CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

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ATTACHMENT F – FACT SHEET

FOR

ORDER NO. R4-2014-0024
(as amended by Order R4-2014-0024-A01)
NPDES PERMIT NO. CAS004003

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISCHARGES FROM THE CITY OF LONG BEACH

February 6, 2014

(amended on September 8, 2016)

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I. INTRODUCTION

As described in Part II.F.2 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 using a standardized format to accommodate a broad range of discharge requirements for dischargers in California.

II. PERMIT INFORMATION

The following table summarizes administrative information about the facility and the City of Long Beach.

Table F-1. Facility and Discharger Information

Discharger	City of Long Beach
Name of Facility	Municipal Separate Storm Sewer System serving the City of Long Beach
Facility Contact and Phone	Storm Water/Environmental Compliance Officer Department of Public Works (562) 570-6383
Mailing Address	333 West Ocean Blvd. 9th Floor Long Beach, CA 90802
Billing Address	Same as above
Type of Facility	Large Municipal Separate Storm Sewer System (MS4)[1]
Major or Minor Facility	Major
Watersheds	(1) Los Angeles River Watershed; (2) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (3) Los Cerritos Channel and Alamitos Bay Watershed Management Area; and (4) San Gabriel 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) Los Angeles River Watershed; (2) Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area; (3) Los Cerritos Channel and Alamitos Bay Watershed Management Area; and (4) San Gabriel River Watershed
Receiving Water Type	Inland surface waters, estuarine waters, and marine waters, including wetlands, lakes, rivers, estuaries, lagoons, harbors, bays, and beaches

III. FACILITY DESCRIPTION

A. Description of the City of Long Beach's MS4

The City of Long Beach is the owner and/or operator[2] of a MS4 within several coastal watersheds of Los Angeles County (hereinafter Facility).

For the purposes of this Order, the City of Long Beach is hereinafter referred to as the Permittee or Discharger. References to "permittee" or "dischargers" or "municipality" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Permittee or Discharger herein.

The City of Long Beach's MS4, like many MS4s in the nation, is based on regional floodwater management systems that use both natural and altered water bodies to achieve flood management goals. The City of Long Beach's MS4 conveys and discharges storm water and non-storm water to surface water bodies.

The permitted area encompasses approximately 47.7 square miles and includes approximately 180 linear miles of MS4. The land use within the permitted area consists of approximately 39.28% residential, 5.35% commercial, 20.42% industrial, 5.98% park, 5.28% planned development, 13.18% roads, and 4.64% unzoned land uses. A map depicting the major drainage infrastructure within the permitted area is included in Attachment C of this Order.

The City of Long Beach's MS4 conveys and ultimately discharges storm water and non-storm water from various sources into receiving waters of the Los Angeles Region. Some of the storm water and non-storm water originating within the City of Long Beach commingles with storm water and non-storm water originating from other sources, including MS4s located upstream, prior to discharge to surface water bodies. Some of the sources of the storm water and non-storm water are the City of Long Beach's urbanized areas and other public agencies, including other MS4 permittees; other non-MS4 NPDES permitted discharges; discharges authorized by the U.S. EPA (including discharges subject to a decision document approved pursuant to the Comprehensive

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

Environmental Response, Compensation, and Liability Act (CERCLA)); groundwater; and natural flows.

B. Regulatory Basis

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, oil and other 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 conveys these pollutants via the MS4 directly into receiving waters.

The water quality impacts, ecosystem impacts, and increased public health risks from MS4 discharges that affect receiving waters nationwide and throughout the jurisdiction of the Los Angeles Regional Board, including its coastline, are well documented. One of the first comprehensive national studies conducted on storm water impacts was the National Urban Runoff Program (NURP) Study (U.S. EPA 1983), which showed that MS4 discharges from residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants. 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. Many studies since continue to support the conclusions of the NURP Study. 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 Los Angeles Regional 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 Stormwater 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 U.S. EPA 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 (CWA Section 305(b) Report) showed that urban runoff/storm water discharges contribute to the impairment of 22,559 miles of streams, to the impairment of 701,024 acres of lakes, and to 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) through its National Water Quality Assessment (NAWQA) program confirm the link between urbanization and water quality impairments in urban watersheds due to contaminated storm water runoff (USGS, 2001).

Furthermore, the water quality impacts of urbanization and urban storm water discharges have been examined and described by many researchers and summarized by U.S. EPA on its website on "Urbanization and Streams: Studies of Hydrologic Impacts" (www.epa.gov/polwaste/nps/urban/report.cfm). 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 City of Long Beach has conducted monitoring to:

- quantify mass emissions of pollutants during storm events and dry weather periods;
- identify critical sources for pollutants of concern in storm water;
- assess impacts on receiving waters; and
- assess compliance with water quality standards and TMDL waste load allocations.

The monitoring by the City of Long Beach and other Los Angeles County MS4 Permittees indicates that concentrations of pathogen indicators (fecal coliform, total coliform, and enterococcus), heavy metals (such as Pb, Cu, Zn, Cd, As, Ni, Ag) and pesticides (such as diazinon, malathion, lindane, total chlordane) exceed water quality standards in receiving waters. 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, non-storm water 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 (Haile et al., 1999).

Trash is also a serious and pervasive water quality problem in the Los Angeles region. 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.

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

MS4 discharges from the City of Long Beach have been regulated under an NPDES MS4 permit when the City became an active participant in the 1990 MS4 permit issued to Los Angeles County and 85 cities. Long Beach was also included in the MS4 permit issued in 1996 to Los Angeles County and 85 cities. In 1999, the Los Angeles Regional Board decided to issue a separate MS4 permit, Order No. 99-60, to Long Beach. Order No. 99-60 expired in 2004, but has been administratively extended in accordance with federal regulations. Order No. 99-60 remains in effect until the Los Angeles Regional Board adopts a new permit.

Order No. 99-60 was organized under the following four parts and includes several attachments. The description below summarizes key permit parts and attachments in the Order No. 99-60:

<u>Part 1 – Receiving Water Limitations</u>

Part one of the expired order prohibited discharges from the MS4 that cause or contribute to violations of water quality standards or to a nuisance condition. It also outlined a procedure for the City of Long Beach to follow in cases when MS4 discharges violate the two prohibitions. The provisions of this section were based on State Board Order No. WQ 99-05.

Part 2 – Discharge Prohibitions

Part two of the expired order followed Section 402(p)(3)(B)(ii) of the Clean Water Act, requiring the City of Long Beach 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 because they are not anticipated to be a source of pollutants to receiving waters. These exempted flows were included in the general categories of natural flows, firefighting flows, and flows incidental to urban activities (e.g. landscape irrigation, sidewalk rinsing). These non-storm water flows were exempted if: (i) they were not a source of pollutants, and (ii) they did not violate antidegradation policies. Part 2 also authorized 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 3 – Storm Water Management, Monitoring, and Reporting

Part three of Order No. 99-60 required the City of Long Beach to implement a storm water management program that is consistent with 40 CFR § 122.26(d)(2) and implement it consistent with EPA guidance. This Part outlined 14 best management practices the City of Long Beach must implement, and required the City of Long Beach to obtain the necessary legal authority to prohibit and control the contribution of pollutants to the MS4.

The monitoring portion of this Part required the City of Long Beach to estimate the annual mass emissions of pollutants discharged to receiving waters from the MS4, determine if there is toxicity in the water column and sediment of the receiving waters, evaluate the impact of storm water on biological organisms in the receiving waters, determine and prioritize pollutants of concern in storm water, identify pollutant sources considering flow, inspections, and illegal and illicit discharger investigations, and evaluate the effectiveness of the best management practices. In addition, this Part required the City of Long Beach to coordinate with other dischargers and with the Southern California Coastal Water Research Project in investigations to determine the impact of storm water discharges on the Los Angeles River, San Gabriel River, and the Los Cerritos Channel. Lastly, this part of Order No. 99-60 outlined the items the City of Long Beach must include in its annual program report and its annual storm water monitoring report.

Part 4 – Special and Standard Provisions

Part four of Order No. 99-60 required the City of Long Beach to coordinate and participate with watershed management committees formed under Order No. 96-054 (the Los Angeles County MS4 Permit in place at the time Order No. 99-60 was adopted) that were applicable to the City of Long Beach. This Part also required the City of Long Beach to inspect the MS4 within its jurisdiction to identify and eliminate illicit connections and illicit discharges.

Order No. 99-60 also included provisions for development planning and construction; for example, the Order required the City of Long Beach to develop guidelines to use in preparing/reviewing CEQA documents and in linking storm water mitigation conditions

to project approvals and to require SUSMP for various types of development projects. The Order also required the City of Long Beach to participate in a five-year public education strategy, conduct educational site visits to industrial and commercial facilities, implement an inlet/catch basin stenciling program, implement specific best management practices for the City of Long Beach's public agency activities, conduct a parking lot study, and modify the City of Long Beach's storm water management program to comply with applicable waste load allocations in TMDLs.

Appendix C – Monitoring and Reporting Program
Order No. 99-60 required (1) mass emissions monitoring; (2) water column and sediment toxicity monitoring; (3) receiving water monitoring; (4) a benthic study; and (5) baseline sampling for bacteria and toxicity In order to assess the impacts of a dry-weather flow diversion that went on line on May 1st, 2000, discharging to Alamitos Bay.

II. 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 U.S. EPA and Chapter 5.5, Division 7 of the California Water Code (CWC), commencing with Section 13370. It serves as an NPDES permit for point source discharges from the City of Long Beach to surface waters. This Order also serves as waste discharge requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the CWC, 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. The Permittee is 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 CWC 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 regional water boards to establish water quality standards for each water body in their region; water quality standards include beneficial uses, water quality objectives and criteria established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters. The *Water Quality Control Plan for the Coastal*

Watersheds of Los Angeles and Ventura Counties, hereinafter 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. 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. Pursuant to CWC Sections 13263(a) and 13377, the requirements of this Order implement the Basin Plan.

The beneficial uses applicable to the surface water bodies that receive discharges from the City of Long Beach's MS4 generally include those listed below:

Table F-2. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
All Municipal Separate Storm Sewer Systems (MS4s) discharge points from 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)

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

The previous Order, Order No. 99-060, was structured primarily as a programmatic permit making references to already established plans and specifying requirements for developing storm water management programs to address pollutants in storm water and non-storm water runoff. With the issuance of the Los Angeles County MS4 Permit (Order No. R4-2012-0175), the Regional Water Board created a new permitting framework based on watershed management areas to address MS4 discharges and water quality protection in the region. This framework is 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. Though the City of Long Beach is the sole Permittee under this Order, the Order allows Long Beach to participate in Watershed Management Programs developed under the Los

Angeles County MS4 Permit to comply with several provisions. This approach allows for consistency in addressing pollutants in MS4 discharges throughout Los Angeles County. This consistency will enable the City of Long Beach to collaborate on regional projects, while also focusing individual resources on issues that may be unique to the City of Long Beach.

The City of Long Beach submitted a Report of Waste Discharge (ROWD) on December 26, 2003. 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.

The Board decided in 1999 to issue a separate MS4 permit to the City of Long Beach, in response to the City's request and its submittal of a complete ROWD. Long Beach is also located geographically at the end of the Los Angeles River, so the individual permit did not significantly impact the Board's regional approach to MS4 regulation. The Board's decision to issue a separate permit to Long Beach was part of a settlement agreement that resolved litigation filed by Long Beach against the Los Angeles Water Board concerning the 1996 Los Angeles County MS4 Permit, Order No. 96-054. Over the last decade, the City of Long Beach has developed and implemented a robust individual monitoring and reporting program to characterize water quality and track implementation of permit requirements within the City. The Board found that the City's proven track record in implementing its individual permit over the past decade and its readiness to work cooperatively with permittees in the Los Angeles County MS4 Permit on watershed based implementation supported the City of Long Beach's continued desire to operate under an individual permit.

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, U.S. EPA 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-3. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
All Municipal Separate Storm Sewer Systems (MS4s) discharge points from 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[3] requires state water quality standards to 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 Los Angeles Regional 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 boards to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the regional water boards' policies. Resolution 68-16 requires discharges of waste to be regulated to meet best practicable treatment or control to ensure pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

   Commenting on the draft version of this Order, some commenters asserted that the watershed management program (WMP)/enhanced watershed management program (EWMP) provisions concerning compliance with receiving water limitations violate the state and federal anti-degradation requirements. The Los Angeles Regional Board disagrees that the WMP/EWMP provisions violate these anti-degradation requirements.

   The Los Angeles Regional Board has appropriately considered whether the WMP/EWMP provisions of this Order comply with the anti-degradation policies. The Board has considered the quality of the receiving waters in the City of Long Beach and Los Angeles County; the likelihood that the WMP/EWMP provisions will prevent

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

additional impacts to receiving waters; and other provisions in this Order that protect receiving water quality. Based on these factors, the Board has determined that the MS4 discharges permitted in this Order will prevent any degradation of receiving waters and therefore this Order is consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution 68-16. In making this determination, the Board has appropriately considered this permit as a whole when assessing the expected impact on water quality, rather than considering individual provisions in isolation. The Board's conclusion that the terms and conditions of this Order will prevent degradation of existing high quality waters has four major supports.

