

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

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**ORDER NO. R4-2014-0024
NPDES PERMIT NO. CAS004003**

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

The City of Long Beach is subject to waste discharge requirements for its municipal separate storm sewer system (MS4) discharges originating within its jurisdictional boundaries composed of storm water and non-storm water as set forth in this Order:

I. FACILITY INFORMATION

Table 1. Discharge Information

Discharger	City of Long Beach
Facility Name	Municipal Separate Storm Sewer System owned and operated by the City of Long Beach
The U.S. Environmental Protection Agency (US EPA) and the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) have classified the City of Long Beach MS4 as part of the Greater Los Angeles County MS4 and as a large MS4 pursuant to 40 CFR section 122.26(b)(4) and a major facility pursuant to 40 CFR Section 122.2.	

Table 2. Facility Information

Permittee (WDID)		Contact Information
City of Long Beach (4B190105032)	Mailing Address	333 West Ocean Blvd. 9 th Floor Long Beach, CA 90802
	Facility Contact	Storm Water/ Environmental Compliance Officer

Table 3. MS4 Discharge Locations¹

Major Outfall Locations	Outfall Size	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
Alamitos Bay / Basin No. 3	39" Discharge	33.753	-118.109	Alamitos Bay
Alamitos Bay /Basin No. 3	36" Discharge	33.756	-118.112	Alamitos Bay
36th PI/Ocean Blvd	54" Discharge	33.76	-118.151	Beach
39th PI / Allin St	39" Discharge	33.759	-118.148	Beach
9th PI / Ocean Blvd	36" Discharge	33.764	-118.174	Beach

¹ Table 3 identifies the major outfall locations based on the best available information at the time of permit adoption and may not be an complete inventory of all the major outfalls.

Ocean Blvd/Molino Ave	51" Discharge	33.762	-118.162	Beach
1231 Pier B 1400 8Th St	54" Discharge	33.777	-118.21	Channel #2 POLB
1722 8Th St	54" Discharge	33.774	-118.216	Channel #2 POLB
850 Edison Avenue	42" Discharge	33.773	-118.219	Channel #2 POLB
6th St/Alley E/O Park Ave	63" Discharge	33.773	-118.136	Colorado Lagoon
6th St/Nieto Ave	54" Discharge	33.773	-118.133	Colorado Lagoon
Monrovia Ave/4th St	48" Discharge	33.772	-118.132	Colorado Lagoon
7380 Willow St	60" Discharge	33.803	-118.085	Coyote Creek
8194 Timor St	48" Discharge	33.819	-118.068	Coyote Creek
Coyote Creek / Fenley Dr	Unk (OC Rossmoor Pump Station Discharge)	33.815	-118.071	Coyote Creek
Coyote Creek / N/O Junction San Gabriel River	Unk (OC Rossmoor Pump Station Discharge)	33.796	-118.089	Coyote Creek
Coyote Creek / S/O 226th St	3-36" Discharge (Claretta Drain Pump Station)	33.823	-118.066	Coyote Creek
710 Fwy / 27TH St	36" Discharge	33.806	-118.206	Los Angeles River
710 Fwy / Cowles St	3-36" & 1-8" Discharge	33.784	-118.206	Los Angeles River
710 Fwy / Hughes Way	24" Discharge	33.829	-118.205	Los Angeles River
710 Fwy / Long Beach Blvd	3-36" Discharge	33.863	-118.197	Los Angeles River
710 Fwy / Taper St	36" Discharge	33.819	-118.206	Los Angeles River
Los Angeles River / 17th St	204" Discharge	33.788	-118.204	Los Angeles River
Los Angeles River / 34th St	78" Discharge	33.819	-118.205	Los Angeles River
Los Angeles River / 3rd St	96" Discharge	33.771	-118.205	Los Angeles River
Los Angeles River / 405 Fwy	72" Discharge	33.825	-118.205	Los Angeles River
Los Angeles River / 7th St	30" & 21" Discharge	33.775	-118.204	Los Angeles River
Los Angeles River / Artesia Blvd	3-48" & 3-36" & 1-8" Discharge	33.874	-118.189	Los Angeles River
Los Angeles River / Loma Vista Dr	4-78" Discharge	33.779	-118.205	Los Angeles River
Los Angeles River / Loma Vista Dr	2-42" & 1-10" Discharge	33.779	-118.204	Los Angeles River
Los Angeles River / S/O Ocean Blvd	4-36" Discharge	33.765	-118.204	Los Angeles River
Los Angeles River / S/O Ocean Blvd	12" Discharge	33.766	-118.206	Los Angeles River
Los Angeles River / Virginia Vista	2-54" Discharge	33.832	-118.204	Los Angeles River
Los Angeles River/ 25th St	54" Discharge	33.802	-118.205	Los Angeles River
Los Angeles River/ 405 Fwy	60" Discharge	33.827	-118.206	Los Angeles River
Los Angeles River/ Wardlow Rd	54" Discharge	33.82	-118.205	Los Angeles River
Los Angeles River/ Willow St	48" Discharge	33.805	-118.205	Los Angeles River
Los Angeles River/Hill St	42" Discharge	33.797	-118.204	Los Angeles River

Los Angeles River/S/O 47th St	9-10" Discharge	33.84	-118.203	Los Angeles River
Market St / Los Angeles River	180 " Discharge	33.854	-118.2	Los Angeles River
1800 Knoxville Ave	3-30" Discharge	33.789	-118.104	Los Cerritos Channel
1809 Vuelta Grande Ave	42" Discharge	33.789	-118.103	Los Cerritos Channel
2040 Knoxville Ave	48" Discharge	33.793	-118.104	Los Cerritos Channel
2201 Vuelta Grande Ave	48" Discharge	33.796	-118.103	Los Cerritos Channel
2372 Knoxville Ave	38" Discharge	33.8	-118.105	Los Cerritos Channel
4600 Spring St	30" Discharge	33.813	-118.14	Los Cerritos Channel
5517 China Pt	36" Discharge	33.767	-118.125	Los Cerritos Channel
5950 Waterfront Pl	39" Discharge	33.766	-118.122	Los Cerritos Channel
6138 Corsica Circle	42" Discharge	33.765	-118.12	Los Cerritos Channel
6220 Willow St	48" Discharge	33.803	-118.109	Los Cerritos Channel
6264 Pacific Coast Highway	42" Discharge	33.763	-118.115	Los Cerritos Channel
6400 Willow St	42" Discharge	33.802	-118.108	Los Cerritos Channel
6491 Bixby Hill Rd	42" Discharge	33.778	-118.104	Los Cerritos Channel
Clark Ave / Spring St	480" Discharge	33.81	-118.133	Los Cerritos Channel
Lakewood Blvd / Spring St	108" Discharge	33.813	-118.141	Los Cerritos Channel
Lakewood Blvd / Spring St	120" Discharge	33.812	-118.142	Los Cerritos Channel
Lakewood Blvd / Spring St	39" Discharge	33.813	-118.139	Los Cerritos Channel
Los Cerritos Channel / 7th St	39" Discharge	33.775	-118.104	Los Cerritos Channel
Los Cerritos Channel / Costa del Sol	64" Discharge	33.763	-118.116	Los Cerritos Channel
Los Cerritos Channel FC/Loynes Dr	60" Discharge	33.768	-118.105	Los Cerritos Channel
Los Cerritos Channel/ 7th St	48" Discharge	33.775	-118.103	Los Cerritos Channel
Spinnaker Bay Dr/Eliot St	60" Discharge	33.768	-118.125	Los Cerritos Channel
Spring St / San Anseline Ave	66" Discharge	33.81	-118.121	Los Cerritos Channel
Studebaker Rd / 9th St	36" Discharge	33.78	-118.103	Los Cerritos Channel
Studebaker Rd / Anaheim Rd	81" Discharge	33.781	-118.103	Los Cerritos Channel
Paoli Way / Marina Park Ln	72" Discharge	33.768	-118.13	Marine Stadium
Paoli Way/ Marina Park Ln	108" Discharge	33.768	-118.13	Marine Stadium
6930 Septimo St	48" Discharge	33.775	-118.098	San Gabriel River
Across 3678 Stevely Ave	96" Discharge	33.825	-118.092	San Gabriel River
Across 3694 Stevely Ave	96" Discharge	33.825	-118.092	San Gabriel River
San Gabriel River/Carson St	48" Discharge	33.831	-118.093	San Gabriel River
San Gabriel River/Spring St	7-42" Discharge	33.81	-118.091	San Gabriel River

Table 4. Administrative Information

This Order was adopted by the California Regional Water Quality Control Board, Los Angeles Region on:	February 6, 2014
This Order becomes effective on:	March 28, 2014
This Order expires on:	March 28, 2019
According to Title 23, Division 3, Chapter 9 of the California Code of Regulations and to Title 40, Part 122 of the Code of Federal Regulation, the City of Long Beach shall file a Report of Waste Discharge as application for new waste discharge requirements no later than:	180 days prior to the expiration date of this Order: September 29, 2018
According to Section 2235.4 of Title 23 of the California Code of Regulations, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of the expired permit are complied with. Accordingly, if a new Order is not adopted by the expiration date above, then the City of Long Beach shall continue to implement the requirements of this Order until a new one is adopted.	

I, Samuel Unger, Executive Officer, do hereby certify that this Order with all its attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on February 6, 2014; and amended by the California Regional Water Quality Control Board, Los Angeles Region on September 8, 2016.



Samuel Unger, Executive Officer

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II. FINDINGS

The California Regional Water Quality Control Board, Los Angeles Region (hereinafter Regional Water Board) finds:

A. Nature of MS4 Discharges and Sources of Pollutants

The City of Long Beach owns and/or operates a large municipal separate storm sewer system (MS4) that conveys and ultimately discharges storm and non-storm water into surface waters under the jurisdiction of the Los Angeles Regional Board. These discharges originate as surface runoff from the various land uses within the City of Long Beach's political boundary; untreated, these discharges contain pollutants with the potential to impair or contribute to the impairment of the beneficial uses in surface waters. Since 1999, the City of Long Beach's monitoring data and analyses in support of TMDL development have identified pollutants of concern in discharges from the MS4. These pollutants of concern vary by receiving water. They generally include but are not limited to copper, lead, zinc, cadmium, PCBs, PAHs, pyrethroid pesticides, organophosphate pesticides, fecal indicator bacteria, and trash.

Impaired water quality has myriad impacts to beneficial uses of surface waters: beach postings and closures, fish consumption advisories, localized and global ecosystem and aesthetic impacts from trash and debris, and reduced habitat for wildlife such as threatened and endangered species, among others. Federal law requires states to address impaired water bodies by developing total maximum daily loads (TMDLs). The Regional Water Board and USEPA have established 9 TMDLs that identify MS4 discharges from the City of Long Beach as one of the pollutant sources causing or contributing to these water quality impairments.

B. Regulatory History and Municipal Separate Storm Sewer System Requirements

The 1972 Clean Water Act² established the NPDES Program to regulate the discharge of pollutants from point sources to waters of the United States. However, pollution from storm water and dry-weather urban runoff was largely unabated for over a decade. In response to the 1987 Amendments to the Clean Water Act, US EPA developed Phase I of the NPDES Storm Water Permitting Program in 1990, which established a framework for regulating municipal and industrial discharges of storm water and non-storm water. The Phase I program addressed sources of storm water and dry-weather urban runoff that had the greatest potential to negatively impact water quality. In particular, under Phase I, US EPA required NPDES Permit coverage for discharges from medium and large MS4 with populations of 100,000 or more.³ Operators of MS4s regulated under the Phase I NPDES Storm Water Program were required to obtain permit coverage for municipal discharges of storm water and non-storm water to waters of the United States.

Early in the history of the MS4 program in the Los Angeles Region, the Regional Water Board designated the MS4s owned and/or operated by the incorporated cities, including the City of Long Beach, and Los Angeles County unincorporated areas within the Coastal Watersheds of Los Angeles County as a large MS4 due to the total population

² Federal Water Pollution Control Act; 33 U.S.C. § 1251 et seq., which, as amended in 1977, is commonly known as the Clean Water Act.

³ Large MS4s are those that serve a population of at least 250,000 and medium MS4s are those that serve a population between 100,000 and 250,000.

of Los Angeles County, including that of unincorporated and incorporated areas, and the interrelationship between the Permittees' MS4s, pursuant to 40 CFR section 122.26(b)(4). In 1990, the City of Long Beach's population alone was 429,433.

The Regional Water Board regulated discharges from the City of Long Beach's MS4 from 1990 through 1999 under the Los Angeles countywide waste discharge requirements (WDR) contained in Order No. 90-079 and in Order No. 96-054 adopted on June 18, 1990, and on July 15, 1996, respectively. In addition to being WDRs, these orders were NPDES permits for the discharges from the MS4 serving the entire Los Angeles County area including those within the City of Long Beach.

In 1999, the Los Angeles Regional Board decided to issue a separate MS4 Permit, Order No. 99-60 to the City of Long Beach. Order No. 99-060 expired in June 2004 but has been administratively extended in accordance with federal regulation. Order No. 99-60 remains in effect until the Los Angeles Regional Board adopts a new permit.

Currently the City of Long Beach's MS4 serves a population of approximately 465,576. Additionally, the City of Long Beach's MS4 is interconnected with portions of the MS4 serving the greater Los Angeles County area.

This Order implements the federal Phase I NPDES storm water regulations and includes three fundamental elements: (i) a requirement to effectively prohibit non-storm water discharges that are a source of pollutants through the MS4, (ii) requirements to implement controls to reduce the discharge of pollutants in storm water to the maximum extent practicable, and (iii) other provisions the Regional Water Board determines appropriate for the control of pollutants discharged from the MS4.

C. Geographic Coverage

The permitted area, approximately 47.7 square miles, includes approximately 180 linear miles of MS4. This drainage area consists of approximately 39.28% residential, 5.35% commercial, 20.42% industrial, 5.98% parks, 5.28% planned development, 13.18% roads, and 4.64% unzoned land uses.

The MS4 discharges flow into surface waters located in the Los Angeles River Watershed, Dominguez Channel and Greater Los Angeles/Long Beach Harbors Watershed Management Area, Los Cerritos Channel and Alamitos Bay Watershed Management Area, and San Gabriel River Watershed.

This Order defines Watershed Management Areas (WMAs) consistent with the delineations used in the Los Angeles Regional Board's Watershed Management Initiative. Attachment B includes a map depicting each WMA and the major receiving waters therein that overlap with the City of Long Beach's jurisdictional area.

Federal, state, regional or local entities not named as a Permittee in this Order may operate MS4 facilities and/or discharge to the MS4 and water bodies covered by this Order. Pursuant to 40 CFR sections 122.26(d)(1)(ii) and 122.26(d)(2)(iv), this Order requires the City of Long Beach to maintain the necessary legal authority to control the contribution of pollutants to its MS4 and include in its storm water management program a comprehensive planning process that includes intergovernmental coordination, where necessary to address discharges from facilities outside of the City of Long Beach's

jurisdiction or within the City of Long Beach's jurisdiction but not owned or operated by the City of Long Beach (e.g. California Department of Transportation, Caltrans).

D. Permit Scope

This Order regulates storm water and non-storm water MS4 discharges from the City of Long Beach into surface waters within the jurisdiction of the Regional Water Board. Section 122.26(b)(8) of Title 40 of the Code of Federal Regulations (CFR) defines an MS4 as "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) [o]wned 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) [d]esignated or used for collecting or conveying storm water; (iii) [w]hich is not a combined sewer; and (iv) [w]hich is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2."

Storm water discharges consist of those discharges that originate from precipitation events. 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, USEPA's preamble to its final storm water 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)).

Non-Storm water discharges consist of all discharges through an MS4 that do not originate from precipitation events. non-storm water discharges through an MS4 are prohibited unless authorized under a separate NPDES permit; authorized by USEPA pursuant to Sections 104(a) or 104(b) of the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); composed of natural flows; the result of emergency fire-fighting activities; or conditionally exempted by this Order.

E. Legal Authorities

This Order is issued pursuant to CWA Section 402 and implementing regulations adopted by the US EPA and Chapter 5.5, Division 7 of the California Water Code (commencing with Section 13370). This Order serves as an NPDES permit for MS4 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 California Water Code (commencing with Section 13260).

F. Background and Rationale for Requirements

The Regional Water Board developed the requirements in this Order based on information from the City of Long Beach's ROWD, monitoring and reporting data, program audits, and other available information. This Order is consistent with the CWA, the CWC and regulations adopted thereunder.

In accordance with federal regulations at 40 CFR section 124.8, the Fact Sheet (Attachment F) has been prepared to explain the principal facts and the significant

factual, legal, methodological, and policy questions considered in preparing this Order. The Fact Sheet is hereby incorporated into this Order and also constitutes part of the Findings of the Regional Water Board for this Order. Attachments A through E and G through I are also incorporated into this Order.

G. Water Quality Control Plans

The CWA requires the Regional Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect those beneficial uses, and an antidegradation policy to prevent degrading waters unless specific circumstances apply. The Regional Water Board adopted a *Water Quality Control Plan - Los Angeles Region* (hereinafter Basin Plan) on June 13, 1994 and has amended it on multiple occasions since 1994. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Los Angeles Region. Pursuant to CWC Section 13263(a), 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 in Table 5 below.

Table 5. Designated Beneficial Uses

Receiving Water Name	Beneficial Uses
Los Angeles River	Water contact (REC1) and non-contact water recreation (REC2); ground water recharge (GWR); warm fresh water habitat (WARM); wildlife habitat (WILD); industrial process supply (PROC)
Los Cerritos Channel	Industrial service supply (IND), navigation (NAV); water contact (REC1) and non-contact water recreation (REC2); commercial and sport fishing (COMM); estuarine habitat (EST); marine habitat (MAR), wildlife habitat (WILD); rare, threatened or endangered species habitat (RARE); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development habitat (SPWN); shellfish harvesting (SHELL)
Coyote Creek	Rare, threatened or endangered species habitat (RARE); municipal and domestic supply (MUN); industrial process supply (PROC); water contact (REC1) and non-contact water recreation (REC2); warm fresh water habitat (WARM); wildlife habitat (WILD)
Colorado Lagoon	Water contact (REC1) and non-contact water recreation (REC2); commercial and sport fishing (COMM); warm fresh water habitat (WARM); spawning, reproduction, and/or early development habitat (SPWN); shellfish harvesting (SHELL)
San Gabriel River	Industrial process supply (PROC), agricultural supply (AGR); ground water recharge (GWR); water contact (REC1) and non-contact water recreation (REC2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened or endangered species habitat (RARE)

H. Ocean Plan

In 1972, the State Water Resources Control Board (State Water Board) adopted the Water Quality Control Plan for Ocean Waters of California, (Ocean Plan). The State

Water Board adopted the most recent amended Ocean Plan on September 15, 2009. The Office of Administrative Law approved it on March 10, 2010. On October 8, 2010, US EPA approved the 2009 Ocean Plan. The Ocean Plan is applicable, in its entirety, to the 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 section 13263(a), 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 in Table 6 below.

Table 6. Designated Beneficial Uses identified in the Ocean Plan

Receiving Water Name	Beneficial Uses
Pacific Ocean	Industrial Service 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)
Los Alamitos Bay	Industrial service supply (IND); navigation (NAV); water contact (REC1) and non-contact water recreation (REC2); commercial and sport fishing; estuarine habitat (COMM); marine habitat (MAR); wildlife habitat (WILD); rare, threatened or endangered species (RARE); shellfish harvesting (SHELL); wetland habitat (WET)
Marine Stadium	Water contact (REC1) and non-contact water recreation (REC2); commercial and sport fishing (COMM); marine habitat (MAR); rare, threatened, or endangered species (RARE); wetland habitat (WET)
Long Beach Harbor	Navigation (NAV); water contact (REC1) and non-contact water recreation (REC2); commercial and sportfishing (COMM); marine habitat (MAR); wildlife habitat (WILD); migration of aquatic organisms (MIGR); spawning, reproduction, and/or early development (SPWN); shellfish harvesting (SHELL)

I. Antidegradation Policy

Section 131.12 of 40 CFR 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. Resolution No. 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of Section 131.12 and State Water Board Resolution No. 68-16 as described in more detail in the Fact Sheet.

J. Anti-Backsliding Requirements

Section 402(o)(2) 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 numeric water quality based effluent limitations. The federal technology based 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.

K. Total Maximum Daily Loads

Section 303(d)(1) of the CWA requires each state to identify the waters within its boundaries that do not meet water quality standards. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's CWA Section 303(d) List. For each listed water body, the state is required to establish a 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 pollutant 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 pollutant 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 § 130.2(i)). MS4 discharges are considered point source discharges.

Numerous receiving waters within Los Angeles County do not meet water quality standards or fully support beneficial uses and therefore have been classified as impaired on the State's 303(d) List. The Regional Water Board and US EPA have each established TMDLs to address many of these water quality impairments. Pursuant to CWA section 402(p)(B)(3)(iii) and 40 CFR section 122.44(d)(1)(vii)(B), this Order includes requirements that are consistent with and implement WLAs that are assigned to MS4 discharges from the City of Long Beach from 9 State-adopted and US EPA established TMDLs. This Order requires the City of Long Beach to comply with the TMDL Provisions in Part VIII, which are consistent with the assumptions and requirements of the WLAs assigned to the City of Long Beach.

The WLAs in these TMDLs are expressed in several ways depending on the nature of the pollutant and its impacts on receiving waters and beneficial uses. Bacteria WLAs assigned to MS4 discharges are expressed as the number of allowable exceedance days that a water body may exceed the Basin Plan water quality objectives for protection of the REC-1 beneficial use. Since the TMDLs and the WLAs contained therein are expressed as receiving water conditions, receiving water limitations have been included in this Order that are consistent with and implement the allowable exceedance day WLAs. Water quality-based effluent limitations are also included equivalent to the Basin Plan water quality objectives to allow the opportunity for the City of Long Beach to individually demonstrate compliance at an outfall or jurisdictional

boundary, thus isolating the City of Long Beach's pollutant contributions from those of other entities and from other pollutant sources to the receiving water.

