TMDL	April 6, 2010
Santa Monica Bay Beaches Bacteria TMDL *Summer Dry Weather only*	July 15, 2006
Santa Monica Bay Beaches Bacteria TMDL *Winter Dry Weather only*	July 15, 2009
Malibu Creek and Lagoon Bacteria TMDL *Summer Dry Weather only*	January 24, 2009
Malibu Creek and Lagoon Bacteria TMDL *Winter Dry Weather only*	January 24, 2012
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL *Dry Weather Year-round only*	March 18, 2007
Los Angeles Harbor Bacteria TMDL	March 10, 2010
Los Angeles River Nitrogen Compounds and Related Effects TMDL	March 23, 2004

Where a Permittee determines that its MS4 discharge may not meet the final WQBELs for the TMDLs in Table F-8 upon adoption of this Order, the Permittee may request a time schedule order (TSO) from the Regional Water Board. TSOs are issued pursuant to California Water Code section 13300, whenever a Water Board "finds that a discharge of waste is taking place or threatening to take place that violates or will violate [Regional Water Board] requirements." Permittees may individually request a TSO, or may jointly request a TSO with all Permittees subject to the WQBELs and/or receiving water limitations. Permittees must request a TSO to achieve WQBELs for the TMDLs in Table F-8 no later than 45 days after the date this Order is adopted, or no less than 90 days prior to the final compliance deadline if after adoption of the Order.

In the request, the Permittee(s) must include, at a minimum, the following:

a. Location specific data demonstrating the current quality of the MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;
b. A detailed description and chronology of structural controls and source control efforts, including location(s) of implementation, since the effective date of the TMDL, to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;
c. A list of discharge locations for which additional time is needed to achieve the water quality based effluent limitations and/or receiving water limitations;
d. Justification of the need for additional time to achieve the water quality-based effluent limitations and/or receiving water limitations for each location identified in Part VI.E.3.c, above;

e. A detailed time schedule of specific actions the Permittee will take in order to achieve the water quality-based effluent limitations and/or receiving water limitations at each location identified in Part VI.E.3.c, above;

f. A demonstration that the time schedule requested is as short as possible, consistent with California Water Code section 13385(j)(3)(C)(i), taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation(s); and

g. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and the date(s) for their achievement. The interim requirements shall include both of the following:

i. Effluent limitation(s) for the pollutant(s) of concern; and

ii. Actions and milestones leading to compliance with the effluent limitation(s).

The Regional Water Board does not intend to take enforcement action against a Permittee for violations of specific WQBELs and corresponding receiving water limitations for which the final compliance deadline has passed if a Permittee is fully complying with the requirements of a TSO to resolve exceedances of the WQBELs for the specific pollutant(s) in the MS4 discharge.

4. USEPA Established TMDLs

USEPA has established seven TMDLs that include wasteload allocations for MS4 discharges covered by this Order (See Table F-9). Five TMDLs were established since 2010, one in 2007, and one in 2003.

Table F-9. USEPA Established TMDLs with WLAs Assigned to MS4 Discharges

TOTAL MAXIMUM DAILY LOADS (TMDL)	Effective Date
Santa Monica Bay TMDL for DDTs and PCBs (USEPA established)	March 26, 2012
Ballona Creek Wetlands TMDL for Sediment and Invasive Exotic Vegetation (USEPA established)	March 26, 2012
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (USEPA established)	March 26, 2012
Los Angeles Area Lakes TMDLs (USEPA established)	March 26, 2012
Los Cerritos Channel Metals TMDL (USEPA established)	March 17, 2010
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (USEPA established)	March 26, 2007
Malibu Creek Watershed Nutrients TMDL (USEPA established)	March 21, 2003

In contrast to State-adopted TMDLs, USEPA established TMDLs do not contain an implementation plan or schedule. The Clean Water Act does not allow USEPA to either adopt implementation plans or establish compliance schedules for TMDLs that is establishes. Such decisions are generally left with the States. The Regional Water Board could either (1) adopt a separate implementation plan as a Basin Plan Amendment for each USEPA established TMDL, which would allow inclusion of compliance schedules in the permit where applicable, or (2) issue a Permittee a schedule leading to full compliance in a separate enforcement order (such as a Time Schedule Order or a Cease and Desist Order). To date, the Board has not adopted a

separate implementation plan or enforcement order for any of these TMDLs. As such, the final WLAs in the seven USEPA established TMDLs identified above become effective immediately upon establishment by USEPA and placement in a NPDES permit.

The Regional Water Board's decision as to how to express permit conditions for USEPA established TMDLs is based on an analysis of several specific facts and circumstances surrounding these TMDLs and their incorporation into this Order. First, since these TMDLs do not include implementation plans, none of these TMDLs have undergone a comprehensive evaluation of implementation strategies or an evaluation of the time required to fully implement control measures to achieve the final WLAs. Second, given the lack of an evaluation, the Regional Water Board is not able to adequately assess whether Permittees will be able to immediately comply with the WLAs at this time. Third, the majority of these TMDLs were established by USEPA recently (i.e., since 2010) and permittees have had limited time to plan for and implement control measures to achieve compliance with the WLAs. Lastly, while federal regulations do not allow USEPA to establish implementation plans and schedules for achieving these WLAs, USEPA has nevertheless included implementation recommendations regarding MS4 discharges as part of six of the seven of these TMDLs. The Regional Water Board needs time to adequately evaluate USEPA's recommendations. For the reasons above, the Regional Water Board has determined that numeric water quality based effluent limitations for these USEPA established TMDLs are infeasible at the present time. The Regional Water Board may at its discretion revisit this decision within the term of the Order or in a future permit, as more information is developed to support the inclusion of numeric water quality based effluent limitations.

In lieu of inclusion of numeric water quality based effluent limitations at this time, this Order requires Permittees subject to WLAs in USEPA established TMDLs to propose and implement best management practices (BMPs) that will be effective in achieving the numeric WLAs. Permittees will propose these BMPs to the Regional Water Board in a Watershed Management Program Plan, which is subject to Regional Water Board Executive Officer approval. As part of this Plan, Permittees are also required to propose a schedule for implementing the BMPs that is as short as possible. The Regional Water Board finds that, at this time, it is reasonable to include permit conditions that require Permittees to develop specific Watershed Management Program plans that include interim milestones and schedules for actions to achieve the WLAs. These plans will facilitate a comprehensive planning process, including coordination among co-permittees where necessary, on a watershed basis to identify the most effective watershed control measures and implementation strategies to achieve the WLAs.

At a minimum, the Watershed Management Program Plan must include the following data and information relevant to the USEPA established TMDL:

i. Available data demonstrating the current quality of the MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

ii. A detailed time schedule of specific actions the Permittee will take in order to achieve the WLA(s);

iii. A demonstration that the time schedule requested is as short as possible, taking into account the time since USEPA establishment of the TMDL, and technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the WLA(s);

a. For the Malibu Creek Nutrient TMDL established by USEPA in 2003, in no case shall the time schedule to achieve the final numeric WLAs exceed five years from the effective date of this Order; and

iv. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements, including numeric milestones, and the date(s) for their achievement.

Each Permittee subject to a WLA in a TMDL established by USEPA must submit a draft of a Watershed Management Program Plan to the Regional Water Board Executive Officer per the timelines outlined for submittal of a Watershed Management Program or EWMP.

Based on the nature and timing of the proposed watershed control measures, the Regional Water Board will consider appropriate actions on its part, which may include: (1) no action and continued reliance on permit conditions that require implementation of the approved watershed control measures throughout the permit term; (2) adopting an implementation plan and corresponding schedule through the Basin Plan Amendment process and then incorporating water quality based effluent limitations and a compliance schedule into this Order consistent with the State-adopted implementation plan; or (3) issuing a time schedule order to provide the necessary time to fully implement the watershed control measures to achieve the WLAs.

If a Permittee chooses not to submit a Watershed Management Program Plan, or the plan is determined to be inadequate by the Regional Water Board Executive Officer and necessary revisions are not made within 90 days of written notification to the Permittee that that plan is inadequate, the Permittee will be required to demonstrate compliance with the numeric WLAs immediately based on monitoring data collected under the MRP (Attachment E) for this Order.

The Regional Water Board does not intend to take enforcement action against a Permittee for violations of specific WLAs and corresponding receiving water limitations for USEPA established TMDLs if a Permittee has developed and is implementing an approved Watershed Management Program to achieve the WLAs in the USEPA TMDL and the associated receiving water limitations.

5. TMDL Revisions Incorporated after November 8, 2012

Part VI.A.7 of this Order contains reopener and modification provisions that allow for the permit to be modified, revoked, reissued, or terminated under certain

circumstances. Subpart a.iv. provides that a cause for taking such actions includes incorporating provisions as a result of TMDL reconsiderations.

a. Permit Modification Related to Revised Los Angeles River Watershed and Ballona Creek Watershed Trash TMDLs

On June 11, 2015, the Regional Water Board adopted Resolution No. R15-006, an amendment to the Water Quality Control Plan for the Los Angeles Region to revise the Los Angeles River Watershed Trash TMDL and the Ballona Creek Watershed Trash TMDL. The revised TMDLs were subsequently approved by the State Water Resources Control Board (State Water Board) by Resolution No. 2015-0068 on November 17, 2015; the Office of Administrative Law on May 4, 2016; and the U.S. Environmental Protection Agency (U.S. EPA) on June 30, 2016. The revised TMDLs became effective upon approval by U.S. EPA.

This Order has been modified consistent with the revisions to these TMDLs, as described below.

<u>Alternative Methods for Demonstrating Compliance with Final Effluent Limitations</u>

Provisions are included in Part VI.E.5.b to provide Permittees alternatives for demonstrating compliance with the final effluent limitations prescribed to achieve the Los Angeles River Watershed Trash TMDL and the Ballona Creek Watershed Trash TMDL. The Staff Report for Resolution No. R15-006 describes the practical considerations that these alternatives address. For example, regarding responsible agencies that have chosen to use full capture systems (FCS) to achieve compliance, the Staff Report notes that:

> Exclusive use of full capture systems provides advantages and many responsible agencies have chosen to use full capture systems exclusively to achieve their WLAs. However, some of these responsible agencies have found that there are some catch basins for which retrofitting with a full capture system, or even a partial capture device, is technically infeasible due to the configuration of the catch basin (i.e., usually too shallow to accommodate a full capture system). In these cases, installation of a full capture system would create a flood risk or would require significant expense to redesign the catch basin and the connected storm drain system that may be out of proportion with the reduction in trash that would be achieved.

To address these practical considerations, in drainage areas where the vast majority of catch basins are retrofitted with Full Capture Systems (FCS); the FCS are properly sized, operated, and maintained; and retrofit of the remaining catch basins is technically infeasible, Permittees may request that the Executive Officer make a determination that the agency is in full compliance with its final WLA if three criteria are met as specified in Part VI.E.5.b.ii.(1).

In these instances, Part VI.E.5.b.ii.(1) of the Order also requires Permittees to re-evaluate the effectiveness of institutional controls and partial capture devices and

report the findings to the Regional Water Board for confirmation or change to the determination, if significant land use changes occur in the affected subwatershed (based on permits for new and significant re-development) or if there is a significant change in the suite of implemented partial capture devices and/or institutional controls (e.g., reduced frequency of implementation, reduced spatial coverage of implementation, change in technology employed). The Order requires such re-evaluation to occur within one year of the identification of the significant changes.

The TMDL revisions addressed similar practical considerations for Permittees employing institutional controls or a combination of full capture systems, partial capture devices, and institutional controls. According to the TMDL revisions, Permittees employing these strategies shall be deemed in compliance with the final WLAs when the reduction of trash from the jurisdiction's baseline load is between 99% and 100% as calculated using a mass balance approach, and the FCS and partial capture devices are properly sized, operated, and maintained.

Alternatively, Permittees may request that the Executive Officer make a determination that a 97% to 98% reduction of the baseline load as calculated using a mass balance approach, constitutes full compliance with the final WLA if the criteria set forth in Part VI.E.5.b.ii.(2) are met.

Finally, Permittees may demonstrate compliance with interim and final WLAs through a scientifically based alternative compliance approach as described in Part VI.E.5.b.ii.(3).

Permittees employing alternative compliance options for FCS, partial capture devices, and the application of institutional controls, or employing a scientifically based alternative compliance approach shall submit a revised Watershed Management Program (WMP) or Enhanced Watershed Management Program (EWMP) or separate TMDL implementation plan if the Permittee does not have an approved WMP or EWMP, for Executive Officer approval prior to use of these alternative compliance options.

<u>Provisions Related to Permittee Responsibilities Relative to the Los Angeles River Watershed and Ballona Creek Watershed Trash TMDLs</u>

Updates to the list of Permittees subject to the Los Angeles River Watershed Trash TMDL and Ballona Creek Watershed Trash TMDL have been made to Attachment K, Tables K-3 and K-5, to ensure that compliance with the interim and final water quality-based effluent limitations and related permit provisions is appropriately determined.

First, consistent with the revised Los Angeles River Watershed Trash TMDL, the City of Santa Clarita was removed as a responsible Permittee for the TMDL and is therefore no longer subject to the effluent limitations for trash assigned to MS4 discharges for the Los Angeles River watershed. The City of Santa Clarita was originally assigned effluent limitations for discharges of trash from its MS4

because a small area within the city's jurisdiction is in the Los Angeles River Watershed. However, as noted in the Staff Report to Resolution No. R15-006, the Los Angeles Water Board has established that the area of the city within the Los Angeles River watershed is undeveloped open space and contains no storm drains or other MS4 infrastructure. The City of Santa Clarita has been removed from Table K-5 in Attachment K and Part A.3 of Attachment O.

Second, the Los Angeles County Flood Control District (LACFCD) has been added as a responsible Permittee subject to the Los Angeles River Watershed Trash TMDL and the Ballona Creek Watershed Trash TMDL. The LACFCD is not assigned a waste load allocation, since waste load allocations are based on jurisdictional area. However, given the LACFCD's separate authority over the MS4, and the fact that some of the key compliance strategies for trash TMDLs rely on installation within the LACFCD's infrastructure, permit provisions affirming and outlining the LACFCD's responsibilities are necessary. Provisions have been added to Part VI.E.5.b.v. pertaining to the LACFCD's responsibilities with respect to the effluent limitations for trash and how the LACFCD may be held responsible with a Permittee for non-compliance with the trash effluent limitations.

Provisions for Plastic Pellet Monitoring for Permittees Subject to the Los Angeles River Watershed Trash TMDL

Permittees subject to the Ballona Creek Watershed Trash TMDL are already addressing plastic pellets as part of the requirements related to the Santa Monica Bay Debris TMDL to which they are also subject. The addition of similar provisions for Permittees subject to the Los Angeles River Watershed Trash TMDL ensures consistency among trash TMDLs.