First, the receiving waters of the discharges regulated by the Order have long been heavily impacted by storm water and non-storm water discharges from the MS4, and most of these water bodies are impaired for multiple constituents.[4] The receiving waters are not "high quality." To the extent that data is available from 1968, there were few high quality receiving waters in Los Angeles County even at that time.[5]

Second, as discussed later in regards to anti-backsliding requirements, the terms of this Order are at least as stringent, and in most respects more stringent, than those of the prior permit. The Order does not authorize any new practices that would increase the amount of pollutant loading from the MS4 and it continues to require implementation of control measures to the maximum extent practicable as required by federal law. Given factors one and two, degradation of high quality waters could only occur under this Permit where baseline water quality is higher than both the water quality standards and the levels achieved under the previous permit, Order No. 99-60. Because the baseline water quality in most instances is at the level of control

[4] Impaired water bodies are listed on the 1998 and 2010 Clean Water Act section 303(d) List approved by USEPA. Thus, despite years of stormwater program implementation, many, if not most, of the waterbodies of Los Angeles County have been listed as impaired.

[5] See e.g., Water Resources Control Board, State of California, Toxic Substances Monitoring Program, Ten Year Summary Report 1978-1987 (August 1990) (Administrative Record, Order No. 01-082, R0044666 - 44669); The Santa Monica Bay Restoration Project, An Assessment of Inputs of Fecal Indicator Organisms and Human Enteric Viruses from Two Santa Monica Storm Drains (June 1990) (Administrative Record, Order No. 01-082, R0047130 - 47174); Santa Monica Bay Restoration Project, Pathogens and Indicators in Storm Drains Within the Santa Monica Bay Watershed (June 1992) (Administrative Record, Order No. 01-082, R0047688 - 47748); Santa Monica Bay Restoration Project, Storm Drains as a Source of Surf Zone Bacterial Indicators and Human Enteric Viruses to Santa Monica Bay (August 1991) (Administrative Record, Order No. 01-082, R004779 - 47780); James M. Danza, Water Quality and Beneficial Use Investigation of the Los Angeles River: Prospects for Restored Beneficial Use (1994) (Administrative Record, Order No. 01-082, R0048073 - 48204); Southern California Coastal Water Research Project, Annual Report (1987) (Administrative Record, Order No. 01-082, R0048205 - 48304); National Research Council, Monitoring Southern California's Coastal Waters (1990) (Administrative Record, Order No. 01-082, R0048306 - 48473); Southern California Coastal Water Research Project, Annual Report (1988-89) (Administrative Record, Order No. 01-082, R0048476 - 48482); City of Los Angeles, Wastewater Program Management Division, Santa Monica Bay Stormwater Pollutant Reduction Study (December 1987) (Administrative Record, Order No. 01-082, R0048485 - 48561; Santa Monica Bay Restoration Project, Santa Monica Bay Characterization Study Chapter 7, Urban Runoff (1993) (Administrative Record, Order No. 01-082, R0048714 - 48733); To California Regional Water Quality Control Board, Stormwater Runoff in Los Angeles and Ventura Counties (June 1988) (Administrative Record, Order No. 01-082, R0050795 - 50888); Heal the Bay's State of the Marina Report, Marina del Rey (July 9, 1993) (Administrative Record, Order No. 01-082, R0050999 - 0051022); County of Los Angeles, Department of Beaches and Harbors, The Marine Environment of Marina del Rey (October 1991 – June 1992) (Administrative Record, Order No. 01-082, R0051023 - 51344); Prepared for American Oceans Campaign, Chemical Contaminant Release into the Santa Monica Bay, A Pilot Study (June 12, 1993) (Administrative Record, Order No. 01-082, R0051345 - 51557; Report to the Department of Beaches and Harbors, County of Los Angeles, The Marine Environment of Marina del Rey, October 1989 to September 1990 (March 1991) (Administrative Record, Order No. 01-082, R0052394 - 52721).

achieved under the prior permit, there is no application of the policies' protection of high quality waters.

A third reason that degradation is unlikely to occur is because measures that control impacts from storm water and non-storm water discharges are typically effective across multiple pollutants. For example, retention basins, low-impact development controls, and low flow diversions avert storm water and non-storm water from reaching the receiving water at all—preventing degradation to the receiving water from all types of constituents. The Watershed Management Program provisions contained in this Order are designed to achieve water quality standards for those constituents that are impairing the receiving water as well as to address other constituents of concern but which may not be causing impairment as defined in CWA section 303(d) and State policy. The Watershed Management Programs developed pursuant to these provisions will likely result in improvements in levels of other pollutants, even those for which the receiving water may be "high quality."

Lastly, and as a final backstop against degradation, the Order includes an extensive monitoring program and reopener provisions to identify changes in water quality and to allow amendment of the Permit as necessary to add preventative provisions if a threat of degradation is suspected. The monitoring requirements are sufficient to identify changes in water quality so that a solution may be implemented.

Further, the Regional Water Board and U.S. EPA have established TMDLs to address the impairments. This Order requires the City of Long Beach to comply with permit provisions to implement the WLAs set forth in nine TMDLs applicable to water bodies to which the City of Long Beach's MS4 discharges and thereby restore the beneficial uses of the impaired water bodies consistent with the assumptions and requirements of the TMDLs. This Order includes requirements to develop and implement a storm water management program, achieve water quality-based effluent limitations, and effectively prohibit non-storm water discharges that are a source of pollutants through the MS4.

The issuance of this Order does not authorize an increase in the amount of discharge of pollutants. The Order is consistent with the purpose and intent of the anti-degradation policies.

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. The previous permit did not include any water quality based effluent limitations. The federal technology based effluent limitation requiring controls to reduce the discharge of pollutants in storm water to the maximum extent practicable was carried over from the previous permit. As such, all effluent limitations in this Order are at least as stringent as those in the previous permit.

   Commenting on the draft version of this Order, some commenters asserted that the WMP/EWMP provisions concerning compliance with receiving water limitations violate the federal anti-backsliding requirements found in CWA sections 303(d)(4)

and 402(o), 40 CFR section 122.44(l). The Los Angeles Regional Board disagrees that the WMP/EWMP provisions violate these federal anti-backsliding requirements.

First, the anti-backsliding requirements found in CWA sections 303(d)(4) and 402(o), by their plain language, are not applicable to the receiving water limitations in this Order. These sections only refer to "effluent limitations." "Effluent limitations," by definition, are not receiving water limitations. CWA section 502(11) defines the term "effluent limitation" as "any restriction established by a State or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are *discharged from point sources* into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance" [emphasis added]. Conversely, Attachment A of this Order defines "receiving water limitation" as "any applicable numeric or narrative water quality objective or criterion, or limitation to implement the applicable water quality objective or criterion, *for the receiving water* as contained in Chapter 3 or 7 of the Water Quality Control Plan for the Los Angeles Region (Basin Plan), water quality control plans or policies adopted by the State Water Board, or federal regulations, including but not limited to, 40 C.F.R. section 131.38" [emphasis added]. Thus, while "effluent limitations" restrict the amount of a pollutant from a point source to a receiving water, the "receiving water limitations" are the applicable water quality objectives or criteria that the receiving water itself must meet. Lastly, even assuming that receiving water limitations are considered effluent limitations, CWA section 402(o) is limited to effluent limitations established on the basis of CWA section 402(a)(1)(B), 301(b)(1)(C), 303(d), or 303(e). The receiving water limitations in this Order are not established on any of these bases, but rather are included in this Order pursuant to CWA section 402(p)(3)(B).

Second, the anti-backsliding requirements found at 40 CFR section 122.44(l) are also not applicable to the receiving water limitations in this Order. The commenters contend that receiving water limitations are "standards" or "conditions" subject to section 122.44(l). While the Board recognizes that 40 CFR section 122.44, subdivision (l)(1), initially refers to "effluent limitations, standards, or conditions," the Board notes that all further references in subdivision (l)(2) only refer to "effluent limitations." In fact, after its initial use in subdivision (l)(1), the words "standards" and "conditions" are found nowhere else in subdivision (l)(2). The most probable explanation for this is that the term "effluent" modifies "limitations, standards, or conditions." As such, the terms "standards" or "conditions" in subdivision (l) means "standards" or "conditions" associated with effluent limitations, and not simply any standard or condition in an NPDES permit. If one were to read these terms as commenters do, by reading each term separately, the purpose of the regulation would run afoul as it would prohibit backsliding of "standards" or "conditions," but would provide no exceptions as it does for "effluent limitations." Such a reading would lend itself to an illogical result.[6]

[6] The Board acknowledges that Chapter 7.2.2 of USEPA's NPDES Permit Writers' Manual (2010) appears to take an expansive view of the scope of its anti-backsliding regulations. However, such an expansive view is not supported by the text of the regulations.

Third, to the extent that the federal anti-backsliding provisions in the CWA or its implementing regulations apply, the WMP/EWMP provisions do not violate the anti-backsliding provisions. As mentioned above, all effluent limitations in this Order are at least as stringent as those in the previous 1999 permit. This is because the previous 1999 permit did not include any water quality based effluent limitations and the federal technology based effluent limitation requiring controls to reduce the discharge of pollutants in storm water to the maximum extent practicable have been carried over from the previous permit to this Order. And, contrary to the commenters' assertion, the Board did not "weaken" the receiving water limitations by including the WMP/EWMP provisions in this Order. Consistent with the previous 1999 permit, Part VI.A. of this Order continues to require compliance with receiving water limitations. Thus, the City of Long Beach is still required to comply with water quality standards, although the Board, consistent with federal law, has provided the City with the flexibility to achieve and demonstrate compliance with RWLs provisions through a WMP/EWMP. Further, the WMP/EWMP provisions are prescriptive (more prescriptive than the previous 1999 permit), and achieving water quality standards remains the centerpiece of the WMP/EWMP approach.

Fourth, there are several statutory and regulatory exceptions to the anti-backsliding provisions. One of these exceptions is relaxation of limitations based on new information that was not available at the time the previous permit was issued.[7] In addition, the anti-backsliding requirements in 40 CFR section 122.44, subdivision (l)(1), do not apply if the circumstances on which the previous permit was based have materially and substantially changed since the time the previous permit was issued and would constitute cause for permit modification or revocation or reissuance under 40 CFR section 122.62. Like section 122.41(l), section 122.62 includes new information not available at the time the previous permit was issued as a cause for modification.

To the extent that the anti-backsliding provisions apply and backsliding has occurred, this Order is based on new information learned since issuance of the previous 1999 permit. When the previous permit was adopted in 1999, there were no TMDLs in effect with wasteload allocations assigned to MS4 discharges. This Order includes new provisions implementing 9 watershed-based TMDLs adopted since 1999 that are applicable to MS4 discharges from the City of Long Beach. During the development of these TMDLs, the Board gained new information, such as MS4 discharges' impacts to receiving waters, the control measures available to reduce or prevent MS4 discharges, and the time needed for the City of Long Beach to implement those measures. Since 1999, the Board also gained information from monitoring and analysis by implementing the permit, including information about which methods were successful in improving water quality and which were not.

Unfortunately, the receiving water limitations provisions in State Water Board Order WQ 99-05 alone have not resulted in the water quality outcomes the Board had hoped for. Rather, the Board has seen greater improvement to water quality through inclusion of TMDLs in MS4 permits, notably the three TMDLs in the 2001 Los

[7] See Clean Water Act § 402(o)(2)(B)(i); 40 CFR § 122.44(l)(2)(i)(B)(*1*).

Angeles County MS4 permit in 2006, 2007, and 2009. For example, in the Santa Monica Bay, a series of low-flow diversions were implemented into the MS4 to divert dry weather flows to the sanitary sewer system. This was a new technology, entailed re-engineering of portions of the MS4, and has been proved to be very effective in improving beach water quality. Also, the Los Angeles River Trash TMDL has resulted in development of full capture and partial capture devices that have achieved measurable water quality improvements. Through the Board's experience in developing and implementing these TMDLs, the Los Angeles Regional Board has learned that time to plan, design, fund, operate and maintain best management practices (BMPs) is necessary to attain water quality improvements, and these BMPs are best implemented on a watershed scale.[8]

Lastly, in terms of water supply, since issuance of the previous 1999 permit, there has been a paradigm shift from viewing storm water as a liability to viewing it instead as a regional asset. Had this information been known in 1999, the previous permit might have included different provisions. The WMP/EWMP approach emphasizes integrated planning for storm water management, flood control, and water supply. The WMP/EWMP plans that will be submitted to the Board, and eventually approved, will be based on new information from modeling and monitoring of the effectiveness of BMPs and other control measures. And, as discussed later in this Fact Sheet, the City of Long Beach will have to periodically reevaluate and revise its WMPs/EWMPs based on new information learned through the adaptive management process.

There is also additional support for the Board's WMP/EWMP provisions. Recently, USEPA Region III adopted a Phase I MS4 permit for the District of Columbia that specifically provided additional time for MS4 permittees to comply with water quality standards.[9] Part 1.4.1. of that permit requires the District of Columbia to "[e]ffectively prohibit pollutants in stormwater discharges or other unauthorized discharges into the MS4 as necessary to comply with existing District of Columbia Water Quality Standards (DCWQS)."[10] Part 1.4.2 requires the District of Columbia to "[a]ttain applicable wasteload allocations (WLAs) for each established or approved Total Maximum Daily Load (TMDL) for each receiving water body…"[11] Part 1.4. further states that "[c]ompliance with the provisions contained in Parts 2 through 8 of this permit, including milestones and final dates for attainment of applicable WLAs, shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term."[12] Parts 2 through 8 of that permit establish a variety of control measures

[8] The Board notes that USEPA and the State Water Board have deemed BMPs to be a type of an effluent limitation. In State Water Board Order 96-13 (*Save San Francisco Bay Association*), the petitioner claimed that Clean Water Act section 402(o) was violated because the permit in question deleted some of the activities specifically listed in the earlier permit. The State Water Board concluded otherwise, stating: "The EPA has also acknowledged that the process of developing the SWMP will result in revising BMPs as new information becomes available. (Reapplication Policy.) It is absurd to assume that such revisions would violate the antibacksliding prohibitions." *Id*., p. 10.