The WLAs for trash are expressed as progressively decreasing allowable amounts of trash discharges from the City of Long Beach's jurisdictional area within the drainage area to the impaired water body. Trash TMDLs require the City of Long Beach to make annual reductions of its discharges of trash over a set period, until the numeric target of zero trash discharged from the MS4 is achieved. The Trash TMDLs specify a specific formula for calculating and allocating annual reductions in trash discharges from each jurisdictional area within a watershed. The formula results in specified annual amounts of trash that may be discharged from each jurisdiction into the receiving waters. Translation of the WLAs or compliance points described in the TMDLs into jurisdiction-specific load reductions from the baseline levels, as specified in the TMDL, logically results in the articulation of an annual limitation on the amount of a pollutant that may be discharged. The specification of allowable annual trash discharge amounts meets the definition of an "effluent limitation", as that term is defined in subdivision (c) of section 13385.1 of the California Water Code. Specifically, the trash discharge limitations constitute a "numeric restriction ... on the quantity [or] discharge rate ... of a pollutant or pollutants that may be discharged from an authorized location."

The WLAs for other pollutants (e.g. metals and toxics) are expressed as a concentration and/or mass and water quality-based effluent limitations have been specified consistent with the expression of the WLA, including any applicable averaging periods. Some TMDLs specify that, if certain receiving water conditions are achieved, such achievement constitutes attainment of the WLA. In these cases, receiving water limitations and/or provisions outlining these alternate means of demonstrating compliance are included in the TMDL provisions of this Order.

The inclusion of water quality-based effluent limitations and receiving water limitations to implement applicable WLAs provides a clear means of identifying required water quality outcomes within the permit and ensures accountability by the City of Long Beach to implement actions necessary to achieve the limitations.

A number of the TMDLs for bacteria, metals, and toxics establish WLAs that are assigned jointly to a group of Dischargers whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL. The TMDLs address commingled MS4 discharges by assigning a WLA to a group of MS4 Dischargers based on co-location within the same subwatershed. Dischargers with commingled MS4 discharges are jointly responsible for meeting the water quality-based effluent limitations and receiving water limitations assigned to MS4 discharges in this Order. "Joint responsibility" means the City of Long Beach is responsible for implementing programs in its jurisdiction, or within the MS4 for which it is an owner and/or operator, to meet the water quality-based effluent limitations and/or receiving water limitations assigned to such commingled MS4 discharges. In these cases, federal regulations state that dischargers need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators (40 CFR Section 122.26(a)(3)(vi)). Individual dischargers are only responsible for their contributions to the commingled MS4 discharge. This Order does not require the City of Long Beach to individually ensure that a commingled MS4 discharge meets the

applicable water quality-based effluent limitations included in this Order, unless the City of Long Beach is shown to be solely responsible for any exceedances.

This Order also allows the City of Long Beach to clarify and distinguish its contribution and demonstrate that the MS4 discharge from its jurisdiction did not cause or contribute to exceedances of applicable water quality-based effluent limitations and/or receiving water limitations. If such a demonstration is made, though the City of Long Beach's discharge may commingle with that of other Dischargers, the City of Long Beach would not be held jointly responsible for the exceedance of the water quality-based effluent limitation or receiving water limitation.

Given the interconnected nature of the MS4s in general, the Regional Water Board expects the City of Long Beach to work cooperatively to control the contribution of pollutants from one portion of the MS4 to another portion of the system through inter-agency agreements or other formal arrangements.

L. Endangered Species Act

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 City of Long Beach is responsible for meeting all requirements of the applicable Endangered Species Act.

M. Monitoring and Reporting

Section 308(a) of the federal Clean Water Act, and 40 CFR sections 122.41(h), (j)-(l), 122.41(i), and 122.48, require 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 authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program in this Order requires monitoring, reporting, and recordkeeping requirements that implement the federal and state laws and/or regulations. This Monitoring and Reporting Program is provided in Attachment E.

N. Standard and Special Provisions

The 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 provided in Attachment D. The Regional Water Board has also included various special provisions applicable to the City of Long Beach in Part VII of this Order. The rationale for the special provisions contained in this Order is provided in the Fact Sheet (Attachment F).

O. 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 as described in detail in the attached Fact Sheet (Attachment F).

P. California Water Code Section 13241

The California Supreme Court has ruled that although California Water Code section 13263 requires the State and Regional Water Boards (collectively, Water Boards) to consider the factors set forth in California Water Code section 13241 when issuing an NPDES permit, the Water Boards may not consider the factors to justify imposing pollutant restriction that are less stringent than the applicable federal regulations require. (*City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 618, 626-627). 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. As noted in the preceding finding, the Regional Water Board finds that the requirements in this permit are not more stringent than the minimum federal requirements. Therefore, a 13241 analysis is not required for permit requirements that implement the effective prohibition on the discharge of non-storm water discharges into the MS4, or for controls to reduce the discharge of pollutants in storm water to the maximum extent practicable, or other provisions that the Regional Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law. Notwithstanding the above, the Regional Water Board has developed an economic analysis of the permit’s requirements, consistent with California Water Code section 13241. That analysis is provided in the Fact Sheet (Attachment F of this Order).

Q. California Environmental Quality Act

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

R. Notification of Interested Parties

In accordance with State and federal laws and regulations, the Regional Water Board notified the City of Long Beach and interested agencies and persons of its intent to prescribe WDRs for the discharges authorized by this Order and provided them with opportunities to provide written and oral comments. The Fact Sheet contains the details on notifications, meetings, and workshops held during the drafting and consideration of this Order.

S. Consideration of Public Comment

The Regional Water Board, in a public meeting, heard and considered all oral and written comments pertaining to the discharges authorized by this Order and the requirements contained herein. The Regional Water Board prepared written responses to all timely comments, and these responses are incorporated by reference as part of this Order.

T. NPDES Permit

This Order serves as an NPDES permit pursuant to CWA section 402 or amendments thereto, and becomes effective fifty (50) days after the date of its adoption, provided the US EPA Region IX Regional Administrator expresses no objections.

U. Previous Order Superseded

This Order supersedes Order No. 99-060 except for enforcement purposes.

V. Review by the State Water Resources Control Board

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, Title 23, Sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the Regional Water Board action, except that if the thirtieth day following the action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

THEREFORE, IT IS HEREBY ORDERED, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with Section 13000), and regulations, plans, and policies adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, the City of Long Beach shall comply with the following requirements in this Order.

III. DISCHARGER RESPONSIBILITIES

- A.** The City of Long Beach is required to comply with the requirements of this Order applicable to discharges within its boundaries. The City shall do the following:
1. Comply with the provisions in this Order including attachments and any modifications thereto.
 2. Inform the Regional Water Board of instances of non-compliance pursuant to the MRP.
 3. Submit complete and timely reports including but not limited to non-compliance reporting, annual reports, monitoring reports, and the report of waste discharge.
 4. Coordinate among its internal departments and agencies, as necessary, to facilitate the implementation of the requirements of this Order in an efficient and cost-effective manner.
 5. Participate in intra-agency coordination (e.g. Planning Department, Fire Department, Building and Safety, Code Enforcement, Public Health, Parks and Recreation, and others) and inter-agency coordination (e.g. other dischargers) necessary to successfully implement the provisions of this Order.

IV. DISCHARGE PROHIBITIONS

A. Toxic Substances

Any discharge from the MS4 into surface waters in concentrations acutely or chronically toxic to animal or plant life is prohibited.

B. Non-Storm Water Discharges

1. **Prohibition of Non-Storm Water Discharges.** The City of Long Beach shall prohibit non-storm water discharges through the MS4 to receiving waters except where such discharges are either:
 - a. Authorized non-storm water discharges separately regulated by an individual or general NPDES permit;
 - b. Temporary non-storm water discharges authorized by US EPA⁴ pursuant to sections 104(a) or 104(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that either: (i) will comply with water quality standards as applicable or relevant and appropriate requirements (“ARARs”) under section 121(d)(2) of CERCLA; or (ii) are subject to either (a) a written waiver of ARARs by US EPA pursuant to section 121(d)(4) of CERCLA or (b) a written determination by US EPA that compliance with ARARs is not practicable considering the exigencies of the situation pursuant to 40 CFR section 300.415(j);
 - c. Authorized non-storm water discharges from emergency fire-fighting activities (i.e., flows necessary for the protection of life or property)⁵;
 - d. Conditionally exempt non storm water discharges in accordance with Part IV.B.2 of this Order; or
 - e. Natural flows, including:
 - i. Natural springs;

⁴ These typically include short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or US EPA or state-required compliance testing of potable water treatment plants, as part of a US EPA authorized groundwater remediation action under CERCLA.

⁵ Discharges from vehicle washing, building fire suppression system maintenance and testing (e.g., sprinkler line flushing), fire hydrant maintenance and testing, and other routine maintenance activities are not considered emergency fire-fighting activities.

- ii. Flows from riparian habitats and wetlands;
- iii. Diverted stream flows, authorized by the State or Regional Water Board;
- iv. Uncontaminated ground water infiltration⁶;
- v. Rising ground waters, where ground water seepage is not otherwise covered by a NPDES permit⁷.

2. Conditional Exemptions from Non-Storm Water Discharge Prohibition

The following categories of non-storm water discharges are conditionally exempt from the non-storm water discharge prohibition, provided they meet all required conditions specified below, or as otherwise approved by the Regional Water Board Executive Officer, in all areas regulated by this Order.

- a. Conditionally Exempt Essential Non-Storm Water Discharges: These consist of those discharges that fall within one of the categories below, meet all required best management practices (BMPs) as specified in Part IV.B.2.i and ii including those enumerated in the referenced BMP manuals, are essential public services discharge activities, and are directly or indirectly required by other state or federal statute and/or regulation.
 - i. Discharges from essential non-emergency fire-fighting activities provided appropriate BMPs are implemented based on the CAL FIRE, Office of the State Fire Marshal's Water-Based Fire Protection Systems Discharge Best Management Practices Manual (September 2011) for water-based fire protection system discharges, and based on Riverside County's Best Management Practices Plan for Urban Runoff Management (May 1, 2004) or equivalent BMP manual for fire training activities and post-emergency fire-fighting activities;
 - ii. Discharges from drinking water supplier distribution systems, not otherwise regulated by an individual or general NPDES permit, provided appropriate BMPs are implemented based on the American Water Works Association (California-Nevada Section) Guidelines for the Development of Your Best Management Practices (BMP) Manual for Drinking Water System Releases (2005) or equivalent industry standard BMP manual. Additionally, the City of Long Beach shall work with drinking water suppliers that may discharge to the MS4 to ensure for all discharges greater than 100,000 gallons: (1) notification at least 72 hours prior to a planned discharge and as soon as possible after an unplanned discharge; (2) monitoring of any pollutants of concern in the drinking water supplier distribution system release; and (3) record keeping by the drinking water supplier. The City of Long Beach shall require that the following information is maintained by the drinking water supplier(s) for all discharges to the MS4 (planned and unplanned) greater than 100,000 gallons: name of 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, total

⁶ Uncontaminated ground water infiltration is water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (See 40 CFR § 35.2005(20).)

⁷ A NPDES permit for discharges associated with ground water dewatering is required within the Los Angeles Region.

number of gallons discharged, type of dechlorination equipment used, type of dechlorination chemicals used, concentration of residual chlorine, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. Records shall be retained for five years and made available upon request by the City of Long Beach or Regional Water Board.

- b. Those discharges that fall within one of the categories below, provided that the discharge itself is not a source of pollutants and meets all required conditions specified in Table 7 or as otherwise specified or approved by the Regional Water Board Executive Officer:
 - i. Lake dewatering ;
 - ii. Landscape irrigation;
 - iii. Dechlorinated/debrominated swimming pool/spa discharges , where not otherwise regulated by a separate NPDES permit;
 - iv. Dewatering of decorative fountains;
 - v. Non-commercial car washing by residents or by non-profit organizations;
 - vi. Street/sidewalk wash water;
 - vii. Short-term releases of potable water with no additives or dyes for filming purposes;
 - viii. Potable wash water used to clean reservoir covers.

3. Permittee Requirements

- a. The City of Long Beach shall develop and implement procedures to ensure that a discharger fulfills the following for non-storm water discharges to the MS4:
 - i. Notifies the City of Long Beach of the planned discharge in advance, consistent with requirements in Table 7 or recommendations pursuant to the applicable BMP manual;
 - ii. Obtains any local permits required by the City of Long Beach;
 - iii. Provides documentation to the City of Long Beach that it has obtained any other necessary permits or water quality certifications⁸ for the discharge;
 - iv. Conducts monitoring of the discharge, if required by the City of Long Beach;
 - v. Implements BMPs and/or control measures as specified in Table 7 or in the applicable BMP manual(s) as a condition of the approval to discharge into the MS4; and
 - vi. Maintains records of its discharge to the MS4, consistent with requirements in Table 7 or recommendations pursuant to the applicable BMP manual. For lake dewatering, the City of Long Beach shall require the lake owner / operator to maintain the following information: name of discharger, date and time of notification, 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, total number of gallons discharged, type(s) of sediment controls used, pH of discharge, type(s) of volumetric and velocity controls used, and field and laboratory monitoring data. These records shall be

⁸ Requirement of the Clean Water Act Section 401.

made available upon request to the City of Long Beach or the Regional Water Board.

- b.** The City of Long Beach shall organize and maintain records of all non-storm water discharges greater than 100,000 gallons, notifications, and local permits in an electronic database.
- c.** The City of Long Beach shall develop and implement procedures that minimize the discharge of landscape irrigation water into the MS4 by promoting conservation programs as follows:
 - i.** The City of Long Beach shall coordinate with the local water purveyor(s), where applicable, to promote landscape water use efficiency requirements for existing landscaping, use of drought tolerant, native vegetation, and the use of less toxic options for pest control and landscape management.
 - ii.** The City of Long Beach shall develop and implement a coordinated outreach and education program to minimize the discharge of irrigation water and pollutants associated with irrigation water consistent with Part VII.G.3 (Public Information and Participation Program).
- d.** The City of Long Beach shall evaluate monitoring data collected pursuant to the Monitoring and Reporting Program (MRP) of this Order (Attachment E), and any other associated data or information, and determine whether any of the authorized or conditionally exempt non-storm water discharges identified in Part IV.B.1 above are a source of pollutants that may be causing or contributing to an exceedance of applicable receiving water limitations in Part VI.A and/or water quality-based effluent limitations in Part VIII. To evaluate monitoring data, the City of Long Beach shall either use applicable interim or final water quality-based effluent limitations for the pollutant or, if there are no applicable interim or final water quality-based effluent limitations for the pollutant, use applicable action levels provided in Attachment G. Based on non-storm water outfall-based monitoring as implemented through the MRP, if monitoring data show exceedances of applicable water quality-based effluent limitations or action levels, the City of Long Beach shall take further action to determine whether the discharge is causing or contributing to exceedances of receiving water limitations in Part VI.A.
- e.** If the City of Long Beach determines that any of the conditionally exempt non-storm water discharges identified in Part IV.B.1 above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the City of Long Beach shall report its findings to the Regional Water Board in its annual report. Based on this determination, the City of Long Beach shall also either:
 - i.** Effectively prohibit⁹ the non-storm water discharge to the MS4; or
 - ii.** Impose conditions in addition to those in Table 7, subject to approval by the Regional Water Board Executive Officer, on the non-storm water discharge such that it will not be a source of pollutants; or

⁹ To “effectively prohibit” means to not allow the non-storm water discharge through the MS4 unless the discharger obtains coverage under a separate NPDES permit prior to discharge to the MS4.

- iii. Require diversion of the non-storm water discharge to the sanitary sewer;
or
 - iv. Require treatment of the non-storm water discharge prior to discharge to the receiving water.
- f. 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.1.a-c or IV.B.2.a.i or ii above is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, the City of Long Beach shall notify the Regional Water Board within 30 days if the non-storm water discharge is an authorized discharge with coverage under a separate NPDES permit or authorized by USEPA under CERCLA in the manner provided in Part IV.B.1.a-b above, or a conditionally exempt essential non-storm water discharge or emergency non-storm water discharge.
- g. If the City of Long Beach prohibits the discharge from the MS4, as per Part IV.B.3.e.i, then the City of Long Beach shall implement procedures developed under Part VII.M (Illicit Connections and Illicit Discharges Elimination Program) in order to eliminate the discharge to the MS4.
- h. If the City of Long Beach demonstrates that the water quality characteristics of a specific authorized or conditionally exempt essential non-storm water discharge resulted in an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations during a specific sampling event, the City of Long Beach shall not be found in violation of applicable receiving water limitations and/or water quality-based effluent limitations for that specific sampling event. Such demonstration must be based on source specific water quality monitoring data from the authorized or conditionally exempt essential non-storm water discharge or other relevant information documenting the characteristics of the specific non-storm water discharge as identified in Table 7.
- i. Notwithstanding the above, the Regional Water Board Executive Officer, based on an evaluation of monitoring data and other relevant information for specific categories of non-storm water discharges, may modify a category or remove categories of conditionally exempt non-storm water discharges from Part IV.B.1 above if the Executive Officer determines that a discharge category is a source of pollutants that causes or contributes to an exceedance of applicable receiving water limitations and/or water quality-based effluent limitations, or may require that a discharger obtain coverage under a separate individual or general State or Regional Water Board permit for a non-storm water discharge.

Table 7. Required Conditions for Conditionally Exempt Non-storm Water Discharges

Discharge Category	General Requirements for Exempt MS4 Discharges	Requirements/Required BMPs Prior to Discharge into Surface Waters from the MS4
All Discharge Categories	See discharge specific conditions below.	<p>Ensure conditionally exempt non-storm water discharges avoid potential sources of pollutants in the flow path to prevent introduction of pollutants to the MS4 and receiving water.</p> <p>Whenever there is a discharge of 100,000 gallons or more into the MS4, the City of Long Beach shall require notification in advance.</p>
Lake Dewatering	Discharge allowed only if all necessary permits/water quality certifications for dredge and fill activities, including water diversions, are obtained prior to discharge.	<p>Ensure procedures for advanced notification by the lake owner / operator to the City of Long Beach no less than 72 hours prior to the planned discharge.</p> <p>Immediately prior to discharge, visible trash on the shoreline or on the surface of the lake shall be removed and disposed of in a legal manner.</p> <p>Immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed shall be inspected and cleaned out.</p> <p>Discharges shall be volumetrically and velocity controlled to minimize sediment re-suspension.</p> <p>Measures shall be taken to stabilize lake bottom sediments.</p> <p>Ensure procedures for water quality monitoring for pollutants of concern¹⁰ in the lake.</p> <p>Ensure record-keeping of lake dewatering by the lake owner / operator.</p>

¹⁰ Pollutants of concern include, at a minimum, trash and debris, including organic matter, TSS, and any pollutant for which there is a water quality-based effluent limitation in Part VIII for the lake and/or receiving water.

Discharge Category	General Requirements for Exempt MS4 Discharges	Requirements/Required BMPs Prior to Discharge into Surface Waters from the MS4
Landscape irrigation using potable water	Discharge allowed if runoff due to potable landscape irrigation is minimized through the implementation of an ordinance specifying water efficient landscaping standards, as well as an outreach and education program focusing on water conservation and landscape water use efficiency.	Implement BMPs to minimize runoff and prevent introduction of pollutants to the MS4 and receiving water. Implement water conservation programs to minimize discharge by using less water.
Landscape irrigation using reclaimed or recycled water	Discharge of reclaimed or recycled water runoff from landscape irrigation is allowed if the discharge is in compliance with the producer and distributor operations and management (O&M) plan, and all relevant portions thereof, including the Irrigation Management Plan.	Discharges must comply with applicable O&M Plans, and all relevant portions thereof, including the Irrigation Management Plan.
Dechlorinated/debrominated swimming pool/spa discharges	Discharges allowed after implementation of specified BMPs. Pool or spa water containing copper-based algaecides is not allowed to be discharged to the MS4. Discharges of cleaning waste water and filter backwash allowed only if authorized by a separate NPDES permit.	Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water. Swimming pool water must be de-chlorinated or de-brominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L. Swimming pool water shall not contain any detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives. ¹¹ Swimming pool discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units. Swimming pool discharges shall be volumetrically and velocity controlled to promote evaporation and/or

¹¹ Applicable mineral water quality objectives for surface waters are contained in Chapter 3 of the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

Discharge Category	General Requirements for Exempt MS4 Discharges	Requirements/Required BMPs Prior to Discharge into Surface Waters from the MS4
		<p>infiltration.</p> <p>Ensure procedures for advanced notification by the pool owner to the City of Long Beach(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more.</p> <p>For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.</p>
Dewatering of decorative fountains	<p>Discharges allowed after implementation of specified BMPs.</p> <p>Fountain water containing copper-based algaecides may not be discharged to the MS4.</p> <p>Fountain water containing dyes may not be discharged to the MS4.</p>	<p>Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water.</p> <p>Fountain water must be de-chlorinated or de-brominated using holding time, aeration, and/or sodium thiosulfate. Chlorine residual in the discharge shall not exceed 0.1 mg/L.</p> <p>Fountain discharges are to be pH adjusted, if necessary, and be within the range of 6.5 and 8.5 standard units.</p> <p>Fountain discharges shall be volumetrically and velocity controlled to promote evaporation and/or infiltration.</p> <p>Ensure procedures for advanced notification by the fountain owner to the City of Long Beach(s) at least 72 hours prior to planned discharge for discharges of 100,000 gallons or more.</p> <p>For discharges of 100,000 gallons or more, immediately prior to discharge, the discharge pathway and the MS4 inlet to which the discharge is directed, shall be inspected and cleaned out.</p>
Non-commercial car washing by residents or by non-profit organizations	Discharges allowed after implementation of specified BMPs.	<p>Implement BMPs and ensure discharge avoids potential sources of pollutants in the flow path to prevent introduction of pollutants prior to discharge to the MS4 and receiving water.</p> <p>Minimize the amount of water used by employing water conservation practices such as turning off nozzles or kinking the hose when not spraying a car, and using a low volume pressure washer.</p> <p>Encourage use of biodegradable, phosphate free detergents and non-toxic cleaning products.</p> <p>Where possible, wash cars on a permeable surface where wash water can percolate into the ground (e.g. gravel or grassy areas).</p> <p>Empty buckets of soapy or rinse water into the sanitary sewer system (e.g., sinks or toilets).</p>
Street/sidewalk	Discharges allowed after implementation of specified	Sweeping should be used as an alternate BMP whenever possible and sweepings should be disposed of in

Discharge Category	General Requirements for Exempt MS4 Discharges	Requirements/Required BMPs Prior to Discharge into Surface Waters from the MS4
wash water	BMPs.	<p>the trash.</p> <p>BMPs shall be in accordance with Regional Water Board Resolution No. 98-08 that requires: 1) removal of trash, debris, and free standing oil/grease spills/leaks (use absorbent material if necessary) from the area before washing and 2) use of high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area. In areas of unsanitary conditions (e.g., areas where the congregation of transient populations can reasonably be expected to result in a significant threat to water quality), whenever practicable, the City of Long Beach shall collect and divert street and alley wash water from street and sidewalk cleaning public agency activities to the sanitary sewer.</p>
Potable water discharges for filming activities		<p>Prior to discharging the water, the storm drain to the receiving water where the discharge will occur as well as the area in the immediate vicinity of the outlet to the receiving water, and the adjacent downstream portion of the channel that will be influenced by the discharge must be cleaned of all pre-existing trash and debris, and kept free of trash and debris during filming.</p> <p>No trash or debris from the filming activities shall be allowed to remain in the storm drain or channel.</p> <p>Each day, prior to water discharge for the movie scenes, a walk-through of the filming area (including the targeted storm drain and receiving water) will be conducted by a City of Long Beach Public Works representative to assure that all trash and debris has been removed and no illicit discharges are observed.</p> <p>The source of the water that will be discharged will be de-ionized, chlorine free water.</p> <p>In receiving waters where scour of the channel is a concern, the water must be discharged at a steady, low velocity to minimize scour.</p> <p>Upon the completion of the discharges and associated filming, the City of Long Beach shall visually inspect the storm drain and channel downstream of the storm drain outlet to remove any possible trash or debris related to the discharge and filming activities.</p>
Potable wash water discharges associated with reservoir cover cleaning	Per the Operations and Maintenance Plan approved by the CDPH	<p>Create a list of the total number of reservoir covers that must be cleaned to comply with CDPH operations and maintenance requirements for reservoir covers; the list should also include the annual cleaning frequency, the address where the reservoirs are located; and the type and size (surface area) of the reservoir covers.</p> <p>The cleaning of the reservoirs shall be done in such a way that minimizes the amount of water used to clean the cover;</p> <p>Waste water from the cleaning of the reservoir covers shall be discharged to a sanitary sewer or allowed to percolate into the ground; and the discharge shall not cause or contribute to erosion in the area where it will</p>

Discharge Category	General Requirements for Exempt MS4 Discharges	Requirements/Required BMPs Prior to Discharge into Surface Waters from the MS4
		<p>be percolation;</p> <p>If Waste water from the cleaning of the reservoir covers is percolated into the ground, the wash water shall not contain solvents, or other contaminants that might migrate into and contaminate the groundwater supplies.</p>

V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Technology Based Effluent Limitations

The City of Long Beach shall reduce pollutants in storm water discharges from the MS4 to the MEP.