Specifically, Attachment E, Part XIX.D requires that Permittees that are subject to the Los Angeles River Watershed Trash TMDL and which do not meet the exemption criteria (as set forth in Attachment E, Part XIX.D) prepare a Plastic Pellet Monitoring and Reporting Plan (PMRP) to (i) monitor the amount of plastic pellets being discharged from the MS4; (ii) establish triggers for increased industrial facility inspections and enforcement of Storm Water Pollution Prevention Plan (SWPPP) requirements for industrial facilities identified as responsible for the plastic pellet WLA herein; and/or (iii) address possible plastic pellet spills. Permittees subject to the Los Angeles River Trash TMDL must submit a PMRP to the Regional Water Board either (i) by December 28, 2017 or (ii) as part of its adaptive management process if the Permittee is participating in an approved WMP or EWMP.

Provisions for Receiving Water Monitoring for Trash

Incorporation of receiving water monitoring requirements allows for an objective evaluation of the effectiveness, and continued effectiveness, of the implementation actions to control trash discharges from the MS4 throughout the two watersheds.

Attachment E, Parts XIX.B and XIX.D require that Permittees propose for Executive Officer approval, and implement, a Trash Monitoring and Reporting Plan (TMRP). To meet this requirement, Permittees must submit a revised Integrated Monitoring Program (IMP) or Coordinated Integrated Monitoring Program (CIMP) incorporating the TMRP requirements or a stand-alone TMRP (if the Permittee does not have an approved IMP or CIMP) for Executive Officer approval six months after the effective date of the TMDL (i.e., December 30, 2016).

E. Other Provisions

1. Legal Authority

Adequate legal authority is required to implement and enforce most parts of the Minimum Control Measures and all equivalent actions if implemented with a Watershed Management Program (See 40 CFR section 122.26(d)(2)(i)(A)-(F) and 40 CFR section 122.26(d)(2)(iv). Without adequate legal authority the MS4 would be unable to perform many vital functions such as performing inspections, requiring remedies, and requiring installation of control measures. In addition, the Permittee would not be able to penalize and/or attain remediation costs from violators.

2. Fiscal Resources

The annual fiscal analysis will show the allocated resources, expenditures, and staff resources necessary to comply with the permit, and implement and enforce the Permittee's Watershed Management Program (See 40 CFR section 122.26(d)(2)(vi). The annual analysis is necessary to show that the Permittee has adequate resources to meet all Permit Requirements. The analysis can also show year-to-year changes in funding for the storm water program. A summary of the annual analysis must be reported in the annual report. This report will help the Permitting Authority understand the resources that are dedicated to compliance with this permit, and to implementation and enforcement of the Watershed Management Program, and track how this changes over time. Furthermore, the inclusion of the requirement to perform a fiscal analysis annually is similar to requirements included in Order No. 01-182 permit as well as the current Ventura County MS4 permit.

3. Responsibilities of the Permittees

Because of the complexity and networking of the storm drain system and drainage facilities within and tributary to the LA MS4, the Regional Water Board adopted an area-wide approach in permitting storm water and urban runoff discharges. Order No. 01-182 was structured as a single permit whereby individual Permittees were assigned uniform requirements and additional requirements were assigned to the Principal Permittee (Los Angeles County Flood Control District). This permit does not designate a principal Permittee and as such requires each Permittee to implement provisions as a separate entity. Furthermore it does not hold a Permittee responsible for implementation of provisions applicable to other Permittees.

Part VI.A.4.a requires inter and intra-agency coordination to facilitate implementation of this Order. This requirement is based on 40 CFR section 122.26(d)(2)(iv) which requires "a comprehensive planning process which public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable […]."

4. Reopener and Modification Provisions

These provisions are based on 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64, and are also consistent with Order No. 01-182. The Regional Water Board may reopen the permit to modify permit conditions and requirements, as well as revoke, reissue, or terminate in accordance with federal regulations. Causes for such actions include, but are not limited to, endangerment to human health or the environment; acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption; to incorporate provisions as a result of new federal or state laws, regulations, plans, or policies (including TMDLs and other Basin Plan amendments); modification in toxicity requirements; violation of any term or condition in this Order; and/or minor modifications to correct typographical errors or require more frequent monitoring or reporting by a Permittee. The Order also includes additional causes including: within 18 months of the effective date of a revised TMDL or as soon as practicable thereafter, where the revisions warrant a change to the provisions of this Order, the Regional Water Board may modify this Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation; in consideration of any State Water Board action regarding the precedential language of State Water Board Order WQ 99-05; and to include provisions or modifications to WQBELs in Part VI.E and Attachments L-R in this Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for storm water discharges based on the Regional Board's evaluation of whether Watershed Management Programs in Part VI.C. of the Order have resulted in attainment of interim WQBELs for storm water and review of relevant research, including but not limited to data and information provided by Permittees and other stakeholders, on storm water quality and the efficacy and reliability of control technologies.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 308(a) of the federal Clean Water Act, and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of Title 40 of the Code of Federal Regulations requires that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements. (40 C.F.R. §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 further authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP (Attachment E of this Order) establishes monitoring, reporting, and recordkeeping requirements that implement the federal and state laws and/or regulations. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Order.

A. Integrated Monitoring Plans

1. Integrated Monitoring Program and Coordinated Integrated Monitoring Program

As discussed in Part VI.B of this Fact Sheet, the purpose of the Watershed Management Programs is to provide a framework for Permittees to implement the requirements of this Order in an integrated and collaborative fashion and to address water quality priorities on a watershed scale. Additionally, the Watershed Management Programs are to be designed to ensure that discharges from the Los Angeles County MS4: (i) achieve applicable water quality based effluent limitations that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-storm water discharges from the MS4, are not a source of pollutants to receiving waters. This Order allows Permittees in coordination with an approved Watershed Management Program per Part VI.C, to implement a customized monitoring program with the primary objective of allowing for the customization of the outfall monitoring programs and that achieves the five Primary Objectives set forth in Part II.A. of Attachment E and includes the elements set forth in Part II.E. of Attachment E. If pursuing a customized monitoring program, the Permittees must provide sufficient justification for each element of the program that differs from the monitoring program as set forth in Attachment E of the Order. This Order provides options for each Permittee to individually develop and implement an Integrated Monitoring Program (IMP), or alternatively, Permittees may cooperate with other Permittees to develop a Coordinated Integrated Monitoring Program (CIMP). Both the IMP and CIMP are intended to facilitate the effective and collaborative monitoring of receiving waters, storm water, and non-storm water discharges and to report the results of monitoring to the Regional Water Board.

The key requirements for Watershed Management Programs are included in Part VI.C of this Order. The IMP and CIMP requirements within the MRP largely summarize the requirements and reinforce that, at a minimum, the IMP or CIMP must address all TMDL and Non-TMDL monitoring requirements of this Order, including receiving water monitoring, storm water outfall based monitoring, non-storm water outfall based monitoring, and regional water monitoring studies.

Both the IMP and CIMP approach provides opportunities to increase the cost efficiency and effectiveness of the Permittees monitoring program as monitoring can be designed, prioritized and implemented on a watershed basis. The IMP/CIMP approach allows the Permittees to prioritize monitoring resources between watersheds based on TMDL Implementation and Monitoring Plan schedules, coordinate outfall based monitoring programs and implement regional studies. Cost savings can also occur when Permittees coordinate their monitoring programs with other Permittees.

B. TMDL Monitoring Plans

Monitoring requirements established in TMDL Monitoring Plans, presented in Table E-1. Approved TMDL Monitoring Plans by Watershed Management Area, were approved by

the Executive Officer of the Regional Water Board prior to the effective date of this Order are incorporated into this Order by reference.

C. Receiving Water Monitoring

The purposes of receiving water monitoring are to measure the effects of storm water and non-storm water discharges from the MS4 to the receiving water, to identify water quality exceedances, to evaluate compliance with TMDL WLAs and receiving water limitations, and to evaluate whether water quality is improving, staying the same or declining.

1. Receiving Water Monitoring Stations

Receiving water monitoring is linked to outfall based monitoring in order to gauge the effects of MS4 discharges on receiving water. Receiving water monitoring stations must be downstream of outfall monitoring stations.

The IMP, CIMP or stand-alone receiving monitoring plan (in the case of jurisdictional monitoring) must include a map identifying proposed wet weather and dry weather monitoring stations. Receiving water monitoring stations may include historical mass emission stations, TMDL compliance monitoring stations, and other selected stations. The Permittee must describe how monitoring at the proposed locations will accurately characterize the effects of the discharges from the MS4 on the receiving water, and meet other stated objectives. The plan must also state whether historical mass emission stations will continue to be monitored, and if not, provide sufficient justification for discontinuation of monitoring at the historical mass emissions stations, and describe the value of past receiving water monitoring data in performing trends analysis to assess whether water quality if improving, staying the same or declining.

2. Minimum Monitoring Requirements

Receiving water is to be monitored during both dry and wet weather conditions to assess the impact of non-storm water and storm water discharges. Wet weather and dry weather are defined in each watershed, consistent with the definitions in TMDLs approved within the watershed. Monitoring is to commence as soon as possible after linked outfall monitoring in order to be reflective of potential impacts from MS4 discharges. At a minimum, the parameters to be monitored and the monitoring frequency are the same as those required for the linked outfalls.

D. Outfall Based Monitoring

The MRP requires Permittees to conduct outfall monitoring, linked with receiving water monitoring, bioassessment monitoring and TMDL special studies. The MRP allows the Permittees flexibility to integrate the minimum requirements of this Order, applicable TMDL monitoring plans and other regional monitoring obligations into a single IMP or within a CIMP.

Per Part VII.A of the MRP, the Permittee must establish a map or geographic database of storm drains, channels and outfalls to aid in the development of the outfall monitoring plan and to assist the Regional Water Board in reviewing the logic and adequacy of the number and location of outfalls selected for monitoring. The map/database must include the storm drain network, receiving waters, other surface waters that may impact hydrology, including dams and dry weather diversions. In addition, the map must identify the location and identifying code for each major outfall within the Permittee's jurisdiction. The map must include overlays including jurisdictional boundaries, subwatershed boundaries and storm drain outfall catchment boundaries. The map must distinguish between storm drain catchment drainage areas and subwatershed drainage areas, as these may differ. In addition, the map must include overlays displaying land use, impervious area and effective impervious area (if available). To the extent known, outfalls that convey significant non-stormwater discharges (see Part I.F to this Fact Sheet), must also be identified on the map, and the map must be updated annually to include the total list of known outfalls conveying significant flow of non-storm water discharge.

E. Storm Water Outfall Based Monitoring

The purpose of the outfall monitoring plan is to characterize the storm water discharges from each Permittee's drainages within each subwatershed. Outfall based monitoring is also conducted to assess compliance with WQBELs. Unless Permittees have proposed and received approval for a customized monitoring program as previously discussed, each Permittee must identify at least one outfall within each subwatershed (HUC 12) within its jurisdictional boundary to monitor storm water discharges. The selected outfall(s) should receive drainage from an area representative of the land uses within the portion of its jurisdiction that drains to the subwatershed, and not be unduly influenced by storm water discharges from upstream jurisdictions or other NPDES discharges. It is assumed that storm water runoff quality will be similar for similar land use areas, and therefore runoff from a representative area will provide sufficient characterization of the entire drainage area. Factors that may impact storm water runoff quality include the land use (industrial, residential, commercial) and the control measures that are applied. Factors that may impact storm water runoff volume include percent effective impervious cover (connected to the storm drain system), vegetation type, soil compaction and soil permeability.

Storm water outfall monitoring is linked to receiving water monitoring (see above). Monitoring must be conducted at least three times per year during qualifying rain events, including the first rain event of the year and conducted approximately concurrently (within 6 hours) before the commencement of the downstream receiving water monitoring.

Monitoring is conducted for pollutants of concern including all pollutants with assigned WQBELs. Parameters to be monitored during wet weather include: flow, pollutants subject to a TMDL applicable to the receiving water, pollutants listed on the Clean Water Act Section 303(d) list for the receiving water or a downstream receiving water. Flow is necessary to calculate pollutant loading. Sampling requirements, including

methods for collecting flow-weighted composite samples, are consistent with the Ventura County Monitoring program (Order No. C17388).

For water bodies listed on the Clean Water Act section 303(d) list as being impaired due to sedimentation, siltation or turbidity, total suspended solids (TSS) and suspended sediment concentration (SSC) must be analyzed. TSS is the parameter most often required in NPDES permits to measure suspended solids. However, studies conducted by the United States Geological Survey (USGS) have found that the TSS procedure may not capture the full range of sediment particle sizes contributing to sediment impairments . Therefore both TSS and SSC are required in this Order.

For freshwater, the following field measurements are also required: hardness, pH, dissolved oxygen, temperature, and specific conductivity. Hardness, pH and temperature are parameters impacting the effect of pollutants in freshwater (i.e., metals water quality standards are dependent on hardness, ammonia toxicity is dependent on pH and temperature. Temperature and dissolved oxygen are interdependent and fundamental to supporting aquatic life beneficial uses. Specific conductivity is a parameter important to assessing potential threats to MUN and freshwater aquatic life beneficial uses.

Aquatic toxicity monitoring is required in the receiving water twice per year during wet weather conditions. Aquatic toxicity is a direct measure of toxicity and integrates the effects of multiple synergistic effects of known and unidentified pollutants. When samples are found to be toxic, a Toxicity Identification Evaluation must be performed in an attempt to identify the pollutants causing toxicity. Aquatic toxicity is required to be monitored in the receiving water twice per year during wet-weather rather than three times per year due to the expense of the procedure.

The monitoring data is to be accompanied by rainfall data and hydrographs, and a narrative description of the storm event, consistent with the requirements in the Ventura County MS4 (Monitoring Program No. CI 7388). This information will allow the Permittee and the Regional Water Board staff to evaluate the effects of differing storm events in terms of storm water runoff volume and duration and in-stream effects.

F. Non-Stormwater Outfall-Based Screening and Monitoring Program

The non-storm water outfall screening and monitoring program is intended to build off of Permittees prior efforts under Order No. 01-182 to screen all outfalls within their MS4 to identify illicit connections and discharges. Under this Order, the Permittees will use the following step-wise method to assess non-storm water discharges.

- Develop criteria or other means to ensure that all outfalls with significant non-storm water discharges are identified and assessed during the term of this Order.
- For outfalls determined to have significant non-storm water flow, determine whether flows are the result of illicit connections/illicit discharges (IC/IDs), authorized or conditionally exempt non-storm water flows, or from unknown sources.
- Refer information related to identified IC/IDs to the IC/ID Elimination Program (Part VI.D.10 of this Order) for appropriate action.

- Based on existing screening or monitoring data or other institutional knowledge, assess the impact of non-storm water discharges (other than identified IC/IDs) on the receiving water.
- Prioritize monitoring of outfalls considering the potential threat to the receiving water and applicable TMDL compliance schedules.
- Conduct monitoring or assess existing monitoring data to determine the impact of non-storm water discharges on the receiving water.
- Conduct monitoring or other investigations to identify the source of pollutants in non-storm water discharges.
- Use results of the screening process to evaluate the conditionally exempt non-storm water discharges identified in Part III.A.2 and III.A.3 in this Order and take appropriate actions pursuant to Part III.A.4.d of this Order for those discharges that have been found to be a source of pollutants. Any future reclassification shall occur per the conditions in Parts III.A.2 or III.A.6 of this Order.