[9] NPDES Permit No. DC0000221. USEPA Region III adopted the District of Columbia MS4 permit on September 30, 2011. As a result of an appeal of the permit, USEPA made limited modifications to the permit on November 9, 2012, including minor language changes to Part 1.4. The language quoted is the language of the existing permit, with the modifications.

[10] *Id*. Note that this language did not change between September 30, 2011 and November 9, 2012.

[11] *Ibid.* Note that this language did not change between September 30, 2011 and November 9, 2012.

[12] *Ibid.* Note that this is the language as it exists today. The language had been slightly modified between September 30, 2011 and November 9, 2012. However, the existing language still provides that compliance with certain provisions constitutes adequate progress toward compliance with water quality standards.

and BMPs that the District of Columbia shall comply with. In its Fact Sheet, USEPA Region III provided the following rationale for this language[13]:

> Today's Final Permit is premised upon EPA's longstanding view that the MS4 NPDES permit program is both an iterative and an adaptive management process for pollutant reduction and for achieving applicable water quality standard and/or total maximum daily load (TMDL) compliance. *See generally,* "National Pollutant Discharge Elimination System Permit Application Regulations for Stormwater Discharges," 55 F.R. 47990 (Nov. 16, 1990).
>
> EPA is aware that many permittees, especially those in highly urbanized areas such as the District, likely will be unable to attain all applicable water quality standards within one or more MS4 permit cycles. Rather the attainment of applicable water quality standards as an incremental process is authorized under section 402(p)(3)(B)(iii) of the Clean Water Act, which requires an MS4 permit "to reduce the discharge of pollutants to the maximum extent practicable" (MEP) "and such other provisions" deemed appropriate to control pollutants in municipal stormwater discharges. To be clear, the goal of EPA's stormwater program is attainment of applicable water quality standards, but Congress expected that many municipal stormwater dischargers would need several permit cycles to achieve that goal.
>
> Specifically, the Agency expects that attainment of applicable water quality standards in waters to which the District's MS4 discharges, requires staged implementation and increasingly more stringent requirements over several permitting cycles. During each cycle, EPA will continue to review deliverables from the District to ensure that its activities constitute sufficient progress toward standards attainment. With each permit reissuance EPA will continue to increase stringency until such time as standards are met in all receiving waters. Therefore today's Final Permit is clear that attainment of applicable water quality standards and consistency with the assumptions and requirements of any applicable WLA are requirements of the Permit, but, given the iterative nature of this requirement under CWA Section 402(p)(3)(B)(iii), the Final Permit is also clear that "compliance with all performance standards and provisions contained in the Final Permit shall constitute adequate progress toward compliance with DCWQS and WLAs for this permit term" (Section 1.4).

Some commenters on the District of Columbia permit also raised the issue of anti-backsliding to USEPA. Specifically, USEPA noted that commenters stated that "by not including language requiring the District [of Columbia] to meet water quality standards, the Permit is backsliding from inferred requirements to do so included in the 2004 Permit."[14] USEPA responded that the final permit for the District of

[13] Fact Sheet for District of Columbia MS4 Permit, pp. 5-6.
[14] USEPA Responsiveness Summary for NPDES Permit No. DC0000221, p. 110.

Columbia "does require standards attainment" and that "[i]f the District does not comply with [Part 1.4], it would be in violation of the Permit."[15] However, USEPA also acknowledged that "such standards attainment may not occur in its entirety during this Permit cycle."[16] Further, USEPA stated that: "As to the suggestion that the previous Permit was more stringent by requiring standards attainment during the Permit cycle, and therefore the current Permit is backsliding, EPA contends that the requirements have not changed. Both the 2004 Permit and current reissuance require incremental standards attainment. Therefore, backsliding has not occurred since the current Permit is no less stringent than the prior one."[17] Like the MS4 permit for the District of Columbia, this Long Beach MS4 permit also requires compliance with water quality standards, but recognizes that actual attainment of water quality standards may not occur during the term of this Order.

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, U.S. EPA approves the State's 303(d) List. Most recently, U.S. EPA 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 U.S. EPA 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 U.S. EPA develops and adopts TMDLs that specify these requirements.

Over the last decade, the Los Angeles Regional Board and U.S. EPA established 9 TMDLs to remedy water quality impairments in various water bodies receiving the City of Long Beach's MS4 discharge. These TMDLs identify MS4 discharges as a source of pollutants to these water bodies and 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*

[15] Ibid.
[16] *Id*., p. 111.
[17] Ibid.

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 NPDES permits to include limitations necessary to implement water quality control plans. Therefore, this Order includes effluent limitations and other provisions to implement the WLAs assigned to the City of Long Beach's MS4 discharges.

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 in 40 CFR section 131.38.

III. RATIONALE FOR DISCHARGE SPECIFICATIONS

A. Discharge Prohibitions

The Order includes discharge prohibitions related to discharges from the MS4 that are acutely or chronically toxic to aquatic life. This discharge prohibition is included based on observed toxicity, as described elsewhere in this Fact Sheet, in waters to which the MS4 discharges and to implement the Basin Plan narrative objective, which states that all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce a detrimental physiological response in, human, plant, animal or aquatic life.

1. **Regulatory Background** – Prohibition of Non-Storm Water Discharges

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. The 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, U.S. EPA 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 and address both storm water and non-storm water discharges from MS4s; however, the minimum requirements for each are significantly different. This is evident from U.S. EPA's preamble to the storm water regulations, which states that "Section 402(p)(B)(3) [of the CWA] requires 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).[18] U.S. EPA 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 U.S. EPA 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 CFR § 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, U.S. EPA'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, U.S. EPA 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)). U.S. EPA 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).

[18] 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)).

However, where certain categories of non-storm water discharges are identified by 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 U.S. EPA'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). U.S. EPA'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, U.S. EPA explained 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. 99-60, 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 firefighting 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.

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 City of Long Beach 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 U.S. EPA 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[19]
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[20]
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[21]

[19] 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.

[20] 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.

[21] 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 U.S. EPA 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 U.S. EPA or State-required compliance testing of potable water treatment plants, as part of a U.S. EPA 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 U.S. EPA pursuant to Section 121(d)(4) of CERCLA or (b) a written determination by U.S. EPA 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 U.S. EPA 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, U.S. EPA's authorization of the discharge under CERCLA will require that the City of Long Beach 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 City of Long Beach and the Los Angeles Regional Board at least one week prior to a planned discharge (unless U.S. EPA 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[22]; and

[22] 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 VIII applicable to discharges from the MS4 to the receiving water.

(5) Maintain records for all discharges greater than 100,000 gallons.[23]

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 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

[23] 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.

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 Los Angeles Regional Board has a general permit for discharges of non-process 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 City of Long Beach's 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 the City of Long Beach is 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 firefighting activities have been incorporated into other MS4 permits including both Orange County and Riverside County. Flows resulting from emergency firefighting 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 firefighting 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 firefighting flows. Rather than develop a program to address non-emergency firefighting flows, common BMPs used in association with non-emergency firefighting discharges have been incorporated into this Order. Guidance on BMPs contained in this Order for non-emergency firefighting 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. Requirements for Non-Storm Water Discharges

This Order requires the City of Long Beach to screen MS4 outfalls and look for non-storm water discharges, and to monitor and evaluate significant non-storm water discharges. This Order requires the City of Long Beach 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 City of Long Beach versus the responsibilities of the non-MS4 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 NPDES permits to include technology based effluent limitations.[24] In 1987, Congress amended the CWA to require municipal storm water discharges to "reduce the discharge of pollutants to the

[24] 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.

maximum extent practicable." (CWA § 402(p)(3)(B)(iii).) The "maximum extent practicable" (MEP) standard is the applicable federal technology based effluent limitation MS4 owners and operators must attain to comply with their NPDES permits.[25] 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 U.S. EPA defined the term "maximum extent practicable." Rather, the MEP standard is a flexible and evolving standard. Congress established this flexible MEP standard so administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of storm water pollution."[26] This standard allows 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.[27] 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 U.S. EPA's interpretation of storm water management programs. U.S. EPA explained 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."

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.

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[25] 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.

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

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

This Order also provides for the use of municipal action levels ("MALs") derived from the National Stormwater Quality Database (NSQD), as one 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 MEP. 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. The U.S. EPA 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.[28]

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."[29] This requirement gives U.S. EPA 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.[30] WQBELs may be expressed narratively or numerically.

In its Phase I Stormwater Regulations, Final Rule, U.S. EPA 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)). In December 1999, U.S. EPA 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."[31] The State Water Board affirmed that MS4 permits must include

[28] 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."

[29] The first and second iterations of the MS4 permit covering discharges from Long Beach's MS4 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.

[30] 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.

[31] *See, e.g.,* Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

requirements necessary to achieve compliance with the applicable technology based standard of MEP and to achieve water quality standards.[32]

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.[33]

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 U.S. EPA 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.[34] 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 U.S. EPA'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 Los Angeles Regional 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. The U.S. EPA also recommends the use of numeric WQBELs to meet water quality standards where MS4 discharges have the reasonable 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.

[32] See, e.g., State Water Board Orders WQ 99-05 and 2001-15.
[33] 40 CFR §§ 122.44(d)(1)(i); 122.44(d)(1)(iii)
[34] 40 CFR §§ 122.44(d)(1)(i)-(iii); 122.44(d)(1)(vii)(B)

While BMPs[35] 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.[36] As discussed earlier, the State and Regional Water Boards 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 permitted area to provide the Los Angeles Regional Board reasonable assurance that the BMPs would be sufficient to achieve the WQBELs.[37]

Regarding the feasibility of numeric effluent limitations, the Los Angeles Regional 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, numerous TMDLs have been developed for water bodies in Los Angeles County in which WLAs are assigned to MS4 discharges. Of these, 9 TMDLs include WLAs applicable to the City of Long Beach 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. U.S. EPA 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.[38]

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 the Los Angeles region, numeric WQBELs create an objective, equitable and accountable means of controlling MS4 discharges, while providing the flexibility for the City of Long Beach to comply with the WQBELs in any lawful manner.

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[35] 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).

[36] 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.

[37] 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.

[38] See US EPA 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 City of Long Beach's MS4 in all available TMDLs.

The MS4 permit 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 Los Angeles Regional 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.

E. Interim Effluent Limitations

Where there is a TMDL implementation plan adopted by the Los Angeles Regional 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.

IV. 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 U.S. EPA or the State permitting authority discretion to determine what permit conditions are necessary to control pollutants. In its Phase I Stormwater Regulations, Final Rule, U.S. EPA 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)). The U.S. EPA 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."[39] The U.S. EPA 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.[40] 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 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

[39] *See, e.g.,* Phase II Stormwater Regulations, Final Rule, 64 Fed. Reg. 68722, 68737.

[40] 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.

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 U.S. EPA 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 Long Beach MS4 permit (Order No. 99-60), the previous Los Angeles County MS4 Permit (Order No. 01-182), and in the current Los Angeles County MS4 Permit (Order No. R4-2012-0175), which are all 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 storm water or non-storm water, for which a Permittee is responsible, shall not cause or contribute to a condition of nuisance.[41]

Third, it includes a provision that states the City of Long Beach 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 modifications." This third provision elucidates the process by which the City of Long Beach should achieve the first two provisions and then outlines the so-called "iterative process" whereby certain actions are required when exceedances of receiving water

[41] 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").

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 U.S. EPA's expectations for MS4 permits.[42]

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 the City of Long Beach in a timely fashion when necessary, so that the first two provisions are achieved as soon as possible. The U.S. EPA 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, U.S. EPA 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.[43]

The receiving water limitations provisions have been litigated twice in the Los Angeles Region, 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, as included in the Los Angeles County MS4 Permit, Order No. 01-182, 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, again as included in Order No. 01-182, were also 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 Order No. 01-182) does not "forgive" violations of the discharge prohibitions (in Parts 2.1 and 2.2 of Order No. 01-182). The court acknowledged that Part 2.3 clarifies that Parts 2 and 3 interact, but

[42] 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."
[43] See note 20.

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 exceedances 'persist,' despite prior abatement efforts, a process will commence whereby a responsible Permittee amends its SQMP. Given that Part 3 of the [2001 Los Angeles County MS4] 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 U.S. EPA in implementing the requirements of the 1999 consent decree between EPA and the environmental groups. The requirements of the consent decree are now complete and nine of these TMDLs addressing several waterbody-pollutant combinations will be implemented in this Order. The number of TMDLs, and many water quality issues that the TMDLs address, is significant. These extensive and enforceable implementation programs for addressing myriad water quality issues throughout the County, including within the City of Long Beach, 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 the City of Long Beach 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 the City of Long Beach being in full compliance with all requirements articulated in the permit and approved Watershed Management Program or Enhanced Watershed Management Program in order to take advantage of these provisions.

This Order includes requirements to implement WLAs assigned to MS4 discharges from 9 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 include compliance schedules for TMDLs adopted by the Los Angeles Regional Board consistent with the TMDL implementation schedule to achieve the final receiving water limitations. The Los Angeles Regional 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 the City of Long Beach's full compliance with the applicable TMDL requirements pursuant to the compliance schedules in this Order constitutes the City of Long Beach's compliance with the receiving water limitations provisions for the particular pollutant addressed by the TMDL.

For water body-pollutant combinations not addressed by a TMDL, the Los Angeles Regional Board included provisions to allow the City of Long Beach to develop a Watershed Management Program or Enhanced Watershed Management Program 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) and the Structural BMP Prioritization and Analysis Tool (SBPAT). The Hydrologic Simulation Program-FORTRAN (HSPF) may also be used in combination with other models. 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 the MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.