2. Water Quality-Based Effluent Limitations

The City of Long Beach shall comply with applicable water quality based effluent limitations (WQBELs) as set forth in Part VIII of this Order, pursuant to applicable compliance schedules. The WQBELs in this Order are consistent with the assumptions and requirements of the TMDL waste load allocations assigned to discharges from the MS4.¹²

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

VI. RECEIVING WATER LIMITATIONS

A. Receiving Water Limitations

1. Discharges from the MS4 that cause or contribute to the violation of receiving water limitations are prohibited.
2. Discharges from the MS4 of storm water, or non-storm water, for which the City of Long Beach is responsible¹³, shall not cause or contribute to a condition of nuisance.
3. The City of Long Beach shall comply with Parts VI.A.1 and VI.A.2 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. The storm water management program and its components shall be designed to achieve compliance with receiving water limitations. If exceedances of receiving water limitations persist, notwithstanding implementation of the storm water management program and its components and other requirements of this Order, the City of Long Beach shall assure compliance with discharge prohibitions and receiving water limitations by complying with the following procedure:
 - a. Upon a 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 promptly notify and thereafter submit an Integrated Monitoring Compliance Report (as described in the Program Reporting Requirements, Part XVIII.A.5 of the Monitoring and Reporting Program) to the Regional Water Board for approval. The Integrated Monitoring Compliance Report shall

¹² According to 40 CFR § 130.2, wasteload allocations constitute a type of water quality based effluent limitation. Pursuant to 40 CFR § 122.2, effluent limitation means any restriction imposed by the permitting authority on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources. The Regional Water Board generally uses the term “effluent limitation” in the context of permits and has done so here; however, the two terms, “water quality based effluent limitation” and “wasteload allocation” when used in the context of a NPDES permit can be interchangeable.

¹³ Pursuant to 40 CFR § 122.26(a)(3)(vi), the Discharger is only responsible for discharges of storm water and non-storm water from the MS4 for which it is an owner or operator.

describe the BMPs that are currently being implemented by the City of Long Beach and additional BMPs, including modifications to current BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedances of receiving water limitations. The Integrated Monitoring Compliance Report shall include an implementation schedule. This Integrated Monitoring Compliance Report shall be incorporated in the City of Long Beach's annual storm water report unless the Regional Water Board directs an earlier submittal. The Regional Water Board may require modifications to the Integrated Monitoring Compliance Report.

- b. The City of Long Beach shall submit any modifications to the Integrated Monitoring Compliance Report required by the Regional Water Board within 30 days of notification.
 - c. Within 30 days following the Regional Water Board Executive Officer's approval of the Integrated Monitoring Compliance Report, the City of Long Beach shall revise the storm water management program and its components and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, an implementation schedule, and any additional monitoring required.
 - d. The City of Long Beach shall implement the revised storm water management program and its components and monitoring program according to the approved implementation schedule.
4. So long as the City of Long Beach has complied with the procedures set forth in Part VI.A.3. above and is implementing the revised storm water management program and its components, the City of Long Beach does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Regional Water Board to modify current BMPs or develop additional BMPs.

B. Ground Water Limitations – Not Applicable

VII. Provisions

A. Standard Provisions

1. **Federal Standard Provisions.** The City of Long Beach shall comply with all Standard Provisions included in Attachment D of this Order, in accordance with 40 CFR sections 122.41 and 122.42.
2. **Legal Authority**
 - a. The City of Long Beach must establish and maintain adequate legal authority, within its respective jurisdiction, to control pollutant discharges into and from its MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize or enable the City to:
 - i. Control the contribution of pollutants to the MS4 from storm water discharges associated with industrial and construction activity and control the quality of storm water discharged from industrial and construction sites. This requirement applies both to industrial and construction sites with

coverage under an NPDES permit, as well as to those sites that do not have coverage under an NPDES permit.

- ii.** Prohibit all non-storm water discharges through the MS4 to receiving waters not otherwise authorized or conditionally exempt pursuant to Part IV.B;
 - iii.** Prohibit and eliminate illicit discharges and illicit connections to the MS4;
 - iv.** Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;
 - v.** Require compliance with conditions in City ordinances, permits, contracts or orders (i.e., hold dischargers to the MS4 accountable for their contributions of pollutants and flows);
 - vi.** Utilize enforcement mechanisms to require compliance with applicable ordinances, permits, contracts, or orders;
 - vii.** Control the contribution of pollutants from one portion of the shared MS4 to another portion of the MS4 through interagency agreements among other owners/operators of a MS4, including but not limited to permittees covered under the Los Angeles County MS4 Permit (Order No. R4-2012-0175) and the California Department of Transportation;
 - viii.** Carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with applicable municipal ordinances, permits, contracts and orders, and with the provisions of this Order, including the prohibition of non-storm water discharges into the MS4 and receiving waters. This means the City of Long Beach must have authority to enter, monitor, inspect, take measurements, review and copy records, and require regular reports from entities discharging into the MS4;
 - ix.** Require the use of control measures to prevent or reduce the discharge of pollutants to achieve water quality standards/receiving water limitations;
 - x.** Require that structural BMPs are properly operated and maintained; and
 - xi.** Require documentation on the operation and maintenance of structural BMPs and their effectiveness in reducing the discharge of pollutants to the MS4.
- b.** The City of Long Beach must submit a statement certified by its chief legal counsel that it has the legal authority within its jurisdiction to implement and enforce each of the requirements contained in 40 CFR section 122.26(d)(2)(i)(A-F) and this Order. The City of Long Beach shall submit this certification annually as part of its Annual Report beginning with the first Annual Report required under this Order. These statements must include:
- i.** Citation of applicable municipal ordinances or other appropriate legal authorities and their relationship to the requirements of 40 CFR section 122.26(d)(2)(i)(A)-(F) and of this Order; and

- ii. Identification of the local administrative and legal procedures available to mandate compliance with applicable municipal ordinances identified in subsection (i) above and therefore with the conditions of this Order, and a statement as to whether enforcement actions can be completed administratively or whether they must be commenced and completed in the judicial system.

3. Fiscal Resources

- a. The City of Long Beach shall conduct a fiscal analysis of the annual capital and operation and maintenance expenditures necessary to implement the requirements of this Order.
- b. The City of Long Beach shall also enumerate and describe in its Annual Report the source(s) of funds used in the past year, and proposed for the coming year, to meet necessary expenditures on the City's storm water management program.

4. Public Review

All documents submitted to the Regional Water Board in compliance with the terms and conditions of this Order shall be made available to members of the public pursuant to the Freedom of Information Act (5 U.S.C. § 552 (as amended)) and the Public Records Act (Cal. Government Code § 6250 et seq.). All documents submitted to the Regional Water Board Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment.

5. Regional Water Board Review

Any formal determination or approval made by the Regional Water Board Executive Officer pursuant to the provisions of this Order may be reviewed by the Regional Water Board. The City of Long Beach or a member of the public may request such review upon petition within 30 days of the effective date of the notification of such decision to the City of Long Beach and interested parties on file at the Regional Water Board.

6. Re-opener and Modification

- a. This Order may be modified, revoked, reissued, or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64. Causes for taking such actions include, but are not limited to:
 - i. Endangerment to human health or the environment resulting from the permitted activity, including information that the discharge(s) regulated by this Order may have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses;
 - ii. Acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption;
 - iii. To address changed conditions identified in required reports or other sources deemed significant by the Regional Water Board;
 - iv. To incorporate provisions as a result of future amendments to the Basin Plan, such as a new or revised water quality objective or the adoption or reconsideration of a TMDL, including the program of implementation. Within 18 months of the effective date of a revised TMDL or as soon as practicable

thereafter, where the revisions warrant a change to the provisions of this Order, the Regional Water Board may modify this Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation;

- v. To incorporate provisions as a result of new or amended statewide water quality control plans or policies adopted by the State Water Board, or in consideration of any State Water Board action regarding the precedential language of State Water Board Order WQ 99-05;
 - vi. To incorporate provisions as a result of the promulgation of new or amended federal or state laws or regulations, USEPA guidance concerning regulated activities, or judicial decisions that becomes effective after adoption of this Order.
 - vii. To incorporate effluent limitations for toxic constituents determined to be present in significant amount in the discharge through a more comprehensive monitoring program included as part of this Order and based on the results of the reasonable potential analysis;
 - viii. In accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach or to include new Minimum Levels (MLs); and/or
 - ix. To include provisions or modifications to WQBELs in Part VIII 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. Such modifications shall be based on the Regional Water Board's evaluation of whether Watershed Management Programs in Part VII.C 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, other MS4 Permittees and other stakeholders, on storm water quality and the efficacy and reliability of storm water control technologies. Provisions or modifications to WQBELs in Part VIII shall only be included in this Order where there is evidence that storm water control technologies can reliably achieve final WQBELs.
- b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
 - i. Violation of any term or condition contained in this Order;
 - ii. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts; or
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.
 - c. The filing of a request by the City of Long Beach for a modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
 - d. This Order may be modified to make corrections or allowances for changes in the permitted activity, following the procedures at 40 CFR section 122.63, if processed as a minor modification. Minor modifications may only:

- i. Correct typographical errors; or
 - ii. Require more frequent monitoring or reporting by the City of Long Beach.
7. Any discharge of waste to any point(s) other than specifically described in this Order is prohibited, and constitutes a violation of this Order.
8. A copy of this Order shall be maintained by the City of Long Beach so as to be available during normal business hours to City employees responsible for implementation of the provisions of this Order and members of the public.
9. The discharge of any product registered under the Federal Insecticide, Fungicide, and Rodenticide Act to any waste stream that may ultimately be released to waters of the United States, is prohibited, unless specifically authorized elsewhere in this Order or another NPDES permit. This requirement is not applicable to products used for lawn and agricultural purposes.
10. Oil or oily material, chemicals, refuse, or other pollution causing materials shall not be stored or deposited in areas where they may be picked up by rainfall and carried off of the property and/or discharged to surface waters. Any such spill of such materials shall be contained and removed immediately.
11. If there is any storage of hazardous or toxic materials or hydrocarbons at a facility owned and/or operated by the City of Long Beach and if the facility is not manned at all times, a 24-hour emergency response telephone number shall be prominently posted where it can easily be read from the outside.

12. Enforcement

- a. Violation of any of the provisions of this Order may subject the City of Long Beach to any of the penalties described herein or in Attachment D of this Order, or any combination thereof, at the discretion of the prosecuting authority; except that only one kind of penalty may be applied for each kind of violation.
- b. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges through the MS4 to receiving waters, may subject the City of Long Beach to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the City of Long Beach to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- c. The California Water Code provides that any person who violates a waste discharge requirement or a provision of the California Water Code is subject to civil penalties of up to \$5,000 per day, \$10,000 per day, or \$25,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to \$10 per gallon per day or \$25 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.
- d. California Water Code Section 13385(h)(1) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars (\$3,000) for each serious violation. Pursuant to California Water Code Section 13385(h)(2),

a “serious violation” is defined as any waste discharge that violates the effluent limitations contained in the applicable waste discharge requirements for a Group II pollutant by 20 percent or more, or for a Group I pollutant by 40 percent or more. Appendix A of 40 CFR section 123.45 specifies the Group I and II pollutants. Pursuant to California Water Code Section 13385.1(a)(1), a “serious violation” is also defined as “a failure to file a discharge monitoring report required pursuant to Section 13383 for each complete period of 30 days following the deadline for submitting the report, if the report is designed to ensure compliance with limitations contained in waste discharge requirements that contain effluent limitations.”

- e. California Water Code Section 13385(i) requires the Regional Water Board to assess a mandatory minimum penalty of three-thousand dollars (\$3,000) for each violation whenever a person violates a waste discharge requirement effluent limitation in any period of six consecutive months, except that the requirement to assess the mandatory minimum penalty shall not be applicable to the first three violations within that time period.
- f. Pursuant to California Water Code Section 13385.1(d), for the purposes of Section 13385.1 and Subdivisions (h), (i), and (j) of Section 13385, “effluent limitation” means a numeric restriction or a numerically expressed narrative restriction, on the quantity, discharge rate, concentration, or toxicity units of a pollutant or pollutants that may be discharged from an authorized location. An effluent limitation may be final or interim, and may be expressed as a prohibition. An effluent limitation, for these purposes, does not include a receiving water limitation, a compliance schedule, or a best management practice.
- g. Unlike Subdivision (c) of California Water Code Section 13385, where violations of effluent limitations may be assessed administrative civil liability on a per day basis, the mandatory minimum penalties provisions identified above require the Regional Water Board to assess mandatory minimum penalties for “each violation” of an effluent limitation. Some water quality-based effluent limitations in this Order (e.g., trash, as described immediately below) are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year.
- h. Trash TMDLS**
 - i. Consistent with the 2009 amendments to Order No. 01-182 to incorporate the Los Angeles River Trash TMDL, the water quality-based effluent limitations in Part VIII of this Order for trash are expressed as annual effluent limitations. Therefore, for such limitations, there can be no more than one violation of each interim or final effluent limitation per year. Trash is considered a Group I pollutant, as specified in Appendix A to 40 CFR section 123.45. Therefore, each annual violation of a trash effluent limitation in Part VIII of this Order by forty percent or more would be considered a “serious violation” under California Water Code section 13385(h). With respect to the final effluent limitation of zero trash, any detectable discharge of trash necessarily is a serious violation, in accordance with the State Water Board’s Enforcement Policy. Violations of the effluent limitations in Part VIII of this Order would not constitute “chronic” violations that would give rise to

mandatory liability under California Water Code section 13385(i) because four or more violations of the effluent limitations subject to a mandatory penalty cannot occur in a period of six consecutive months.

- ii. For the purposes of enforcement under California Water Code section 13385, subdivisions (a), (b), and (c), not every storm event may result in trash discharges. In trash TMDLs adopted by the Regional Water Board, the Regional Water Board states that improperly deposited trash is mobilized during storm events of greater than 0.25 inches of precipitation. Therefore, violations of the effluent limitations are limited to the days of a storm event of greater than 0.25 inches. Once the City of Long Beach has violated the annual effluent limitation, any subsequent discharges of trash during any day of a storm event of greater than 0.25 inches during the same storm year constitutes an additional “day in which the violation [of the effluent limitation] occurs”.

13. This Order does not exempt the City of Long Beach from compliance with any other laws, regulations, or ordinances that maybe applicable.

14. The provisions of this Order are severable. If any provisions of this Order or the application of any provision of this Order to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected.

B. Monitoring and Reporting Program Requirements

The City of Long Beach shall comply with the monitoring and reporting requirements (MRP) and future revisions thereto, in Attachment E of this Order or may, in coordination with an approved Watershed Management Program per Part VII.C, implement a customized monitoring program that achieves the five Primary Objectives set forth in Part II.A. of Attachment E and includes the elements set forth in Part II.E. of Attachment E.

C. Watershed Management Programs

1. General

- a. The purpose of this Part VII.C is to allow the City of Long Beach the flexibility to develop Watershed Management Programs to implement the requirements of this Order on a watershed scale through customized strategies, control measures, and BMPs.
- b. Participation in a Watershed Management Program is voluntary and allows the City of Long Beach to address the highest watershed priorities, including complying with the requirements of Part VI.A. (Receiving Water Limitations) and Part VIII (Total Maximum Daily Load Provisions), by customizing the control measures in Parts IV (Discharge Prohibitions) and VII.D (Minimum Control Measures).
- c. The City of Long Beach shall implement customized strategies, control measures, and BMPs on a watershed basis, where applicable, through the City of Long Beach’s storm water management program and/or collectively if collaborating with other entities through a Watershed Management Program.
- d. The Watershed Management Programs shall ensure that discharges from the MS4: (i) achieve applicable water quality-based effluent limitations in Parts V.A.2

and VIII, pursuant to the corresponding compliance schedules, (ii) do not cause or contribute to exceedances of receiving water limitations in Parts VI.A and VIII, and (iii) do not include non-storm water discharges that are effectively prohibited pursuant to Part IV.B. The programs shall also ensure that controls are implemented to reduce the discharge of pollutants to the MEP pursuant to Part V.A.1.

- e. Watershed Management Programs shall be developed either collaboratively or individually using the Regional Water Board's Watershed Management Areas (WMAs). Where appropriate, WMAs may be separated into subwatersheds to focus water quality prioritization and implementation efforts by receiving water.
- f. Each Watershed Management Program shall be consistent with the Program Development provisions of this Part VII.C and shall:
 - i. Prioritize water quality issues resulting from storm water and non-storm water discharges from the MS4 to receiving waters within each WMA,
 - ii. Identify and implement strategies, control measures, and BMPs to achieve the outcomes specified in Part VII.C.1.d,
 - iii. Execute an integrated monitoring and assessment program pursuant to Attachment E – MRP, Part IV to determine progress towards achieving applicable limitations and/or action levels in Attachment G, and
 - iv. 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 are achieved in the required timeframes.
 - v. Provide appropriate opportunity for meaningful stakeholder input in the development of the Watershed Management Programs and enhanced Watershed Management Programs. Compliance with this provision may be satisfied by the continued participation of the City of Long Beach in the TAC formed under the LA County MS4 Permit (Order R4-2012-0175).
- g. The City of Long Beach may elect to collaborate with other MS4 permittees on the development of an enhanced watershed management program (EWMP). An EWMP is one that comprehensively evaluates opportunities, within the City of Long Beach's and other participating permittees' collective jurisdictional area in a Watershed Management Area, for collaboration with partners on multi-benefit regional projects that, wherever feasible, retain (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event for the drainage areas tributary to the projects, while also achieving other benefits including flood control and water supply, among others. In drainage areas within the EWMP area where retention of the 85th percentile, 24-hour storm event is not feasible, the EWMP shall include a Reasonable Assurance Analysis to demonstrate that applicable water quality based effluent limitations and receiving water limitations shall be achieved through implementation of other watershed control measures. An EWMP shall:
 - i. Be consistent with all applicable provisions in Part VII.C (Watershed Management Programs);
 - ii. Incorporate applicable State agency input on priority setting and other key implementation issues;

- iii. Demonstrate that it will result in meeting water quality standards and other CWA obligations by utilizing provisions in the CWA and its implementing regulations, policies and guidance;
- iv. Include multi-benefit regional projects to ensure that MS4 discharges achieve compliance with all final WQBELs set forth in Part VIII and do not cause or contribute to exceedances of receiving water limitations in Part VI.A by retaining through infiltration or capture and reuse the storm water volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects;
- v. In drainage areas where retention of the storm water volume from the 85th percentile, 24-hour event is not technically feasible, include other watershed control measures to ensure that MS4 discharges achieve compliance with all interim and final WQBELs set forth in Part VIII with compliance deadlines occurring after approval of a EWMP and to ensure that MS4 discharges do not cause or contribute to exceedances of receiving water limitations in Part VI.A;
- vi. Maximize the effectiveness of funds through analysis of alternatives and the selection and sequencing of actions needed to address human health and water quality related challenges and non-compliance;
- vii. Incorporate effective innovative technologies, approaches and practices, including green infrastructure;
- viii. Ensure that existing requirements to comply with technology-based effluent limitations and core requirements (e.g., including elimination of non-storm water discharges of pollutants through the MS4, and controls to reduce the discharge of pollutants in storm water to the maximum extent practicable) are not delayed;
- ix. Ensure that a financial strategy is in place.

2. Compliance with Receiving Water Limitations Not Otherwise Addressed by a TMDL through a WMP or EWMP

- a. For receiving water limitations in Part VI.A associated with water body-pollutant combinations not addressed through a TMDL, but which the City of Long Beach elects to address through a WMP or EWMP as set forth in this Part VII.C (Watershed Management Programs), the City of Long Beach shall comply as follows:
- b. For pollutants that are in the same class¹⁴ as those addressed in a TMDL for the watershed and for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:**
 - i. The City of Long Beach shall demonstrate that the watershed control measures to achieve the applicable TMDL provisions identified pursuant to Part VII.C.5.h.iii (TMDL Control Measures) will also adequately address contributions of the pollutant(s) within the same class from MS4 discharges to receiving waters, consistent with the assumptions and requirements of the corresponding TMDL provisions, including interim and final requirements and deadlines for their achievement, such that the MS4

¹⁴ Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the Watershed Management Program for the TMDL.

discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part VI.A.