The screening and monitoring program is intended to maximize the use of Permittee resources by integrating the screening and monitoring process into existing or planned IMP/CIMP efforts. It is also intended to rely on the illicit discharge source investigation and elimination requirements in Part VI.D.10 of this Order and the MS4 Mapping requirements in Part VII.A of the MRP.

The screening and source identification component of the program is used to identify the source(s) and point(s) of origin of the non-storm water discharge. The Permittee is required to develop a source identification schedule based on the prioritized list of outfalls exhibiting significant non-storm water discharges. The schedule shall ensure that source investigations are to be conducted for no less than 25% of the outfalls in the inventory within three years of the effective date of this Order and 100% of the outfalls within 5 years of the effective date of this Order. This will ensure that all outfalls with significant non-storm water discharges will be assessed within the term of this Order.

Additional requirements have been included to require the Permittee to develop a map and database of all outfalls with known non-storm water discharges. The database and map are to be updated throughout the term of this Order. If the source of the non-storm water discharge is determined to be an NPDES permitted discharge, a discharge subject to a Record of Decision approved by USEPA pursuant to section 121 of CERCLA, a conditionally exempt essential non-storm water discharge, or entirely comprised of natural flows as defined at Part III.A.d of this Order, the Permittee need only document the source and report to the Regional Water Board within 30 days of determination and in the next annual report. Likewise, if the discharge is determined to originate in an upstream jurisdiction, the Permittee is to provide notice and all characterization data to the upstream jurisdiction within 30 days of determination.

However, if the source is either unknown or a conditionally exempt non-essential non-storm water discharge, each Permittee shall conduct monitoring required in Part IX.F of the MRP. Special provisions are also provided if the discharge is found to result from multiple sources.

The parameters to be monitored include flow rate, pollutants assigned a WQBEL or receiving water limitation to implement TMDL provisions for the respective receiving water, as identified in Attachments L - R of this Order, non-storm water action levels as identified in Attachment G of this Order, and CWA Section 303(d) listed pollutants for the respective receiving water. Aquatic Toxicity required only when receiving water monitoring indicates aquatic toxicity and the TIE conducted in the receiving water is inconclusive.

In an effort to provide flexibility and allow the Permittee to prioritize its monitoring efforts, the outfall based monitoring can be integrated within an IMP/CIMP. For outfalls subject to a dry weather TMDL, monitoring frequency is established per the approved TMDL Monitoring Program.

Unless specified in an approved IMP/CIMP, outfalls not subject to dry weather TMDLs must be monitored at least four times during the first year of monitoring. The four times per year monitoring is reflective of the potential for high variability in the quality and volume of non-storm water discharges and duration as opposed to storm water discharges.

Collected monitoring data is to be compared against applicable receiving water limitations, water quality based effluent limitations, non-storm water action levels, or exhibited Aquatic Toxicity as defined in the Parts XII.F and G of the MRP and all exceedances are to be reported in the Integrated Monitoring Compliance Report required in Part XIX.A.5 of the MRP.

After the first year, monitoring for specific pollutants may be reduced to once per year, if the values reported in the first year do not exceed applicable non-storm water WQBELs, non-storm water action levels, or a water quality standard applicable to the receiving water.

After one year of monitoring, the Permittee may submit a written request to the Executive Officer of the Regional Water Board requesting to eliminate monitoring for specific pollutants based on an analysis demonstrating that there is no reasonable potential for the pollutant to exist in the discharge at a concentration exceeding applicable water quality standards.

1. Dry Weather Screening Monitoring

a. Background

Clean Water Act section 402(p) regulates discharges from municipal separate storm sewer systems (MS4s). Clean Water Act section 402(p)(3)(B)(ii) requires the Permittees to effectively prohibit non-storm water from entering the MS4.

Non-exempted, non-storm water discharges are to be effectively prohibited from entering the MS4 or become subject to another NPDES permit (55 Fed.Reg. 47990, 47995 (Nov.16, 1990)). Conveyances which continue to accept non-

exempt, non-storm water discharges do not meet the definition of MS4 and are not subject to Clean Water Act section 402(p)(3)(B) unless the discharges are issued separate NPDES permits. Instead, conveyances that continue to accept non-exempt, non-storm water discharges that do not have a separate NPDES permit are subject to sections 301 and 402 of the CWA (55 Fed.Reg. 47990, 48037 (Nov. 16, 1990)).

In part, to implement these statutory provisions, Order No. 01-182 included non-storm water discharge prohibitions. Several categories of non-storm water discharges are specifically identified as authorized or conditionally exempt non-storm water discharges, including:

i. Discharges covered under an NPDES permit

ii. Discharges authorized by USEPA under CERCLA

iii. Discharges resulting from natural flows

iv. Discharges from emergency fire fighting activity

v. Some Categories of Discharges incidental to urban activities

Further, as another mechanism to effectively prohibit non-storm water discharges into the MS4, Order No. 01-182 also requires the Los Angeles County MS4 Co-Permittees to implement an illicit connections and illicit discharges elimination program as part of their storm water management program pursuant to 40 CFR section 122.26(d)(2)(iv)(B).

Finally, Monitoring and Reporting Program CI 6948, a part of Order No. 01-182, required dry weather monitoring at the Mass Emissions Stations (MES) to estimate pollutant contributions and determine if the MS4 is contributing to exceedances of applicable water quality standards during dry weather.

b. Evaluation of Dry Weather Data

40 CFR section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in the Basin Plan and other state plans and policies, or any applicable water quality criteria contained in the California Toxics Rule (CTR) and National Toxics Rule (NTR).

In an effort to evaluate the Discharger's program to effectively prohibit non-storm water discharges into the MS4, as well as to determine whether MS4 discharges are potentially contributing to exceedances of water quality standards, the Reasonable Potential Analysis (RPA) process was used as a screening tool. In doing so, dry weather monitoring data submitted by the Discharger was evaluated to identify where non-storm water discharges may impact beneficial

uses and where additional monitoring and/or investigations of non-storm water discharges should be focused.

Order No. 01-182 and Monitoring and Reporting Program No. 6948 required the Discharger to implement core monitoring at seven mass emission stations:

- Ballona Creek
- Malibu Creek
- Los Angeles River
- San Gabriel River (representing the upper portion of the San Gabriel River Watershed Management Area)
- Coyote Creek (representing the lower portion of the San Gabriel River Watershed Management Area)
- Dominguez Channel
- Santa Clara River

In addition to wet weather monitoring requirements at each of the mass emission stations, a minimum of two dry weather samples were required each year. Monitoring was required for conventional pollutants (BOD, TSS, pH, fecal coliform, oil and grease), priority pollutants, and a variety of other nonconventional pollutants (e.g., nutrients, dissolved oxygen, salinity/conductivity).

Dry weather monitoring data were compiled from Annual Stormwater Monitoring Reports submitted by the Los Angeles County Department of Public Works for the period from 2005 to 2011 to reflect the most recent data. The Annual Stormwater Monitoring Reports include the results for dry weather samples that were collected from 2005 to 2011 on 15 different dates.

For each monitored parameter, the most stringent applicable water quality objective/criterion was identified from the Basin Plan and the CTR at 40 CFR section 131.38. The following assumptions were made when conducting the analysis:

- The mass emissions stations represented only freshwater segments. Accordingly, CTR criteria for the protection of freshwater aquatic life were selected for comparison to monitoring results.
- For hardness-dependent metals, criteria were derived by using the lowest reported dry-weather hardness value for each mass emission station for the period of 2005 to 2011.
- For screening purposes the criteria associated with the most protective beneficial use for any segment within the watershed was selected for comparison to monitoring results.
- Basin Plan surface water quality objectives for minerals (i.e., total dissolved solids, sulfate, and chloride) apply to specific stream reaches within each watershed and are provided in Chapter 3 of the Basin Plan. Where no specific objectives are identified, footnote f to Table 3-8 provides guidelines

for protection of various beneficial uses. When guidelines were presented as a range, the most protective (low end of range) value was selected and applied according to beneficial uses in the watershed.

- With the exception of bacteria, the water quality objectives used for the analysis are the most current in effect. Since adoption of Order No. 01-182 in 2001, some Basin Plan objectives and CTR criteria have been amended. As a result, the pollutants monitored under the MRP for Order No. 01-182 may not necessarily reflect current objectives.
- *E coli* bacteria was not required as part of the MRP to Order No. 01-182, thus screening for bacteria was based solely on fecal coliform. Monitoring results for fecal coliform were compared to the Basin Plan fecal coliform objective in effect during the monitoring period. The Basin Plan objective for bacteria was amended in December 2011 to omit fecal coliform as a fresh water objective. The existing numeric bacteria objective for freshwater is limited to *E. coli*. The Basin Plan bacteria objectives are expressed as a single sample maximum and a geometric mean. In this screening, limited data precluded calculation of geometric means, therefore, the geometric mean objective was treated as a "not-to-exceed" criterion for screening purposes. The geometric mean objective for fecal coliform is 200/100 ml (the Basin Plan objective to protect primary contact recreation beneficial use (REC-1) uses in freshwaters).
- Within a given watershed, where the Basin Plan designates a "Potential" beneficial use of MUN, drinking water maximum contaminant levels (MCLs) were not applied as the most stringent objectives. Within a given watershed, where the Basin Plan designates "Potential" or "Intermittent" for beneficial uses other than MUN, the appropriate protective objectives were used for screening. This is consistent with Basin Plan requirements and existing permitting procedures.

The maximum reported pollutant concentration was compared to the most stringent applicable water quality objective to determine if there was potential for receiving water concentrations to exceed water quality objectives.

Table F-10 summarizes the results of the RPA analysis based on evaluation of the 15 sets of data for the period of 2005 to 2011 for each of the mass emission stations. Generally, all priority pollutant organic parameters were reported as below detection levels at practical quantitation levels (PQLs) consistent with the minimum levels (MLs) listed in the SIP. The most prevalent pollutants of concern among the mass emission stations include fecal coliform bacteria, cyanide, mercury, chloride, sulfate, total dissolved solids, copper, and selenium. Reported fecal coliform bacteria, cyanide, copper, and selenium concentrations appear to consistently exceed objectives/criteria in all watersheds at relatively high levels. For watersheds where objectives apply for sulfate and total dissolved solids, the receiving water concentrations consistently exceeded the objectives. The incidences where exceedances are indicated for mercury are largely due to analytical detection levels that were higher than the applicable criterion.

Table F-10. Summary of LA County Watersheds and Frequency of Receiving Water Exceeding Criteria - 2005 to 2011- Dry Season Data Analysis[1]

Parameter	Santa Clara River	Los Angeles River	Dominguez Channel	Ballona Creek	Malibu Creek	San Gabriel River	
						Upper Portion	Lower Portion
pH	0/15	7/15	5/15	3/15	0/15	1/14	2/15
Total Coliform	No FW Objective	No FW Objective)	No FW Objective	No FW Objective	No FW Objective	No FW Objective	No FW Objective
Fecal Coliform	4/15	4/15	10/15	13/15	6/15	11/14	13/15
Enterococcus	No FW Objective	No FW Objective	No FW Objective	No FW Objective	No FW Objective	No FW Objective	No FW Objective
Chloride	15/15	15/15	No Objective	0/15	0/15	14/14	15/15
Dissolved Oxygen	1/15	0/15	0/15	0/15	0/15	√1/14	0/15
Nitrate-N	0/15	0/15	No Objective	No Objective	0/15	7/14	No Objective
Nitrite-N	0/15	3/15	No Objective	No Objective	0/15	0/15	No Objective
Methylene Blue Active Substances	4/15	0/15	No Objective	No Objective	0/15	0/14	No Objective
Sulfate	15/15	15/15	No Objective	No Objective	15/15	14/14	15/15
Total Dissolved Solids	15/15	15/15	No Objective	No Objective	13/15	14/14	15/15
Turbidity[2]	0/15	2/15	No Objective	No Objective	0/15	0/15	0/15
Cyanide	11/15	14/15	4/15	15/15	3/15	14/14	15/15
Total Aluminum	1/15	2/15	No Objective	No Objective	0/15	1/14	No Objective
Dissolved Copper	0/15	0/15	5/15	0/15	0/15	13/14	0/15
Total Copper	1/15	6/15	11/15	3/15	0/15	13/14	2/15
Dissolved Lead	0/15	0/15	0/15	0/15	0/15	1/14	0/15
Total Lead	0/15	0/15	1/15	1/15	0/15	13/14	0/15
Total Mercury	1515	14/15	14/15	15/15	15/15	14/14	15/15
Dissolved Mercury	15/15	15/15	15/15	15/15	15/15	14/14	14/14
Total Nickel	0/15	0/15	0/15	0/15	0/15	1/14	0/15
Dissolved Selenium	2/15	2/15	1/15	2/15	6/15	1/15	10/11
Total Selenium	2/15	2/15	1/15	2/15	6/15	1/15	10/11
Dissolved Zinc	0/15	0/15	0/15	0/15	0/15	7/10	0/15
Total Zinc	0/15	0/15	0/1)	0/15	0/15	10/10	0/15

1. Frequency of exceedance is denoted as number of exceedances/number of dry weather samples evaluated. For example, "2/15" indicates 2 of the 15 samples had analytical results that exceeded the water quality objective for a given parameter.

2. The Basin Plan objective for turbidity for the protection of MUN is the secondary MCL of 5 NTU. The Basin Plan contains additional turbidity objectives expressed as incremental changes over natural conditions. Since inadequate data were available to assess criteria expressed as incremental changes, only the MCL was considered in the analysis.

c. Requirements for Controlling Non-Storm Water Discharges

The USEPA's approach for non-storm water discharges from MS4s is to regulate these discharges under the existing CWA section 402 NPDES framework for discharges to surface waters. The NPDES program (40 CFR section 122.44(d)) utilizes discharge prohibitions and effluent limitations as regulatory mechanisms to regulate non-storm water discharges, including the use of technology- and water quality-based effluent limitations. Non-numerical controls, such as BMPs for non-storm water discharges may only be authorized where numerical effluent limitations are infeasible.

As described in Table F-10 above, there were a number of pollutants for which it was determined that receiving water concentrations at the mass emission

stations indicate possible exceedances of water quality standards within the watershed. However, for waterbody-pollutant combinations not subject to a TMDL, there is uncertainty regarding whether exceedances occurred within specific segments where standards apply; the extent to which non-storm water discharges from the MS4 have caused or contributed to any exceedances; and whether the exceedances are attributable to any one or more specific MS4 outfalls within the watershed management area.