The City of Long Beach'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 for the specific water body-pollutant combinations addressed by an approved Watershed Management Program or Enhanced Watershed Management Program. However, if the City of Long Beach fails to meet any requirement or date for its achievement beginning with notification of intent to develop a Watershed Management Program or Enhanced Watershed Management Program, and continuing with implementation of an approved Watershed Management Program or Enhanced Watershed Management Program, the City of Long Beach is subject to the provisions for the waterbody-pollutant combination(s) that were to be addressed by the requirement. If the City of Long Beach does not elect to develop a Watershed Management Program or Enhanced Watershed Management Program, the City of Long Beach must demonstrate compliance with receiving water limitations pursuant to the provisions of Part VI.C.

V. 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. The City of Long Beach 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 the City of Long Beach 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 Receiving Water Limitations requirements and Total Maximum Daily Load Provisions by customizing the control measures in Prohibitions – Non-Storm Water Discharges and in 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)). The U.S. EPA later issued a Watershed-Based NPDES Permitting Policy Statement (U.S. EPA, 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, U.S. EPA explains that, "[t]he utility of this tool relies heavily on a detailed, integrated, and inclusive watershed planning process." The U.S. EPA 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. 99-60. A watershed based structure for permit implementation is consistent with TMDLs developed by the Los Angeles Regional Board and U.S. EPA, which are established at a watershed or subwatershed scale and are a prominent new part of this Order. The City of Long Beach has already begun collaborating on a watershed scale to develop monitoring and implementation plans required by TMDLs.

An emphasis on watersheds is appropriate at this stage in the region's MS4 program to shift the focus from rote program development and implementation to 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 discharges from the 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 for the City of Long Beach to design and implement a program based on improved knowledge of storm water and its impacts on local receiving waters and by employing BMPs and other control measures 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 the City of Long Beach 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 the City of Long Beach must expend funds outside of its jurisdiction. Rather, the City of Long Beach is 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. The City of Long Beach can implement the strategy individually within its jurisdiction, or 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 City of Long Beach's watershed management programs. Such opportunities for program integration inherently provide flexibility to the City of Long Beach in implementing its program. Program integration can be expanded or minimized as the City of Long Beach sees fit. In some cases the City of Long Beach may opt to continue jurisdiction-specific implementation for certain programs, while for other program areas more collaborative watershed scale implementation may be more effective. The City of Long Beach will identify individual roles and responsibilities as part of the Watershed Management Program Plan.

The City of Long Beach can customize the BMPs to be implemented, or required to be implemented, for public agency activities, construction, and existing development areas. The City of Long Beach can also determine which industrial or commercial sites are to be inspected, based on appropriate criteria, and select the most effective educational outreach approaches. The Order provides flexibility to the City of Long Beach in selecting the applicable methods to assess the effectiveness of the storm water management program. This approach includes the monitoring program requirements whereby the City of Long Beach may develop several monitoring approaches to the various aspects of the monitoring requirements.

The challenge in drafting this Order was in providing the City of Long Beach the flexibility described above, while ensuring enforceability of the Order. Therefore, this Order contains baseline or default requirements, such as the six "minimum control measures" within the City of Long Beach's baseline storm water management program, while providing the City of Long Beach the flexibility to propose customized actions as part of a watershed management program.

If the City of Long Beach elects to develop a Watershed Management Program, the City of Long Beach must submit a "Notice of Intent" to the Los Angeles Regional Board no later than two months after the effective date of this Order. If the City of Long Beach elects not to develop a Watershed Management Program, the City of Long Beach is then 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 City of Long Beach's outfall(s).

If the City of Long Beach elects to develop a Watershed Management Program, the City of Long Beach must submit a draft plan for approval by the Los Angeles Regional Board or by the Executive Officer on behalf of the Los Angeles Regional Board no later than one year after the effective date of the Order for a Watershed Management Program and no later than June 28, 2015 for an Enhanced Watershed Management Program. To encourage stakeholder involvement in the development of the Watershed Management Programs, the Order requires that the City of Long Beach to participate in the technical advisory committee (TAC) convened under the Los Angeles County MS4 Permit that is advising and participating in the development of the Watershed Management Programs. Additionally, the Order requires the draft Watershed Management Programs to be made available for public review prior to approval by the Los Angeles Regional Board or Executive Officer on behalf of the Los Angeles Regional Board.

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 Los Angeles Regional 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 where appropriate, with "watershed authority groups" designated in the amendments to the Los Angeles County Flood Control Act, so long as the City of Long Beach implements the TMDL provisions for which it is responsible.

The City of Long Beach 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 TMDL deadlines that have already passed and limitations have not been achieved.
2. Pollutants for which there are water quality based effluent limitations and/or receiving water limitations with interim or final compliance deadlines during the permit term.
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.

The City of Long Beach must identify strategies, control measures, and BMPs to implement through its 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. The City of Long Beach 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, the City of Long Beach 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 the City of Long Beach identifies 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. The City of Long Beach 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 City of Long Beach 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, the City of Long Beach 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.

The City of Long Beach 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, the City of Long Beach 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)).

The City of Long Beach must develop schedules for both the strategies, and control measures and BMPs the City of Long Beach plans to implement. 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 and not otherwise addressed by TMDL Provisions:

- **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.

The City of Long Beach must implement the Watershed Management Program immediately after determination by the Los Angeles Regional Board Executive Officer that the Watershed Management Program meets the requirements of this Order.

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, the City of Long Beach 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).

The City of Long Beach must also 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 City of Long Beach's 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, the City of Long Beach must 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). The City of Long Beach must implement any modifications to the Watershed Management Program upon acceptance by the Los Angeles Regional Board Executive Officer.

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

1. General Requirements

a. **Basis for MCMs**. Section 122.26(d)(2)(iv) of 40 CFR establishes required elements for the City of Long Beach's storm water management program. The minimum control measures require the City of Long Beach 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, this Order allows the City of Long Beach 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 Los Angeles Regional Board.

b. Timelines for Implementation

The timelines for implementation of most MCMs contained in this Order are provided in Table F-5 below. Where implementation dates for minimum control measures are not provided in the Table, implementation is required within 6 months of the effective date this Order. Unless otherwise noted in this Order, if the City of Long Beach does not elect to develop a Watershed Management Program or Enhanced Watershed Management Program, the City of Long Beach must implement the requirements within 6 months after the effective date of this Order. In the interim, the City of Long Beach 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).

If the City of Long Beach elects to develop a Watershed Management Program or Enhanced Watershed Management Program, the City of Long Beach 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) until the Watershed Management Program or Enhanced Watershed Management Program is approved by the Los Angeles Regional Board Executive Officer. During this planning period, the City shall target implementation of its existing storm water management program to address known contributions of pollutants from MS4 discharges that cause or contribute to receiving water limitation exceedances. The Table below denotes the timeframe for requirements as well as the basis of those timeframes. The majority of the timeframes are consistent with other area permits including the Los Angeles County MS4 Permit, 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			
IV C1ii	Drinking water suppliers must notify the City of Long Beach if intend to discharge to the City of Long Beach'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.
IV E4	If the City of Long Beach determines that any of the authorized or conditionally exempt essential non-storm water discharges identified in Parts IV.B.2.a and IV.B.2.b 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	Within 30 days of determination.	The specification of a 30 day deadline is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	CERCLA, or a conditionally exempt essential non-storm water discharge or emergency non-storm water discharge.		
Table 7	Dewatering of Lakes – Ensure procedures for advanced notification by the lake owner/operator to the City of Long Beach(s).	At least 72 hours in advance of discharge.	Allows for advanced notice and sampling, if warranted.
Table 7	Dechlorinated/debrominated swimming pool/spa discharges – Ensure procedures for advanced notification by the pool owner to the City of Long Beach(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 7	Dewatering of decorative fountains – Ensure procedures for advanced notification by the fountain owner to the City of Long Beach 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.
Receiving Water Limitations			
VI A3a	Upon determination by either the City of Long Beach or the Regional Water Board that discharges from the MS4 are causing or contributing to an exceedance of an applicable Receiving Water Limitation, the City of Long Beach 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 specification of a 30 day deadline is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
VI A3b	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 the current LA MS4 Permit
VI A3c	City of Long Beach 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			
Table 4	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			
VII C4b	If the City of Long Beach elects to develop a Watershed Management	No later than 3 months after the date this Order	This provides a reasonable amount of time to

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	Program must notify the Regional Water Board.	is adopted.	determine participation in a WMP, but also ensure adequate time for implementation of watershed scale control measures during the term of this Order.
VII C4c	If the City of Long Beach elects to develop a Watershed Management Program shall submit a draft plan to the Regional Water Board Executive Officer.	No later than June 28, 2014 if the City of Long Beach is participating with other Permittees and no later than 12 months after the Order is adopted if developing an individual Watershed Management Plan, by June 28, 2015 if participating in an Enhanced Watershed Management Plan.	This provides a reasonable amount of time to complete the plan but also ensure effective monitoring during the term of this Order.
VII C8a	The City of Long Beach shall implement an adaptive management process in each applicable watershed management area receiving its discharge thus adapting the Watershed Management Program to become more effective.	At least twice during the permit term.	This encourages application of the iterative approach.
VII C8b	City of Long Beach shall implement the adaptive management process with regard to its jurisdictional storm water management program to improve its effectiveness in each applicable watershed management area.	At least annually.	This encourages application of the iterative approach.
Special Provisions: Minimum Control Measures			
VII D2i(1)	Progressive Enforcement and Interagency Coordination – In the event the City of Long Beach determines that a facility or site operator has failed to adequately implement all necessary BMPs, the City of Long Beach 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.
VII D2ii	Progressive Enforcement and interagency Coordination –The City of Long Beach shall initiate investigation of complaints from facilities within its jurisdiction.	Initiate investigation within one business day of complaint.	This is consistent with the current LA MS4 Permit
VII F2iv	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	No later than 30 days after a change occurs.	This is consistent with the current LA MS4 Permit

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	designated PIPP coordinator and contact information changes.		
VII G2iii	Industrial/Commercial Business Program –The City of Long Beach shall update its inventory of critical sources.	Update at least annually.	Business turn-over can be significant thus an active inventory is required.
VII G3i	Industrial/Commercial Business Program – The City of Long Beach shall notify the owner/operator of each of its inventoried commercial and industrial sites identified in Part VII.G.2.i 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.
VII G4i	Industrial/Commercial Business Program –The City of Long Beach shall inspect all commercial facilities identified in Part VII.G.2.i 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.	The 2 year requirement contained in this Order is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
VII G5i(1)	Industrial/Commercial Business Program – The City of Long Beach shall perform an initial compliance inspection of all industrial facilities identified in Part VII.G.2.i of this Order	No later than 2 years after the date this Order is adopted.	The 2 year requirement contained in this Order is considered reasonable and the earliest practicable deadline to ensure the protection of water quality.
VII G5i(2)	Industrial/Commercial Business Program – The City of Long Beach 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 City of Long Beach 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 that is consistent with the current LA MS4 Permit
VII G5i(3)	Industrial/Commercial Business Program – The City of Long Beach 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 with the current LA MS4 Permit
VII J4iii(5)(f)	Planning and Land Development Program – The City of Long Beach shall develop a schedule for the completion of offsite projects, including milestone dates to	Offsite projects shall be completed as soon as possible, and at the latest within 4 years of the certificate of occupancy	This requirement is consistent with the provisions contained in the Ventura County Redevelopment Project

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	identify, fund, design, and construct the projects.	for the first project that contributed funds toward the construction of the offsite project.	Area Master Plan (RPAMP) and the current LA MS4 Permit
VII J5iv(1)	Planning and Land Development Program – The City of Long Beach shall maintain a database providing key information for each new development/re-development subject to the requirements of Part VII.J of this Order.	The City of Long Beach 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.
VII J5i	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 60 days after the date this Order is adopted.	The requirement is deemed acceptable due to the large number of existing LID ordinances within the City of Long Beach and the varied number of templates available nationally.
VII J5iii(1)(a)	Planning and Land Development Program – Written conditions in the sales or lease agreement, which require the property owner or tenant to assume responsibility for BMP maintenance and conduct a maintenance inspection.	At least once a year.	This is consistent with the current Ventura County and the current LA MS4 permit.
VII J5iv(1)	Planning and Land Development Program – The City of Long Beach 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.
VII J5iv(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 and the current LA MS4 permit.
Table 16	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.
Table 16	Development Construction Program	When two or more	This requirement is

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	– Inspect public and private construction sites 1 acre or larger determined to be a significant threat to water quality.	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.	consistent with the current State Water Board's General NPDES Construction Permit Requirements.
Table 16	Development Construction Program – Inspect public and private construction sites 1 acre or larger that do not meet other criteria in Part VII.K.1.xii.2(1)of this Order.	At least monthly.	This requirement is consistent with the current General Construction Permit Requirements.
VII L3iii	Public Agency Activities Program – The City of Long Beach 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.
VII L8iii(2)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, The City of Long Beach 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 the current LA MS4 Permit
VII L8iii(2)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, the City of Long Beach shall inspect Priority B catch basins.	A minimum of once during the wet season and once during the dry season every year.	This is consistent with the current LA MS4 Permit
VII L8iii(2)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, the City of Long Beach shall inspect Priority C catch basins.	A minimum of once per year.	This is consistent with the current LA MS4 Permit
VII L8iv	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 and the Current LA County MS4 permit.
VII L8vi(2)	Public Agency Activities Program – The City of Long Beach shall inspect the legibility of the stencil or label nearest each inlet.	Prior to the wet season every year.	This is consistent with the current LA MS4 Permit
VII L8vi(3)	Public Agency Activities Program – The City of Long Beach shall record all catch basins with illegible stencils and re-stencil or re-label.	Within 180 days of inspection.	This is consistent with the current LA MS4 Permit
VII L8vii(1)	Public Agency Activities Program – In areas that are not subject to a trash TMDL, the City of Long Beach 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 consistent with the current LA MS4 Permit
VII L8viii(1)	Public Agency Activities Program – Visual monitoring of the City of Long Beach's owned open channels and other drainage structures, including debris basins, for debris.	At least annually.	This is consistent with the current LA MS4 Permit