- ii. The City of Long Beach shall include the water body-pollutant combination(s) in the Reasonable Assurance Analysis in Part VII.C.5.h.v.
 - iii. The City of Long Beach shall identify milestones and dates for their achievement consistent with those in the corresponding TMDL.
- c. For pollutants that are not in the same class as those addressed in a TMDL for the watershed, but for which the water body is identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:**
- i. The City of Long Beach shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VII.C.5.d (Source Assessment).
 - ii. The City of Long Beach shall identify Watershed Control Measures pursuant to Part VII.C.5.f (Selection of Watershed Control Measures) that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part VI.A.
 - iii. The City of Long Beach shall include the water body-pollutant in the Reasonable Assurance Analysis in Part VII.C.5.h.v.
 - iv. The City of Long Beach shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.
 - v. Where the final date(s) in (4) is beyond the term of this Order, the following conditions shall apply:
 - (a) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, the City of Long Beach shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.
 - (b) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible and where the Regional Water Board determines that MS4 discharges cause or contribute to the water quality impairment, the City of Long Beach may initiate development of a stakeholder-proposed TMDL upon approval of the Watershed Management Program or EWMP. For MS4 discharges from these drainage areas to the receiving waters, any

extension of this compliance mechanism beyond the term of this Order shall be consistent with the implementation schedule in a TMDL for the waterbody pollutant combination(s) adopted by the Regional Water Board.

d. For pollutants for which there are exceedances of receiving water limitations in Part VIII, but for which the water body is not identified as impaired on the State's Clean Water Act Section 303(d) List as of the effective date of this Order:

- i. Upon an exceedance of a receiving water limitation, based on data collected pursuant to the MRP and approved IMPs and CIMPs, the City of Long Beach shall assess contributions of the pollutant(s) from MS4 discharges to the receiving waters and sources of the pollutant(s) within the drainage area of the MS4 pursuant to Part VI.A.3.
- ii. If MS4 discharges are identified as a source of the pollutant(s) that has caused or contributed to, or has the potential to cause or contribute to, the exceedance(s) of receiving water limitations in Part VI.A, the City of Long Beach shall address contributions of the pollutant(s) from MS4 discharges through modifications to the WMP or EWMP pursuant to Part VII.C.8.
- iii. In a modified WMP or EWMP, the City of Long Beach shall identify watershed control measures pursuant to Part VII.C.5.f that will adequately address contributions of the pollutant(s) from MS4 discharges to receiving waters such that the MS4 discharges of the pollutant(s) will not cause or contribute to exceedances of receiving water limitations in Part VI.A.
- iv. The City of Long Beach shall modify the Reasonable Assurance Analysis pursuant to Part VII.C.5.h.v to address the pollutant(s).
- v. The City of Long Beach shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.
- vi. Where the final date(s) in (5) is beyond the term of this Order, the following conditions shall apply:
 - (a) For an EWMP, in drainage areas where retention of (i) all non-storm water runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event will be achieved, the City of Long Beach shall continue to target implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges that are a source of pollutants to receiving waters.
 - (b) For a WMP and in areas of a EWMP where retention of the volume in (a) is technically infeasible, for newly identified exceedances of receiving water limitations, the City of Long Beach may request that the Regional Water Board approve a modification to its WMP or EWMP to include these additional water body-pollutant combinations.

- e. The City of Long Beach's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute its compliance with the receiving water limitations provisions in Part VI.A of this Order for the specific water body-pollutant combinations addressed by an approved Watershed Management Program or EWMP.
 - f. If the City of Long Beach fails to meet any requirement or date for its achievement in an approved Watershed Management Program or EWMP, the City of Long Beach shall be subject to the provisions of Part VI.A for the waterbody-pollutant combination(s) that were to be addressed by the requirement.
 - g. Upon notification of the City of Long Beach's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, the City of Long Beach's full compliance with all of the following requirements shall constitute the City of Long Beach's compliance with the receiving water limitations provisions in Part VI.A not otherwise addressed by a TMDL, if all the following requirements are met:
 - i. Provides timely notice of its intent to develop a WMP or EWMP,
 - ii. Meets all interim and final deadlines for development of a WMP or EWMP,
 - iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and
 - iv. Receives final approval of its WMP or EWMP within the applicable timeframe in Table 8.
- 3. Compliance with Receiving Water Limitations Addressed by a TMDL through a WMP or EWMP**
- a. The City of Long Beach's full compliance with all requirements and dates for their achievement in an approved Watershed Management Program or EWMP shall constitute the City of Long Beach's compliance with provisions pertaining to applicable interim water quality based effluent limitations and interim receiving water limitations in Part VIII for the pollutant(s) addressed by the approved Watershed Management Program or EWMP.
 - b. Upon notification of the City of Long Beach's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, the City of Long Beach's full compliance with all of the following requirements shall constitute the City of Long Beach's compliance with the receiving water limitations provisions in Part VI.A if all the following requirements are met:
 - i. Provides timely notice of its intent to develop a WMP or EWMP,
 - ii. Meets all interim and final deadlines for development of a WMP or EWMP,
 - iii. For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to exceedances of receiving water limitations, and
 - iv. Receives final approval of its WMP or EWMP within the applicable timeframe in Table 8.

- c. Subdivision b above does not apply to receiving water limitations corresponding to final compliance deadlines pursuant to TMDL provisions in Part VIII that have passed or will occur prior to approval of a WMP or EWMP.

4. Process

a. Timelines for Implementation

Implementation of the following requirements shall occur per the schedule specified in Table 8.

Table 8. Watershed Management Program Implementation Requirements

Part	Provision	Due Date
VII.C.4.b	Notify Regional Water Board of intent to develop WMP or EWMP and request submittal date for draft program plan	3 months after Order effective date
VII.C.4.c	If electing to develop WMP with other Los Angeles County MS4 Permittees, submit draft plan to Los Angeles Regional Board	June 28, 2014
VII.C	If electing to develop an individual WMP, submit draft plan to Los Angeles Regional Board If electing to collaborate on an enhanced WMP that meets the requirements of Part VII.C.3.viii, submit draft plan to Los Angeles Regional Board	1 year after Order effective date By June 28, 2014 provide final work plan for development of enhanced WMP By June 28, 2015 submit draft plan
VII.C	Comments provided to Discharger by Regional Water Board	4 months after submittal of draft plan
VII.C	Submit final plan to Regional Water Board	3 months after receipt of Regional Water Board comments on draft plan
VII.C	Approval or denial of final plan by Regional Water Board or by the Executive Officer on behalf of the Regional Water Board	3 months after submittal of final plan
VII.C	Begin implementation of Watershed Management Program or EWMP	Upon approval of final plan
VII.C	Comprehensive evaluation of Watershed Management Program or EWMP and submittal of modifications to plan	Every two years from date of approval

- b. The City of Long Beach must notify the Regional Water Board no later than three months after the effective date of this Order of the decision to develop a WMP or EWMP.

- i. Such notification shall specify if the City of Long Beach is requesting a June 28, 2014 submittal date for the draft WMP or if the City of Long Beach is requesting a June 28, 2014/June 28, 2015 submittal date for the draft EWMP.
- ii. As part of the notice of intent to develop a WMP or EWMP, the City of Long Beach shall identify all applicable interim and final WQBELs and receiving water limitations pursuant to Part VIII with compliance deadlines occurring prior to approval of a WMP or EWMP. The City of Long Beach shall identify watershed control measures from existing TMDL implementation plans where such plans have been developed, that will be implemented concurrently with the development of a WMP or EWMP to ensure that MS4 discharges achieve compliance with applicable interim and final trash WQBELs and all other final WQBELs and receiving water limitations set forth in Part VIII.F and the applicable attachment(s) by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.
- iii. As part of the notification, the City of Long Beach, if electing to develop an EWMP, shall submit the following in addition to the requirements of Part VII.C.4.b.i-ii:
 - (1) Plan concept and geographical scope,
 - (2) Cost estimate for plan development,
 - (3) Executed MOU/agreement among participating Permittees to fund plan development.
 - (4) Interim milestones for plan development and deadlines for their achievement,
 - (5) Identification of, and commitment to fully implement one structural BMP or a suite of BMPs at a scale that provides meaningful water quality improvement within each watershed covered by the plan no later than June 28, 2015 in addition to watershed control measures to be implemented pursuant to Part VII.C.4.e. The structural BMP or suite of BMPs shall be subject to approval by the Regional Water Board Executive Officer, and
 - (6) Documentation that the requirements in Part VII.C.4.d have been met.
- c. If the City of Long Beach elects to develop a WMP, the City of Long Beach must submit a draft of such plan to the Regional Water Board as follows:
 - i. If the City of Long Beach elects to collaborate with other Permittees on the development of a WMP, the City of Long Beach shall submit the draft WMP no later than June 28, 2014.
 - ii. If the City of Long Beach elects to develop an individual WMP, the City of Long Beach shall submit the draft WMP no later than 12 months after the effective date of this Order.
- d. If the City of Long Beach elects to collaborate on the development of an EWMP, the City of Long Beach shall submit the work plan for development of the EWMP no later than June 28, 2014, and shall submit the draft program no later than June 28, 2015 if the following conditions are met in greater than 50% of the land area in the watershed:
 - i. Demonstrate there are low impact development (LID) ordinances in place and/or draft LID ordinance(s) prepared, which meet the requirements of this Order's Planning and Land Development Program. Draft LID ordinances must be adopted no later than June 28, 2015, and
 - ii. Demonstrate there are green streets policies in place and/or draft policy(ies) prepared, which specify the use of green street strategies for transportation

corridors. Draft green streets policies must be adopted no later than June 28, 2015.

- iii. Submit the draft and/or effective LID ordinances and green streets policies with the notification of intent to develop an EWMP and submit all final effective LID ordinances and green streets policies with the draft EWMP as demonstration that Parts VII.C.4.d.i-ii have been met in greater than 50% of the watershed area covered by the EWMP.
- e. Until the Regional Water Board or the Executive Officer on behalf of the Regional Water Board approves the WMP or EWMP, the City of Long Beach, if electing to develop a WMP or EWMP shall:
 - i. Continue to implement watershed control measures in the 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),
 - ii. Continue to implement watershed control measures to eliminate non-storm water discharges through the MS4 that are a source of pollutants to receiving waters consistent with CWA section 402(p)(3)(B)(ii), and
 - iii. Implement watershed control measures from existing TMDL implementation plans, where such plans have been developed, to ensure that MS4 discharges achieve compliance with interim and final trash WQBELs and all other final WQBELs and receiving water limitations pursuant to Part VIII by the applicable compliance deadlines occurring prior to approval of a WMP or EWMP.
- f. If the City of Long Beach does not elect to develop a WMP or EWMP, or does not have an approved WMP or EWMP within the applicable timeframe specified in Table 8, the City shall be subject to the baseline requirements in Part VII.D-M and shall demonstrate compliance with receiving water limitations pursuant to Part VI.A and with applicable interim water quality-based effluent limitations in Part VIII.E.

5. Program Development

- a. **Water Quality Characterization** - Each plan shall 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, to support identification and prioritization/sequencing of management actions.
- b. **Identification of Water Quality Priorities** - The City of Long Beach shall identify the water quality priorities within each WMA that will be addressed by the Watershed Management Program. At a minimum, these priorities shall include achieving applicable water quality-based effluent limitations and/or receiving water limitations established pursuant to TMDLs, as set forth in Part VIII of this Order.
- c. **Water Body-Pollutant Classification** - On the basis of the evaluation of existing water quality conditions, water body-pollutant combinations shall be classified into one of the following three categories:
 - i. Category 1 (Highest Priority): Water body-pollutant combinations for which water quality-based effluent limitations and/or receiving water limitations are established in Parts VI and VIII. of this Order.
 - ii. Category 2 (High Priority): Pollutants for which data indicate water quality impairment in the receiving water according to the State's Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List

- (State Listing Policy) and for which MS4 discharges may be causing or contributing to the impairment.
- iii. 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.
- d. **Source Assessment** - Utilizing existing information, potential sources within the watershed for the water body-pollutant combinations in Categories 1 - 3 shall be identified.
- i. The City of Long Beach shall 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 water quality priorities. The identification of known and suspected sources of the highest water quality priorities shall consider the following:
 - (1) Review of available data, including but not limited to:
 - (a) Findings from the City of Long Beach's Illicit Connections and Illicit Discharge Elimination Programs;
 - (b) Findings from the City of Long Beach's Industrial/Commercial Facilities Programs;
 - (c) Findings from the City of Long Beach's Development Construction Programs;
 - (d) Findings from the City of Long Beach's Public Agency Activities Programs;
 - (2) TMDL source investigations;
 - (3) Watershed model results;
 - (4) Findings from the City of Long Beach's monitoring programs, including but not limited to TMDL compliance monitoring and receiving water monitoring; and
 - (5) Any other pertinent data, information, or studies related to pollutant sources and conditions that contribute to the highest water quality priorities.
 - ii. Locations of the City of Long Beach's MS4, including, at a minimum, all MS4 major outfalls and major structural controls for storm water and non-storm water that discharge to receiving waters.
 - iii. Other known and suspected sources of pollutants in non-storm water or storm water discharges from the MS4 to receiving waters within the WMA.
- e. **Prioritization** - Based on the findings of the source assessment, the issues within each watershed shall be prioritized and sequenced. Watershed priorities shall include:
- i. **TMDLs**
 - (1) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines within the permit term, or TMDL compliance deadlines that have already passed and limitations have not been achieved.
 - (2) Controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines within the term of this Order.

- (3) Progress toward controlling pollutants for which there are water quality-based effluent limitations and/or receiving water limitations with interim or final compliance deadlines beyond the term of this Order.
- ii. **Other Receiving Water Considerations**
- (1) Controlling pollutants for which data indicate impairment pursuant to the State's Listing Policy and the findings from the source assessment implicates discharges from the MS4.
- (2) Controlling pollutants for which data indicate exceedances of receiving water limitations in the receiving water within the last five years and the findings from the source assessment implicates discharges from the MS4.
- f. **Selection of Watershed Control Measures** - The City of Long Beach shall identify strategies, control measures, and BMPs to implement through their individual storm water management programs, and collectively on a watershed scale, with the goal of creating an efficient program to focus individual and collective resources on watershed priorities. The objectives of the Watershed Control Measures shall include:
- i. Prevent or eliminate non-storm water discharges to the MS4 that are a source of pollutants from the MS4 to receiving waters.
 - ii. Implement pollutant controls necessary to achieve all applicable interim and final water quality-based effluent limitations and/or receiving water limitations pursuant to corresponding compliance schedules.
 - iii. Ensure that discharges from the MS4 do not cause or contribute to exceedances of receiving water limitations.
- g. **Watershed Control Measures may include:**
- i. Structural and/or non-structural controls and operation and maintenance procedures that are designed to achieve applicable water quality-based effluent limitations and receiving water limitations in Part VIII;
 - ii. Retrofitting areas of existing development known or suspected to contribute to the highest water quality priorities with regional or sub-regional controls or management measures; and
 - iii. Stream and/or habitat rehabilitation or restoration projects where stream and/or habitat rehabilitation or restoration are necessary for, or will contribute to demonstrable improvements in the physical, chemical, and biological receiving water conditions and restoration and/or protection of water quality standards in receiving waters.
- h. **Watershed Management Program Provisions** - The following provisions of this Order shall be incorporated as part of the Watershed Management Program:
- i. **Minimum Control Measures** - The City of Long Beach shall assess the minimum control measures (MCMs) as defined in Part VII.D of 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 shall identify potential modifications that will address watershed priorities:
 - Development Construction Program
 - Industrial/Commercial Facilities Program
 - Illicit Connection and Illicit Discharges Detection and Elimination Program
 - Public Agency Activities Program
 - Public Information and Participation Program

- (1) At a minimum, the Watershed Management Program shall include management programs consistent with 40 CFR Section 122.26(d)(2)(iv)(A)-(D)
 - (2) If the City of Long Beach(s) elects to eliminate a control measure identified in Part VII.D because that specific control measure is not applicable to the City of Long Beach, the City of Long Beach shall provide a justification for its elimination. The Planning and Land Development Program is not eligible for modification or elimination, except through the “Local Ordinance Equivalence” provisions of Part VII.J.5.
 - (3) Such customized actions, once approved as part of the Watershed Management Program, shall replace in part or in whole the requirements in Part VII.D.
- ii. **Non-Storm Water Control Measures** - Where the City of Long Beach identifies non-storm water discharges from the MS4 as a source of pollutants that cause or contribute to exceedance of receiving water limitations, the Watershed Control Measures shall include strategies, control measures, and/or BMPs that must be implemented to effectively eliminate the source of pollutants consistent with Parts IV.B. and VII.L. 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, diversion to a sanitary sewer for treatment, or strategies to require the non-storm water discharge to be separately regulated under a general NPDES permit.
- iii. **TMDL Control Measures** - The City of Long Beach shall compile control measures that have been identified in TMDLs and corresponding implementation plans. The City of Long Beach shall identify those control measures to be modified, if any, to most effectively address TMDL requirements within the watershed. If not sufficiently identified in previous documents, or if implementation plans have not yet been developed (e.g., USEPA established TMDLs), the City of Long Beach shall 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.
- (1) TMDL control measures shall include where necessary control measures to address both storm water and non-storm water discharges from the MS4.
 - (2) TMDL control measures may include baseline or customized activities covered under the general MCM categories in Part VII.D as well as BMPs and other control measures covered under the non-storm water discharge provisions of Parts IV.B of this Order.
 - (3) The WMP shall 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.
- iv. **Each plan shall include the following components:**
- (1) Identification of specific structural controls and non-structural best management practices, including operational source control and pollution prevention, and any other actions or programs to achieve all water quality-based effluent limitations and receiving water limitations contained in Part VIII to which the City of Long Beach(s) is subject;

- (2) For each structural control and non-structural best management practice, the number, type, and location(s) and/or frequency of implementation;
 - (3) For any pollution prevention measures, the nature, scope, and timing of implementation;
 - (4) For each structural control and non-structural best management practice, interim milestones and dates for achievement to ensure that TMDL compliance deadlines will be met; and
 - (5) The plan shall clearly identify the responsibilities of the City of Long Beach for implementation of watershed control measures.
- v. **Reasonable Assurance Analysis** - The City of Long Beach shall conduct a Reasonable Assurance Analysis for each water body-pollutant combination addressed by the Watershed Management Program. A Reasonable Assurance Analysis (RAA) shall be 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 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 EWMPs to ensure the City of Long Beach's MS4 discharges achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances of receiving water limitations.
- (1) The City of Long Beach shall demonstrate using the RAA that the activities and control measures 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.
 - (2) Where the TMDL Provisions in Part VIII 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 shall identify interim milestones and dates for their achievement to ensure adequate progress toward achieving interim and final water quality-based effluent limitations and/or receiving water limitations with deadlines beyond the permit term.
 - (3) For water body-pollutant combinations not addressed by TMDLs, the City of Long Beach shall demonstrate using the RAA that the activities and control measures identified in the Watershed Control Measures will achieve applicable receiving water limitations as soon as possible.
- vi. **Legal Authority** - The City of Long Beach shall demonstrate the necessary legal authority to implement the Watershed Control Measures identified in the plan, or that other legal authority exists to compel implementation of the Watershed Control Measures.

vii. Compliance Schedules - The City of Long Beach shall incorporate compliance schedules in Part VIII into the plan and, where necessary develop interim milestones and dates for their achievement. Compliance schedules and interim milestones and dates for their achievement 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.

- (1) Schedules must be adequate for measuring progress on a watershed scale once every two years.
- (2) Schedules must be developed for both the strategies, control measures and BMPs implemented by the City of Long Beach within its jurisdiction and for those that will be implemented by multiple entities on a watershed scale.
- (3) Schedules shall incorporate the following:
 - (a) Compliance deadlines occurring within the permit term for all applicable interim and/or final water quality-based effluent limitations and/or receiving water limitations in Parts VI and VIII of this Order,
 - (b) Interim milestones and dates for their achievement within the permit term for any applicable final water quality-based effluent limitation and/or receiving water limitation in Parts VI and VIII, where deadlines within the permit term are not otherwise specified.
 - (c) For watershed priorities related to addressing exceedances of receiving water limitations in Part VI.A and not otherwise addressed by Part VIII:
 - a. Milestones based on measureable criteria or indicators, to be achieved in the receiving waters and/or MS4 discharges,
 - b. A schedule with dates for achieving the milestones, and
 - c. A final date for achieving the receiving water limitations as soon as possible.
 - d. The milestones and implementation schedule in (a)-(c) fulfill the requirements in Part VI.A.3.a to prepare an Integrated Monitoring Compliance Report.

6. Watershed Management Program Implementation

The City of Long Beach shall begin implementing the Watershed Management Program or EWMP immediately upon approval of the plan by the Regional Water Board or the Executive Officer on behalf of the Regional Water Board.

The City of Long Beach may request an extension of only the deadlines for achieving interim milestones in Part VII.C.5.h.vii.(3)(b)-(c) of this Order. The City of Long Beach shall provide a written request at least 90 days prior to the deadline and shall include the justification for the extension. Extensions shall be subject to approval by the Regional Water Board Executive Officer.

7. Integrated Watershed Monitoring and Assessment

The City of Long Beach shall develop an integrated monitoring program as set forth in Part IV of the MRP (Attachment E) or implement a customized monitoring program with the primary objective of allowing for the customization of the outfall monitoring program (Parts VIII and IX) in conjunction with an approved Watershed Management Program or EWMP, as defined below. Each monitoring program shall

assess progress toward achieving the water quality-based effluent limitations and/or receiving water limitations per the compliance schedules, and progress toward addressing the water quality priorities for each WMA. The customized monitoring program shall be submitted as part of the Watershed Management Program, or where the City of Long Beach elects to develop an EWMP, shall be submitted by June 28, 2014. If pursuing a customized monitoring program, the City of Long Beach shall provide sufficient justification for each element of the program that differs from the monitoring program requirements as set forth in Attachment E. Monitoring programs shall be subject to approval by the Executive Officer following a public comment period. The customized monitoring program shall be designed to address the Primary Objectives detailed in Attachment E, Part II.A and shall include the following program elements:

- a. Receiving Water Monitoring
- b. Storm Water Outfall Monitoring
- c. Non-Storm Water Outfall Monitoring
- d. New Development/Re-Development Effectiveness Tracking
- e. Regional Studies

8. Adaptive Management Process

a. Watershed Management Program Adaptive Management Process

In Each WMA affected, the City of Long Beach shall implement an adaptive management process, every two years from the date of program approval, adapting the Watershed Management Program or EWMP to become more effective, based on, but not limited to a consideration of the following:

- i. Progress toward achieving interim and/or final water quality-based effluent limitations and/or receiving water limitations in Part VIII, according to established compliance schedules;
- ii. Progress toward achieving improved water quality in MS4 discharges and achieving receiving water limitations through implementation of the watershed control measures based on an evaluation of outfall-based monitoring data and receiving water monitoring data;
- iii. Achievement of interim milestones;
- iv. Re-evaluation of the water quality priorities identified for the WMA 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;
- v. Availability of new information and data from sources other than the City of Long Beach' monitoring program(s) within the WMA that informs the effectiveness of the actions implemented by the City of Long Beach;
- vi. Regional Water Board recommendations; and
- vii. Recommendations for modifications to the Watershed Management Program solicited through a public participation process.