Given the need for additional data on non-stormwater discharges from the MS4 where a TMDL has not been developed, USEPA and the State have used action levels as a means to gauge potential impact to water quality and to identify the potential need for additional controls for non-stormwater discharges in the future. If these action levels are exceeded, then additional requirements (e.g., numeric effluent limitations, increased monitoring, special studies, additional BMPs) are typically used to address the potential impacts. In this case, non-storm water action levels are applicable to non-storm water discharges from that MS4 outfall. Non-storm water discharges from the MS4 are those which occur during dry weather conditions. These action levels are not applied to storm water discharges, as defined within this Order. Storm water discharges regulated by this Order are required to meet the MEP standard and other provisions determined necessary by the State to control pollutants and have separate requirements under this Order.

The use of action levels in this Order does not restrict the Regional Water Boards ability to modify this Order in accordance with 40 CFR section 122.62 to include numeric effluent limitations should monitoring data indicate that controls beyond action levels are necessary to ensure that non-storm water discharges do not cause or contribute to exceedances of water quality standards.

i. Approach for Deriving Action Levels

Where exceedances are indicated in Table F-10 and where a TMDL has not been developed, action levels are applied as a screening tool to indicate where non-storm water discharges, including exempted flows and illicit connections may be causing or contributing to exceedances of water quality objectives. Action levels in this Order are based upon numeric or narrative water quality objectives and criteria as defined in the Basin Plan, the Water Quality Control Plan for Ocean Waters of California (Ocean Plan), and the CTR.

(1) Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries

Priority Pollutants Subject to the CTR

Priority pollutant water quality criteria in the CTR are applicable to all inland surface waters, enclosed bays, and estuaries. The CTR contains both saltwater and freshwater criteria. Because a distinct separation generally does not exist between freshwater and saltwater aquatic communities, the following apply, in accordance with Section 131.38(c)(3):

- For waters in which the salinity is equal to or less than 1 part per thousand (ppt), the freshwater criteria apply.
- For waters in which the salinity is greater than 10 ppt 95 percent or more of the time, the saltwater criteria apply.
- For waters in which the salinity is between 1 ppt and 10 ppt, the more stringent of the freshwater or saltwater criteria apply.

For continuous discharges, 40 CFR section 122.45(d)(1) specifies daily maximum and average monthly effluent limitations. Because of the uncertainty regarding the frequency of occurrence and duration of non-storm water discharges through the MS4, average monthly action levels (AMALs) and maximum daily action levels (MDALs) were calculated following the procedure based on the steady-state model, available in Section 1.4 of the SIP. The SIP procedures were used to calculate action levels for CTR priority pollutants and other constituents for which the Basin Plan contains numeric objectives.

Since many of the streams in the Region have minimal upstream flows, mixing zones and dilution credits are usually not appropriate. Therefore, in this Order, no dilution credit is being allowed.

40 CFR section 122.45(c) requires that effluent limitations for metals be expressed as total recoverable concentration; therefore it is appropriate to include action levels also as a total recoverable concentration. The SIP requires that if it is necessary to express a dissolved metal value as a total recoverable and a site-specific translator has not yet been developed, the Regional Water Board shall use the applicable conversion factor contained in the 40 CFR section 131.38.

Using nickel as an example, and assuming application of saltwater criteria (e.g., a situation where an MS4 outfall discharges to an estuary), the following demonstrates how action levels were established for this Order. The tables in Attachment H provide the action levels for each watershed management area addressed by this Order using the process described below.

The process for developing these limits is in accordance with Section 1.4 of the SIP. Two sets of AMAL and MDAL values are calculated separately, one set for the protection of aquatic life and the other for the protection of human health (consumption of organisms only). The AMALs and MDALs for aquatic life and human health are compared, and the most restrictive AMAL and the most restrictive MDAL are selected as the action level.

Step 1: For each constituent requiring an action level, identify the applicable water quality criteria or objective. For each criterion, determine

the effluent concentration allowance (ECA) using the following steady state mass balance equation:

$ECA = C + D(C-B)$ when $C > B$, and
$ECA = C$ when $C \leq B$,

Where:

C = The priority pollutant criterion/objective, adjusted if necessary for hardness, pH and translators (criteria for saltwater are independent of hardness and pH).
D = The dilution credit, and
B = The ambient background concentration

As discussed above, for this Order, dilution was not allowed; therefore:

$ECA = C$

For nickel the applicable ECAs are:

ECA_{acute} = 75 µg/L

$ECA_{chronic}$= 8.3 µg/L

Step 2: For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute\ 99}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic\ 99}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80% of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6. For nickel, a CV of 0.6 was assumed.

For nickel, the following data were used to develop the acute and chronic LTA using equations provided in Section 1.4, Step 3 of the SIP (Table 1 of the SIP also provides this data up to three decimals):

CV	ECA Multiplier$_{acute}$	ECA Multiplier$_{chronic}$
0.6	0.32	0.53

LTA_{acute} = 75 µg/L x 0.32 = 24 µg/L

$LTA_{chronic}$ = 8.3 µg/L x 0.53 = 4.4 µg/L

Step 3: Select the most limiting (lowest) of the LTA.

LTA = most limiting of LTA_{acute} or $LTA_{chronic}$

For nickel, the most limiting LTA was the $LTA_{chronic}$

LTA_{nickel}= $LTA_{chronic}$ = 4.4 µg/L

Step 4: Calculate the action levels by multiplying the LTA by a factor (multiplier). Action levels are expressed as AMAL and MDAL. The multiplier is a statistically based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the action levels. The value of the multiplier varies depending on the probability basis, the CV of the data set, the number of samples (for AMAL) and whether it is a monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$AMAL_{aquatic\ life}$ = LTA x $AMAL_{multiplier\ 95}$

$MDAL_{aquatic\ life}$ = LTA x $MDAL_{multiplier\ 99}$

AMAL multipliers are based on a 95th percentile occurrence probability, and the MDAL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For nickel, the following data were used to develop the AMAL and MDAL for action levels using equations provided in Section 1.4, Step 5 of the SIP (Table 2 of the SIP also provides this data up to two decimals):

No. of Samples Per Month	CV	Multiplier$_{MDAL\ 99}$	Multiplier$_{AMAL\ 95}$
4	0.6	3.11	1.55

Therefore:

AMAL = 4.4 µg/L x 1.55 = 6.8 µg/L

MDAL= 4.4 µg/L x 3.11 = 14 µg/L

Step 5: For the ECA based on human health, set the AMAL equal to the $ECA_{human\ health}$

$AMAL_{human\ health} = ECA_{human\ health}$

For nickel:

$AMAL_{human\ health}$ = 4,600 µg/L

Step 6: Calculate the MDAL for human health by multiplying the AMAL by the ratio of the $Multiplier_{MDAL}$ to the $Multiplier_{AMAL}$. Table 2 of the SIP provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

$MDAL_{human\ health} = AMAL_{human\ health}$ x ($Multiplier_{MDAL}$ **/** $Multiplier_{AMAL}$)

For nickel, the following data were used to develop the $MDAL_{human\ health}$:

No. of Samples Per Month	CV	$Multiplier_{MDAL\ 99}$	$Multiplier_{AMAL\ 95}$	Ratio
4	0.6	3.11	1.55	2.0

For nickel:

$MDAL_{human\ health}$= 4,600 µg/L x 2 = 9,200 µg/L

Step 7: Select the lower of the AMAL and MDAL based on aquatic life and human health as the non-storm water action level for this Order.

$AMAL_{aquatic\ life}$	$MDAL_{aquatic\ life}$	$AMAL_{human\ health}$	$MDAL_{human\ health}$
6.8	14	4,600	9,200

For nickel, the lowest (most restrictive) levels are based on aquatic toxicity and serve as the basis for non-storm water action levels included in this Order.

Table F-11: Calculations of Freshwater Action Levels[1]

Parameter	Units	CV	Aquatic Life Criteria[2]		Human Health Criteria	HH Calculations			Aquatic Life Calculations									Final Action Levels	
			C acute = CMC tot	C chronic = CCC tot	HH-Organisms only	ECA_{HH} = $AMAL_{HH}$	AMAL/MDAL $Multiplier_{HH}$	$MDAL_{HH}$	ECA $Multiplier_{acute}$	LTA_{acute}	ECA $Multiplier_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMAL $Multiplier_{95}$	$AMAL_{AL}$	MDAL $Multiplier_{99}$	$MDAL_{AL}$	Lowest AMAL	Lowest MDAL
Cadmium	µg/L	0.6	4.52	2.46	N		2.01		0.321	1.45	0.527	1.30	1.30	1.55	2.02	3.11	4.0	2.0	4.0
Copper	µg/L	0.6	14.00	9.33			2.01		0.321	4.49	0.527	4.92	4.49	1.55	6.98	3.11	14	7.0	14
Lead	µg/L	0.6	81.65	3.18	N		2.01		0.321	26.21	0.527	1.68	1.68	1.55	2.61	3.11	5.2	2.6	5.2
Mercury	µg/L	0.6	R	R	0.051	0.051	2.01	0.1023										0.051	0.10
Nickel	µg/L	0.6	469.17	52.16	4600	4600	2.01	9228	0.321	150.6	0.527	27.51	27.51	1.55	42.71	3.11	86	43	86
Selenium	µg/L	0.6	20.00	5.00	N		2.01		0.321	6.42	0.527	2.64	2.64	1.55	4.09	3.11	8.2	4.1	8.2
Silver	µg/L	0.6	4.06				2.01		0.321	1.30	0.527		1.30	1.55	2.02	3.11	4.1	2.0	4.1
Zinc	µg/L	0.6	119.82	119.82			2.01		0.321	38.47	0.527	63.20	38.47	1.55	59.72	3.11	120	60	120
Cyanide	µg/L	0.6	22.00	5.20	22,0000	22,0000	2.01	44,1362	0.321	7.06	0.527	2.74	2.74	1.55	4.26	3.11	8.5	4.3	8.5

R = Reserved
N = Narrative
[1] Calculations include rounded results. Final AMALs/MDALs are rounded to 2 significant digits.
[2] Where criteria are based on hardness, a value of 100 mg/L CaCO3 was used for these sample calculations.

Table F-12: Calculations of Saltwater Action Levels

Parameter	Units	CV	Aquatic Life Criteria		Human Health Criteria	HH Calculations			Aquatic Life Calculations									Final Action Levels	
			C acute = CMC tot	C chronic = CCC tot	HH-Organisms only	$ECA_{HH} = AMAL_{HH}$	AMAL/MDAL Multiplier$_{HH}$	$MDAL_{HH}$	ECA Multiplier$_{acute}$	LTA_{acute}	ECA Multiplier$_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMAL Multiplier$_{95}$	$AMAL_{AL}$	MDAL Multiplier$_{99}$	$MDAL_{AL}$	Lowest AMAL	Lowest MDAL
Cadmium	µg/L	0.6	42.25	9.36	N		2.01		0.321	13.57	0.527	4.93	4.93	1.55	7.66	3.11	15.4	7.7	15
Copper	µg/L	0.6	5.78	3.73			2.01		0.321	1.86	0.527	1.97	1.86	1.55	2.88	3.11	5.8	2.9	5.8
Lead	µg/L	0.6	220.82	8.52	N		2.01		0.321	70.90	0.527	4.49	4.49	1.55	6.97	3.11	14	7.0	14
Mercury	µg/L	0.6	R	R	0.051	0.051	2.01	0.1023										0.051	0.10
Nickel	µg/L	0.6	74.75	8.28	4600	4600	2.01	9228	0.321	24.00	0.527	4.37	4.37	1.55	6.78	3.11	14	6.8	14
Selenium	µg/L	0.6	290.58	71.14	N		2.01		0.321	93.30	0.527	37.52	37.52	1.55	58.25	3.11	117	58	117
Silver	µg/L	0.6	2.24				2.01		0.321	0.72	0.527		0.72	1.55	1.11	3.11	2.2	1.1	2.2
Zinc	µg/L	0.6	95.14	85.62			2.01		0.321	30.55	0.527	45.16	30.55	1.55	47.42	3.11	95	47	95
Cyanide	µg/L	0.6	1.00	1.00	22,0000	22,0000	2.01	44,1362	0.321	0.32	0.527	0.53	0.32	1.55	0.50	3.11	1.0	0.50	1.0

R = Reserved
N = Narrative
[1] Calculations include rounded results. Final AMALs/MDALs are rounded to 2 significant digits.

Basin Plan Requirements for Other Pollutants

A number of pollutants were identified that exceed applicable Basin Plan objectives. These objectives however, are not amenable to the SIP process for developing action levels.

Resolution No. 01-018, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Water Bodies Designated for Water Contact Recreation, adopted by the Regional Water Board on October 25, 2001, served as the basis for the action levels for bacteria. Subsequently, the Basin Plan was amended through Order No. R10-005 (effective on December 5, 2011) to remove the freshwater fecal coliform numeric objective while retaining the freshwater objective for *E. coli*. The dry-weather evaluation conducted for fecal coliform indicates of a need for a bacteria action level. Since the Basin Plan no longer contains freshwater objectives for fecal coliform, action levels have been developed for *E. coli* in freshwater. The current bacteria objectives (saltwater and freshwater) are applied directly to the MS4 outfalls discharging to freshwaters to serve as action levels.

The Basin Plan, in Tables 3-5 through 3-7, include chemical constituents objectives based on the incorporation of Title 22, Drinking Water Standards, by reference, to protect the surface water MUN beneficial use. The Basin Plan in Tables 3-8 and 3-10 also includes mineral quality objectives that apply to specific watersheds and stream reaches and where indicated by the beneficial use of ground water recharge (GWR). These objectives contained in the Basin Plan are listed as not-to-exceed values. Consistent with the approach used by the Regional Water Board in other Orders for dry weather discharges, these not-to-exceed values will be applied as AMALs in this Order.

(2) Discharges to the Surf Zone

From the Table B water quality objectives of the Ocean Plan, action levels are calculated according to Equation 1 of the Ocean Plan for all pollutants:

$$Ce = Co + Dm(Co-Cs)$$

Where:

Ce = the Action Level (µg/L)
Co = the water quality objective to be met at the completion of initial dilution (µg/L)
Cs = background seawater concentration (µg/L)
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

The Dm is based on observed waste flow characteristics, receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. It is conservatively assumed that when non-storm water discharges to the surf zone occur, that conditions are such that no rapid mixing would occur. Therefore, an initial dilution is not allowed and the formula above reduces to:

Ce = Co

The following demonstrates how the action levels for copper are established.

Copper
Ce = 3 µg/L (6-Month Median)
Ce = 12 µg/L (Daily Maximum)
Ce = 30 µg/L (Instantaneous Maximum)

ii. Applicability of Action Levels

The action levels included in this Order apply to pollutants in non-storm water discharges from the MS4 to receiving waters that are not already subject to WQBELs to implement TMDL wasteload allocations applicable during dry weather.