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
VII L8viii(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 the current LA MS4 Permit
VII L9ii	Public Agency Activities Program – The City of Long Beach shall perform street sweeping of curbed streets for Priority A areas.	Swept at least two times per month.	This is consistent with the current LA MS4 Permit
VII L9ii	Public Agency Activities Program – The City of Long Beach shall perform street sweeping of curbed streets for Priority B areas.	Swept at least once per month.	This is consistent with the current LA MS4 Permit
VII L9ii	Public Agency Activities Program – The City of Long Beach 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 the current LA MS4 Permit
VII L9iv(1)	Public Agency Activities Program – The City of Long Beach's 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 City of Long Beach-owned parking lot be cleaned less than once a month.	This is consistent with the current LA MS4 Permit
VII L10i(2)	Public Agency Activities Program – Where the self-waiver has been invoked, the City of Long Beach 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.	No later than 30 business days after the situation of emergency has passed.	This is consistent with the current Ventura County and the current LA County MS4 permit.
VII L11i	Public Agency Activities Program – The City of Long Beach 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.	Implementation within a year is considered reasonable and the earliest practicable period for implementation. This is consistent with the current Ventura County and the current LA County MS4 permits.
VII L11ii	Public Agency Activities Program – The City of Long Beach 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 and the current LA County MS4 permits.
VII M2ii	Illicit Connections and Illicit Discharges Elimination Program – The City of Long Beach shall initiate investigation(s) to identify and locate the source of an illicit discharge.	Within 72 hours of becoming aware of the illicit discharge.	The 72 hour requirement takes into account the possibility of weekend spills.
VII M2iv(2)	Illicit Connections and Illicit	Within 30 days of such	This ensures the ID is

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	Discharges Elimination Program – If the source of the illicit discharge has been determined to originate within an upstream jurisdiction, the City of Long Beach shall notify the upstream jurisdiction and the Regional Water Board.	determination.	addressed in a reasonable period of time by the upstream jurisdiction.
VII M2v	Illicit Connections and Illicit Discharges Elimination Program – In the event the City of Long Beach 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, the City of Long Beach shall work with the Regional Water Board to provide a diversion of the entire flow to the sanitary sewer or provide treatment.	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.
VII M3i	Illicit Connections and Illicit Discharges Elimination Program – The City of Long Beach, 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 the current Ventura County and LA County MS4 permits.
VII M3ii	Illicit Connections and Illicit Discharges Elimination Program – The City of Long Beach, 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 the current Ventura County and the current LA County MS4 permits.
VII M5i(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 the current Ventura County and the current LA County MS4 permits.
VII M5i(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.
VII M6iv	Illicit Connections and Illicit Discharges Elimination Program – The City of Long Beach must create a list of applicable staff and	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

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	contractors which require IC/ID training and ensure that training is provided.		earliest practicable period for implementation.
VII M6v	Illicit Connections and Illicit Discharges Elimination Program – New City of Long Beach staff members must be provided with IC/ID training.	Within 180 days of starting employment.	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 step. Progressive enforcement includes procedures to coordinate enforcement between the Los Angeles Regional Board and the City of Long Beach. Since the Los Angeles Regional Board is the agency responsible for implementing the NPDES program, it has the authority to step in when enforcement actions taken by the City of Long Beach are unsuccessful in bringing responsible parties into compliance with the permit. As such, progressive enforcement is an effective strategy to achieve timely compliance with permit requirements. This Order includes supplemental documentation requirements for site acreage and Risk Factor rating, when making a referral to the Los Angeles Regional Board for MS4 permit non-compliance of a discharger under the construction general permit. This requirement is necessary information for the Los Angeles Regional Board consideration.

3. Modifications/Revisions

This Order requires the City of Long Beach to modify its storm water management program, protocols, practices, and municipal codes to be consistent with this Order. This provision is necessary to ensure the City of Long Beach takes all the steps necessary to update the core and ancillary programs that are required to ensure compliance with this Order.

4. Public Information and Participation Program

a. Legal Authority

Section 122.26(d)(2)(iv)(A)(6) in 40 CFR requires 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."

Section 122.26(d)(2)(iv)(B)(6) in 40 CFR requires 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 City of Long Beach must 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 within the City of Long Beach 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 U.S. EPA 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."[44]

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:

- A 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;
- A 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.

[44] 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, the City of Long Beach is 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.

This Order requires the City of Long Beach 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 City of Long Beach's 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 the City of Long Beach 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 City of Long Beach to implement the requirements on a watershed group basis.

The Order requires outreach to ethnically diverse communities using culturally effective strategies. The U.S. EPA, 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 the applicant to: (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, among others, were the subject of litigation between several Los Angeles County MS4 permittees and the Los Angeles 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 their Permit. The Court determined that "[t]he Permit contains reasonable inspection requirements for these types of facilities. [Citation.] The Permit requires each permittee 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 claims that the requirements shifted the Los Angeles Regional 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 own 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 construction 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 Board); that permit was also subject to litigation. In that case, the City of Rancho Cucamonga claimed that the Santa Ana Regional 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 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 by implementing a mandatory baseline minimum set of source control BMPs, implementing an inspection program to verify the adequacy of BMPs in the field and verify compliance with the municipal ordinances, and by assisting the Regional Water Board in ensuring industrial activities subject to regulations are covered by the State Board's General Permit for Stormwater Discharges Associated with Industrial Activities. The Regional Water Board will in turn 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, U.S. EPA clearly states the intended strategy for discharges of storm water associated with industrial activity:

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

Similarly, in the U.S. EPA's Guidance Manual (Chapter 3.0), U.S. EPA 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), U.S. EPA states the municipality is ultimately responsible for discharges from its MS4. Consequently, the MS4 applicant must describe how the municipality will help the U.S. EPA 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, the City of Long Beach must conduct second compliance inspections yearly at a minimum of 20% of the facilities.

This Order also relieves the City of Long Beach from the responsibility of inspecting industrial facilities the Los Angeles Regional Board has inspected within the previous 24 months.

In regards to the level of inspection, this Order requires the City of Long Beach to determine during inspections if the facility has a current Waste Discharge Identification (WDID) number only if the facility falls under the category of facilities that should be covered under the State's General Permit for Stormwater Discharges Associated with Industrial Activity; this Order also requires the City of Long Beach to determine if a storm water pollution prevention plan 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, this Order requires the City of Long Beach to verify the facility's implementation of minimum BMPs, as previously approved by Board Order 98-08, and compliance with its 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 the City of Long Beach must take in their program to enforce their municipalities' storm water requirements. In recognition of some of the City of Long Beach's concerns regarding the resource intensive efforts needed to elevate enforcement actions, a mechanism was provided through which the City of Long Beach can refer cases to the Los Angeles Regional Board, and for violations of the State Board's General Permit for Stormwater

Discharges Associated with Industrial Activities; the referral can be expedited, and 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.[45] 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.[46] 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.[47] The TMDL was approved by U.S. EPA 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 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

[45] Hawley, Robert J. 2011. The effects of urbanization on the hydrologic stability of small streams in southern California.
[46] 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.
[47] Ohio Environmental Protection Agency. Total Maximum Daily Loads for the Grand River (lower) Watershed. Draft Report. October 12, 2011.

bodies, the Los Angeles Regional Board approaches each situation differently. Where development occurs in drainages to water bodies that have been converted to engineered channels, the Los Angeles Regional 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 Los Angeles Regional 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 the Planning and Land Development part 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 were included in the Los Angeles County MS4 Permit and/or included in the Ventura County MS4 Permit and are appropriate for defining new developments and redevelopments in this Order. Clarification is provided for developments in progress during formulation of this Order.

New development/re-development projects are subject to the Water Quality/Flow Reduction Resource Management Criteria.

i. Integrated Water Quality/Flow Reduction/Resources Management Criteria. 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.

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.

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.** 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 Los Angeles County Permit and the Ventura County MS4 Permit, and is necessary to ensure that a competent determination is conducted.

The criteria for technical infeasibility contained areis 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[48]. Infiltration rates for the lower permeability B soil group ranges between 0.30 and 0.15 inches per hour

[48] 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>.

(U.S. EPA, 2009, Appendix A)[49]. 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 VII.J.4.ii(2) are the same as contained in the Los Angeles County MS4 permit and are consistent with conservative national guidance.

iii. **Alternative Compliance Measures (Part VII.J.4.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 Los Angeles Regional Board has included the alternative for regional ground water replenishment in 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. In addition, the same study notes potential energy savings and reductions in CO_2 emissions.[50]

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

[49] 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.

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

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.[51]

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 or HUC-12 equivalent as the proposed new development or re-development. However, the mitigation project may be located within the expanded HUC-10 drainage area or HUC-10 equivalent, if approved by the Executive Officer of the Regional Water Board.

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 H 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.

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

iv. Water Quality Mitigation Criteria 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 or 0.75 inch, whichever is greater, 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. The one year, one-hour rainfall intensity is the flow requirement specified in the Los Angeles River Trash Total Maximum Daily Load (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.

This Order also requires the City of Long Beach to require all new development and redevelopment projects that have been approved for offsite mitigation or ground water replenishment projects to also provide treatment of storm water runoff from the project site. The Order requires the City to require these projects to design and implement post-construction storm water BMPs and control measures to meet the pollutant specific benchmarks listed in Table 10 of the Order at the treatment system's outlet or prior to the discharge to the MS4 and ensure the discharge does not cause or contribute to an exceedances of water quality standards at the City's downstream MS4 outfall. The treatment control BMP performance benchmarks were developed from the median effluent water quality values of the six highest performing BMPs per pollutant in the storm water BMP data base (http://www.bmpdatabase.org/

The sixth best performing BMP is bolded and italicized in Table F-6 below. The values in Table F-6 are based on updated effluent values and differ slightly form the values in the Order. The value in parenthesis is the median effluent value for that particular BMP.

Table F- 6 BMP Effluent Concentrations for Nutrients and Metals

Suspended Solids (mg/L)	Total P (mg/L)	Total N (mg/L)	TKN (mg/L)
Green Roof (2.9)	Wetland Basin (0.08)	Bioswale (0.71)	Media Filter (0.57)
Bioretention (8.3)	Media Filter (0.09)	Media Filter (0.82)	Bioretention (0.60)
Media Filter (8.7)	Bioretention (0.09)	Bioretention (0.90)	Bioswale (0.62)
Wetland Basin (9.06)	Porous Pavement (0.09)	Grass Strip (1.13)	Porous Pavement (0.80)
Porous Pavement (13.2)	Manufactured Device (0.12)	Wetland Basin (1.19)	Wetland Basin (1.01)
Retention Pond (13.5)	***Composite/ Retention Pond (0.13)***	***Retention Pond (1.28)***	***Composite (1.02)***

Total Cd (ug/L)	Total Cu (ug/L)	Total Cr (ug/L)	Total Pb (ug/L)	Total Zn (ug/L)
Media Filter (0.16)	Wetland Basin (3.57)	Green Roof (0.73)	Green Roof (0.30)	Porous Pavement (15.0)
Grass Strip/Wetland Basin (0.18)	Wetland Channel (4.81)	Media Filter (1.02)	Wetland Basin (1.21)	Wetland Channel (15.6)
Green Roof (0.21)	Retention Pond (4.99)	Retention Pond (1.36)	Media Filter (1.69)	Media Filter (17.9)
Retention Pond (0.23)	Detention Basin (5.67)	Wetland Channel (1.41)	Porous Pavement (1.86)	Bioretention (18.3)
Porous Pavement (0.25)	Composite (5.88)	Bioswale (2.32)	Grass Strip (1.96)	Retention Pond (21.2)
Manufactured Device (0.28)	***Media Filter (6.01)***	***Grass Strip (2.73)***	***Bioswale (2.02)***	***Wetland Basin (22.0)***

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 the Los Angeles County MS4 Permit. As noted above, the inspection requirements contained in the Los Angeles County MS4 Permit for construction sites were the subject of litigation between several Los Angeles County MS4 permittees and the Los Angeles Regional 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 U.S. EPA 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[52] (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

The City of Long Beach 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.

The City of Long Beach shall use an electronic data base 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 the City of Long Beach. To satisfy this requirement, the use of a database or GIS system is recommended.