- b. Based on the results of the adaptive management process, the City of Long Beach shall report any modifications, including where appropriate new compliance deadlines and interim milestones, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Watershed Management Program or EWMP in the Annual Report, as required pursuant to Part XVIII.A.6 of the MRP (Attachment E), and as

part of the Report of Waste Discharge (ROWD) required pursuant to Part II.B of Attachment D – Standard Provisions.

- i. The adaptive management process fulfills the requirements in Part VI.A.4 to address continuing exceedances of receiving water limitations.
- c. The City of Long Beach shall implement any modifications to the Watershed Management Program or EWMP upon approval by the Regional Water Board Executive Officer or within 60 days of submittal if the Regional Water Board Executive Officer expresses no objections.

D. Storm Water Management Program Minimum Control Measures

1. General Requirements

- i. The City of Long Beach shall implement the requirements in Parts VII.F-M below, or may in lieu of the requirements in Parts VII.F-M (with the exception of Part VII.J) implement customized actions within each of these general categories of control measures as set forth in an approved Watershed Management Program per Part VII.C. Implementation shall be consistent with the requirements of 40 CFR section 122.26(d)(2)(iv).
- ii. **Timelines for Implementation**
Unless otherwise noted in Part VII.C, if the City of Long Beach does not elect to develop a Watershed Management Program or EWMP per Part VII.C, then the City of Long Beach shall implement the requirements contained in Part VII.F-M within 6 months after the effective date of this Order in the areas not addressed by a WMP/EWMP. 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).
- iii. If the City of Long Beach elects to develop a Watershed Management Program or EWMP, 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 EWMP is approved by the Los Angeles Regional Board Executive Officer.

2. Progressive Enforcement and Interagency Coordination

- i. The City of Long Beach shall develop and implement a Progressive Enforcement Policy to ensure that (1) regulated Industrial/Commercial facilities, (2) construction sites, (3) development and redevelopment sites with post-construction controls, and (4) illicit discharges are each brought into compliance with all storm water and non-storm water requirements within a reasonable time period as specified below:

(1) Follow-up Inspections

In the event that the City of Long Beach determines, based on an inspection or illicit discharge investigation conducted, that a facility or site operator has failed to adequately implement all necessary BMPs, the City of Long Beach shall take progressive enforcement actions which, at a minimum, shall include a follow-up inspection within 4 weeks from the date of the initial inspection and/or investigation.

(2) Enforcement Action

In the event that the City of Long Beach determines that a facility or site operator has failed to adequately implement BMPs after a follow-up inspection, the City of Long Beach shall take enforcement action as established through authority in its municipal code and ordinances, through the judicial system, or refer the case to the Regional Water Board, per the Interagency Coordination provisions below.

(3) Records Retention

The City of Long Beach shall maintain records, per their existing record retention policies, and make them available on request to the Regional Water Board, including inspection reports, warning letters, notices of violations, and other enforcement records, demonstrating a good faith effort to bring facilities into compliance.

(4) Referral of Violations of Municipal Ordinances and California Water Code § 13260

The City of Long Beach may refer a violation(s) of its municipal storm water ordinances and/or California Water Code Section 13260 by Industrial and Commercial facilities and construction site operators to the Regional Water Board provided that the City of Long Beach has made a good faith effort of applying its Progressive Enforcement Policy to achieve compliance with its own ordinances. At a minimum, the City of Long Beach's good faith effort must be documented with:

- (a)** Two follow-up inspections, and
- (b)** Two warning letters or notices of violation.
- (c)** Referral of Violations of the Industrial and Construction General Permits, including Requirements to File a Notice of Intent or No Exposure Certification

For those facilities or site operators in violation of municipal storm water ordinances and subject to the Industrial and/or Construction General Permits, the City of Long Beach may escalate referral of such violations to the Regional Water Board (promptly via telephone or electronically) after one inspection and one written notice of violation (copied to the Regional Water Board) to the facility or site operator regarding the violation. In making such referrals, the City of Long Beach shall include, at a minimum, the following documentation:

- (a)** Name of the facility or site,
- (b)** Operator of the facility or site,
- (c)** Owner of the facility or site,
- (d)** WDID Number (if applicable),
- (e)** Records of communication with the facility/site operator regarding the violation, which shall include at least one inspection report,
- (f)** The written notice of violation (copied to the Regional Water Board),

- (g) For industrial sites, the industrial activity being conducted at the facility that is subject to the Industrial General Permit, and
- (h) For construction sites the documentation shall include site acreage and risk factor rating.

ii. Investigation of Complaints Transmitted by the Regional Water Board Staff

The City of Long Beach shall initiate, within one business day,¹⁵ investigation of complaints from facilities within its jurisdiction. The initial investigation shall include, at a minimum, a limited inspection of the facility to confirm validity of the complaint and to determine if the facility is in compliance with municipal storm water ordinances and, if necessary, to oversee corrective action.

(1) Assistance with Regional Water Board Enforcement Actions

As directed by the Regional Water Board Executive Officer, the City of Long Beach shall assist Regional Water Board enforcement actions by:

- (a) Assisting in identification of current owners, operators, and lessees of properties and sites.
- (b) Providing staff, when available, for joint inspections with Regional Water Board inspectors.
- (c) Appearing to testify as witnesses in Regional Water Board enforcement hearings.
- (d) Providing copies of inspection reports and documentation demonstrating application of its Progressive Enforcement Policy.

E. Modifications/Revisions

- 1. The City of Long Beach shall modify its storm water management programs, protocols, practices, and municipal codes to make them consistent with the requirements in this Order.

F. Public Information and Participation Program

1. General

The City of Long Beach shall develop and implement a public information and participation program (PIPP) with the following the objectives:

- i. To measurably increase the knowledge of the target audiences about the MS4, the adverse impacts of storm water pollution on receiving waters and potential solutions to mitigate the impacts.
- ii. To measurably change the waste disposal and storm water pollution generation behavior of target audiences by developing and encouraging the implementation of appropriate alternatives.
- iii. To involve and engage a diversity of socio-economic groups and ethnic communities in its jurisdiction to participate in mitigating the impacts of storm water pollution.

¹⁵ The Discharger may comply with the Permit by taking initial steps (such as logging, prioritizing, and tasking) to “initiate” the investigation within that one business day. However, the Los Angeles Regional Board would expect the initial investigation, including a site visit, would occur within four business days.

- 2. PIPP Implementation** - The City of Long Beach shall develop and implement the PIPP using one or more of the following approaches:
 - i. By participating in a County-wide PIPP,
 - ii. By participating in one or more Watershed Group sponsored PIPPs, and/or
 - iii. Or individually within its jurisdiction.
 - iv. If the City of Long Beach participates in a County-wide or Watershed Group PIPP, the City of Long Beach shall provide the contact information for their appropriate staff responsible for storm water public education activities to the designated PIPP coordinator and contact information changes no later than 30 days after a change occurs.
- 3. Public Participation**
 - i. The City of Long Beach, whether participating in a County-wide or watershed group sponsored PIPP, or acting individually, shall provide a means for public reporting of clogged catch basin inlets and illicit discharges/dumping, faded or missing catch basin labels, and general storm water and non-storm water pollution prevention information.
 - (1) The City of Long Beach shall continue to operate the Storm Water Pollution Prevention Hotline and Reporting of Illegal Dumping to Storm Drains: (562) 570-DUMP and the website www.lbstormwater.org
 - (2) The City of Long Beach shall include the reporting information, updated when necessary, in public information, and the government pages of the telephone book, as they are developed or published.
 - (3) The City of Long Beach shall identify staff or departments who will serve as the contact person(s) and shall make this information available on its website.
 - (4) The City of Long Beach is responsible for providing current, updated hotline contact information to the general public within its jurisdiction.
 - ii. The City of Long Beach shall organize events targeted to residents and population subgroups to educate and involve the community in storm water and non-storm water pollution prevention and clean-up (e.g., education seminars, clean-ups, and community catch basin stenciling).
- 4. Residential Outreach Program**
 - i. Working in conjunction with a County-wide or Watershed Group sponsored PIPP or individually, the City of Long Beach shall implement the following activities:
 - (1) Conduct storm water pollution prevention public service announcements and advertising campaigns
 - (2) Public education materials shall include but are not limited to information on the proper handling (i.e., disposal, storage and/or use) of:
 - (a) Vehicle waste fluids
 - (b) Household waste materials (i.e., trash and household hazardous waste, including personal care products and pharmaceuticals)
 - (c) Construction waste materials

- (d) Pesticides and fertilizers (including integrated pest management practices [IPM] to promote reduced use of pesticides)
 - (e) Green waste (including lawn clippings and leaves)
 - (f) Animal wastes
- (3) Distribute activity specific storm water pollution prevention public education materials at, but not limited to, the following points of purchase:
- (a) Automotive parts stores
 - (b) Home improvement centers / lumber yards / hardware stores/paint stores
 - (c) Landscaping / gardening centers
 - (d) Pet shops / feed stores
- (4) Maintain storm water websites or provide links to storm water websites via the City of Long Beach’s website, which shall include educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities listed in Part VII.G.4.
- (5) Provide independent, parochial, and public schools within in the City of Long Beach’s jurisdiction with materials to educate school children (K-12) on storm water pollution. Material may include videos, live presentations, and other information. The City of Long Beach is encouraged to work with, or leverage, materials produced by other statewide agencies and associations such as the State Water Board’s “Erase the Waste” educational program and the California Environmental Education Interagency Network (CEEIN) to implement this requirement.
- (6) When implementing activities in Part VII.F.4.i.(1)-(5), the City of Long Beach shall use effective strategies to educate and involve ethnic communities in storm water pollution prevention through culturally effective methods.

G. Industrial/Commercial Facilities Program

1. General

The City of Long Beach shall implement an Industrial / Commercial Facilities Program that meets the requirements of this Part VII G. The Industrial / Commercial Facilities Program shall be designed to prevent illicit discharges into the MS4 and receiving waters, reduce industrial / commercial discharges of storm water to the MEP, and prevent industrial / commercial discharges from the MS4 from causing or contributing to a violation of receiving water limitations. At a minimum, the Industrial / Commercial Facilities Program shall be implemented in accordance with the requirements listed in this Part VII.G, or as approved in a Watershed Management Program per Part VII.C. The minimum program components shall include the following:

- i. Track
- ii. Educate
- iii. Inspect

- iv. Ensure compliance with municipal ordinances at industrial and commercial facilities that are critical sources of pollutants in storm water.

2. Tracking Critical Industrial/Commercial Sources

- i. The City of Long Beach shall maintain an updated watershed-based inventory or database containing the latitude / longitude coordinates of all industrial and commercial facilities within its jurisdiction that are critical sources of storm water pollution. The inventory or database shall be maintained in electronic format and incorporation of facility information into a Geographical Information System (GIS) is recommended. Critical Sources to be tracked are summarized below:

(1) Commercial Facilities

- (a) Restaurants
- (b) Automotive service facilities (including those located at automotive dealerships)
- (c) Retail Gasoline Outlets
- (d) Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)

(2) USEPA "Phase I" Facilities [as specified in 40 CFR §122.26(b)(14)(i)-(xi)]

(3) Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(iv)(C)]

- (a) Municipal landfills
- (b) Hazardous waste treatment, disposal, and recovery facilities
- (c) Industrial facilities subject to section 313 "Toxic Release Inventory" reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [42 U.S.C. § 11023]

(4) All other commercial or industrial facilities that the City of Long Beach determines may contribute a substantial pollutant load to the MS4.

- ii. The City of Long Beach shall include the following minimum fields of information for each critical source industrial and commercial facility identified in its watershed-based inventory or database:

- (1) Name of facility
- (2) Name of owner/ operator and contact information
- (3) Address of facility (physical and mailing)
- (4) North American Industry Classification System (NAICS) code
- (5) Standard Industrial Classification (SIC) code
- (6) A narrative description of the activities performed and/or principal products produced
- (7) Status of exposure of materials to storm water
- (8) Name of receiving water
- (9) Identification of whether the facility is tributary to a CWA § 303(d) listed water body segment or water body segment subject to a TMDL, where

the facility generates pollutants for which the water body segment is impaired.

- (10) Ability to denote if the facility is known to maintain coverage under the State Water Board's General NPDES Permit for the Discharge of Stormwater Associated with Industrial Activities (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.
- (11) Ability to denote if the facility has filed a No Exposure Certification with the State Water Board.
- iii. The City of Long Beach shall update its inventory of critical sources at least annually. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter- and intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer connection permits, and similar information).

3. Educate Industrial / Commercial Sources

- i. At least once during the five-year period of this Order, 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 of the BMP requirements applicable to the site/source.
- ii. Business Assistance Program
 - (1) The City of Long Beach shall implement a Business Assistance Program to provide technical information to businesses to facilitate their efforts to reduce the discharge of pollutants in storm water. Assistance shall be targeted to select business sectors or small businesses upon a determination that their activities may be contributing substantial pollutant loads to the MS4 or receiving water. Assistance may include technical guidance and provision of educational materials. The Program may include:
 - (a) On-site technical assistance, telephone, or e-mail consultation regarding the responsibilities of business to reduce the discharge of pollutants, procedural requirements, and available guidance documents.
 - (b) Distribution of storm water pollution prevention educational materials to operators of auto repair shops; car wash facilities; restaurants and mobile sources including automobile/equipment repair, washing, or detailing; power washing services; mobile carpet, drape, or upholstery cleaning services; swimming pool, water softener, and spa services; portable sanitary services; and commercial applicators and distributors of pesticides, herbicides and fertilizers, if present.

4. Inspect Critical Commercial Sources

- i. Frequency of Mandatory Commercial Facility Inspections

The City of Long Beach shall inspect all commercial facilities identified in Part VII.G.2 twice during the 5-year term of the Order, provided that the first mandatory compliance inspection occurs no later than 2 years after the

effective date of this Order. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. In addition, the City of Long Beach shall implement the activities outlined in the following subparts.

ii. Scope of Mandatory Commercial Facility Inspections

The City of Long Beach shall inspect all commercial facilities to confirm that storm water and non-storm water BMPs are being effectively implemented in compliance with municipal ordinances. At each facility, inspectors shall verify that the operator is implementing effective source control BMPs for each corresponding activity. The City of Long Beach shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA), a water body subject to TMDL provisions in Part VIII, or a CWA § 303(d) listed impaired water body. Likewise, for those BMPs that are not adequately protective of water quality standards, the City of Long Beach may require additional site-specific controls.

5. Inspect Critical Industrial Sources

The City of Long Beach shall conduct industrial facility compliance inspections as specified below.

i. Frequency of Mandatory Industrial Facility Compliance Inspections

(1) Minimum Inspection Frequency

The City of Long Beach shall perform an initial mandatory compliance inspection at all industrial facilities identified in Part VII.G.2 no later than 2 years after the effective date of this Order. After the initial inspection, all facilities that have not filed a No Exposure Certification with the State Water Board are subject to a second mandatory compliance inspection. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. A facility need not be inspected more than twice during the term of the Order unless subject to an enforcement action as specified in Part VII.I below.

(2) Exclusion of Facilities Previously Inspected by the Regional Water Board.

The City of Long Beach shall review the State Water Board's Storm Water Multiple Application and Report Tracking System (SMARTS) database¹⁶ at defined intervals to determine if an industrial facility has recently been inspected by the Regional Water Board. The first interval shall occur approximately 2 years after the effective date of the Order. 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 second interval shall occur approximately 4 years after the effective date of the Order. Likewise, 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.

(3) No Exposure Verification

As a component of the first mandatory inspection, the City of Long Beach shall identify those facilities that have filed a No Exposure Certification

¹⁶ SMARTS is accessible at <https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp>

with the State Water Board. Approximately 3 to 4 years after the effective date of the Order, 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. The purpose of this inspection is to verify the continuity of the no exposure status.

(4) Exclusion Based on Watershed Management Program

The City of Long Beach is exempt from the mandatory inspection frequencies listed above if it is implementing industrial inspections in accordance with an approved Watershed Management Program per Part VII.C.

ii. Scope of Mandatory Industrial Facility Inspections

The City of Long Beach shall confirm that each industrial facility:

- (1)** Has a current Waste Discharge Identification (WDID) number for coverage under the Industrial General Permit, and that a Storm Water Pollution Prevention Plan (SWPPP) is available on-site; *or*
- (2)** Has applied for, and has received a current No Exposure Certification for facilities subject to this requirement;
- (3)** Is effectively implementing BMPs in compliance with municipal ordinances. Facilities must implement the source control BMPs identified in Table 9, unless the pollutant generating activity does not occur. The City of Long Beach shall require implementation of additional BMPs where storm water from the MS4 discharges to a water body subject to TMDL Provisions in Part VIII, or a CWA § 303(d) listed impaired water body. Likewise, if the specified BMPs are not adequately protective of water quality standards, the City of Long Beach may require additional site-specific controls. For critical sources that discharge to MS4s that discharge to SEAs, the City of Long Beach shall require operators to implement additional pollutant-specific controls to reduce pollutants in storm water runoff that are causing or contributing to exceedances of water quality standards.
- (4)** Applicable industrial facilities identified as not having either a current WDID or No Exposure Certification shall be notified that they must obtain coverage under the Industrial General Permit and shall be referred to the Regional Water Board per the progressive enforcement policy procedures identified in Part VII.D.2

6.Source Control BMPs for Commercial and Industrial Facilities

Effective source control BMPs for the activities listed in Table 9 shall be implemented at commercial and industrial facilities, unless the pollutant generating activity does not occur:

Table 9. Source Control BMPs at Commercial and Industrial Facilities

Pollutant-Generating Activity	BMP Narrative Description
Unauthorized Non-Storm water Discharges	Effective elimination of non-storm water discharges
Accidental Spills/ Leaks	Implementation of effective spills/ leaks prevention and response procedures
Vehicle/ Equipment Fueling	Implementation of effective fueling source control devices and practices
Vehicle/ Equipment Cleaning	Implementation of effective equipment/ vehicle cleaning practices and appropriate wash water management practices
Vehicle/ Equipment Repair	Implementation of effective vehicle/ equipment repair practices and source control devices
Outdoor Liquid Storage	Implementation of effective outdoor liquid storage source controls and practices
Outdoor Equipment Operations	Implementation of effective outdoor equipment source control devices and practices
Outdoor Storage of Raw Materials	Implementation of effective source control practices and structural devices
Storage and Handling of Solid Waste	Implementation of effective solid waste storage/ handling practices and appropriate control measures
Building and Grounds Maintenance	Implementation of effective facility maintenance practices
Parking/ Storage Area Maintenance	Implementation of effective parking/ storage area designs and housekeeping/ maintenance practices
Storm water Conveyance System Maintenance Practices	Implementation of proper conveyance system operation and maintenance protocols
Pollutant-Generating Activity	BMP Narrative Description from Regional Water Board Resolution No. 98-08
Sidewalk Washing	Remove trash, debris, and free standing oil/grease spills/leaks (use absorbent material, if necessary) from the area before washing; and Use high pressure, low volume spray washing using only potable water with no cleaning agents at an average usage of 0.006 gallons per square feet of sidewalk area.
Street Washing	Collect and divert wash water to the sanitary sewer – publically owned treatment works (POTW). Note: POTW approval may be needed.

H. Significant Ecological Areas (SEAs)

See VII.G.5.ii.(3).

I. Progressive Enforcement

The City of Long Beach shall implement its progressive enforcement policy to ensure that Industrial / Commercial facilities are brought into compliance with all storm water requirements within a reasonable time period. See Part VII.D.2 for requirements for the development and implementation of a progressive enforcement policy.

J. Planning and Land Development Program

1. Purpose - The City of Long Beach shall implement a planning and land development program pursuant to this Part VII.J for all new development and redevelopment projects subject to this Order to:

- i. Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.
- ii. Minimize the adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of water bodies in accordance with requirements under CEQA (Cal. Pub. Resources Code § 21000 et seq.).
- iii. Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint, and employing Low Impact Development (LID) design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use.
- iv. Maintain existing riparian buffers and enhance riparian buffers when possible.
- v. Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including Source Control BMPs such as good housekeeping practices), LID Strategies, and Treatment Control BMPs.
- vi. Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors¹⁷.
- vii. Prioritize the selection of BMPs to remove storm water pollutants, reduce storm water runoff volume, and beneficially use storm water to support an integrated approach to protecting water quality and managing water resources in the following order of preference:
 - (a) On-site infiltration, bioretention and/or rainfall harvest and use.
 - (b) On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit.

2. New Development Projects

- i. New Development projects subject to conditioning and approval by the City of Long Beach for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:
 - (1) Industrial parks 10,000 square feet or more of surface area
 - (2) Commercial malls 10,000 square feet or more surface area
 - (3) Retail gasoline outlets 5,000 square feet or more of surface area

¹⁷ Treatment BMPs when designed to drain within 96 hours of the end of rainfall minimize the potential for the breeding of vectors. See California Department of Public Health *Best Management Practices for Mosquito Control in California* (2012) at <http://www.westnile.ca.gov/resources.php>

- (4) Restaurants (SIC 5812) 5,000 square feet or more of surface area
- (5) Parking lots 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces
- (6) Street and road construction of 10,000 square feet or more of impervious surface area shall follow USEPA guidance regarding Managing Wet Weather with Green Infrastructure: Green Streets¹⁸ (December 2008 EPA-833-F-08-009) to the maximum extent practicable. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.
- (7) Automotive service facilities (SIC 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area. Projects located in or directly adjacent to, or discharging directly to an Ecological Significant Area (ESA), where the development will:
 - (a) Discharge storm water runoff that is likely to impact a sensitive biological species or habitat; and
 - (b) Create 2,500 square feet or more of impervious surface area
- (8) Single-family hillside homes. To the extent that the City of Long Beach may lawfully impose conditions, mitigation measures or other requirements on the development or construction of a single-family home in a hillside area as defined in the City's Code and Ordinances, the City of Long Beach shall require that during the construction of a single-family hillside home, the following measures are implemented:
 - (a) Conserve natural areas
 - (b) Protect slopes and channels
 - (c) Provide storm drain system stenciling and signage
 - (d) Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability
 - (e) Direct surface flow to vegetated areas before discharge unless the diversion would result in slope instability.
- (9) All development projects equal to 1 acre or greater of disturbed area and adding more than 10,000 square feet of impervious surface area.
- (10) Redevelopment projects in subject categories that meet Redevelopment thresholds identified in Part VII.J.3.i (Redevelopment Projects) below.