This Order requires outfall-based monitoring throughout each Watershed Management Area, including monitoring during dry weather. The dry weather monitoring data will be evaluated by the Permittee(s) in comparison to all applicable action levels.

iii. Requirements When Action Levels are Exceeded

When monitoring data indicates an action level is exceeded for one or more pollutants, then the Permittee will be required to implement actions to identify the source of the non-storm water discharge, and depending on the identified source, implement an appropriate response. With respect to action levels, the Permittee will have identified appropriate procedures within the Watershed Management Program (Part VI.C) and the Illicit Connection and Illicit Discharge Elimination Program (Part VI.D.9).

G. New Development/Re-Development Tracking

This Order requires the use of Low Impact Development (LID) designs to reduce storm water runoff (and pollutant discharges) from new development or re-development projects. In areas that drain to water bodies that have been armored or are not natural drainages, the goal of this requirement is to protect water quality by retaining on-site the

storm water runoff from the 85th percentile storm event. This is the design storm used throughout most of California for water quality protection. If it is not technically feasible due to site constraints (e.g., close proximity to a drinking water supply, slope instability) or if instead the project proponent is proposing to supplement a groundwater replenishment project, the project proponent may provide treatment BMPs to reduce pollutant loading in storm water runoff from the project site. Flow through treatment BMPs are less effective in reducing pollutant loadings than on-site retention for the design storm. Therefore the project proponent must mitigate the impacts further by providing for LID designs at retrofit projects or other off-site locations within the same subwatershed. The effectiveness monitoring is designed to assess and track whether post construction operation of the LID designs are effective in retaining the design storm runoff volume.

For projects located in natural drainages, the goal of the LID design is to retain the pre-development hydrology, unless a water body is not susceptible to hydromodification effects (e.g., estuaries or the ocean). Smaller projects that will disturb less than 50 acres of land are presumed to meet the criteria if the project retains the storm water runoff from the 95th percentile storm. The effectiveness monitoring in this situation should be design to confirm that storm water runoff is not occurring for any storm at or less than the 95th percentile storm. Projects may also demonstrate compliance by showing that the erosion potential will be approximately 1 as described in Attachment J of this Order. For larger projects, the project proponent may be required to conduct modeling to demonstrate compliance by comparing the hydrographs of a two-year storm for the pre-development and post-development conditions, or by comparing the flow duration curves for a reference watershed and the post project condition. Flow monitoring will be required to substantiate the simulated hydrographs or flow duration curves.

Monitoring studies conducted by the California Department of Public Health (CDPH) have documented that mosquitoes opportunistically breed in structural storm water Best Management Practices (BMPs), particularly those that hold standing water for over 96 hours. Certain Low Impact Development (LID) site design measures that hold standing water such as rainwater capture systems may similarly produce mosquitoes. BMPs and LID design features should incorporate design, construction, and maintenance principles to promote drainage within 96 hours to minimize standing water available to mosquitoes. This Order requires regulated MS4 Permittees to coordinate with other agencies necessary to successfully implement the provisions of this Order. These agencies may include CDPH and local mosquito and vector control agencies on vector-related issues surrounding implementation of post-construction BMPs.

This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Public Health or local vector agencies in accordance with CA Health and Safety Code, § 116110 et seq. and Water Quality Order No. 2012-0003-DWQ.

H. Regional Studies

1. Southern California Stormwater Monitoring Coalition Watershed Monitoring Program

As a condition to this Order, Permittees must participate in the bioassessment studies conducted under the Southern California Stormwater Monitoring Coalition Watershed Monitoring Program. Bioassessment provides a direct measure of whether aquatic life beneficial uses are fully supported and integrates the effects of multiple factors including pollutant discharges, changes in hydrology, geomorphology, and riparian buffers.

I. Aquatic Toxicity Monitoring Methods

Based on the stated goals of the CWA, the USEPA and individual states implement three approaches to monitoring water quality. These approaches include chemical-specific monitoring, toxicity testing, and bioassessments (USEPA 1991a). Each of the three approaches has distinct advantages and all three work together to ensure that the physical, chemical and biological integrity of our waters are protected. Water quality objectives have been developed for only a limited universe of chemicals. For mixtures of chemicals with unknown interactions or for chemicals having no chemical-specific objectives, the sole use of chemical-specific objectives to safeguard aquatic resources would not ensure adequate protection. Aquatic life in southern California coastal watersheds are often exposed to nearly 100% effluent from wastewater treatment plants, urban runoff, or storm water; therefore, toxicity testing and bioassessments are also critical components for monitoring programs as they offer a more direct and thorough confirmation of biological impacts. The primary advantage of using the toxicity testing approach is that this tool can be used to assess toxic effects (acute and chronic) of all the chemicals in aqueous samples of effluent, receiving water, or storm water. This allows the cumulative effect of the aqueous mixture to be evaluated, rather than the toxic responses to individual chemicals (USEPA, EPA Regions 8, 9, and 10 Toxicity Training Tool, January 2010).

Based on available data from the LA County MS4 Permit Annual Monitoring Reports, samples collected at mass emissions stations during both wet weather and dry weather have been found to be toxic in the San Gabriel River, Coyote Creek, the Los Angeles River, Dominguez Channel, Ballona Creek, Malibu Creek, and the Santa Clara River, demonstrating the need for this toxicity monitoring requirement (see Table below).

Summary of Toxicity by Watershed							
Source and Season	San Gabriel River	Coyote Creek	Los Angeles River	Dominguez Channel	Ballona Creek	Malibu Creek	Santa Clara River
Integrated Receiving Water Impacts Report (1994-2005)							
Wet Weather	-	CDS, CDR, SUF	CDS, SUF	CDS, CDR, SUF	CDR, SUF	CDR	CDS
Dry Weather	-	SUF	SUF	SUF	SUF	-	-

Annual Monitoring Reports (2005-2010)							
Wet Weather							
2005-06	-	-	SUF	CDS, CDR, SUF	SUF	-	-
2006-07	SUF	SUF	SUF	SUF	SUF	SUF	SUF
2007-08	SUF	-	-	SUF	-	CDS,CDR,SUF	SUF
2008-09	-	SUF	SUF	-	SUF	CDS,CDR,SUF	-
2009-10	-	-	-	-	-	-	-
Dry Weather							
2005-06	-	-	-	-	-	CDS,CDR	-
2006-07	-	-	-	-	SUF	-	-
2007-08	-	-	CDS,CDR	-	SUF	-	-
2008-09	-	-	SUF	-	-	-	-
2009-10	-	-	-	-	-	-	-

Notes:
CDS= Ceriodaphnia survival toxicity
SUF= Sea Urchin fertilization toxicity
CDR= Ceriodaphnia reproduction toxicity

This Order requires Permittee(s) to conduct chronic toxicity tests on water samples, by methods specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136) or a more recent edition.

To determine the most sensitive test species, the Permittee(s) shall conduct two wet weather and two dry weather toxicity tests with a vertebrate, an invertebrate, and a plant. After this screening period, subsequent monitoring shall be conducted using the most sensitive test species. Alternatively, if a sensitive test species has already been determined, or if there is prior knowledge of potential toxicant(s) and a test species is sensitive to such toxicant(s), then monitoring shall be conducted using only that test species. Sensitive test species determinations shall also consider the most sensitive test species used for proximal receiving water monitoring. After the screening period, subsequent monitoring shall be conducted using the most sensitive test species. Rescreening shall occur in the fourth year of the permit term.

For brackish water, this Order requires the Permittee(s) to conduct the chronic toxicity test in accordance with USEPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms, First Edition, August 1995, (EPA/600/R-95/136), or Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, (EPA/821-R-02-014), or a more recent edition.

Furthermore, the toxicity component of the Monitoring Program includes toxicity identification procedures so that pollutants that are causing or contributing to acute or

chronic effects in aquatic life exposed to these waters can be identified and others can be discounted. TIEs are needed to identify the culprit constituents to be used to prioritize management actions. Where toxicants are identified in a MS4 discharge, the Order requires a Toxicity Reduction Plan (TRE).

TRE development and implementation is directly tied to the integrated monitoring programs and watershed management program, to ensure that management actions and follow-up monitoring are implemented when problems are identified. Permittees are 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 and non-storm water discharges on the overall quality of aquatic fauna and flora and implement measures to ensure that those impacts are eliminated or reduced. As stated previously, chemical monitoring does not necessarily reveal the totality of impacts of storm water on aquatic life and habitat-related beneficial uses of water bodies. Therefore, toxicity requirements are a necessary component of the MS4 monitoring program.

J. Special Studies

Requirements to conduct special studies as described in TMDL Implementation Plans that were approved by the Executive Officer of the Regional Water Board prior to the effective date of this Order are incorporated into this Order by reference.

K. Annual Reporting

The Annual Reporting requirement was also required in Order No. 01-182 and provides summary information to the Regional Water Board on each Permittee's participation in one or more Watershed Management Programs; the impact of each Permittee(s) storm water and non-storm water discharges on the receiving water; each Permittee's compliance with receiving water limitations, numeric water quality based effluent limitations, and non-storm water action levels; and the effectiveness of each Permittee(s) control measures in reducing discharges of pollutants from the MS4 to receiving waters. In addition the Annual Report allows the Regional Water Board to assess whether the quality of MS4 discharges and the health of receiving waters is improving, staying the same, or declining as a result watershed management program efforts, and/or TMDL implementation measures, or other Control Measures and whether changes in water quality can be attributed to pollutant controls imposed on new development, re-development, or retrofit projects. The Annual Report provides the Permittee(s) a forum to discuss the effectiveness of its past and ongoing control measure efforts and to convey its plans for future control measures as well as a way to present data and conclusions in a transparent manner so as to allow review and understanding by the general public. Overall the Annual Report allows Permittee's to focus reporting efforts on watershed condition, water quality assessment, and an evaluation of the effectiveness of control measures.

L. Watershed Summary Information, Organization and Content

As a means to establish a baseline and then identify changes or trends, for each watershed, each Permittee shall provide the information on its watershed management area, subwatershed area, and drainage areas within the subwatershed area in its odd year Annual Report (e.g., Year 1, 3, 5). The requested information should be provided for each watershed within the Permittee's jurisdiction. Alternatively, permittees participating in a Watershed Management Program may provide the requested information through the development and submission of a Watershed Management Program report or within a TMDL Implementation Plan Annual Report. However, in either case, the Permittee shall bear responsibility for the completeness and accuracy of the referenced information. This reporting requirement helps to ensure that both the Permittee and the Regional Water Board have up to date information on the status of each of their watersheds and subwatersheds.

M. Jurisdictional Assessment and Reporting

The requested information shall be provided for each watershed within the Permittee's jurisdiction. Annual Reports submitted on behalf of a group of Watershed Permittees shall clearly identify all data collected and strategies, control measures, and assessments implemented by each Permittee within its jurisdiction as well as those implemented by multiple Permittees on a watershed scale. Permittees must provide information on storm water control measures, an effectiveness assessment of storm water control measures, information on non-storm water control measures, an effectiveness assessment of non-storm water control measures, an integrated monitoring compliance report, information on adaptive management strategies, and supporting data and information. The addition of this reporting requirement serves as a mechanism to evaluate and ensure the protection of receiving water quality on a watershed scale. If Permittees do not elect to develop a Watershed Management Program, all required information shall be provided by the Permittee for its jurisdiction.

N. TMDL Reporting

Reporting requirements included in this Order and Attachment E (MRP) were established during the TMDL development process for each individual TMDL. These reporting requirements have incorporated into this Order to implement TMDL requirements.

VIII. CALIFORNIA WATER CODE SECTION 13241

California Water Code section 13241 requires the Regional Water Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. California Water Code section 13263 requires the Board to take into consideration the provisions of section 13241 in adopting waste discharge requirements. In *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal.4th 613, the California Supreme Court considered whether regional water boards must comply with section 13241 when issuing waste discharge requirements under section 13263(a) by taking into account the costs a

permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information "depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act." (*Id.* at p. 627.) The Court ruled that regional water boards may not consider the factors in section 13241, including economics, to justify imposing pollutant restriction that are less stringent than the applicable federal law requires. (*Id.* at pp. 618, 626-627 ["[Water Code s]ection 13377 specifies that [] discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act…Because section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a [] discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards"].) However, when the pollutant restrictions in an NPDES permit are more stringent than federal law requires, California Water Code section 13263 requires that the Water Boards consider the factors described in section 13241 as they apply to those specific restrictions.

The Regional Water Board finds that the requirements in this Order are not more stringent than the minimum federal requirements. Among other requirements, federal law requires MS4 permits to include requirements to effectively prohibit non-storm water discharges into the storm sewers, in addition to requiring controls to reduce the discharge of pollutants in storm water to the maximum extent practicable and other provisions that the agency determines are necessary for the control of pollutants in MS4 discharges. The requirements in this Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR § 122.26 or in USEPA guidance. However, the requirements have been designed to be consistent with and within the federal statutory mandates described in Clean Water Act section 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. Consistent with federal law, all of the conditions in this Order could have been included in a permit adopted by USEPA in the absence of the in lieu authority of California to issue NPDES permits. Moreover, the inclusion of numeric WQBELs in this Order does not cause the permit to be more stringent than current federal law. Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. The inclusion of WQBELs as discharge specifications in an NPDES permit in order to achieve compliance with water quality standards is not a more stringent requirement than the inclusion of BMP based permit limitations to achieve water quality standards. (State Water Board Order No. WQ 2006-0012 (*Boeing*).) Therefore, consideration of the factors set forth in section 13241 is not required for permit requirements that implement the effective prohibition on the discharge of non-storm water discharges into the MS4, or for controls to reduce the discharge of pollutants in storm water to the maximum extent practicable, or other provisions that the Regional Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law..

Notwithstanding the above, the Regional Water Board has considered the factors set forth in California Water Code section 13241 in issuing this Order. That analysis is provided below. The Regional Water Board has also considered all of the evidence that has been presented to the Board regarding the section 13241 factors in adopting this Order. The Regional Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses identified in the Basin Plan, and the economic information related

to costs of compliance and other section 13241 factors are not sufficient to justify failing to protect those beneficial uses. Where appropriate, the Regional Water Board has provided Permittees with additional time to implement control measures to achieve final WQBELs and/or water quality standards.

A. *Past, present and probable future beneficial uses of water.*

Chapter 2 of the Basin Plan identifies designated beneficial uses for water bodies in the Los Angeles Region, which are the receiving waters for MS4 discharges. Beneficial uses are also identified in the findings of this Order and further discussed relative to TMDLs in section VI.D of this Fact Sheet.

B. *Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.*

Environmental characteristics of each of the Watershed Management Areas covered by this Order, including the quality of water, are discussed in the Region's Watershed Management Initiative Chapter as well as available in State of the Watershed reports and the State's CWA Section 303(d) List of impaired waters.