For construction activity equal or greater than one acre, the City of Long Beach 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

[52] 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.

its progressive state that requires specific description and selection of BMPs needed to address all possible generated pollutants. The City of Long Beach 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 the Construction Program and ensure consistency regarding BMP selection, the Permit requires the City of Long Beach 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 City of Long Beach 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 City of Long Beach 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 City of Long Beach is required to implement BMPs and comply with the Planning and Land Development Program requirements in this Order and the Development Construction Program requirements in this Order at applicable Discharger-owned or operated (i.e., public or Discharger sponsored) construction projects. These requirements ensure that Discharger-owned or operated construction and development occurs in an equally protective manner as private development. The City of Long Beach 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 City of Long Beach is required to obtain separate coverage under the State Water Board's Construction General NPDES Permit for all Discharger-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 Discharger-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

The City of Long Beach is required to maintain an updated inventory of all Discharger-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of storm water pollution. This Order recommends incorporating facility information into a GIS as this has been proven effective as an inventory and for management of facilities and associated BMPs. Given that facility operation, condition, and practices can change over a five year period, the City of Long Beach is 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, the City of Long Beach is 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. The City of Long Beach is also required to evaluate and rank these retrofitting opportunities.

iv. Public Agency Facility and Activity Management

The City of Long Beach 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, the City of Long Beach shall obtain separate coverage under the State Water Board's Industrial General NPDES Permit for all Discharger-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 City of Long Beach. Not only must these expectations be defined in contracts between the City of Long Beach and its contractors, but the City of Long Beach 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 City of Long Beach shall ensure all contractors hired by the City of Long Beach 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. Fire stations have been exempted from retrofitting stations to discharge vehicle wash water to the sanitary sewer system or a holding sump, but new fire stations or redeveloped stations must have wash water discharged to a sanitary sewer system or holding sump. 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 in this Order, similar to those in the Los Angeles County MS4 Permit and the 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 in this Order are similar to those in the Los Angeles County MS4 Permit.

The City of Long Beach 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

The City of Long Beach 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, the City of Long Beach 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

The City of Long Beach is required to conduct repairs of essential public service systems and infrastructure in emergency situations. These requirements ensure public safety and the protection of property. BMPs must be implemented to reduce the threat to water quality and the Los Angeles Regional 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

The City of Long Beach is 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 City of Long Beach. Not only must these expectations be defined in contracts between the City of Long Beach and its contractors, but the City of Long Beach 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 City of Long Beach 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). The City of Long Beach 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.

U.S. EPA 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 firefighting 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/debrominated 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 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 the City of Long Beach 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 City of Long Beach shall require diversion of the entire flow to the sanitary sewer or treatment. In either instance, the City of Long Beach shall notify the Los Angeles Regional 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. This Order requires the City of Long Beach to investigate and follow-up all illicit connections within 21 days of identification and elimination within 180 days.

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

The City of Long Beach needs to promote a program to help in the identification and termination of illicit discharges. This Order requires the City of Long Beach 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 Discharger 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. The City of Long Beach must set up or maintain 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 City of Long Beach 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 the City of Long Beach 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. The City of Long Beach's 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.

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 U.S. EPA, 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 Los Angeles Regional Board's Basin Plan and applicable statewide plans, serve as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Los Angeles Regional Board. When adopting TMDLs as part of its Basin Plan, the Los Angeles Regional 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 Los Angeles Regional Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply "any more stringent effluent standards or limitations necessary to implement water quality control plans…" (CWC §§ 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 U.S. EPA has published guidance for establishing WLAs for storm water discharges in TMDLs and their incorporation as numeric WQBELs in MS4 permits.[53]

As required, permit conditions are included in this Order consistent with the assumptions and requirements of the available WLAs assigned to the City of Long Beach MS4 discharges, which have been established in nine TMDLs. The TMDLs included in this Order along with the adoption and approval dates are listed in the table below. 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 in the table below.

[53] 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.

TMDLs with Resolution Numbers, Adoption Dates and Effective Dates	RESOLUTION NUMBER	ADOPTION DATE	STATE BOARD RESOLUTION NUMBER	STATE BOARD APPROVAL DATE	OAL APPROVAL DATE	EPA APPROVAL DATE	EFFECTIVE DATE
Dominguez Channel and Greater Harbors Waters Watershed Management Area							
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
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (U.S. EPA established)	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 (U.S. EPA established)	N/A	N/A	N/A	N/A	N/A	3/26/2007	N/A
Los Cerritos Channel and Alamitos Bay Watershed Management Area							
Los Cerritos Channel Metals TMDL (U.S. EPA 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

TMDLs with Resolution Numbers, Adoption Dates and Effective Date - Los Angeles River Watershed Management Area.

The Los Angeles River Watershed Management Area (LAR WMA) drains a watershed of 824 square miles (See Attachment B to this Order). 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.

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.

TMDLs have been adopted by the Los Angeles Regional Board for trash, nitrogen, metals, and bacteria in the Los Angeles River. U.S. EPA 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 Los Angeles Regional 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.

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 (Attachment B). 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. 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. 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.

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 (Attachment B). The channel's tidal prism is generally thought to start 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. U.S. EPA 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.

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.

A WLA 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, 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.

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 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 and Nitrogen TMDLs, this Order requires the City of Long Beach to demonstrate compliance with its assigned WQBELs.

   A number of the TMDLs for Bacteria, Metals and Toxics establish WLAs that are assigned jointly to a group of several MS4 dischargers whose storm water and/or

non-storm water discharges are or may be co-mingled in the MS4 prior to discharge to the receiving water subject to the TMDL. TMDLs address co-mingled MS4 discharges by assigning a WLA to a group of MS4 dischargers based on co-location within the same subwatershed. Dischargers with co-mingled storm water are jointly responsible for meeting the WQBELs and receiving water limitations assigned to the City of Long Beach in this Order. "Joint responsibility" means that if the City of Long Beach has co-mingled MS4 discharges, the City of Long Beach is still responsible for implementing programs in its jurisdiction, or within the MS4 it owns or operates to meet the WQBELs and/or receiving water limitations assigned to such co-mingled 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 co-mingled discharge. This Order does not require a Permittee to individually ensure that a co-mingled 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 the City of Long Beach to clarify and distinguish its 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 City of Long Beach's MS4 discharge may commingle with that of other entities' discharge, the City of Long Beach would not be held jointly responsible for the exceedance of the WQBELs or receiving water limitation.

Demonstrating Compliance with Interim Limitations. This Order provides the City of Long Beach 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 City of Long Beach's applicable MS4 outfall(s) or access points,[54] including an outfall to the receiving water that collects discharges from multiple entities;

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 City of Long Beach's outfall(s);

c. There is no direct or indirect discharge from the City of Long Beach'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 City of Long Beach has submitted and is fully implementing an approved Watershed Management Program or Enhanced Watershed Management Program (EWMP), which includes analyses that provide the Los Angeles

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

Regional 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 the City of Long Beach 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 City of Long Beach's applicable MS4 outfall(s)[55];

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

c. There is no direct or indirect discharge from the City of Long Beach'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 the City of Long Beach is 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. This compliance mechanism does not apply to final trash WQBELs.

This Order provides the opportunity for the City of Long Beach to demonstrate compliance with *interim* effluent limitations through development and implementation of a Watershed Management Program or Enhanced Watershed Management Program, where the City of Long Beach 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.

As stated above, this Order provides the City of Long Beach the option to implement regional multi-benefit storm water retention projects, sized to capture the 85th percentile, 24-hour storm for contributing drainage areas, as means of demonstrating compliance with TMDL permit provisions. This alternative is available for the City of Long Beach to demonstrate compliance with final water quality-based effluent limitations and receiving water limitations for pollutants

[55] Ibid.

associated with specific TMDL were the City has developed and is implementing an enhanced watershed management program (EWMP). The compliance determination alternative does not apply to final trash water quality- based effluent limitations.

The hallmark of an EWMP is maximal implementation of regional multi-benefit retention projects that capture the runoff volume from the 85th percentile, 24-hour storm event, as well as all non-storm water that would otherwise discharge through the MS4 to receiving waters. However, an EWMP also must ensure that actions to comply with core MS4 management program requirements, including controls to reduce the discharge of pollutants in storm water to the maximum extent practicable and to eliminate non-storm water discharges of pollutants through the MS4, are achieved. Specifically, in addition to maximizing retention of runoff from the 85th percentile, 24-hour storm event, the EWMP must include actions to implement a MS4 management program consistent with Title 40, Code of Federal Regulations, section 122.26(d)(2)(iv)(A)-(D). Additionally, in order to pursue an EWMP, the City of Long Beach must commit to certain "early actions" including adoption of: (1) low impact development ordinances that meet the requirements of the Planning and Land Development Program contained in the permit, and (2) green streets policies that specify the use of green street strategies for transportation corridors. Both of these actions would augment the storm water management provided by the regional multi-benefit retention projects.

There is a significant amount of history associated with the development of this alternative. Work to determine an appropriate water quality design storm began over seven years ago as a result of the Regional Board's 2005-2007 triennial review process. Through a contract with the Southern California Water Research Project (SCCWRP), the Regional Board embarked to develop a potential design storm criteria and evaluate these concepts and study findings. As part of a steering committee made up of stakeholders, and Regional Board staff, the Regional Board set out to evaluate design storm criteria that could apply to storm water discharges to achieve TMDL requirements and water quality standards during wet weather. This design storm project was identified as a high priority by both the stakeholder task force and the Los Angeles Water Board in its adoption of the Los Angeles River Metals TMDL.[56]

The initial phase of the design storm project resulted in a conceptual framework and pilot modeling application. The results of the initial phase were presented to the Los

[56] The supporting information may be found in the following supporting documents:
Evaluation of Exceedance Frequencies and Load Reductions as a Function of BMP Size. Presentation to Project Steering Committee. SCCWRP. June 12, 2007;
Exceedance Frequency and Load Reduction Simulation: Evaluation of Three BMP Types as a Function of BMP Size and Cost. Presentation to Project Steering Committee. SCCWRP. July 18, 2007;
Status report on the Design Storm Project. Agenda Item 14. Los Angeles Regional Water Quality Control Board. December 6, 2007;
Concept Development: Design Storm for Water Quality in the Los Angeles Region. Staff presentation for Agenda Item 14. Los Angeles Regional Water Quality Control Board. December 6, 2007;
Concept Development: Design Storm for Water Quality in the Los Angeles Region. SCCWRP Technical Report 520. October 2007;
Design Storm. Presentation to SCCWRP Commission Technical Advisory Group. [undated].

Angeles Water Board at its regularly scheduled meeting in December 2007, and were also presented to SCCWRP Commission's Technical Advisory Group (CTAG). Key findings of this phase of the project indicated that if bioretention basins were sized to capture a rainfall volume of ¾ inch for the catchment area (i.e., the 85th percentile, 24-hour event applicable to the central portion of Los Angeles County), less than 5% of storm events would exceed the dissolved copper criterion and 94% of the annual pollutant load would be removed. In the final technical report for the initial phase of the design storm project, SCCWRP recommended that the pilot modeling application be expanded to incorporate other water quality constituents, land uses, and watersheds. This first phase of the project is documented in the administrative record. Following completion of the initial phase, the Los Angeles County Department of Public Works (County) expressed interest in continuing to expand the project based on the recommendations in the concept development report prepared by SCCWRP. Staff from the Los Angeles Water Board and USEPA participated in a technical advisory committee to provide input to the County as they developed their Watershed Management Modeling System (WMMS), effectively expanding the evaluation of the design storm criteria to other water quality constituents, land uses, and watersheds. The County met with Regional Board staff and management multiple times during the development of the WMMS and ultimately presented an overview of the WMMS to the Board at its regularly scheduled meeting in May 2010.[57] Additionally, Geosyntec Consultants, on behalf of various clients within and outside of California, and the California Department of Transportation have evaluated design storm criteria for storm water controls and have proposed similar design storm thresholds, which were considered by Los Angeles Water Board staff during the initial phase of the design storm project.[58]

In the summer of 2012, during development of the Los Angeles County MS4 Permit, the County proposed the concept of an EWMP to Los Angeles Water Board staff. The key objective of an EWMP would be to maximize retention of the storm water runoff associated with the 85th percentile, 24-hour storm event. In light of this proposal, the Board considered region-specific studies evaluating storm water

[57] The supporting information may be found in the following documents:
Los Angeles County Watershed Model Configuration and Calibration – Part I: Hydrology, including Appendices A - F. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. August 6, 2010;
Los Angeles County Watershed Model Configuration and Calibration – Part I: Hydrology. Appendices G – H. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. August 6, 2010;
Los Angeles County Watershed Model Configuration and Calibration – Part II: Water Quality. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. August 6, 2010;
Los Angeles County Watershed Model Configuration and Calibration – Part II: Water Quality, including Appendices A - E. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. August 6, 2010;
Watershed Management Modeling System: An Integrated Watershed-based Approach for Urban Runoff and Stormwater Quality. Presentation by Dr. Youn Sim, P.E., Los Angeles County Department of Public Works. Regional Board Meeting. May 6, 2010;
Phase II Report: Development of the Framework for Watershed-Scale Optimization Modeling. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. June 30, 2011;
Evaluation of Water Quality Design Storms. Submitted by Tetra Tech, Inc. to the County of Los Angeles Department of Public Works. June 20, 2011.

[58] The supporting information may be found in the following documents:
Design Standards and Addressing Pollutants/Parameters of Concern. Presentation by Eric Strecker, P.E., GeoSyntec Consultants. Design Storm Meeting. March 20, 2006.
Design Storm for Water Quality. Presentation by Karl Dreher, Jim Sullivan, and Scott Taylor, California Department of Transportation. Design Storm Meeting. March 20, 2006.

recharge feasibility, including The Green Solution Project developed by Community Conservancy International and the Stormwater Recharge Feasibility and Pilot Project Development Study prepared by the Council of Watershed Health, Geosyntec Consultants, and the Santa Monica Bay Restoration Project, to assess the feasibility and opportunities to capture the storm water volume associated with the design storm in drainage areas throughout the region.[59]

The EWMP proposal was presented to, and endorsed by, several permittees and environmental organizations, including the LA Permit Group, City of Los Angeles, Heal the Bay, LA Waterkeeper, NRDC, and Lawyers for Clean Water during the Los Angeles County MS4 Permit development process. The EWMP proposal was further refined in a collaborative set of meetings and conference calls in October 2012 among the Los Angeles Water Board staff, County, City of LA, and environmental organizations. This refinement included providing: (1) a consensus based definition of an EWMP, found in Part VII.C.1.g of the permit, including the 85th percentile, 24-hour storm event design criterion for regional storm water retention projects, as well as (2) parameters for modeling the effectiveness of watershed control measures in achieving specific water quality outcomes. A key meeting was held on October 17, 2012 via conference call to discuss the County's WMMS and, specifically, the proposal to use retention of the storm water volume associated with the 85th percentile, 24-hour storm event within a drainage area as a means of demonstrating compliance with final water quality-based effluent limitations associated with TMDLs (except for final limitations for trash). Dr. Richard Horner, a modeling expert retained by the environmental organizations to assist in providing input on the tentative permit, was a key participant in this meeting and approved of this approach.[60]

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.