3. Redevelopment Projects

- i. Redevelopment projects subject to conditioning and approval by the City of Long Beach for the design and implementation of post-construction controls to mitigate storm water pollution, prior to completion of the project(s), are:
 - (1) Land-disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site for development categories/project thresholds identified in Part VII.J.2 (New Development Projects).

¹⁸ <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>
Part VII

Special Conditions for Redevelopment Projects

- (a) Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, the entire project must be mitigated.
 - (b) Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction storm water quality control requirements, only the alteration must be mitigated, and not the entire development.
 - (c) Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.
 - (d) Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.
- ii. In this section, New Development or Redevelopment projects shall mean all discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Order. Projects that have been deemed complete within 90 days of adoption of the Order are not subject to the requirements Part VII.J.4. For the City's projects the effective date shall be the date the governing body or their designee approves initiation of the project design.

4. New Development/ Redevelopment Project Performance Criteria

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

- (1) The City of Long Beach shall require all new development and redevelopment projects, referred to hereinafter as new projects, identified in Part VII.J.2-3 to control pollutants, pollutant loads, and runoff volume emanating from the project site by: (1) minimizing the impervious surface area and (2) controlling runoff from impervious surfaces through infiltration, bioretention and/or rainfall harvest and use.
- (2) Except as provided in Part VII.J.4.ii (Technical Infeasibility or Opportunity for Regional Ground Water Replenishment) or Part VII.J.5 (Local Ordinance Equivalence), below, the City of Long Beach shall require the project to retain on-site the stormwater quality design volume (SWQDv) defined as the runoff from:
 - (a) The 0.75-inch, 24-hour rain event or

- (b) The 85th percentile, 24-hour rain event, as determined from the Los Angeles County 85th percentile precipitation isohyetal map, *whichever is greater*.
 - (3) Bioretention and biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.
 - (4) When evaluating the potential for on-site retention, the City of Long Beach shall consider the maximum potential for evapotranspiration from green roofs and rainfall harvest and use.
- ii. Alternative Compliance for Technical Infeasibility or Opportunity for Regional Ground Water Replenishment
 - (1) In instances of technical infeasibility or where a project has been determined to provide an opportunity to replenish regional ground water supplies at an offsite location, the City of Long Beach may allow projects to comply with this Order through the alternative compliance measures as described in Part VII.J.4.iii.
 - (2) To demonstrate technical infeasibility, the project applicant must demonstrate that the project cannot reliably retain 100 percent of the SWQDv on-site, even with the maximum application of green roofs and rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. Technical infeasibility may result from conditions including the following:
 - (a) The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv on-site.
 - (b) Locations where seasonal high ground water is within 5 to 10 feet of the surface,
 - (c) Locations within 100 feet of a ground water well used for drinking water,
 - (d) Brownfield development sites where infiltration poses a risk of causing pollutant mobilization,
 - (e) Other locations where pollutant mobilization is a documented concern¹⁹,
 - (f) Locations with potential geotechnical hazards, or
 - (g) Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the on-site volume retention requirement.

¹⁹ Pollutant mobilization is considered a documented concern at or near properties that are contaminated or store hazardous substances underground.

(3) To utilize alternative compliance measures to replenish ground water at an offsite location, the project applicant shall demonstrate (i) why it is not advantageous to replenish ground water at the project site, (ii) that ground water can be used for beneficial purposes at the offsite location, and (iii) that the alternative measures shall also provide equal or greater water quality benefits to the receiving surface water than the Water Quality/Flow Reduction/Resource Management Criteria in Part VII.J.4.i.

iii. **Alternative Compliance Measures** - When the City of Long Beach determines a project applicant has demonstrated that it is technically infeasible to retain 100 percent of the SWQDv on-site, or is proposing an alternative offsite project to replenish regional ground water supplies, the City of Long Beach shall require one of the following mitigation options:

(1) On-site Biofiltration

(a) If using biofiltration due to demonstrated technical infeasibility, then the new project must biofiltrate 1.5 times the portion of the SWQDv that is not reliably retained on-site, as calculated by Equation 1 below.

Equation 1:

$$B_v = 1.5 * [SWQD_v - R_v]$$

Where:

B_v = biofiltration volume

SWQD_v = the storm water runoff from a 0.75 inch, 24-hour storm or the 85th percentile storm, *whichever is greater*.

R_v = volume reliably retained on-site

(b) Conditions for On-site Biofiltration

(i) Biofiltration systems shall meet the design specifications provided in Attachment H to this Order unless otherwise approved by the Regional Water Board Executive Officer.

(ii) Biofiltration systems discharging to a receiving water that is included on the Clean Water Act Section 303(d) list of impaired water quality-limited water bodies due to nitrogen compounds or related effects shall be designed and maintained to achieve enhanced nitrogen removal capability. See Attachment H for design criteria for underdrain placement to achieve enhanced nitrogen removal.

(2) Offsite Infiltration

(a) Use infiltration or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv, less the volume of storm water runoff reliably retained on-site, at an approved offsite project, and

(b) Provide pollutant reduction (treatment) of the storm water runoff discharged from the project site in accordance with the Water Quality Mitigation Criteria provided in Part VII.J.4.iii.(7).

(c) The required offsite mitigation volume shall be calculated by Equation 2 below and equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, *whichever is greater*

Rv = the volume of storm water runoff reliably retained on-site.

(3) Ground Water Replenishment Projects

The City of Long Beach may propose, in their Watershed Management Program or EWMP, regional projects to replenish regional ground water supplies at offsite locations, provided the groundwater supply has a designated beneficial use in the Basin Plan.

- (a)** Regional groundwater replenishment projects must use infiltration, ground water replenishment, or bioretention BMPs to intercept a volume of storm water runoff equal to the SWQDv for new development and redevelopment projects, subject to conditioning and approval by the City of Long Beach for the design and implementation of post-construction controls, within the approved project area, and
- (b)** Provide pollutant reduction (treatment) of the storm water runoff discharged from development projects, within the project area, subject to conditioning and approval by the City of Long Beach for the design and implementation of post-construction controls to mitigate storm water pollution in accordance with the Water Quality Mitigation Criteria provided in Part VII.J.4.iii.(7).
- (c)** Where the City of Long Beach elects to implement a regional ground water replenishment project in lieu of onsite controls, it shall ensure the volume of runoff captured by the project shall be equal to:

Equation 2:

$$Mv = 1.0 * [SWQDv - Rv]$$

Where:

Mv = mitigation volume

SWQDv = runoff from the 0.75 inch, 24-hour storm event or the 85th percentile storm, *whichever is greater*

Rv = the volume of storm water runoff reliably retained on-site.

- (d)** Regional groundwater replenishment projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan, or HUC-12 equivalent area) as the new development or redevelopment projects which did not implement on site retention BMPs . The City of Long Beach may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.

(4) Offsite Project - Retrofit Existing Development

Use infiltration, bioretention, rainfall harvest and use and/or biofiltration BMPs to retrofit an existing development, with similar land uses as the new development or land uses associated with comparable or higher storm water runoff event mean concentrations (EMCs) than the new development. Comparison of EMCs for different land uses shall be based on published data from studies performed in southern California. The retrofit plan shall be designed and constructed to:

- (a)** Intercept a volume of storm water runoff equal to the mitigation volume (M_v) as described above in Equation 2, except biofiltration BMPs shall be designed to meet the biofiltration volume as described in Equation 1 and
- (b)** Provide pollutant reduction (treatment) of the storm water runoff from the project site as described in the Water Quality Mitigation Criteria provided in Part VII.J.4.iii.(7).

(5) Conditions for Offsite Projects

- (a)** Project applicants seeking to utilize these alternative compliance provisions may propose other offsite projects, which the City of Long Beach may approve if they meet the requirements of this subpart.
- (b)** Location of offsite projects. Offsite projects shall be located in the same sub-watershed (defined as draining to the same HUC-12 hydrologic area in the Basin Plan) as the new development or redevelopment project. The City of Long Beach may consider locations outside of the HUC-12 but within the HUC-10 subwatershed area if there are no opportunities within the HUC-12 subwatershed or if greater pollutant reductions and/or ground water replenishment can be achieved at a location within the expanded HUC-10 subwatershed. The use of a mitigation, ground water replenishment, or retrofit project outside of the HUC-12 subwatershed is subject to the approval of the Executive Officer of the Regional Water Board.
- (c)** Project applicant must demonstrate that equal benefits to ground water recharge cannot be met on the project site.
- (d)** The City of Long Beach shall develop a prioritized list of offsite mitigation, ground water replenishment and/or retrofit projects, and when feasible, the mitigation must be directed to the highest priority project within the same HUC-12 or if approved by the Regional Water Board Executive Officer, the HUC-10 drainage area, as the new development project.
- (e)** Infiltration/bioretention shall be the preferred LID BMP for offsite mitigation or ground water replenishment projects. Offsite retrofit projects may include green streets, parking lot retrofits, green roofs, and rainfall harvest and use. Biofiltration BMPs may be considered for retrofit projects when infiltration, bioretention or rainfall harvest and use is technically infeasible.
- (f)** The City of Long Beach shall develop a schedule for the completion of offsite projects, including milestone dates to identify, fund, design, and

construct the projects. Offsite projects shall be completed as soon as possible, and at the latest, within 4 years of the certificate of occupancy for the first project that contributed funds toward the construction of the offsite project, unless a longer period is otherwise authorized by the Executive Officer of the Regional Water Board. For public offsite projects, the City of Long Beach must provide in their annual reports a summary of total offsite project funds raised to date and a description (including location, general design concept, volume of water expected to be retained, and total estimated budget) of all pending public offsite projects. Funding sufficient to address the offsite volume must be transferred to the City of Long Beach (for public offsite mitigation projects) or to an escrow account (for private offsite mitigation projects) within one year of the initiation of construction.

- (g) Offsite projects must be approved by the City of Long Beach and may be subject to approval by the Regional Water Board Executive Officer, if a third-party petitions the Executive Officer to review the project. Offsite projects will be publicly noticed on the Regional Water Board's website for 30 days prior to approval.
- (h) The project applicant must perform the offsite projects as approved by either the City of Long Beach or the Regional Water Board Executive Officer or provide sufficient funding for public or private offsite projects to achieve the equivalent mitigation storm water volume.

(6) Regional Storm Water Mitigation Program

The City of Long Beach may apply to the Regional Water Board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly for New and Redevelopment requirements for the area covered by the regional or sub-regional storm water mitigation program. Upon review and a determination by the Regional Water Board Executive Officer that the proposal is technically valid and appropriate, the Regional Water Board may consider for approval such a program if its implementation meets all of the following requirements:

- (a) Retains the runoff from the 85th percentile, 24-hour rain event or the 0.75 inch, 24-hour rain event, whichever is greater;
- (b) Results in improved storm water quality;
- (c) Protects stream habitat;
- (d) Promotes cooperative problem solving by diverse interests;
- (e) Is fiscally sustainable and has secure funding; and
- (f) Is completed in five years including the construction and start-up of treatment facilities.
- (g) Nothing in this provision shall be construed as to delay the implementation of requirements for new and redevelopment, as approved in this Order.

(7) Water Quality Mitigation Criteria

- (a) The City of Long Beach shall require all new development and redevelopment projects that have been approved for offsite mitigation or ground water replenishment projects as defined in Part VII.J.4.ii-iii to also provide treatment of storm water runoff from the project site. The City of Long Beach shall require these projects to design and

implement post-construction storm water BMPs and control measures to reduce pollutant loading as necessary to:

- (i) Meet the pollutant specific benchmarks listed in Table 10 at the treatment systems outlet or prior to the discharge to the MS4, and
 - (ii) Ensure that the discharge does not cause or contribute to an exceedance of water quality standards at the City of Long Beach’s downstream MS4 outfall.
- (b) The City of Long Beach may allow the project proponent to install flow-through modular treatment systems including sand filters, or other proprietary BMP treatment systems with a demonstrated efficiency at least equivalent to a sand filter. The sizing of the flow through treatment device shall be based on a rainfall intensity of:
- (i) 0.2 inches per hour, or
 - (ii) The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, *whichever is greater*.
- (c) In addition to the requirements for controlling pollutant discharges as described in Part VII.J.4.iii and the treatment benchmarks described above, the City of Long Beach shall ensure that the new development or redevelopment will not cause or contribute to an exceedance of applicable water quality-based effluent limitations established in Part VIII pursuant to Total Maximum Daily Loads (TMDLs).

Table 10. Benchmarks Applicable to New Development Treatment BMPs²⁰

Conventional Pollutants	Effluent Concentration (mg/l)
Suspended Solids	14
Total P	0.13
Total N	1.28
TKN	1.09

²⁰ 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 database (<http://www.bmpdatabase.org/>, last visited September 25, 2012).

Metals	
Total Cd	0.3
Total Cu	6
Total Cr	2.8
Total Pb	2.5
Total Zn	23

iv. Watershed Equivalence

Regardless of the methods through which Discharger allow project applicants to implement alternative compliance measures, the subwatershed-wide (defined as draining to the same HUC-12 hydrologic area in the Basin Plan, or HUC-12 equivalent) result of all development must be at least the same level of water quality protection as would have been achieved if all projects utilizing these alternative compliance provisions had complied with Part VII.J.4.i (Integrated Water Quality/Flow Reduction/Resource Management Criteria).

v. Reporting

The City of Long Beach shall provide in their annual report to the Regional Water Board a list of mitigation project descriptions and estimated pollutant and flow reduction analyses (compiled from design specifications submitted by project applicants and approved by the City of Long Beach). Within 4 years of Order adoption, the City of Long Beach must submit in their annual report, a comparison of the expected aggregate results of alternative compliance projects to the results that would otherwise have been achieved by retaining on site the SWQDv.

5. Implementation

i. Local Ordinance Equivalence On November 16, 2010, the City of Long Beach adopted LID regulations under Ordinance No. ORD-10-0035; amended on November 12, 2013 by ORD-13-0024. The Ordinance expanded the category of projects subject to post-construction BMPs to include any new development or redevelopment that results in the replacement of more than fifty (50%) of an existing building structure, or impervious cover. The Ordinance requires all projects, with the exception of small scale residential development projects to utilize stormwater management techniques that must be properly sized, at a minimum, to infiltrate, evapotranspire, store for use, without any stormwater runoff leaving the site to the maximum extent feasible, for at least the volume of water produced by the water quality design storm event. Provided the City of Long Beach condition projects in Part VII.J.2 and Part VII.J.3 to include a retention requirement numerically equal to the 0.75-inch, 24-hour rain event or the 85th percentile, 24-hour rain event, whichever is greater, the City of Long Beach may submit documentation to the Regional Water Board that the alternative requirements in the local ordinance will provide equal or greater reduction in storm water discharge pollutant loading

and volume as would have been obtained through strict conformance with Part VII.J.4.i (Integrated Water Quality/Flow Reduction Resources Management Criteria) or Part VII.J.4.ii (Alternative Compliance Measures for Technical Infeasibility or Opportunity for Regional Ground water Replenishment) of this Order and request that the City of Long Beach be allowed to implement Ordinance no. ORD-10-0035, as amended on November 12, 2013 by ORD-13-0024 in lieu of requirements in Part VII.J.

(1) Documentation shall be submitted within 60 days after the effective date of this Order.

(2) The Regional Water Board shall provide public notice of the proposed equivalency determination and a minimum 30-day period for public comment. After review and consideration of public comments, the Regional Water Board Executive Officer will determine whether implementation of the local ordinance provides equivalent pollutant control to the applicable provisions of this Order. Local ordinances that do not strictly conform to the provisions of this Order must be approved by the Regional Water Board Executive Officer as being “equivalent” in effect to the applicable provisions of this Order in order to substitute for the requirements in Part VII.J.

(3) Where the Regional Water Board Executive Officer determines that a the City of Long Beach’s local LID ordinance does not provide equivalent pollutant control, the City of Long Beach shall either

(a) Require conformance with Part VII.J.4, or

(b) Update its local ordinance to conform to the requirements herein within one year of the effective date of this Order.

ii. Project Coordination

(1) The City of Long Beach shall facilitate a process for effective approval of post-construction storm water control measures. The process shall include:

(a) Detailed LID site design and BMP review including BMP sizing calculations, BMP pollutant removal performance, and municipal approval; and

(b) An established structure for communication and delineated authority between and among municipal departments that have jurisdiction over project review, plan approval, and project construction through memoranda of understanding or an equivalent agreement.

iii. Maintenance Agreement and Transfer

(1) Prior to issuing approval for final occupancy, the City of Long Beach shall require that all new development and redevelopment projects subject to post-construction BMP requirements, with the exception of simple LID BMPs implemented on single family residences, provide an operation and maintenance plan, monitoring plan, where required, and verification of ongoing maintenance provisions for LID practices and Treatment Control BMPs, including but not limited to: final map conditions, legal agreements,

covenants, conditions or restrictions, CEQA mitigation requirements, conditional use permits, and/ or other legally binding maintenance agreements. The City of Long Beach shall require maintenance records be kept on site for treatment BMPs implemented on single family residences.

(a) Verification at a minimum shall include the developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either:

(i) A signed statement from the public entity assuming responsibility for BMP maintenance; or

(ii) 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; or

(iii) Written text in project covenants, conditions, and restrictions (CCRs) for residential properties assigning BMP maintenance responsibilities to the Home Owners Association; or

(iv) Any other legally enforceable agreement or mechanism that assigns responsibility for the maintenance of BMPs.

(b) The City of Long Beach shall require all development projects subject to post-construction BMP requirements to provide a plan for the operation and maintenance of all structural and treatment controls. The plan shall be submitted for examination of relevance to keeping the BMPs in proper working order. Where BMPs are transferred to the City for ownership and maintenance, the plan shall also include all relevant costs for upkeep of BMPs in the transfer. Operation and Maintenance plans for private BMPs shall be kept on-site for periodic review by City or Regional Water Board inspectors.

iv. Tracking, Inspection, and Enforcement of Post-Construction BMPs

(1) 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.

(a) Implement a GIS or other electronic system for tracking projects that have been conditioned for post-construction BMPs. The electronic system, at a minimum, should contain the following information:

(i) Municipal Project ID

(ii) State WDID No.

(iii) Project Acreage

(iv) BMP Type and Description

(v) BMP Location (coordinates)

- (vi) Date of Acceptance
 - (vii) Date of Maintenance Agreement
 - (viii) Maintenance Records
 - (ix) Inspection Date and Summary
 - (x) Corrective Action
 - (xi) Date Certificate of Occupancy Issued
 - (xii) Replacement or Repair Date
- (b) Inspect all development sites upon completion of construction and prior to the issuance of occupancy certificates to ensure proper installation of LID measures, structural BMPs and treatment control BMPs. The inspection may be combined with other inspections provided it is conducted by trained personnel.
- (c) Verify proper maintenance and operation of post-construction BMPs previously approved for new development and redevelopment and operated by the City of Long Beach. The post-construction BMP maintenance inspection program shall incorporate the following elements:
- (i) The development of a Post-construction BMP Maintenance Inspection checklist
 - (ii) Inspection at least once every 2 years after project completion, of post-construction BMPs to assess operation conditions with particular attention to criteria and procedures for post-construction treatment control BMP repair, replacement, or re-vegetation.
- (d) For post-construction BMPs operated and maintained by parties other than the City of Long Beach, the City of Long Beach shall require the other parties to document proper maintenance and operations.
- (e) Undertake enforcement action per the established Progressive Enforcement Policy as appropriate based on the results of the inspection. See Part VII.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.

K. Construction Program

1. The City of Long Beach shall develop and implement an enforceable erosion and sediment control program including establishing ordinances for all construction sites that disturb soil that:
 - i. Prevents illicit construction-related discharges of pollutants into the MS4 and receiving waters.
 - ii. Implements and maintains structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites.
 - iii. Reduces construction site discharges of pollutants to the MS4 to the MEP.

iv. Prevents construction site discharges to the MS4 from causing or contributing to a violation of water quality standards.

v. Construction Program Applicability

The provisions contained in Part VII.K.6.vi below apply exclusively to construction sites less than 1 acre. Provisions contained in Part VII.K.6.vii-xii apply exclusively to construction sites 1 acre or greater. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).

vi. Requirements for Construction Sites Less than One Acre

(1) Through the use of the City of Long Beach’s erosion and sediment control ordinance or and/or building permit, require the implementation of an effective combination of erosion and sediment control BMPs from Table 11 to prevent erosion and sediment loss, and the discharge of construction wastes.

Table 11. Applicable Set of BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

(2) Possess the ability to identify all construction sites with soil disturbing activities that require a permit, regardless of size, and shall be able to provide a list of permitted sites upon request of the Regional Water Board. The City of Long Beach may use existing permit databases or other tracking systems to comply with these requirements.