- Santa Clara River Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/santa_clara_river_watershed/santa_clara_river_watershed.doc
- Santa Monica Bay Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/santa_monica_bayWMA/santa_monica_bayWMA.doc
- Dominguez Channel Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/dominguez_channelWMA/dominguez_channelWMA.doc
- Los Angeles River Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/los_angeles_river_watershed/los_angeles_river_watershed.doc
- San Gabriel River Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/san_gabriel_river_watershed/san_gabriel_river_watershed.doc
- Los Cerritos Channel and Alamitos Bay Watershed Management Area
  www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/wmi/los_cerritos_channelWMA/los_cerritos_channelWMA.doc
- Middle Santa Ana River Watershed Management Area
  http://www.waterboards.ca.gov/santaana/water_issues/programs/wmi/index.shtml
  http://www.sawpa.org/watershedinfo.html

The quality of water in receiving waters for MS4 discharges has been routinely monitored by Permittees through the Monitoring and Reporting Program under Order No. 01-182. Below are summaries of water quality exceedances reported for the 2010-2011 reporting year.

Summary of Constituents that Did Not Meet Water Quality Objectives at Mass Emission Stations during 2010-2011 for One or More Events

Mass Emission/Watershed	Wet	Dry
Ballona Creek (S01)[1]	Fecal coliforms[2] pH[3] Dissolved zinc	pH[3]
Malibu Creek (S02)	Fecal coliforms Cyanide pH[3] Sulfate	Fecal coliforms Sulfate
Los Angeles River (S10)[1]	Fecal coliforms[2] pH[3] Dissolved zinc Cyanide	Fecal coliforms pH[3]
Coyote Creek (S13)	Fecal coliforms[2] pH[3] Dissolved zinc	Fecal coliforms
San Gabriel River (S14)	Fecal coliforms[2] pH[3]	
Dominguez Channel (S28)[1]	Fecal coliforms[2] Dissolved copper Dissolved zinc	Fecal coliforms pH[3]
Santa Clara River (S29)	Fecal coliforms pH[3] Dissolved zinc	

[1] More urbanized watersheds.
[2] Subject to the fecal coliform water quality objective high-flow suspension (LARWQCB, 2003).
[3] pH was evaluated outside of holding time.

The following table summarizes the results of an analysis based on evaluation of the 15 sets of dry weather data for the period of 2005 to 2011 for each of the mass emission stations. The most prevalent pollutants of concern among the mass emission stations include fecal coliform bacteria, cyanide, mercury, chloride, sulfate, total dissolved solids, copper, and selenium. Reported results for fecal coliform bacteria, cyanide, copper, and

selenium concentrations consistently exceeded water quality objectives in all watersheds. For watersheds where objectives apply for sulfate and total dissolved solids, the receiving water concentrations consistently exceeded the objectives. The incidences where exceedances are indicated for mercury are largely due to analytical detection levels that were higher than the applicable objective.

Summary of LA County Watersheds and Frequency of Receiving Water Exceeding Water Quality Objectives (2005 to 2011 - Dry Season Data Analysis)[1]

Parameter	Santa Clara River	Los Angeles River	Dominguez Channel	Ballona Creek	Malibu Creek	San Gabriel River	
						Upper Portion	Lower Portion
pH	0/15	7/15	5/15	3/15	0/15	1/14	2/15
Total Coliform	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective
Fecal Coliform	4/15	4/15	10/15	13/15	6/15	11/14	13/15
Enterococcus	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective
Chloride	15/15	15/15	No Objective	0/15	0/15	14/14	15/15
Dissolved Oxygen	1/15	0/15	0/15	0/15	0/15	1/14	0/15
Nitrate-N	0/15	0/15	No Objective	No Objective	0/15	7/14	No Objective
Nitrite-N	0/15	3/15	No Objective	No Objective	0/15	0/15	No Objective
Methylene Blue Active Substances	4/15	0/15	No Objective	No Objective	0/15	0/14	No Objective
Sulfate	15/15	15/15	No Objective	No Objective	15/15	14/14	15/15
Total Dissolved Solids	15/15	15/15	No Objective	No Objective	13/15	14/14	15/15
Turbidity[2]	0/15	2/15	No Objective	No Objective	0/15	0/15	0/15
Cyanide	11/15	14/15	4/15	15/15	3/15	14/14	15/15
Total Aluminum	1/15	2/15	No Objective	No Objective	0/15	1/14	No Objective
Dissolved Copper	0/15	0/15	5/15	0/15	0/15	13/14	0/15
Total Copper	1/15	6/15	11/15	3/15	0/15	13/14	2/15
Dissolved Lead	0/15	0/15	0/15	0/15	0/15	1/14	0/15
Total Lead	0/15	0/15	1/15	1/15	0/15	13/14	0/15
Total Mercury	1515	14/15	14/15	15/15	15/15	14/14	15/15
Dissolved Mercury	15/15	15/15	15/15	15/15	15/15	14/14	14/14
Total Nickel	0/15	0/15	0/15	0/15	0/15	1/14	0/15
Dissolved Selenium	2/15	2/15	1/15	2/15	6/15	1/15	10/11
Total Selenium	2/15	2/15	1/15	2/15	6/15	1/15	10/11
Dissolved Zinc	0/15	0/15	0/15	0/15	0/15	7/10	0/15
Total Zinc	0/15	0/15	0/1)	0/15	0/15	10/10	0/15

[1] Frequency of exceedance is denoted as number of exceedances/number of dry weather samples evaluated. For example, “2/15” indicates 2 of the 15 samples had analytical results that exceeded the water quality objective for a given parameter.

[2] The Basin Plan water quality objective for turbidity for the protection of MUN is the secondary MCL of 5 NTU. The Basin Plan contains additional turbidity objectives expressed as incremental changes over natural conditions. Since inadequate data were available to assess criteria expressed as incremental changes, only the MCL was considered in the analysis.

[3] FW means freshwater

C. *Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.*

Since 2001, municipalities both locally and nationally have gained considerable experience in the management of municipal storm water and non-storm water discharges. The technical capacity to monitor storm water and its impacts on water quality has also increased. In many areas, monitoring of the impacts of storm water on water quality has become more sophisticated and widespread. Better information on the effectiveness of storm water controls to reduce pollutant loadings and address water quality impairments is now available. The International Stormwater BMP Database (http://www.bmpdatabase.org/) provides extensive information of the performance capabilities of storm water controls. Additionally, the County of Los Angeles conducted a BMP effectiveness study as a requirement of Order No. 01-182.[50]

Generally, improvements in the quality of receiving waters impacted by MS4 discharges can be achieved by reducing the volume of storm water or non-storm water discharged through the MS4 to receiving waters; reducing pollutant loads to storm water and non-storm water through source control/pollution prevention, including operational source control such as street sweeping, public education, and product or materials elimination or substitution; and removing pollutants that have been loaded into storm water or non-storm water before they enter receiving waters, through treatment or diversion to a sanitary sewer. The following factors are generally accepted to affect pollutant concentrations in MS4 discharges[51]:

- Land use
- Climatic conditions
- Season (i.e. for southern California, dry season and winter wet season)
- Percentage imperviousness (in particular, “effective impervious area” or “EIA”)
- Rainfall amount and intensity (including seasonal “first-flush” effects)
- Runoff amount
- Watershed size
- Motor vehicle operation
- Aerial deposition

In their 2010-2011 Annual Report, Permittees identified the following storm water and non-storm water pollutant control measures as particularly effective:

- Street sweeping;
- Catch basin cleaning;
- Catch basin inserts
- Trash bins;
- End-of-pipe controls such as low-flow diversions;
- Infiltration controls;
- Erosion controls; and

[50] County of Los Angeles Department of Public Works. “Los Angeles County BMP Effectiveness Study,” August 2005.
[51] Maestre, Alexander and Robert Pitt. “Identification of Significant Factors Affecting Stormwater Quality Using the NSQD” (draft monograph, 2005).

- Public education and outreach, including multi-lingual strategies.

Permittees summarized the most-used BMPs and most popular BMPs (according to the number of Permittees using a particular BMP) in their 2010-2011 Annual Report. An itemization of all BMPs installed and maintained during the 2010-11 reporting period is provided in Appendices B and C of the Permittees' Annual Report.

Most installed BMPs County-wide During 2010-11

BMP Type	Total Number Installed
Catch Basin Connector Pipe Full Capture (CPS)	6377
Fossil Filter Catch Basin Insert	5968
Automatic Retractable Catch Basin Trash Screen (ARS)	3870
Clean Screen Catch Basin Insert	3767
Extra Trash Can	3681
Covered Trash Bin	3119
Signage and Stenciling	1884
Drain Pac Catch Basin Insert	1625
CulTec Infiltration Systems	1296
Infiltration Trenches	963
Infiltration Pit	958
Abtech Ultra Urban Catch Basin Insert	748
CDS Gross Pollutant Separator	438
United Storm Water Catch Basin Scree Inserts	403
Restaurants Vent Traps	258
Stormceptor Gross Pollutant Separators	211

Most Used Proprietary and Non-Proprietary BMPs During 2010-11

Types of Nonproprietary BMPs Used By Most Permittees		**Types Proprietary BMPs Used By Most Permittees**	
BMP Type	**No. of Cities**	**BMP Type**	**No. of Cities**
Infiltration Trenches	40	Fossil Filter Catch Basin Inserts	46
Covered Trash Bins	32	CDS Gross Pollutant Separator	36
Extra Trash Cans	31	Drain Pac Catch Basin Insert	21
Enhanced Street Sweeping	26	Clean Screen Catch Basin Insert	21

Dog Parks	23	Stormceptor Gross Pollutant Separator	19

Some of the many advances in how to effectively control storm water and pollutants in storm water have occurred locally within the Los Angeles Region and include the development of cost effective trash full capture devices, storm water diversion, treatment and beneficial use facilities such as SMURRF and storm water capture, storage, and reuse facilities such as Sun Valley, low impact development/site design practices, and innovative/opportunistic culvert inlet multi-media filters. There are many other case studies of municipalities that have implemented innovative and effective storm water management measures (e.g., Portland, OR).

This Order is designed to reduce pollutant loading to waterbodies within Los Angeles County from discharges to and from the Los Angeles County MS4 through the implementation of multi-faceted storm water management programs at the municipal and watershed levels. Overall improvements in MS4 discharge quality are expected to occur over time with ongoing implementation of the Los Angeles County MS4 Permit. However, currently little information on the quality of storm water in the region and the water quality that can be achieved with the coordinated control of all MS4 discharges through full implementation of all storm water management measures by individual municipalities and collectively by all Permittees within a watershed is available. This Order, however, is designed to effectively focus and broaden monitoring requirements with the addition of outfall monitoring and monitoring associated with the 33 TMDLs being incorporated, so pollutant loading from the MS4 can be better quantified and improvements in water quality resulting from implementation of storm water management measures can be tracked.

D. *Economic considerations.*

The Regional Water Board recognizes that Permittees will incur costs in implementing this Order above and beyond the costs from the Permittees' prior permit. Such costs will be incurred in complying with the post-construction, hydromodification, Low Impact Development, TMDL, and monitoring and reporting requirements of this Order. The Regional Water Board also recognizes that, due to California's current economic condition, many Permittees currently have limited staff and resources to implement actions to address its MS4 discharges. Based on the economic considerations below, the Board has provided permittees a significant amount of flexibility to choose how to implement the permit. This Order allows Permittees the flexibility to address critical water quality priorities, namely discharges to waters subject to TMDLs, but aims to do so in a focused and cost-effective manner while maintaining the level of water quality protection mandated by the Clean Water Act and other applicable requirements. For example, the inclusion of a watershed management program option allows Permittees to submit a plan, either individually or in collaboration with other Permittees, for Regional Water Board Executive Officer approval that would allow for actions to be prioritized based on specific watershed needs. The Order also allows Permittees to customize monitoring requirements, which they may do individually, or in collaboration with other Permittees. In the end, it is up to the permittees to determine the effective BMPs and measures needed to comply with this Order. Permittees

can choose to implement the least expensive measures that are effective in meeting the requirements of this Order. This Order also does not require permittees to fully implement all requirements within a single permit term. Where appropriate, the Board has provided permittees with additional time outside of the permit term to implement control measures to achieve final WQBELs and/or water quality standards. Lastly, this Order includes several reopener provisions whereby the Board can modify this Order based on new information gleaned during the term of this Order.

Before discussing the economics associated with regulating MS4 discharges, it should be noted that there are instances outside of this Order where the Board previously considered economics. First, when the Board adopted the water quality objectives that serve as the basis for several requirements in this Order, it took economic considerations into account. (See *In re Los Angeles County Municipal Storm Water Permit Litigation* (Sup. Ct. Los Angeles County, March 24, 2005, Case No. BS 080548), Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, p. 21.) Second, the cost of complying with TMDL wasteload allocations has been previously considered during the adoption of each TMDL. The costs of complying with the water quality based effluent limitations and receiving water limitations derived from the 33 TMDLs, which are incorporated into this Order, are not additive. For example, the costs estimated for compliance with a TMDL for one pollutant in a watershed, such as metals, can be applied to the costs to achieve compliance with a TMDL for another pollutant in the same watershed, such as pesticides, because the same implementation strategies can be used for both pollutants. Several MS4 permittees have recognized this opportunity in the multi-pollutant TMDL implementation plans they have submitted (e.g. Ballona Creek Metals/Bacteria TMDLs and Machado Lake Pesticides/Nutrients TMDLs). In other words, the estimated cost of complying with the Ballona Creek Metals TMDL can apply to metals, pesticides, PCBs, and bacteria. The costs for complying with trash TMDLs are based on different implementation strategies (e.g., full capture devices), but those strategies are effective at removing metals and toxic pollutants as well. Thus, the costs estimated for each TMDL should not be added to determine the cost of compliance with all TMDLs. The staff reports for the various TMDLs include this disclaimer, and also discuss the cost efficiencies that can be achieved by treating multiple pollutants. Further, the Board's considerations of economics in developing each TMDL have often resulted in lengthy implementation schedules to achieve water quality standards. Where appropriate, these implementation schedules have been used to justify compliance schedules in this Order.

<u>Economic Considerations of Regulating MS4 Discharges</u>

It is very difficult to determine the true cost of implementing storm water and urban runoff management programs because of highly variable factors and unknown level of implementation among different municipalities and inconsistencies in reporting by Permittees. In addition, it is difficult to isolate program costs attributable to permit compliance. Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin that is not easily explained. Despite these problems, efforts have been made to identify storm water and urban runoff

management program costs, which can be helpful in understanding the costs of program implementation.

Economic considerations of implementing this Order were examined by primarily utilizing the data that are self-reported by the Permittees in their annual reports and a State Water Board funded study, which examined the costs of municipal MS4 programs statewide.[52] The economic impact to public agencies was tabulated based on the reported costs of implementing the six minimum control measures (Public Information and Participation, Industrial/Commercial Facilities Control, Development Planning, Development Construction, Public Agency Activities, and Illicit Connections and Illicit Discharges Elimination) required by 40 CFR section 122.26(d)(2)(iv) as well as costs associated with program management, monitoring programs, and a category described as other. As noted above, Permittees report wide variability in the cost of compliance, which is not easily explained. Based on reported values, the average annual cost to the Permittees in 2010-11 was $4,090,876 with a median cost of $687,633.