The Los Angeles River Nitrogen TMDL is the only State-adopted TMDL for which the compliance deadlines for final water quality-based effluent limitations applicable to storm water occur during the term of this Order.

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[59] The supporting information may be found in the following documents:
The Green Solution Project: Identification and Quantification of Urban Runoff Water Quality Improvement Projects in Los Angeles County. Community Conservancy International. Technical Report, Analysis and Mapping by Geosyntec Consultants and GreenInfo Network. March 2008;
Stormwater Recharge Feasibility and Pilot Project Development Study: Final Report. Prepared for the Water Replenishment District of Southern California by The Council for Watershed Health, Geosyntec Consultants, and Santa Monica Bay Restoration Commission. August 20, 2012.

[60] Conference call regarding WMMS and design storm among Los Angeles County Department of Public Works, City of Los Angeles, Heal the Bay, LA Waterkeeper, Lawyers for Clean Water, Dr. Richard Horner and the Regional Board. October 17, 2012;
Los Angeles County Municipal Stormwater NPDES Permit. Presentation by the County of Los Angeles and Los Angeles County Flood Control District. Regional Board Hearing. October 4-5, 2012;
Los Angeles County Municipal Stormwater NPDES Permit. Presentation by the County of Los Angeles and Los Angeles County Flood Control District. Regional Board Hearing. November 8, 2012.

The Los Angeles Regional 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 Los Angeles Regional 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 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 Los Angeles Regional Board's review of relevant research, including but not limited to data and information provided by the City of Long Beach, 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.[61] In California, TMDL implementation plans[62] 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).[63] 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. The WQBELs must be consistent with the assumptions and requirements of any WLA, which includes applicable implementation schedules.[64] California Water Code Sections 13263 and 13377 state that waste discharge requirements must implement the Basin Plan.[65] Therefore,

[61] 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).

[62] 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.)

[63] 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.

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

[65] 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, together with any more stringent effluent standards or limitations necessary to implement waste quality

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 Los Angeles Regional 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 the City of Long Beach 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 Los Angeles County MS4 Permit 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.

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 (2014-2019)	Final Compliance date between 5 and 10 years (2019-2024)	Final Compliance date after 10 years
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
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (U.S. EPA established)	March 26, 2012			
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (U.S. EPA established)	March 26, 2007			
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL				
Los Cerritos Channel Metals TMDL (U.S. EPA established)	March 17, 2010			

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
Los Angeles River Nitrogen Compounds and Related Effects TMDL	March 23, 2004

If the City of Long Beach determines that its MS4 discharge may not meet the final WQBELs for the TMDLs in Table F-8 upon adoption of this Order, the City of Long Beach may request a time schedule order (TSO) from the Los Angeles Regional Board. The 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." The City of Long Beach may individually request a TSO. The City of Long Beach 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.

In the request, the City of Long Beach 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;

e. A detailed time schedule of specific actions the City of Long Beach will take in order to achieve the water quality-based effluent limitations and/or receiving water limitations at each location identified;

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 Los Angeles Regional Board does not intend to take enforcement action against the City of Long Beach for violations of specific WQBELs and corresponding receiving water limitations for which the final compliance deadline has passed if the City of Long Beach 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. TMDLs Established by U.S. EPA

The U.S. EPA has established three TMDLs that include wasteload allocations for MS4 discharges covered by this Order (See Table F-9).

Table F-9. U.S. EPA Established TMDLs with WLAs Assigned to MS4 Discharges

Total Maximum Daily Load (TMDL)	Effective Date
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL (U.S. EPA established)	March 26, 2012
Los Cerritos Channel Metals TMDL (U.S. EPA established)	March 26, 2010
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL (U.S. EPA established)	March 26, 2007

In contrast to State-adopted TMDLs, U.S. EPA established TMDLs do not contain program of implementation or associated schedule. The Clean Water Act does not allow U.S. EPA to either adopt programs of implementation or establish implementation schedules for TMDLs that it establishes. Such decisions are generally left with the States. The Los Angeles Regional Board could either (1) adopt a program of implementation as a Basin Plan Amendment for each U.S. EPA established TMDL, which would allow inclusion of compliance schedules in the permit where applicable, or (2) issue the City of Long Beach a schedule leading to full compliance in a separate enforcement order (such as a Time Schedule Order or a Cease and Desist Order). The Los Angeles Regional Board adopted programs of implementation for the Los Cerritos Channel Metals TMDL and the San Gabriel River and Impaired Tributaries Metals and Selenium TMDL on June 6, which will be incorporated into the Basin Plan once they are fully approved. Once fully approved, the requirements of these programs of implementation and associated schedules may be used to develop a Watershed Management Program. The Los Angeles Regional Board has not adopted a program of implementation for the Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL. Therefore, the final WLAs in that U.S. EPA established TMDL becomes effective immediately upon establishment by U.S. EPA and placement in a NPDES permit.

The Los Angeles Regional Board's decision as to how to express permit conditions for U.S. EPA established TMDLs is based on an analysis of several specific facts and circumstances surrounding these TMDLs and their incorporation into this Order.

First, since the TMDLs do not include programs of implementation, the TMDLs have not 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 Los Angeles Regional Board is not able to adequately assess whether the City of Long Beach will be able to immediately comply with the WLAs at this time. Third, the majority of these TMDLs were established by U.S. EPA 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 U.S. EPA to establish programs of implementation and schedules for achieving these WLAs, U.S. EPA has nevertheless included implementation recommendations regarding MS4 discharges as part of these TMDLs. The Regional Water Board needs time to adequately evaluate U.S. EPA's recommendations. For the reasons above, the Los Angeles Regional Board has determined that numeric water quality based effluent limitations for these U.S. EPA established TMDLs are infeasible at the present time. The Los Angeles Regional 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 the City of Long Beach subject to WLAs in U.S. EPA established TMDLs to propose and implement best management practices (BMPs) that will be effective in achieving the numeric WLAs. The City of Long Beach will propose these BMPs to the Los Angeles Regional Board in a Watershed Management Program Plan, which is subject to the Los Angeles Regional Board Executive Officer approval. As part of this Plan, the City of Long Beach is also required to propose a schedule for implementing the BMPs that is as short as possible. The Los Angeles Regional Board finds that, at this time, it is reasonable to include permit conditions that require the City of Long Beach 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 with other entities 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 U.S. EPA 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 City of Long Beach 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 U.S. EPA 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); 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.

The City of Long Beach subject to a WLA in a TMDL established by U.S. EPA must submit a draft of a Watershed Management Program Plan to the Los Angeles Regional Board Executive Officer per the timelines outlined for submittal of a Watershed Management Program or Enhanced Watershed Management Program.

Based on the nature and timing of the proposed watershed control measures, the Los Angeles Regional 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 program of implementation 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 program of implementation; or (3) issuing a time schedule order to provide the necessary time to fully implement the watershed control measures to achieve the WLAs.

If the City of Long Beach chooses not to submit a Watershed Management Program Plan, or the plan is determined to be inadequate by the Los Angeles Regional Board Executive Officer and necessary revisions are not made within 90 days of written notification to the City of Long Beach that that plan is inadequate, the City of Long Beach 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 Los Angeles Regional Board does not intend to take enforcement action against the City of Long Beach for violations of specific WLAs and corresponding receiving water limitations for U.S. EPA established TMDLs if the City of Long Beach has developed and is implementing an approved Watershed Management Program to achieve the WLAs in the U.S. EPA TMDL and the associated receiving water limitations.

5. TMDL Revisions Incorporated after February 6, 2014

Part VII.A.6 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 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 the Los Angeles River Watershed Trash TMDL, as described below.

Alternative Methods for Demonstrating Compliance with Final Effluent Limitations

Provisions are included in Part VIII.O.2.b to provide the City of Long Beach alternatives for demonstrating compliance with the final effluent limitations prescribed to achieve the Los Angeles River Watershed Trash TMDL. The Staff Report for Resolution No. R15-006 describes the practical considerations that these alternatives address. For example, regarding permittees 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, the City of Long Beach 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 VIII.O.2.b.i.(4)(a).

In these instances, Part VIII.O.2.b.i.(4) of the Order also requires the City of Long Beach 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, the City of Long Beach 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 VIII.O.2.b.i.(4) are met.

Finally, the City of Long Beach may demonstrate compliance with interim and final WLAs through a scientifically based alternative compliance approach as described in Part VIII.O.2.b.i.(4).

If the City of Long Beach employs alternative compliance options for FCS, partial capture devices, and the application of institutional controls, or employs a scientifically based alternative compliance approach, the city shall submit a revised Watershed Management Program (WMP) for Executive Officer approval prior to use of these alternative compliance options.

Provisions for Plastic Pellet Monitoring for MS4 Permittees Subject to the Los Angeles River Watershed Trash TMDL

MS4 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 MS4 Permittees subject to the Los Angeles River Watershed Trash TMDL, including the City of Long Beach, ensures consistency among trash TMDLs.

Specifically, Attachment E, Part XIX.B requires that the City of Long Beach 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 if it does not meet the exemption criteria (as set forth in Attachment E, Part XIX.B). The City of Long Beach must submit a PMRP to the Regional Water Board either (i) by March 8, 2018 or (ii) as part of its adaptive management process for its approved Lower Los Angeles River WMP and corresponding CIMP.

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 in the Los Angeles River watershed.

Attachment E, Part XIX.B requires that the City of Long Beach propose for Executive Officer approval, and implement, a Trash Monitoring and Reporting

Plan (TMRP). To meet this requirement, the City of Long Beach must submit a revised Integrated Monitoring Program (IMP) or Coordinated Integrated Monitoring Program (CIMP) incorporating the TMRP requirements for Executive Officer approval six months after the effective date of the TMDL (i.e., December 30, 2016).

Provisions for Minimum Frequency of Assessment and Collection Approach

Part VIII.O.2.b.1(4), "Minimum Frequency of Assessment and Collection Approach," was initially included in the Long Beach MS4 Permit, allowing the City of Long Beach to alternatively comply with its final effluent limitations for trash by implementing a program for minimum frequency of assessment and collection (MFAC) in conjunction with BMPs if allowed in the TMDL; however, since this section is not applicable to the LA River Trash TMDL provisions (i.e., such an approach is not allowed for the WLAs in the TMDL), it has been removed from this Order.

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 City of Long Beach 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 City of Long Beach's Watershed Management Program (See 40 CFR Section 122.26(d)(2)(vi). The annual analysis is necessary to show that the City of Long Beach 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 the Los Angeles County MS4 permit as well as the Ventura County MS4 permit.

3. Responsibilities of the City of Long Beach

Because of the complexity of the storm drain system and drainage, and the complexity in implementing TMDLs, this Order 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. The Los Angeles Regional 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 Discharger. 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 Los Angeles Regional 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 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 Los Angeles Regional Board’s evaluation of whether Watershed Management Programs 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 the City of Long Beach and other stakeholders, on storm water quality and the efficacy and reliability of control technologies.

VI. 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

The purpose of the Watershed Management Programs is to provide a framework for the City of Long Beach 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 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 the City of Long Beach in coordination with an approved Watershed Management Program, 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 III of Attachment E. If pursuing a customized monitoring program, the City of Long Beach 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 the City of Long Beach to develop and implement an Integrated Monitoring Program (IMP), or alternatively, the City of Long Beach may cooperate with other entities 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 Los Angeles Regional Board.

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 City of Long Beach monitoring program as monitoring can be designed, prioritized and implemented on a watershed basis. The IMP/CIMP approach allows the City of Long Beach 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 the City of Long Beach coordinates its monitoring programs with other entities.

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 Los Angeles Regional 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 City of Long Beach 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 the City of Long Beach to conduct outfall monitoring, linked with receiving water monitoring, bioassessment monitoring and TMDL special studies. The MRP allows the City of Long Beach 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 the MRP, the City of Long Beach 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 Los Angeles Regional 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 City of Long Beach'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 VI.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 the City of Long Beach's drainages within each subwatershed. Outfall based monitoring is also conducted to assess compliance with WQBELs. Unless the City of Long Beach has proposed and received approval for a customized monitoring program as previously discussed, the City of Long Beach 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. This information will allow the City of Long Beach and the Los Angeles Regional 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 the City of Long Beach's prior efforts to screen all outfalls within their MS4 to identify illicit connections and discharges. Under this Order, the City of Long Beach 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 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 and take appropriate actions for those discharges that have been found to be a source of pollutants.

The screening and monitoring program is intended to maximize the use of the City of Long Beach's 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 and the MS4 Mapping requirements in 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 City of Long Beach 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 City of Long Beach 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 U.S. EPA pursuant to Section 121 of CERCLA, a conditionally exempt essential non-storm water discharge, or entirely comprised of natural flows, the City of Long Beach needs only to document the source and report to the Los Angeles Regional 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 City of Long Beach must 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, the City of Long Beach shall conduct monitoring. 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, 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 City of Long Beach 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 and all exceedances are to be reported in the Integrated Monitoring Compliance Report.