(3) Inspect construction sites on as needed based on the evaluation of the factors that are a threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

- (4) Implement the City of Long Beach's Progressive Enforcement Policy to ensure that construction sites are brought into compliance with the erosion and sediment control ordinance within a reasonable time period. See Part VII.D.2 for requirements for the development and implementation of a Progressive Enforcement Policy.
- vii. The City of Long Beach shall require operators of public and private construction sites within its jurisdiction to select, install, implement, and maintain BMPs that comply with its erosion and sediment control ordinance.
- viii. The requirements contained in this part apply to all activities involving soil disturbance with the exception of agricultural activities. Activities covered by this permit include but are not limited to grading, vegetation clearing, soil compaction, paving, re-paving and linear underground/overhead projects (LUPs).
- ix. **Construction Site Inventory / Electronic Tracking System**
- (1) The City of Long Beach shall use an electronic system to inventory 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.
- (2) The City of Long Beach shall complete an inventory and continuously update as new sites are permitted and sites are completed. The inventory / tracking system shall contain, at a minimum:
- (a) Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor.
 - (b) The basic site information including location, status, size of the project and area of disturbance.
 - (c) The proximity all water bodies, water bodies listed as impaired by sediment-related pollutants, and water bodies for which a sediment-related TMDL has been adopted and approved by USEPA.
 - (d) Significant threat to water quality status, based on consideration of factors listed in Appendix 1 to the Statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit).
 - (e) Current construction phase where feasible.
 - (f) The required inspection frequency.
 - (g) The project start date and anticipated completion date.
 - (h) Whether the project has submitted a Notice of Intent and obtained coverage under the Construction General Permit.
 - (i) The date the City of Long Beach approved the erosion and sediment control plan (ESCP).
 - (j) Post-construction structural BMPs subject to operation and maintenance Requirements.

x. Construction Plan Review and Approval Procedures

(1) The City of Long Beach shall develop procedures to review and approve relevant construction plan documents.

(2) The review procedures shall be developed and implemented such that the following minimum requirements are met:

(a) Prior to issuing a grading or building permit, the City of Long Beach shall require each operator of a construction activity within its jurisdiction to prepare and submit an ESCP prior to the disturbance of land for the City of Long Beach's review and written approval. The construction site operator shall be prohibited from commencing construction activity prior to receipt of written approval by the City of Long Beach. The City of Long Beach shall not approve any ESCP unless it contains appropriate site-specific construction site BMPs that meet the minimum requirements of the City's erosion and sediment control ordinance.

(b) ESCPs must include the elements of a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs prepared in accordance with the requirements of the Construction General Permit can be accepted as ESCPs.

(c) At a minimum, the ESCP must address the following elements:

(i) Methods to minimize the footprint of the disturbed area and to prevent soil compaction outside of the disturbed area.

(ii) Methods used to protect native vegetation and trees.

(iii) Sediment/Erosion Control.

(iv) Controls to prevent tracking on and off the site.

(v) Non-storm water controls (e.g., vehicle washing, dewatering, etc.).

(vi) Materials Management (delivery and storage).

(vii) Spill Prevention and Control.

(viii) Waste Management (e.g., concrete washout/waste management; sanitary waste management).

(ix) Identification of site Risk Level as identified per the requirements in Appendix 1 of the Construction General Permit.

(d) The ESCP must include the rationale for the selection and design of the proposed BMPs, including quantifying the expected soil loss from different BMPs.

(e) The City of Long Beach shall require that the ESCP is developed and certified by a Qualified SWPPP Developer (QSD).

(f) The City of Long Beach shall require that all structural BMPs be designed by a licensed California Engineer.

(g) The City of Long Beach shall require that for all sites, the landowner or the landowner's agent sign a statement on the ESCP as follows:

- (i) “I certify that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that submitting false and/ or inaccurate information, failing to update the ESCP to reflect current conditions, or failing to properly and/ or adequately implement the ESCP may result in revocation of grading and/ or other permits or other sanctions provided by law.”
 - (3) Prior to issuing a grading or building permit, the City of Long Beach must verify that the construction site operators have existing coverage under applicable permits, including, but not limited to the State Water Board’s Construction General Permit, and State Water Board 401 Water Quality Certification.
 - (4) The City of Long Beach shall develop and implement a checklist to be used to conduct and document review of each ESCP.
- xi. BMP Implementation Level**
- (1) The City of Long Beach shall implement technical standards for the selection, installation and maintenance of construction BMPs for all construction sites within its jurisdiction.
 - (2) The BMP technical standards shall require:
 - (a) The use of BMPs that are tailored to the risks posed by the project. Sites are to be ranked from Low Risk (Risk 1) to High Risk (Risk 3). Project risks are to be calculated based on the potential for erosion from the site and the sensitivity of the receiving water body. Receiving water bodies that are listed on the Clean Water Act (CWA) Section 303(d) list for sediment or siltation are considered High Risk. Likewise, water bodies with designated beneficial uses of SPWN, COLD, and MIGR are also considered to be High Risk. The combined (sediment/receiving water) site risk shall be calculated using the methods provided in Appendix 1 of the Construction General Permit. At a minimum, the BMP technical standards shall include requirements for High Risk sites as defined in Table 14.
 - (b) The use of BMPs for all construction sites, sites equal or greater to 1 acre, and for paving projects per Tables 13 and 15 of this Order.
 - (c) Detailed installation designs and cut sheets for use within ESCPs.
 - (d) Maintenance expectations for each BMP, or category of BMPs, as appropriate.
 - (3) The City of Long Beach is encouraged to adopt respective BMPs from latest versions of the *California BMP Handbook*, *Construction* or *Caltrans Stormwater Quality Handbooks*, *Construction Site Best Management Practices (BMPs) Manual* and addenda. Alternatively, the City is authorized

to develop or adopt equivalent BMP standards consistent for Southern California and for the range of activities presented below in Tables 12 through 15.

(4) The local BMP technical standards shall be readily available to the development community and shall be clearly referenced within the City of Long Beach’s storm water or development services website, ordinance, permit approval process and/or ESCP review forms. The local BMP technical standards shall also be readily available to the Regional Water Board upon request.

(5) Local BMP technical standards shall be available for the following:

Table 12. Minimum BMPs for All Construction Sites

Erosion Controls	Scheduling
	Preservation of Existing Vegetation
Sediment Controls	Silt Fence
	Sand Bag Barrier
	Stabilized Construction Site Entrance/Exit
Non-Storm water Management	Water Conservation Practices
	Dewatering Operations
Waste Management	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management
	Concrete Waste Management
	Sanitary/Septic Waste Management

Table 13. Additional BMPs for Construction Sites Disturbing ≥ 1 Acre

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
Sediment Controls	Fiber Rolls
	Gravel Bag Berm
	Street Sweeping and/ or Vacuum
	Storm Drain Inlet Protection
	Scheduling
	Check Dam
Additional Controls	Wind Erosion Controls
	Stabilized Construction Entrance/ Exit
	Stabilized Construction Roadway
	Entrance/ Exit Tire Wash
Non-Storm water Management	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
	Vehicle and Equipment Maintenance

Waste Management	Material Delivery and Storage
	Spill Prevention and Control

Table 14. Additional BMPs for High Risk Sites

Erosion Controls	Hydraulic Mulch
	Hydroseeding
	Soil Binders
	Straw Mulch
	Geotextiles and Mats
	Wood Mulching
	Slope Drains
Sediment Controls	Silt Fence
	Fiber Rolls
	Sediment Basin
	Check Dam
	Gravel Bag Berm
	Street Sweeping and/or Vacuum
	Sand Bag Barrier
Additional Controls	Storm Drain Inlet Protection
	Wind Erosion Controls
	Stabilized Construction Entrance/Exit
	Stabilized Construction Roadway
	Entrance/Exit Tire Wash
Non-Storm water Management	Advanced Treatment Systems (applies to public roadway projects)
	Water Conservation Practices
	Dewatering Operations (Ground water dewatering only under NPDES Permit No. CAG994004)
	Vehicle and Equipment Washing
	Vehicle and Equipment Fueling
Waste Management	Vehicle and Equipment Maintenance
	Material Delivery and Storage
	Stockpile Management
	Spill Prevention and Control
	Solid Waste Management

Table 15. Minimum BMPs for Roadway Paving or Repair Operation (Private or Public Projects)

1	Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall unless required by emergency conditions.
2	Install gravel bags and filter fabric or other equivalent inlet protection at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat.
3	Prevent the discharge of release agents including soybean oil, other oils, or diesel to the storm water drainage system or receiving waters.
4	Minimize non storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
5	Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
6	Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.
7	Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.
8	Cover the "cold-mix" asphalt (i.e., pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.
9	Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
10	Minimize airborne dust by using water spray or other approved dust suppressant during grinding.
11	Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near storm water drainage system or receiving waters.
12	Protect stockpiles with a cover or sediment barriers during a rain.

xii. Construction Site Inspection

1. The City of Long Beach shall use its legal authority to implement procedures for inspecting public and private construction sites.
2. The inspection procedures shall be implemented as follows:
 - (1) Inspect the public and private construction sites as specified in Table 16 below:

Table 16. Inspection Frequencies for Sites ≥1 Acre

Site	Inspection Frequency Shall Occur
All sites 1 acre or larger that discharge to a tributary listed by the state as an impaired water for sediment or turbidity under the CWA Section 303(d)	(1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA ²¹ , (2) within 48 hours of a ½-inch rain event and at (3) least once every two weeks
Other sites 1 acre or more determined to be a significant threat to water quality ²²	
All other construction sites with 1 acre or more of soil disturbance not meeting the criteria above	At least monthly

(2) The City of Long Beach shall inspect all phases of construction as follows:

(a) Prior to Land Disturbance

Prior to allowing an operator to commence land disturbance, the City of Long Beach shall perform an inspection to ensure all necessary erosion and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan.

(b) During Active Construction, including Land Development²³ and Vertical Construction²⁴

In accordance with the frequencies specified in Part VII.J.6.xii and Table 10 of this Order, the City of Long Beach shall perform an inspection to ensure all necessary erosion and sediment structural and non-structural BMP materials and procedures are available per the erosion and sediment control plan throughout the construction process.

(c) Final Landscaping / Site Stabilization²⁵

At the conclusion of the project and as a condition of approving and/or issuing a Certificate of Occupancy, the City of Long Beach

²¹ www.srh.noaa.gov/forecast

²² In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

²³ Activities include cuts and fills, rough and finished grading; alluvium removals; canyon cleanouts; rock undercuts; keyway excavations; stockpiling of select material for capping operations; and excavation and street paving, lot grading, curbs, gutters and sidewalks, public utilities, public water facilities including fire hydrants, public sanitary sewer systems, storm sewer system and/or other drainage improvement.

²⁴ The build out of structures from foundations to roofing, including rough landscaping.

²⁵ All soil disturbing activities at each individual parcel within the site have been completed.

shall inspect the constructed site to ensure that all graded areas have reached final stabilization and that all trash, debris, and construction materials, and temporary erosion and sediment BMPs are removed.

(d) Based on the required frequencies above, each construction project shall be inspected a minimum of three times.

(e) **Inspection Standard Operating Procedures**
The City of Long Beach shall develop, implement, and revise as necessary, standard operating procedures that identify the inspection procedures the City of Long Beach will follow. Inspections of construction sites, and the standard operating procedures, shall include, but are not limited to:

(i) Verification of active coverage under the Construction General Permit for sites disturbing 1 acre or more, or that are part of a planned development that will disturb 1 acre or more and a process for referring non-filers to the Regional Water Board.

(ii) Review of the applicable ESCP and inspection of the construction site to determine whether all BMPs have been selected, installed, implemented, and maintained according to the approved plan and subsequent approved revisions.

(iii) Assessment of the appropriateness of the planned and installed BMPs and their effectiveness.

(iv) Visual observation and record keeping of non-storm water discharges, potential illicit discharges and connections, and potential discharge of pollutants in storm water runoff.

(v) Development of a written or electronic inspection report generated from an inspection checklist used in the field.

(vi) Tracking of the number of inspections for the inventoried construction sites throughout the reporting period to verify that the sites are inspected at the minimum frequencies required in Table 16 of this Order.

xiii. Enforcement

The City of Long Beach shall implement its Progressive Enforcement Policy to ensure that construction sites are brought into compliance with all storm water requirements within a reasonable time period. See Part VII.D.2 for requirements for the development and implementation of a progressive enforcement policy.

xiv. Staff Training

(1) The City of Long Beach shall ensure that all staff whose primary job duties are related to implementing the construction storm water program are adequately trained.

(2) The City of Long Beach may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(a) Plan Reviewers and Permitting Staff

Ensure staff and consultants are trained as qualified individuals, knowledgeable in the technical review of local erosion and sediment control ordinance, local BMP technical standards, ESCP requirements, and the key objectives of the State Water Board QSD program. The City of Long Beach may provide internal training to staff or require staff to obtain QSD certification.

(b) Erosion Sediment Control/Storm Water Inspectors

The City of Long Beach shall ensure that its inspectors are knowledgeable in inspection procedures consistent with the State Water Board sponsored program QSD or a Qualified SWPPP Practitioner (QSP) or that a designated person on staff who has been trained in the key objectives of the QSD/QSP programs supervises inspection operations. The City of Long Beach may provide internal training to staff or require staff to obtain QSD/QSP certification. Each inspector must be knowledgeable of the local BMP technical standards and ESCP requirements.

(c) Third-Party Plan Reviewers, Permitting Staff, and Inspectors

If the City of Long Beach utilizes outside parties to conduct inspections and/or review plans, the City of Long Beach shall ensure these staff are trained per the requirements listed above. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

L. Public Agency Activities Program

1. The City of Long Beach shall implement a Public Agency Activities Program to minimize storm water pollution impacts from City-owned or operated facilities and activities and to identify opportunities to reduce storm water pollution impacts from areas of existing development. Requirements for Public Agency Facilities and Activities consist of the following components:
 - i. Public Construction Activities Management
 - ii. Public Facility Inventory
 - iii. Inventory of Existing Development for Retrofitting Opportunities
 - iv. Public Facility and Activity Management
 - v. Vehicle and Equipment Wash Areas
 - vi. Landscape, Park, and Recreational Facilities Management
 - vii. Storm Drain Operation and Maintenance
 - viii. Streets, Roads, and Parking Facilities Maintenance
 - ix. Emergency Procedures
 - x. Municipal Employee and Contractor Training

2. Public Construction Activities Management

- i. The City of Long Beach shall implement and comply with the Planning and Land Development Program requirements in Part VII.J of this Order at City-owned or operated (i.e., public or City sponsored) construction projects that are categorized under the project types identified in Part VII.J.2-3 of this Order.
- ii. The City of Long Beach shall implement and comply with the appropriate Development Construction Program requirements in Part VII.K of this Order at City-owned or operated construction projects as applicable.
- iii. For City-owned or operated projects (including those under a capital improvement project plan) that disturb less than one acre of soil, the City of Long Beach shall require an effective combination of erosion and sediment control BMPs from Table 12 (see Construction Development Program, minimum BMPs).
- iv. The City of Long Beach shall obtain separate coverage under the Construction General Permit for all City-owned or operated construction sites that require coverage.

3. Public Facility Inventory

- i. The City of Long Beach shall maintain an updated inventory of all City-owned or operated (i.e., public) facilities within its jurisdiction that are potential sources of storm water pollution. The incorporation of facility information into a GIS is recommended. Sources to be tracked include but are not limited to the following:
 - (1) Animal control facilities
 - (2) Chemical storage facilities
 - (3) Composting facilities
 - (4) Equipment storage and maintenance facilities (including landscape maintenance-related operations)
 - (5) Fueling or fuel storage facilities (including municipal airports)
 - (6) Hazardous waste disposal facilities
 - (7) Hazardous waste handling and transfer facilities
 - (8) Incinerators
 - (9) Landfills
 - (10) Materials storage yards
 - (11) Pesticide storage facilities
 - (12) Fire stations
 - (13) Public restrooms
 - (14) Public parking lots
 - (15) Public golf courses
 - (16) Public swimming pools

- (17) Public parks
 - (18) Public works yards
 - (19) Public marinas
 - (20) Recycling facilities
 - (21) Solid waste handling and transfer facilities
 - (22) Vehicle storage and maintenance yards
 - (23) Storm water management facilities (e.g., detention basins)
 - (24) All other City-owned or operated facilities or activities that the City of Long Beach determines may contribute a substantial pollutant load to the MS4.
- ii. The City of Long Beach shall include the following minimum fields of information for the City of Long Beach-owned or operated facility in its inventory.
 - (1) Name of facility
 - (2) Name of facility manager and contact information
 - (3) Address of facility (physical and mailing)
 - (4) A narrative description of activities performed and potential pollution sources.
 - (5) Coverage under the Industrial General Permit or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.
 - iii. The City of Long Beach shall update its inventory at least once during the 5-year term of the Order. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter and intra-agency informational databases (e.g., property management, land-use approvals, accounting and depreciation ledger account, and similar information).

4. Inventory of Existing Development for Retrofitting Opportunities

- i. The City of Long Beach shall develop an inventory of retrofitting opportunities that meets the requirements of this Part VII.L.4. Retrofit opportunities shall be identified within the public right-of-way or in coordination with a TMDL implementation plan(s). The goals of the existing development retrofitting inventory are to address the impacts of existing development through regional or sub-regional retrofit projects that reduce the discharges of storm water pollutants into the MS4 and prevent discharges from the MS4 from causing or contributing to a violation of water quality standards as defined in Part VI (Receiving Water Limitations).
- ii. The City of Long Beach shall screen existing areas of development to identify candidate areas for retrofitting using watershed models or other screening level tools.
- iii. The City of Long Beach shall evaluate and rank the areas of existing development identified in the screening to prioritize retrofitting candidates. Criteria for evaluation may include but are not limited to:

- (1) Feasibility, including general private and public land availability;
 - (2) Cost effectiveness;
 - (3) Pollutant removal effectiveness;
 - (4) Tributary area potentially treated;
 - (5) Maintenance requirements;
 - (6) Landowner cooperation;
 - (7) Neighborhood acceptance;
 - (8) Aesthetic qualities;
 - (9) Efficacy at addressing concern; and
 - (10) Potential improvements to public health and safety.
- iv. The City of Long Beach shall consider the results of the evaluation in the following programs:
- (1) The City of Long Beach's storm water management program: Highly feasible projects expected to benefit water quality should be given a high priority to implement source control and treatment control BMPs in the City's SWMP.
 - (2) Off-site mitigation for New Development and Redevelopment: The City of Long Beach shall consider high priority retrofit projects as candidates for off-site mitigation projects per part VII.J.4.iii(4).
 - (3) Where feasible, at the discretion of the City of Long Beach, the existing development retrofitting program may be coordinated with flood control projects and other infrastructure improvement programs per Part VII.L.5.ii(2) below.
- v. The City of Long Beach shall cooperate with private landowners to encourage site specific retrofitting projects. The City of Long Beach shall consider the following practices in cooperating with private landowners to retrofit existing development:
- (1) Demonstration retrofit projects;
 - (2) Retrofits on public land and easements that treat runoff from private developments;
 - (3) Education and outreach;
 - (4) Subsidies for retrofit projects;
 - (5) Requiring retrofit projects as enforcement, mitigation or ordinance compliance;
 - (6) Public and private partnerships;
 - (7) Fees for existing discharges to the MS4 and reduction of fees for retrofit implementation.

5. Public Agency Facility and Activity Management

- i. The City of Long Beach shall obtain separate coverage under the Industrial General Permit for all City-owned or operated facilities where industrial

activities are conducted that require coverage under the Industrial General Permit.

- ii. The City of Long Beach shall implement the following measures for City-owned and operated flood management projects:
 - (1) Develop procedures to assess the impacts of flood management projects on the water quality of receiving water bodies; and
 - (2) Evaluate existing structural flood control facilities to determine if retrofitting the facility to provide additional pollutant removal from storm water is feasible.
- iii. The City of Long Beach shall ensure the implementation and maintenance of activity specific BMPs listed in Table 17 (BMPs for Public Agency Facilities and Activities) or an equivalent set of BMPs when such activities occur at City-owned or operated facilities and field activities (e.g., project sites) including but not limited to the facility types listed in Part VII.L.3 above, and at any area that includes the activities described in Table 17, or that have the potential to discharge pollutants in storm water.
- iv. Any 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 17. The City of Long Beach shall conduct oversight of contractor activities to ensure these BMPs are implemented and maintained.
- v. City-owned or operated facilities that have obtained coverage under the Industrial General Permit shall implement and maintain BMPs consistent with the associated SWPPP and are therefore not required to implement and maintain the activity specific BMPs listed in Table 17.
- vi. Effective source control BMPs for the activities listed in Table 17 shall be implemented at City-owned or operated facilities, unless the pollutant generating activity does not occur. The City of Long Beach shall require implementation of additional BMPs where storm water from the MS4 discharges to a significant ecological area (SEA, see Attachment A for definition), a water body subject to TMDL provisions in Part VIII, or a CWA Section 303(d) listed water body (see Part VIII below). Likewise, for those BMPs that are not adequately protective of water quality standards, the City may require additional site-specific controls.

Table 17. BMPs for Public Agency Facilities and Activities

General and Activity Specific BMPs	
General BMPs	Scheduling and Planning
	Spill Prevention and Control
	Sanitary/Septic Waste Management
	Material Use
	Safer Alternative Products
	Vehicle/Equipment Cleaning, Fueling and Maintenance
	Illicit Connection Detection, Reporting and Removal
	Illegal Spill Discharge Control
	Maintenance Facility Housekeeping Practices
Flexible Pavement	Asphalt Cement Crack and Joint Grinding/ Sealing
	Asphalt Paving
	Structural Pavement Failure (Digouts) Pavement Grinding and Paving
	Emergency Pothole Repairs
	Sealing Operations
Rigid Pavement	Portland Cement Crack and Joint Sealing
	Mudjacking and Drilling
	Concrete Slab and Spall Repair
Slope/ Drains/ Vegetation	Shoulder Grading
	Non-landscaped Chemical Vegetation Control
	Non-landscaped Mechanical Vegetation Control/ Mowing
	Non-landscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Fence Repair
	Drainage Ditch and Channel Maintenance
	Drain and Culvert Maintenance

General and Activity Specific BMPs	
	Curb and Sidewalk Repair
Litter/ Debris/ Graffiti	Sweeping Operations
	Litter and Debris Removal
	Emergency Response and Cleanup Practices
	Graffiti Removal
Landscaping	Chemical Vegetation Control
	Manual Vegetation Control
	Landscaped Mechanical Vegetation Control/ Mowing
	Landscaped Tree and Shrub Pruning, Brush Chipping, Tree and Shrub Removal
	Irrigation Line Repairs
	Irrigation (Watering), Potable and Non-potable
Environmental	Storm Drain Stenciling
	Roadside Slope Inspection
	Roadside Stabilization
	Stormwater Treatment Devices
	Traction Sand Trap Devices
Bridges	Welding and Grinding
	Sandblasting, Wet Blast with Sand Injection and Hydroblasting
	Painting
	Bridge Repairs
Other Structures	Pump Station Cleaning
	Tube and Tunnel Maintenance and Repair
	Tow Truck Operations
	Toll Booth Lane Scrubbing Operations
Electrical	Sawcutting for Loop Installation

General and Activity Specific BMPs	
Traffic Guidance	Thermoplastic Striping and Marking
	Paint Striping and Marking
	Raised/ Recessed Pavement Marker Application and Removal
	Sign Repair and Maintenance
	Median Barrier and Guard Rail Repair
	Emergency Vehicle Energy Attenuation Repair
Storm Maintenance	Minor Slides and Slipouts Cleanup/ Repair
Management and Support	Building and Grounds Maintenance
	Storage of Hazardous Materials (Working Stock)
	Material Storage Control (Hazardous Waste)
	Outdoor Storage of Raw Materials
	Vehicle and Equipment Fueling
	Vehicle and Equipment Cleaning
	Vehicle and Equipment Maintenance and Repair
	Aboveground and Underground Tank Leak and Spill Control

6. Vehicle and Equipment Washing

- i. The City of Long Beach shall implement and maintain the activity specific BMPs listed in Table 17 (BMPs for Public Agency Facilities and Activities) for all fixed vehicle and equipment washing except for fire-fighting vehicles.
- ii. The City of Long Beach shall prevent discharges of wash waters from vehicle and equipment washing to the MS4 by implementing any of the following measures at existing facilities with vehicle or equipment wash areas (with the exception of fire stations):
 - (1) Self-contain, and haul off for disposal; or
 - (2) Equip with a clarifier or an alternative pre-treatment device and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.
- iii. The City of Long Beach shall ensure that any municipal facilities constructed, redeveloped, or replaced shall not discharge wastewater from vehicle and equipment wash areas to the MS4 by plumbing all areas to the sanitary sewer in accordance with applicable waste water provider regulations, or self-

containing all waste water/ wash water and hauling to a point of legal disposal (excluding fire stations).