It is important to note that reported program costs are not all solely attributable to compliance with requirements of the LA County MS4 Permit. Many program components, and their associated costs, existed before the first LA County MS4 Permit was issued in 1990. For example, storm drain maintenance, street sweeping and trash/litter collection costs are not solely or even principally attributable to MS4 permit compliance, since these practices have long been implemented by municipalities. Therefore, the true program cost related to complying with MS4 permit requirements is some fraction of the total reported costs. For example, after adjusting the total reported costs by subtracting out the costs for street sweeping and trash collection, the average annual cost to the Permittees was $2,397,315 with a median cost of $290,000.

These results are consistent with the State Water Board funded study ("State Water Board Study") that surveyed the costs to develop, implement, maintain and monitor municipal separate storm sewer system management and control programs in 2004.[53] The objectives of the study were to: 1) document stormwater program costs and 2) assess alternative approaches to MS4 quality control. The six cities selected for the study were judged by State Water Board staff as having good MS4 management programs, adequate accounting systems, and represented a variety of geographic locations, hydrologic areas, populations and incomes. The cities selected were Corona, Encinitas, Fremont, Fresno-Clovis Metropolitan Area, Sacramento and Santa Clarita. The results found that the annual total cost per household ranged from $18 to $46. The average cost was found to be $35 and the median, $36. The true mean, which is derived by dividing the total sample costs by the total sample number of households, is $29 in 2002 dollars. This study was further examined and applied to the Ventura County MS4 Permit in "*Economic Considerations of the Proposed (February 25, 2008) State of California Regional Water Quality Control Board Los Angeles Region, Order 08-xxx, NPDES Permit No. CAS004002, Waste Discharge*

[52] Data from NPDES Stormwater Cost Survey, prepared by the Office of Water Programs, California State University, Sacramento (January 2005) and the Los Angeles County Municipal Storm Water Permit (Order No. 01-182), Unified Annual Stormwater Report, 2010 – 2011, http://ladpw.org/wmd/npdesrsa/annualreport/

[53] Currier, Brian K., Joseph M. Jones, Glenn L. Moeller. "NPDES Stormwater Cost Survey, Final Report", Prepared for California State Water Resources Control Board, California State University Sacramento, Office of Water Programs, January, 2005.

Requirements for Stormwater (Wet Weather) and Non-Stormwater (Dry Weather) Discharges from the Municipal Separate Storm Sewer Systems within the Ventura County Watershed Protection District, County of Ventura and the Incorporated Cities Therein," and found that when adjusted for inflation, the total annual cost to the MS4 Permittees ranged from $7.15 to $10.9 million, depending on the averaging method applied.

The State Water Board Study noted inherent limitations in the cost data quality. The most significant data quality limitation cited is that the costs provided by the municipalities were not sufficiently detailed or referenced to provide opportunity for independent review of the accuracy and completeness of the cost data. Similarly, the costs presented in the Los Angeles County Unified Annual Report ("Unified Annual Report") are not presented with supporting data or references so that they can be independently reviewed. Some of the limitations of the reported cost data are illustrated by a comparison of monitoring costs in different sections of the Unified Annual Report. In the monitoring costs section, the total costs for monitoring, including sample collection, analytical results, and sampling station maintenance was $713,409 for 2010-2011. In contrast, the same report showed the monitoring costs of $9,008,460 in the Unified Cost Table. Absent further explanation in the Unified Annual Report, this suggests that the reported costs may not be reliable.

The State Water Board Study also found that certain stormwater implementation costs included activities that provide separate and additional municipal benefits such as street sweeping and storm drain and channel cleaning. The State Water Board Study indicated that the inclusion of these costs as stormwater implementation costs is not uniform across different municipalities. In order to assess the variability of costs reported by different municipalities under the same permit and determine if Los Angeles County MS4 Permittees are reporting costs for activities that provide municipal benefits beyond storm water management and permit compliance, Regional Water Board staff reviewed costs reported by Los Angeles County MS4 Permittees in the Unified Annual Report. The reported storm water costs range from $11.45 to $928.10 per household per year. The average reported cost was $120.04 per household per year and the median cost was $57.31 per household per year. The wide spread of annual costs and the significant difference between the mean and median costs indicate that the LA County MS4 Permittees are not reporting costs in a uniform manner.

Board staff also reviewed available cost data in the Unified Annual Report for Permittees that provided separate costs regarding street sweeping and trash collection. Staff adjusted the total costs so that the costs for these multi-benefit municipal programs were not included in the storm water cost and found that the adjusted storm water costs were greatly reduced by excluding these activities. These adjusted costs ranged from $0.00 per household per year to $903.10 per household per year. The mean adjusted rate is $42.57 per household per year and the median adjusted rate is $17.89 per household per year. Clearly, a significant portion (greater than 50%) of the costs attributed to storm water compliance activities also provide additional municipal benefits. (In the case of the Los Angeles County MS4 Permittees, some municipalities reported costs for trash collection; these costs were not reported by municipalities in the State Water Board Study.)

Finally, Board staff reviewed the cost breakdowns reported in the State Water Board Study and the Unified Annual Report for Los Angeles County MS4 Permittees. The following table summarizes the results:

Cost Category	State Water Board Study	Los Angeles County (2010-2011)
Watershed Management	6%	5%
Construction	11%	1%
Illicit Discharge	4%	2%
Industrial and Commercial	8%	1%
Overall Management	37%	5%
Pollution Prevention	2%	2%
Post Construction	3%	
Public Education	13%	2%
Monitoring	16%	3%
BMP Maintenance	Not Reported	2%
Development	Not Reported	1%
Other	Not reported	76%

The reported costs show differences between the MS4 Permittees surveyed in the State Water Board Study and the Los Angeles County MS4 Permittee costs in the following categories: construction, industrial and commercial activities, public education and monitoring. These categories all show greater proportional statewide cost allocations relative to the cost allocations by the Los Angeles County MS4 Permittees. The Los Angeles County MS4 Permittees report a cost category of BMP maintenance, which is not defined in the State Water Board Study. The management costs in the State Water Board Study were greater than the management costs reported by the Los Angeles County MS4 Permittees, but the Los Angeles County MS4 Permittees also reported a category of "Other" that accounted for a large proportion of costs, which is not defined in the Unified Annual Report.

The State Water Board Study found that cost information is crucial in making management decisions regarding storm water requirements. The report also recommends that annual reports required under MS4 permits throughout the State follow a standard format for cost reporting and that costs for all MS4 program activities (per program area) should be identified as existing, enhanced or new according to the extent that the activity was required under the previous permit, is enhanced by the permit, or is exclusively a result of compliance efforts with new provisions of the MS4 permit.

Further, there is an element of cost consideration inherent in the maximum extent practicable (MEP) standard. While the term "maximum extent practicable" is not specifically defined in the Clean Water Act or its implementing regulations, USEPA, courts, and the State Water Board have addressed what constitutes MEP. MEP is not a one-size fits all approach. Rather, MEP is an evolving, flexible, and advancing concept, which considers practicability. This includes technical and economic practicability. Compliance with the MEP standard involves applying BMPs that are effective in reducing or eliminating the discharge

of pollutants in storm water to receiving waters. BMP development is a dynamic process, and the menu of BMPs may require changes over time as experience is gained and/or the state of the science and art progresses. MEP is the cumulative effect of implementing, evaluating, and making corresponding changes to a variety of technically appropriate and economically practicable BMPs, ensuring that the most appropriate controls are implemented in the most effective manner. The State Water Board has held that "MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the costs would be prohibitive." (State Water Board Order WQ 2000-11.)

In addition to considering the costs of storm water management, it is important to consider the benefits of storm water and urban runoff management programs. A recent study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost $2.8 billion but provide $5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be $5.7 to $7.4 billion, while benefits could reach $18 billion.[54] Costs are anticipated to be borne over many years. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by USEPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.[55]

Economic Considerations of Not Regulating MS4 Discharges

Economic discussions of storm water and urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, in adopting Order WQ 2000-11, the State Water Board further found that in considering the cost of compliance, it is also important to consider the costs of impairment; that is, the negative impact of pollution on the economy and the positive impact of improved water quality. For example, economic benefits may result through program implementation, and alternative costs (as well as environmental impacts) may be incurred by not fully implementing the program. So, while it is appropriate and necessary to consider the cost of compliance, it is also important to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits which result from program implementation.

The benefits of implementation of the Los Angeles County MS4 Permit include improvements in water quality, enhancement of beneficial uses, and increased employment, income and satisfaction from environmental amenities. Most of the benefits of this permit can be identified and, in some cases, quantified in monetary terms. Others cannot be expressed in dollar terms and can only be described. For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by USEPA[56] to be $158-210.62. This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife

[54] LARWQCB, 2004. Alternative Approaches to Stormwater Control.
[55] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.
[56] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

benefits, or flood control benefits. The California State University, Sacramento study corroborates USEPA's estimates, reporting annual household willingness to pay for statewide clean water to be $180.63.[57] When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Not regulating discharges from the Los Angeles County MS4 will result in greater pollution of rivers, streams, lakes, reservoirs, bays, harbors, estuaries, groundwater, coastal shorelines and wetlands. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.[58] A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8% among bathers at those beaches resulted in about $3 million annually in health-related expenses.[59] In addition, poor beach water quality negatively affects tourism, which in turn reduces revenues to local businesses.

Funding Sources.

Public agencies (both federal and state) recognize the importance of storm water improvement projects and have provided significant sources of funding through grants, bonds, and fee collections to help offset the costs of storm water management in Los Angeles County. The table below summarizes the funds that have been allocated to storm water management in Los Angeles County, to date.

Source of Money	Dollars	% of total costs funded by State (only for those projects which included State funding)
Only State Board-awarded funding (Propositions 12, 13, 40, 50, and 84; and federal money, 319h, 205j, ARRA)	$49,143,132	47%
Only State money from any State agency (propositions only, no federal); includes State Board, DWR, Coastal Conservancy, Fish & Game	$67,461,699	58%
Total costs (approx.) for projects involving State money	$114,703,731	N/A
Prop A	$4,981,772	N/A
Prop O	$508,678,258	N/A
Measure V	$9,107,959	N/A
Total Public Funds (federal,	$645,389,932	N/A (information not

[57] State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.
[58] Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.
[59] Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

State, local bonds and measures) expended on stormwater control projects		available for projects funded by local bonds and measures)

In addition to current funding options, future funding options continue to be created. Assembly Bill 2554, known as the Los Angeles County Flood Control District's Water Quality Funding Initiative, is currently under consideration by the LACFCD's Board of Supervisors. If the Board of Supervisors approve the fee proposal and no majority protest is received, then it will be submitted for voter approval and could create an estimated annual revenue of $300 million to be utilized for various storm water projects including but not limited to:

- New and Existing Water Quality Projects and Programs
- Maintenance of Existing Facilities
- TMDL and MS4 Permit Implementation

Of the annual revenue, forty percent would be returned to the municipalities to create new local projects and programs and maintenance. Below are the estimated revenues that would be allocated to certain municipalities based on the estimated annual revenue of $300 million.

Municipalities	Estimated Annual Revenue
City of Los Angeles	$37 million
City of Santa Monica	$1 million
El Segundo	$600,000
Manhattan Beach	$300,000
Redondo Beach	$750,000
Unincorporated Areas on Los Angeles County	$15 million

Fifty percent of the annual revenue would be spread across nine watershed authority groups (WAGs) to develop Water Quality Improvement Plans and implement regional projects and programs. Some examples of the possible annual revenues available to the WAGs are provided below:

WAG	Estimated Revenue
Santa Monica Bay	$12 million
Upper Los Angeles River	$36 million
Lower Los Angeles River	$15 million
Upper San Gabriel River	$17 million

The remaining ten percent of the annual revenues would be allocated to the Los Angeles County Flood Control District for administration of the program and other district water quality projects and programs.

E. *Need for developing housing within the region.*

For over 100 years, this region has relied on imported water to meet many of our water resource needs. Imported water makes up approximately 70 to 75% of the Southern California region's water supply, with local groundwater, local surface water, and reclaimed water making up the remaining 25 to 30%.[60] The area encompassed by this Order imports approximately 50% of its water supply. The Los Angeles County MS4 permit helps address the need for housing by controlling pollutants in MS4 discharges, which will improve the quality of water available for recycling and re-use. This in turn may reduce the demand for imported water thereby increasing the region's capacity to support continued housing development.

A reliable water supply for future housing development is required by law, and with less imported water available to guarantee this reliability, an increase in local supply is necessary.

In this Order, the Regional Water Board supports integrated water resources approaches. An integrated water resources approach manages water resources by integrating wastewater, stormwater, recycled water, and potable water planning through the capture and beneficial use of stormwater. An integrated approach can preserve local groundwater resources and reduce imported water needs. Thus, complying with this Order can positively affect the need for developing housing in the region. Furthermore, the low impact development (LID) requirements of this MS4 permit emphasize the necessity to balance growth with the protection of water quality. LID emphasizes cost effective, lot-level strategies that replicate the natural hydrology of the site and reduces the negative impacts of development. By avoiding the installation of more costly conventional storm water management strategies and harnessing runoff at the source, LID practices enhance the environment while providing cost savings to both developers and local governments.

F. *Need to develop and use recycled water.*

Storm water runoff that travels across the urban landscape quickly becomes contaminated with the wastes inherent from urban living. This polluted water is then discharged to the surface waters and eventually the ocean where it wreaks havoc on the natural coastal ecosystem and impacts human health. If the storm water is captured and treated (or captured prior to contamination) a new resource could be added to local water supplies. If this water is more effectively harnessed and recycled, numerous benefits could be achieved. These include:

- Regional reduction on imported water;
- Aid in the restoration of area aquifers;
- Reduction in the need for extensive public works projects; and
- Improvement in the quality of impaired water bodies.

[60] Southern California Association of Governments. The State of the Region 2007 Measuring Regional Progress (Housing, Environment). December 6, 2007. http://www.scag.ca.gov/publications/index.htm.

The exact volume of storm water available for capture is dependent on the intensity and duration of storm events. Looking at land uses across the region and applying land use-specific runoff coefficients, the annual average runoff in the Los Angeles subarea is 450,000 acre-feet/year (with an average annual rainfall of 15.5 inches). The Los Angeles and San Gabriel Rivers Watershed Council estimates that, on average, about 550,000 acre-feet/year of runoff are discharged from Los Angeles area to the ocean.[61]

It is not possible to capture all MS4 discharges; however, a significant portion could be put to beneficial use. Potentially, in Los Angeles, "[i]f we could capture 80% of the rainfall that falls on just a quarter of the urban area-15% of the total watershed-we would be reducing total runoff by approximately 30%. That translates into a diversion of 43 billion gallons of water per year (132,000 acre-feet) or enough to supply 800,000 people for a year."[62] That water capture would render a savings of almost sixty million dollars of imported State Water Project water. Capturing storm water from a larger portion of the watershed could increase the volume of this "new" water even further. Unlike traditional recycled water that requires the installation of dual plumbing and intensive infrastructure, much of the storm water capture could be done with minimal infrastructure retrofits in established communities.