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 City of Long Beach may submit a written request to the Executive Officer of the Los Angeles Regional 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 dischargers 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. 99-06 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 resulting from natural flows

iii. Discharges from emergency fire fighting activity

iv. Other categories of discharges incidental to urban activities

Further, as another mechanism to effectively prohibit non-storm water discharges into the MS4, Order No. 99-060 also required the City of Long Beach to implement an illicit connections and illicit discharges elimination program as part of its storm water management program pursuant to 40 CFR Section 122.26(d)(2)(iv)(B).

Finally, Monitoring and Reporting Program CI 8052, a part of Order No. 99-060, 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. Requirements for Controlling Non-Storm Water Discharges

The U.S. EPA'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.

Given the need for additional data on non-storm water discharges from the MS4 where a TMDL has not been developed, U.S. EPA 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-storm water 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 Los Angeles Regional Water Board's 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 found 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.

Section 122.45(c) of 40 CFR requires effluent limitations for metals to 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 Los Angeles Regional 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-10: 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-11: 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 Los Angeles Regional 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 Los Angeles Regional 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 City of Long Beach 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 City of Long Beach 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 City of Long Beach will have identified appropriate procedures within the Watershed Management Program (Part VII.C) and the Illicit Connection and Illicit Discharge Elimination Program (Part VII.M).

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.

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. The 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, the City of Long Beach 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 U.S. EPA and individual states implement three approaches to monitoring water quality. These approaches include chemical-specific monitoring, toxicity testing, and bioassessments (U.S. EPA 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 (U.S. EPA, EPA Regions 8, 9, and 10 Toxicity Training Tool, January 2010).

Based on available data from the City of Long Beach's Annual Monitoring Reports, samples collected at mass emissions stations during both wet weather and dry weather have been found to be toxic in the Los Cerritos Channel, Belmont Pump Station, and Bouton Creek discharges, demonstrating the need for this toxicity monitoring requirement (see Table below).

Summary of Toxicity by Station				
Source and Season	Los Cerritos Channel	Belmont Pump Station	Bouton Creek	Dominguez Gap Pump Station
Annual Monitoring Reports (2007-2012)				
Wet Weather				
2007-08	CDS, SUF	CDR, SUF	CDS, CDR, SUF	No data available
2008-09	CDR, SUF	CDR	CDR, SUF	No data available
2009-10	-	CDR	CDR	No data available
2010-11	CDR	CDR	-	No data available
2011-12	SUF	SUF	SUF	No data available
Dry Weather				
2007-08	CDR, SUF	No data available	-	No data available
2008-09	CDR, SUF	No data available	No data available	No data available
2009-10	-	-	CDR	No data available
2010-11	-	-	No data available	No data available
2011-12	-	No data available	-	No data available

Notes:

CDS= Ceriodaphnia survival toxicity
SUF= Sea Urchin fertilization toxicity;
CDR= Ceriodaphnia reproduction toxicity

This Order requires the City of Long Beach 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 City of Long Beach shall conduct two wet weather and one 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 City of Long Beach to conduct the chronic toxicity test in accordance with U.S. EPA'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. The City of Long Beach is 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 Los Angeles Regional 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. 99-060 and provides summary information to the Los Angeles Regional Board on the City of Long Beach's participation in one or more Watershed Management Programs; the impact of the City of Long Beach's storm water and non-storm water discharges on the receiving water; the City of Long Beach's compliance with receiving water limitations, numeric water quality based effluent limitations, and non-storm water action levels; and the effectiveness of the City of Long Beach's control measures in reducing discharges of pollutants from the MS4 to receiving waters. In addition the Annual Report allows the Los Angeles Regional 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 City of Long Beach 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 the City of Long Beach 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, the City of Long Beach 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 City of Long Beach's jurisdiction. Alternatively, if the City of Long Beach is participating in a Watershed Management Program, the City of Long Beach may provide the requested information through the development and submission of a Watershed Management Program report. However, in either case, the City of Long Beach shall bear responsibility for the completeness and accuracy of the referenced information. This reporting requirement helps to ensure that both the City of Long Beach and the Los Angeles Regional 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 City of Long Beach's jurisdiction. Annual Reports submitted on behalf of a group of Watershed dischargers shall clearly identify all data collected and strategies, control measures, and assessments implemented by each discharger within its jurisdiction as well as those implemented by multiple dischargers on a watershed scale. The City of Long Beach 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 the City of Long Beach does not elect to develop a Watershed Management Program, all required information shall be provided by the City of Long Beach 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.

VII. CALIFORNIA WATER CODE SECTION 13241

California Water Code Section 13241 requires the Los Angeles Regional Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. California Water Code Section 13263 requires the Los Angeles Regional 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 Los Angeles Regional 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 U.S. EPA 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 U.S. EPA 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 Los Angeles Regional 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 Los Angeles Regional 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 Los Angeles Regional Board has provided the City of Long Beach 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 II.D.1.a 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.

- 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

The quality of water in receiving waters for MS4 discharges has been routinely monitored by the City of Long Beach through the Monitoring and Reporting Program under Order No. 99-060. Below are summaries of water quality exceedances reported for the 2010-2011 reporting year.

Water Quality Indicators that Exceed Water Quality Objectives at Mass Emission Stations during 2007-2011 for One or More Events

Mass Emission/Watershed	Wet	Dry
Los Cerritos Channel[1]		Enterococcus Total coliform Total chlordane Mirex Diazinon Malathion Astrazine Simazine MBAS Nitrate Total ammonia Dissolved and total arsenic Dissolved and total cadmium Dissolved and total copper Dissolved and total lead Dissolved and total nickel Dissolved and total selenium Dissolved and total silver Dissolved and total zinc Total aluminum Total iron Fecal coliform pH
Bouton Creek		Enterococcus Total coliform Fecal coliforms Total chlordane MBAS Nitrate Nitrite Total ammonia Dissolved and total arsenic Dissolved and total cadmium Dissolved and total copper Dissolved and total lead Dissolved and total nickel

		Dissolved and total silver Dissolved and total zinc Total aluminum Total iron pH
Dominguez Channel		Enterococcus Total coliform Fecal coliforms Total chlordane MBAS Nitrate Total ammonia Dissolved and total arsenic Dissolved and total cadmium Dissolved and total copper Dissolved and total lead Dissolved and total nickel Dissolved and total silver Dissolved and total zinc Total aluminum Total iron pH
Belmont Pump Station[1]		No data available

[1] More urbanized watersheds.

The following table summarizes the results of an analysis based on evaluation of the dry weather data for the period of 2007 to 2011 for each of the mass emission stations to which the City's MS4 discharges. 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 Mass Emissions Stations Data and Frequency of Exceeding Water Quality Benchmarks (2007 to 2011 - Dry Season Data Analysis)[1]

Parameter	Los Cerritos Channel	Dominguez Channel	Bouton Creek	Belmont Pump Station
pH	7/15	5/15	1/14	2/15
Total Coliform	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective
Fecal Coliform	4/15	10/15	11/14	13/15
Enterococcus	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective	No FW[3] Objective
Chloride	15/15	No Objective	14/14	15/15
Dissolved Oxygen	0/15	0/15	1/14	0/15
Nitrate-N	0/15	No Objective	7/14	No Objective
Nitrite-N	3/15	No Objective	0/15	No Objective
Methylene Blue Active Substances	0/15	No Objective	0/14	No Objective
Sulfate	15/15	No Objective	14/14	15/15
Total Dissolved Solids	15/15	No Objective	14/14	15/15
Turbidity[2]	2/15	No Objective	0/15	0/15
Cyanide	14/15	4/15	14/14	15/15
Total Aluminum	2/15	No Objective	1/14	No Objective
Dissolved Copper	0/15	5/15	13/14	0/15
Total Copper	6/15	11/15	13/14	2/15
Dissolved Lead	0/15	0/15	1/14	0/15
Total Lead	0/15	1/15	13/14	0/15
Total Mercury	14/15	14/15	14/14	15/15
Dissolved Mercury	15/15	15/15	14/14	14/14
Total Nickel	0/15	0/15	1/14	0/15
Dissolved Selenium	2/15	1/15	1/15	10/11
Total Selenium	2/15	1/15	1/15	10/11
Dissolved Zinc	0/15	0/15	7/10	0/15
Total Zinc	0/15	0/1)	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 1999, 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 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. 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[66]:

- 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

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 from discharges originating from the City of Long Beach 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 this Order. 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 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 9 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.

[66] Maestre, Alexander and Robert Pitt. “Identification of Significant Factors Affecting Stormwater Quality Using the NSQD” (draft monograph, 2005).

D. *Economic considerations.*

The Regional Water Board recognizes that City of Long Beach will incur costs in implementing this Order above and beyond the costs from the prior permit. Such costs will be incurred in complying with the TMDL and monitoring and reporting requirements of this Order. The Regional Water Board also recognizes that, due to California's current economic condition, the City of Long Beach may have limited staff and resources to implement actions to address its MS4 discharges. Based on the economic considerations below, the Board has provided a significant amount of flexibility to choose how to implement the permit. This Order allows 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 the City of Long Beach to submit a plan, either individually or in collaboration with other municipalities, for Regional Water Board Executive Officer approval that would allow for actions to be prioritized based on specific watershed needs. The Order also allows the City of Long Beach to customize monitoring requirements, which they may do individually, or in collaboration with other municipalities. In the end, it is up to the City of Long Beach to determine the effective BMPs and measures needed to comply with this Order. The City of Long Beach can choose to implement the least expensive measures that are effective in meeting the requirements of this Order. This Order also does not require the City of Long Beach to fully implement all requirements within a single permit term. Where appropriate, the Board has provided the City of Long Beach 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 9 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. 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.

Economic Considerations of Regulating MS4 Discharges

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 municipalities. 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 municipality to municipality, 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 municipalities in their annual reports and a State Water Board funded study, which examined the costs of municipal MS4 programs statewide.[67] 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, municipalities report wide variability in the cost of compliance, which is not easily explained. Based on reported values, the average annual cost to the municipalities 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 Permit requirements. Many program components, and their associated costs, existed before the first 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 municipalities 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.[68] 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

[67] 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/

[68] 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.

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 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.

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, U.S. EPA, 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.[69] 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 U.S. EPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.[70]

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 U.S. EPA[71] to be $158-210.62. This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento study corroborates U.S. EPA's estimates, reporting annual household willingness to pay for statewide clean water to be $180.63.[72] When viewed in comparison

[69] LARWQCB, 2004. Alternative Approaches to Stormwater Control.
[70] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.
[71] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.
[72] State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

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.[73] 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.[74] 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, State, local bonds and measures) expended on stormwater control projects	$645,389,932	N/A (information not available for projects funded by local bonds and measures)

In addition to current funding options, future funding options may continue to be created. For example, the Los Angeles County Flood Control District's Water Quality Funding Initiative is a possible funding source currently under consideration by the Los Angeles County Board of Supervisors. If approved, this initiative could create an estimated annual

[73] 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.
[74] 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.

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.

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. 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%.[75] The City of Long Beach according to their website at: http://www.longbeach.gov/citymanager/sustainability/water.asp, lasted visited on October 15, 2013, imports approximately 50% of its water supply. The Long Beach 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 City's and 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.

[75] 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.

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.

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.[76]

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."[77] 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."[78]

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[79]:

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[76] http://www.lasgrwc.org/WAS/WASflyer_web.pdf

[77] Los Angeles and San Gabriel River Watershed Council. 1999. *Stormwater: asset not liability*.

[78] Los Angeles County Department of Regional Planning. 2008. 2008 Draft General Plan-Planning Tomorrow's Great Places.

[79] Los Angeles and San Gabriel River Watershed Council. 2010. Water Augmentation Study: Research, Strategy, and Implementation Report.

"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.[80]. 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 (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 City of Long Beach 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[81] 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

[80] Los Angeles and San Gabriel River Watershed Council. 2005. Los Angeles Basin Water Augmentation Study Phase II Final Report.
[81] www.treepeople.org

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).[82] 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.

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."83 This aggressive plan involves several stakeholders and has implemented a variety of on-site BMPs as well as storm water infiltration retrofits and diversions.

VIII. 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

[82] http://c0133251.cdn.cloudfiles.rackspacecloud.com/Case%20Study%20-%20Santa%20Monica%20Urban%20Runoff%20Recycling%20Facility%20SMURFF.pdf
[83] http://www.sunvalleywatershed.org/watershed_management_plan/wmp-0ES.pdf

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.)

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. 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 MS4 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 Los Angeles Regional 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 U.S. EPA 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 City of Long Beach's obligations under this Order are similar to, and in many respects less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. 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 City of Long Beach 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 Discharger 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 the City of Long Beach's 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.)

IX. PUBLIC PARTICIPATION

Regional Water Board staff met with various representatives of the City of Long Beach by phone and in person on multiple occasions 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. On July 18, 2013, Regional Water Board staff met with the City of Long Beach staff representing most of the City departments. After a discussion by Board staff, the City of Long Beach representatives had an initial opportunity to ask questions of staff, raise concerns, and provide feedback. The feedback provided at this meeting and others is reflected in the tentative order and attachments. Regional Water Board staff also conducted a field visit of the MS4 and key major outfalls within the City's boundaries on May 22, 2013. The tentative permit and supporting documents were released for public comment on November 22, 2013 for a 54 day comment period. The Regional Water Board considered all timely comments and prepared a written response to all comments. The Tentative Permit and supporting documents were revised in response to comments, where appropriate.

A Board workshop was held during the Board meeting on December 5, 2013.

The Regional Water Board held a public hearing on the tentative Order during its regular Board meeting on February 6, 2014. The Permittee 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.