Larger projects (and the corresponding savings) are also possible. The County of Los Angeles recharges storm water already. While the scale of these recharge activities is limited compared to the volume of water potentially available to recharge, the value of the process is significant. For example, in 2000 "County conservation efforts captured 220,000 acre-feet of local storm water runoff that was valued at $80 million dollars."[63]

The unknown effects of infiltrating stormwater to recharge ground water have created some concern that such activities could introduce pollutants to the water supply. However, the U.S. Bureau of Reclamation has found[64]:

"Based on the findings of the WAS research, decentralized stormwater management would provide a local and reliable supply of water that would not negatively impact groundwater quality. A decentralized approach could contribute up to 384,000 acre-feet of additional groundwater recharge annually if the first ¾" of each storm is infiltrated on all parcels, enough to provide water annually to approximately 1.5 million people. The value of this new water supply would be approximately $311 million, using the MWD Tier 2 rate for 2010."

Recent studies in the Los Angeles area have also shown that in the process of infiltration through the soil, many contaminants are removed with no immediate impacts, and no apparent trends to indicate that storm water infiltration will negatively impact groundwater.[65]. In areas with groundwater contamination issues, utilizing recycled storm water to recharge the aquifers may actually aid in the dilution of the buildup of salts. The value of this is hard to quantify but is an additional benefit. The use of recycled water can be accomplished in direct (such as irrigation projects or dual plumbing fixtures) or indirect

[61] http://www.lasgrwc.org/WAS/WASflyer_web.pdf
[62] Los Angeles and San Gabriel River Watershed Council. 1999. *Stormwater: asset not liability*.
[63] Los Angeles County Department of Regional Planning. 2008. 2008 Draft General Plan-Planning Tomorrow's Great Places.
[64] Los Angeles and San Gabriel River Watershed Council. 2010. Water Augmentation Study: Research, Strategy, and Implementation Report.
[65] Los Angeles and San Gabriel River Watershed Council. 2005. Los Angeles Basin Water Augmentation Study Phase II Final Report.

(such as infiltration) ways. Both direct and indirect methods can be completed on a variety of different scales. To maximize the benefits available from using recycled water, the direct and indirect projects will need to be completed on household, neighborhood, watershed and regional scales. Currently there are a limited (but growing) number of projects in the region that can serve as examples of what may be accomplished through the development and implementation of recycled water projects. The Los Angeles County MS4 permit addresses the need for recycled water by controlling pollutants in storm water, which will result in water of improved quality with a greater potential for recycling or beneficial use. State law and policy advocates greatly expanding the use of recycled water to help meet local demand and reduce the volumes of water that are imported from other regions. Increased utilization of recycled water will require looking beyond the traditional reclaimed wastewater and will require utilizing storm water that is wasted by conveyance in the MS4 and dumping into the ocean. Storm water capture and use has not traditionally been included in the discussion of water recycling, but the process meets the definitional constraints and is bound by the same limitations and boundaries.

In addition, there are a number of Total Maximum Daily Loads (TMDLs) developed by the Regional Water Board that incorporate recycled water programs as potential implementation actions to meet TMDL requirements. These potential actions focus on both traditional water recycling and the newer storm water recycling approaches. Such recycled water programs could also reduce reliance on potable water supplies by expanding water recycling and aiding in the reclamation of poor quality, unconfined groundwater supplies. The capture, treatment and use of stormwater could augment these techniques as well. On-site capture of storm water helps prevent the water from being contaminated by urban by-products to begin with and the use of this high quality resource could reduce the unnecessary use of potable water for non-potable needs.

Some great examples of onsite capture are being demonstrated by TreePeople[66] who have demonstration projects ranging from small scale rainwater harvesting at the single family home locations, to large scale watershed projects at Tuxedo Green in Sun Valley where the project redesigned the intersection with a flood control system that conveys most stormwater under, instead of into, the busy intersection. The water is stored in a 45,000-gallon cistern to be used for irrigating the landscaping at the new pocket park, which is planted with native and drought-tolerant species.

Another state of the art project was implemented by the City of Santa Monica called the Santa Monica Urban Runoff Recycling Facility (SMURRF).[67] The project harnesses the urban runoff (primarily during the dry season) and treats it for various pollutants to create a source of high quality water for reuse in landscape irrigation. Because the facility captures the dry weather runoff before it reaches the Santa Monica Bay it decreases a significant amount of pollutants from negatively impacting the Bay and associated beaches. The SMURRF is also open to the public and has several exhibits to raise public awareness of Santa Monica Bay pollution and the role of each individual in the watershed's health.

[66] www.treepeople.org
[67] http://c0133251.cdn.cloudfiles.rackspacecloud.com/Case%20Study%20-%20Santa%20Monica%20Urban%20Runoff%20Recycling%20Facility%20SMURFF.pdf

The County of Los Angeles Department of Public Works, Watershed Management Division has targeted the Sun Valley Watershed "…to solve the local flooding problem while retaining all storm water runoff from the watershed, increasing water conservation, recreational opportunities, wildlife habitat, and reducing stormwater pollution."[68] This aggressive plan involves several stakeholders and has implemented a variety of on-site BMPs as well as storm water infiltration retrofits and diversions.

IX. STATE MANDATES

Article XIII B, Section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The requirements of this Order do not constitute state mandates that are subject to a subvention of funds for several reasons, including, but not limited to, the following.

First, the requirements of this Order do not constitute a new program or a higher level of service as compared to the requirements contained in the previous permit, Order No. 01-182 (as amended). The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the Clean Water Act and is not new to this permit cycle. (33 U.S.C. §1342(p)(3)(B).) The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is anticipated under the Clean Water Act (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990)), and these new and advanced measures do not constitute a new program or higher level of service.

Second, and more broadly, mandates imposed by federal law, rather than by a state agency, are exempt from the requirement that the local agency's expenditures be reimbursed. (Cal. Const., art. XIII B, §9, subd. (b).) This Order implements federally mandated requirements under the Clean Water Act and its requirements are therefore not subject to subvention of funds. This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. (30 U.S.C. §1342(p)(3)(B).) Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. U.S. E.P.A*. (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (cf. *Burbank v. State Water Resources Control Bd*. (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-883.)

[68] http://www.sunvalleywatershed.org/watershed_management_plan/wmp-0ES.pdf

The maximum extent practicable standard is a flexible standard that balances a number of considerations, including technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. (*Building Ind. Asso., supra,* 124 Cal. App.4th at pp. 873, 874, 889.) Such considerations change over time with advances in technology and with experience gained in storm water management. (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990).) Accordingly, a determination of whether the conditions contained in this Order exceed the requirements of federal law cannot be based on a point by point comparison of the permit conditions and the six minimum control measures that are required "at a minimum" to reduce pollutants to the maximum extent practicable and to protect water quality (40 CFR § 122.34). Rather, the appropriate focus is whether the permit conditions, as a whole, exceed the maximum extent practicable standard. In recent months, the County of Los Angeles and County of Sacramento Superior Courts have granted writs setting aside decisions of the Commission on State Mandates that held that certain requirements in Phase I permits constituted unfunded mandates. In both cases, the courts found that the correct analysis in determining whether a MS4 permit constituted a state mandate was to evaluate whether the permit as a whole -- and not a specific permit provision -- exceeds the maximum extent practicable standard. (*State of Cal. v. Comm. on State Mandates* (Super. Ct. Sacramento County, 2012, No. 34-2010-80000604), *State of Cal. v. County of Los Angeles* (Super. Ct. Los Angeles County, 2011, No. BS130730.)

The requirements of the Order, taken as a whole rather than individually, are necessary to reduce the discharge of pollutants to the maximum extent practicable and to protect water quality. The Regional Water Board finds that the requirements of the Order are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California. (Cal. Wat. Code, §§ 13001, 13370.)

It should also be noted that the provisions in this Order to effectively prohibit non-storm water discharges are also mandated by the Clean Water Act. (33 U.S.C. § 1342(p)(3)(B)(ii).) Likewise, the provisions of this Order to implement total maximum daily loads (TMDLs) are federal mandates. The Clean Water Act requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once the USEPA or a state establishes or adopts a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions and requirements of any applicable waste load allocation in a TMDL. (40 CFR § 122.44(d)(1)(vii)(B).)

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

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

Fourth, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in Clean Water Act section 301, subdivision (a) (33 U.S.C. § 1311(a)). To the extent that the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (Accord *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.)

Fifth, the local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

Finally, even if any of the permit provisions could be considered unfunded mandates, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The local agency Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order subject to certain voting requirements contained in the California Constitution. (See California Constitution XIII D, section 6, subdivision (c); see also *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal. App. 4th 1351, 1358-1359.). Additional fee authority has recently been established through amendments to the Los Angeles County Flood Control Act (Chapter 755 of the Statutes of 1915, as amended by Assembly Bill 2554 (2010)) to provide funding for municipalities, watershed authority groups, and the LACFCD to initiate, plan, design, construct, implement, operate, maintain, and sustain projects and services to improve surface water quality and reduce storm water and non-storm water pollution in the LACFCD, which may directly support Permittees' implementation of the requirements in this Order. The Fact Sheet demonstrates that numerous activities contribute to the pollutant loading in the municipal separate storm sewer system. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The authority and ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*Clovis Unified School Dist. v. Chiang* (2010) 188

Cal. App.4th 794, 812, quoting *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

X. PUBLIC PARTICIPATION

Regional Water Board staff held a kick-off meeting on May 25, 2011 to discuss the preliminary schedule for permit development; identify potential alternative permit structures; and outline some of the major technical and policy aspects of permit development. All LA County MS4 Permittees, as well as other known interested stakeholders, were invited to attend. Ninety-five individuals attended the meeting, representing most of the permittees as well as environmental organizations. After a presentation by Board staff, Permittees and interested persons had an initial opportunity to ask questions of staff, raise concerns, and provide feedback.

At the May 25, 2011 kick-off meeting, Board staff requested input from the attendees on various permit structures. In order to solicit more focused input from permittees on alternative permit structures, and per suggestions at the kick-off meeting, Board staff developed and distributed an on-line survey to permittees using the on-line survey tool, SurveyMonkey®. The survey was distributed to all Los Angeles County MS4 Permittees on June 14, 2011 and responses were requested within two weeks. Fifty-two permittees responded using the on-line survey tool. The on-line survey sought input on several options for permit structure, including an individual permit for each municipality, a single permit for all permittees (i.e., the existing permit structure), and a single or multiple watershed-based permits.

Regional Water Board staff also held three topical workshops on December 15, 2011, January 23, 2012, and March 1, 2012. At the December 2011 workshop, staff discussed and invited feedback on: tentative permit requirements for the “minimum control measures” that comprise Permittees core storm water management program, approaches to addressing non-storm water MS4 discharges, and options for flexibility in permit requirements to address watershed priorities. At the January 2012 workshop, staff discussed and invited feedback on: tentative permit requirements to implement TMDL waste load allocations assigned to MS4 discharges and monitoring and reporting requirements for this Order. At the March 2012 workshop, staff discussed the use of water quality-based effluent limitations in this Order, discussed a revised proposal for monitoring requirements based on comments from the January 2012 workshop, and provided additional detail on proposed minimum control measure requirements.

Three Regional Water Board workshops were held during regularly scheduled Board meetings on November 10, 2011, April 5, 2012, and May 3, 2012. At the November 2011 Board workshop, staff discussed the objectives for the new permit, the status and schedule for permit development, alternatives for permit structure, provisions to implement TMDL WLAs, and provisions for minimum control measures, and identified preliminary considerations related to provisions for non-storm water discharges, receiving water limitations, water quality-based effluent limitations, and requirements for monitoring and reporting.

Prior to the April 5, 2012 Board workshop, staff released complete working proposals of the permit provisions related to two key parts of this Order: the storm water management

program "minimum control measures" and the non-storm water MS4 discharge prohibitions on March 21, 2012 and March 28, 2012, respectively. Staff provided Permittees and interested persons the opportunity to submit written and oral comments over a period of three weeks for early consideration by staff prior to the release of the tentative Order. At the April 2012 Board workshop, staff presented the working proposals and the Board invited public comments. Detailed comments were made on both working proposals, and in particular, comments were made on how to address "essential" non-storm water discharges from drinking water supplier distribution systems and fire fighting activities in this Order.

Prior to the May 3, 2012 Board workshop, staff released complete working proposals of the permit provisions related to three other key parts of this Order: provisions for watershed management programs, TMDL-related requirements, and receiving water limitations language. Staff provided Permittees and interested persons the opportunity to submit written and oral comments over a period of three weeks for early consideration by staff prior to the release of the tentative Order. At the May 2012 Board workshop, staff presented the three working proposals and the Board invited public comments. Staff answered extensive questions from Board members following public comments.

In addition to staff and Board workshops, Regional Water Board staff met regularly with Permittees, including the LA Permit Group (a coalition of 62 of the 86 Permittees covered by this Order), the Los Angeles County Flood Control District and the County of Los Angeles, the City of Los Angeles, and interested environmental organizations including Heal the Bay, Santa Monica Baykeeper, and the Natural Resources Defense Council (NRDC). Staff also met on several occasions with other affected agencies including large public water suppliers (Los Angeles Department of Water and Power and Metropolitan Water District), small community water suppliers, and local fire departments.

Finally, staff hosted several "joint" meetings to bring together key leaders among the Permittees and environmental organizations to discuss significant issues and work towards consensus on these issues where possible. The first two of these were held on May 17, 2012 and May 31, 2012, during which the group discussed permit requirements for USEPA established TMDLs. Staff prepared a working proposal based on the areas of agreement from the May 17th joint meeting, and distributed the proposal for review prior to the second meeting on May 31st. The proposal was discussed and refined at the second meeting. A third meeting was held on June 14, 2012.

Prior to the Board's consideration of this Order, the Regional Water Board notified the Permittees and all interested agencies and persons of its intent to hold a hearing to issue an NPDES permit for discharges from the Los Angeles County MS4 and provided them with an opportunity to submit written comments over a 45-day period. The procedures followed for submission of written comments are described in the Notice of Hearing and Opportunity to Comment published for this Order. Notification was provided through the Regional Water Board's website, the Regional Water Board's e-mail subscription service, and the LA Times. After releasing the tentative permit for public review, the Regional Water Board held a staff level workshop on July 9, 2012 to answer questions regarding the tentative permit. A Board member field tour of portions of the MS4 in the San Gabriel Valley was held on July 31, 2012.

The Regional Water Board held a public hearing on the tentative Order during its regular Board meeting on October 4-5, 2012. The Regional Water Board continued the public hearing at its next regular Board meeting on November 8, 2012. Permittees and interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony and comments pertinent to the discharge and this Order. The hearing procedures followed by the Regional Water Board are described in the Notice of Hearing and Opportunity to Comment published for this Order.