7. Landscape, Park, and Recreational Facilities Management

- i. The City of Long Beach shall implement and maintain the activity specific BMPs listed in Table 17 for all public right-of-ways, flood control facilities and open channels, lakes and reservoirs, and landscape, park, and recreational facilities and activities.
- ii. The City of Long Beach shall implement an IPM program that includes the following:
 - (1) Pesticides are used only if monitoring indicates they are needed, and pesticides are applied according to applicable permits and established guidelines.
 - (2) Treatments are made with the goal of removing only the target organism.
 - (3) Pest controls are selected and applied in a manner that minimizes risks to human health, beneficial non-target organisms, and the environment.
 - (4) The use of pesticides, including organophosphates and pyrethroids, does not threaten water quality.
 - (5) Partner with other agencies and organizations to encourage the use of IPM.
 - (6) Adopt and verifiably implement policies, procedures, and/ or ordinances requiring the minimization of pesticide use and encouraging the use of IPM techniques (including beneficial insects) for Public Agency Facilities and Activities.
 - (7) Policies, procedures, and ordinances shall include commitments and a schedule to reduce the use of pesticides that cause impairment of surface waters by implementing the following procedures:
 - (a) Prepare and annually update an inventory of pesticides used by all internal departments, divisions, and other operational units.
 - (b) Quantify pesticide use by staff and hired contractors.
 - (c) Demonstrate implementation of IPM alternatives where feasible to reduce pesticide use.
- iii. The City of Long Beach shall implement the following requirements:
 - (1) Use a standardized protocol for the routine and non-routine application of pesticides (including pre-emergents), and fertilizers.
 - (2) Ensure there is no application of pesticides or fertilizers (1) when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA²⁶, (2) within 48 hours of a ½-inch rain event, or (3) when water is flowing off the area where the application is to occur. The requirements in Part VII.L.7.iii.2 do not apply to the application of aquatic pesticides or pesticides which require water for activation.
 - (3) Ensure that no banned or unregistered pesticides are stored or applied.

- (4) Ensure that all staff applying pesticides are certified in the appropriate category by the California Department of Pesticide Regulation, or are under the direct supervision of a pesticide applicator certified in the appropriate category.
- (5) Implement procedures to encourage the retention and planting of native vegetation to reduce water, pesticide and fertilizer needs; and
- (6) Store pesticides and fertilizers indoors or under cover on paved surfaces, or use secondary containment.
 - (a) Reduce the use, storage, and handling of hazardous materials to reduce the potential for spills.
 - (b) Regularly inspect storage areas.

8. Storm Drain Operation and Maintenance

- i. The City of Long Beach shall implement and maintain the activity specific BMPs listed in Table 17 for storm drain operation and maintenance.
- ii. Ensure that all material removed from the MS4 does not reenter the system. Solid material shall be dewatered in a contained area and liquid material shall be disposed in accordance with any of the following measures:
 - (1) Self-contain, and haul off for legal disposal; or
 - (2) Applied to the land without runoff; or
 - (3) Equip with a clarifier or an alternative pre-treatment device; and plumb to the sanitary sewer in accordance with applicable waste water provider regulations.

iii. Catch Basin Cleaning

- (1) In areas that are not subject to a trash TMDL, the City of Long Beach shall determine priority areas and shall update its map or list of Catch Basins with their GPS coordinates and priority:

Priority A: Catch basins that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Catch basins that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Catch basins that are designated as generating low volumes of trash and/or debris.

The map or list shall contain the rationale or data to support priority designations.

- (2) In areas that are not subject to a trash TMDL, the City of Long Beach shall inspect catch basins according to the following schedule:

Priority A: A minimum of 3 times during the wet season (October 1 through April 15) and once during the dry season every year.

Priority B: A minimum of once during the wet season and once during the dry season every year.

Priority C: A minimum of once per year.

Catch basins shall be cleaned as necessary on the basis of inspections. At a minimum, the City shall ensure that any catch basin that is determined to be at least 25% full of trash shall be cleaned out. the City shall maintain inspection and cleaning records for Regional Water Board review.

- (3)** In areas that are subject to a trash TMDL, the City of Long Beach shall implement the applicable provisions in Part VIII.

iv. Trash Management at Public Events

- (1)** The City of Long Beach shall require the following measures for any event in the public right of way or wherever it is foreseeable that substantial quantities of trash and litter may be generated, including events located in areas that are subject to a trash TMDL:

- (a)** Proper management of trash and litter generated; and
- (b)** Arrangement for temporary screens to be placed on catch basins; or
- (c)** Provide clean out of catch basins, trash receptacles, and grounds in the event area within one business day subsequent to the event.

v. Trash Receptacles

- (1)** The City of Long Beach shall ensure trash receptacles, or equivalent trash capturing devices, are covered in areas newly identified as high trash generation areas within its jurisdiction.
- (2)** The City of Long Beach shall ensure that all trash receptacles are cleaned out and maintained as necessary to prevent trash overflow.

vi. Catch Basin Labels and Open Channel Signage

- (1)** The City of Long Beach shall label all storm drain inlets that they own with a legible “no dumping” message.
- (2)** The City of Long Beach shall inspect the legibility of the stencil or label nearest each inlet prior to the wet season every year.
- (3)** The City of Long Beach shall record all catch basins with legible stencils and re-stencil or re-label within 180 days of inspection.
- (4)** The City of Long Beach shall post signs, referencing local code(s) that prohibit littering and illegal dumping, at designated public access points to open channels, creeks, urban lakes, and other relevant water bodies.

vii. Additional Trash Management Practices

- (1)** 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 to prevent the discharge of trash to the MS4 or receiving water no later than four years after the effective date of this Order in areas defined as Priority A, Part VII.L.8.iii(1), except at sites where the application of such BMP(s) alone will cause flooding. Lack of maintenance that causes flooding is not an acceptable exception to the requirement to install BMPs. Alternatively, the City of Long Beach may implement alternative or enhanced BMPs beyond the provisions of this Order (such as but not limited to increased street sweeping, adding trash cans near trash

generation sites, prompt enforcement of trash accumulation, increased trash collection on public property, increased litter prevention messages or trash nets within the MS4) that provide substantially equivalent removal of trash. The City of Long Beach shall demonstrate that BMPs, which substituted for trash excluders, provide equivalent trash removal performance as excluders. When outfall trash capture is provided, revision of the schedule for inspection and cleanout of catch basins in Part VII.L.8.iii(2) shall be reported in the next year's annual report.

viii. Storm Drain Maintenance

The City of Long Beach shall implement a program for Storm Drain Maintenance that includes the following:

- (1) Visual monitoring of open channels and other drainage structures with City boundaries for trash and debris at least annually.
- (2) Removal of trash and debris from open channels a minimum of once per year before the wet season.
- (3) Elimination of the discharge of contaminants during MS4 maintenance and clean outs.
- (4) Proper disposal of debris and trash removed during storm drain maintenance.

ix. Infiltration from Sanitary Sewer to MS4/Preventive Maintenance

- (1) The City of Long Beach shall implement controls and measures to prevent and eliminate infiltration of seepage from sanitary sewers to MS4s through thorough, routine preventive maintenance of the MS4.
- (2) The City of Long Beach that operates both a municipal sanitary sewer system and a MS4 must implement controls and measures to prevent and eliminate infiltration of seepage from the sanitary sewers to the MS4s that must include overall sanitary sewer and MS4 surveys and thorough, routine preventive maintenance of both. Implementation of a Sewer System Management Plan in accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, may be used to fulfill this requirement.
- (3) The City of Long Beach shall implement controls to limit infiltration of seepage from sanitary sewers to the MS4 where necessary. Such controls must include:
 - (a) Adequate plan checking for construction and new development;
 - (b) Incident response training for its municipal employees that identify sanitary sewer spills;
 - (c) Code enforcement inspections;
 - (d) MS4 maintenance and inspections;
 - (e) Interagency coordination with sewer agencies; and
 - (f) Proper education of its municipal staff and contractors conducting field operations on the MS4 or its municipal sanitary sewer (if applicable).

x. Discharger Owned Treatment Control BMPs

- (1) The City of Long Beach shall implement an inspection and maintenance program for all Discharger owned treatment control BMPs, including post-construction treatment control BMPs.
- (2) The City of Long Beach shall ensure proper operation of all treatment control BMPs and maintain them as necessary for proper operation, including all post-construction treatment control BMPs.
- (3) Any residual water²⁷ produced by a treatment control BMP and not being internal to the BMP performance when being maintained shall be:
 - (a) Hauled away and legally disposed of; or
 - (b) Applied to the land without runoff; or
 - (c) Discharged to the sanitary sewer system (with permits or authorization); or
 - (d) Treated or filtered to remove bacteria, sediments, nutrients, and meet the limitations set in Table 18 (Discharge Limitations for Dewatering Treatment BMPs), prior to discharge to the MS4.

Table 18. Discharge Limitations for Dewatering Treatment BMPs ²⁷

Parameter	Units	Limitation
Total Suspended Solids	mg/L	100
Turbidity	NTU	50
Oil and Grease	mg/L	10

9. Streets, Roads, and Parking Facilities Maintenance

i. The City of Long Beach shall designate streets and/or street segments within its jurisdiction as one of the following:

Priority A: Streets and/or street segments that are designated as consistently generating the highest volumes of trash and/or debris.

Priority B: Streets and/or street segments that are designated as consistently generating moderate volumes of trash and/or debris.

Priority C: Streets and/or street segments that are designated as generating low volumes of trash and/or debris.

ii. The City of Long Beach shall perform street sweeping of curbed streets according to the following schedule:

Priority A: Streets and/or street segments that are designated as Priority A shall be swept at least two times per month.

Priority B: Streets and/or street segments that are designated as Priority B shall be swept at least once per month.

²⁷ See Attachment A.
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Priority C: Streets and/or street segments that are designated as Priority C shall be swept as necessary but in no case less than once per year.

iii. Road Reconstruction

The City of Long Beach shall require for each and any project that includes roadbed or street paving, repaving, patching, dig-outs, or roadbed resurfacing, the following BMPs be implemented:

- (1) Restrict paving and repaving activity to exclude periods of rainfall or predicted rainfall²⁸ unless required by emergency conditions.
- (2) Install sand bags or gravel bags and filter fabric at all susceptible storm drain inlets and at manholes to prevent spills of paving products and tack coat;
- (3) Prevent the discharge of release agents including soybean oil, other oils, or diesel into the MS4 or receiving waters.
- (4) Prevent non-storm water runoff from water use for the roller and for evaporative cooling of the asphalt.
- (5) Clean equipment over absorbent pads, drip pans, plastic sheeting or other material to capture all spillage and dispose of properly.
- (6) Collect liquid waste in a container, with a secure lid, for transport to a maintenance facility to be reused, recycled or disposed of properly.
- (7) Collect solid waste by vacuuming or sweeping and securing in an appropriate container for transport to a maintenance facility to be reused, recycled or disposed of properly.
- (8) Cover the “cold-mix” asphalt (i.e., stockpiled, pre-mixed aggregate and asphalt binder) with protective sheeting during a rainstorm.
- (9) Cover loads with tarp before haul-off to a storage site, and do not overload trucks.
- (10) Minimize airborne dust by using water spray during grinding.
- (11) Avoid stockpiling soil, sand, sediment, asphalt material and asphalt grindings materials or rubble in or near MS4 or receiving waters.
- (12) Protect stockpiles with a cover or sediment barriers during a rain.

iv. Parking Facilities Maintenance

- (1) City-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-owned parking lot be cleaned less than once a month.

10. Emergency Procedures

- i. The City of Long Beach may conduct repairs of essential public service systems and infrastructure in emergency situations with a self-waiver of the provisions of this Order as follows:

²⁸ A probability of precipitation (POP) of 50% is required.

- (1) The City of Long Beach shall abide by all other regulatory requirements, including notification to other agencies as appropriate.
- (2) 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.
- (3) Minor repairs of essential public service systems and infrastructure in emergency situations (that can be completed in less than one week) are not subject to the notification provisions. Appropriate BMPs to reduce the threat to water quality shall be implemented.

11. Municipal Employee and Contractor Training

- i. The City of Long Beach shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees in targeted positions (whose interactions, jobs, and activities affect storm water quality) on the requirements of the overall storm water management program, or shall ensure contractors performing privatized/contracted municipal services are appropriately trained to:
 - (1) Promote a clear understanding of the potential for activities to pollute storm water.
 - (2) Identify opportunities to require, implement, and maintain appropriate BMPs in their line of work.

Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

- ii. The City of Long Beach shall, no later than 1 year after Order adoption and annually thereafter before June 30, train all of their employees and contractors who use or have the potential to use pesticides or fertilizers (whether or not they normally apply these as part of their work). Training programs shall address:
 - (1) The potential for pesticide-related surface water toxicity.
 - (2) Proper use, handling, and disposal of pesticides.
 - (3) Least toxic methods of pest prevention and control, including IPM.
 - (4) Reduction of pesticide use.

- iii. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.

M. Illicit Connections and Illicit Discharges Elimination Program

1. General

- i. The City of Long Beach shall continue to implement an Illicit Connection and Illicit Discharge Elimination (IC/ID) Program to detect, investigate, and eliminate IC/IDs to the MS4. The IC/ID Program must be implemented in

accordance with the requirements and performance measures specified in this Order.

- ii. As stated in Part VII.B of this Order, the City of Long Beach must have adequate legal authority to prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.
- iii. The City of Long Beach's IC/ID Program shall consist of at least the following major program components:
 - (1) Procedures for conducting source investigations for IC/IDs
 - (2) Procedures for eliminating the source of IC/IDs
 - (3) Procedures for public reporting of illicit discharges
 - (4) Spill response plan
 - (5) IC/IDs education and training for City staff

2. Illicit Discharge Source Investigation and Elimination

- i. The City of Long Beach shall develop written procedures for conducting investigations to identify the source of all suspected illicit discharges, including procedures to eliminate the discharge once the source is located.
- ii. At a minimum, the City of Long Beach shall initiate an investigation(s) to identify and locate the source within 72 hours of becoming aware of the illicit discharge.
- iii. When conducting investigations, the City of Long Beach shall comply with the following:
 - (1) Illicit discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated first.
 - (2) The City of Long Beach shall track all investigations to document at a minimum the date(s) the illicit discharge was observed; the results of the investigation; any follow-up of the investigation; and the date the investigation was closed.
 - (3) The City of Long Beach shall investigate the source of all observed illicit discharges.
- iv. When taking corrective action to eliminate illicit discharges, the City of Long Beach shall comply with the following:
 - (1) If the source of the illicit discharge has been determined to originate within the City of Long Beach's jurisdiction, the City of Long Beach shall immediately notify the responsible party/parties of the problem, and require the responsible party to initiate all necessary corrective actions to eliminate the illicit discharge. Upon being notified that the discharge has been eliminated, the City of Long Beach shall conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned-up to the satisfaction of the City of Long Beach. The City of Long Beach shall document its follow-up investigation. The City of Long Beach may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and

oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VII.D.2.

- (2) 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 within 30 days of such determination and provide all of the information collected regarding efforts to identify its source. The City of Long Beach may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's Progressive Enforcement Policy, per Part VII.D.2.
 - (3) If the source of the illicit discharge cannot be traced to a suspected responsible party, the City shall implement its spill response plan and then initiate a permanent solution as described in Part VII.M.2.v below.
- v. 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, including the inability to find the responsible party/parties, the City of Long Beach shall provide for diversion of the entire flow to the sanitary sewer or provide treatment. In either instance, the City of Long Beach shall notify the Regional Water Board in writing within 30 days of such determination and shall provide a written plan for review and comment that describes the efforts that have been undertaken to eliminate the illicit discharge, a description of the actions to be undertaken, anticipated costs, and a schedule for completion.

3. Identification and Response to Illicit Connections

i. Investigation

The City of Long Beach, upon discovery or upon receiving a report of a suspected illicit connection, shall initiate an investigation within 21 days, to determine the following: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

ii. Elimination

The City of Long Beach, upon confirmation of an illicit MS4 connection, shall ensure that the connection is:

- (1) Permitted or documented, provided the connection will only discharge storm water and non-storm water allowed under this Order or other individual or general NPDES Permits/WDRs, or
- (2) Eliminated within 180 days of completion of the investigation, using its formal enforcement authority, if necessary, to eliminate the illicit connection.

iii. Documentation

Formal records must be maintained for all illicit connection investigations and the formal enforcement taken to eliminate illicit connections.

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

- i. The City of Long Beach shall promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers and an internet site for complaints and spill reporting. The City of Long Beach shall also provide the reporting hotline to City staff to leverage the field staff that has direct contact with the MS4 in detecting and eliminating illicit discharges.
- ii. The City of Long Beach shall implement the central point of contact and reporting hotline requirements listed in this part in one or more of the following methods:
 - (1) By participating in a County-wide sponsored hotline
 - (2) By participating in one or more Watershed Group sponsored hotlines
 - (3) Or individually within its own jurisdiction
 - (4) The City of Long Beach shall continue to maintain the 562-570-DUMP hotline to promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s.
- iii. The City of Long Beach shall ensure that signage adjacent to open channels, as required in Part VII.L.8.vi, includes information regarding dumping prohibitions and public reporting of illicit discharges.
- iv. The City of Long Beach shall develop and maintain written procedures that document how complaint calls are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the City of Long Beach. Any identified changes shall be made to the procedures subsequent to the evaluation.
- v. The City of Long Beach shall maintain documentation of the complaint calls and record the location of the reported spill or IC/ ID and the actions undertaken in response to all IC/ID complaints, including referrals to other agencies.

5. Spill Response Plan

- i. The City of Long Beach shall implement a spill response plan for all sewage and other spills that may discharge into its MS4. The spill response plan shall clearly identify agencies responsible for spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:
 - (1) Coordination with spill response teams throughout all appropriate departments, programs and agencies so that maximum water quality protection is provided.
 - (2) Initiate investigation of all public and employee spill complaints within one business day of receiving the complaint to assess validity.
 - (3) 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

the response should be within 2 hours of gaining legal access to the property.

- (4) Spills that may endanger health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES).

6. Illicit Connection and Illicit Discharge Education and Training

- i. The City of Long Beach must continue to implement a training program regarding the identification of IC/IDs for all municipal field staff, who, as part of their normal job responsibilities (e.g., street sweeping, storm drain maintenance, collection system maintenance, road maintenance), may come into contact with or otherwise observe an illicit discharge or illicit connection to the MS4. Contact information, including the procedure for reporting an illicit discharge, must be readily available to field staff. Training program documents must be available for review by the permitting authority.
- ii. The City of Long Beach shall ensure contractors performing privatized/contracted municipal services such as, 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 are trained regarding IC/ID identification and reporting. The City may provide training or include contractual requirements for IC/ID identification and reporting training. Outside contractors can self-certify, providing they certify they have received all applicable training required in the Permit and have documentation to that effect.
- iii. The City of Long Beach's training program should address, at a minimum, the following:
 - (1) IC/ID identification, including definitions and examples,
 - (2) investigation,
 - (3) elimination,
 - (4) cleanup,
 - (5) reporting, and
 - (6) documentation.
- iv. The City of Long Beach must create a list of applicable positions and contractors which require IC/ID training and ensure that training is provided at least twice during the term of the Order. The City of Long Beach must maintain documentation of the training activities.
- v. New City of Long Beach staff members must be provided with IC/ID training within 180 days of starting employment.

VIII. Total Maximum Daily Loads

A. General

1. The provisions of this Part implement and are consistent with the assumptions and requirements of all available waste load allocations (WLAs) assigned to MS4 discharges established in TMDLs that are wholly or in part the responsibility of the City of Long Beach.

2. The provisions in this Part are designed to ensure the City of Long Beach will achieve WLAs and meet other requirements of TMDLs covering receiving waters impacted by MS4 discharges from the City of Long Beach.
3. The City of Long Beach shall comply with the applicable water quality-based effluent limitations and/or receiving water limitations contained in this Part, consistent with the assumptions and requirements of the WLAs established in the TMDLs, including implementation plans and schedules, where provided for in the State adoption and approval of the TMDL (40 CFR §122.44(d)(1)(vii)(B); Cal. Wat. Code §13263(a)).
4. The City of Long Beach may comply with water quality-based effluent limitations and receiving water limitations using any lawful means.

B. Compliance Determination

1. The City of Long Beach shall demonstrate compliance at compliance monitoring points established in each TMDL or, if not specified in the TMDL, at locations identified in an approved TMDL monitoring plan or in accordance with an approved integrated monitoring program per Attachment E, Part IX.D.16 (Integrated Watershed Monitoring and Assessment).
2. Compliance with water quality-based effluent limitations shall be determined as described in Part VIII.E-F or as otherwise set forth in TMDL specific provisions in this Part.
3. Pursuant to Part VII.C the City of Long Beach may, individually or as part of a watershed-based group, develop and submit for approval by the Regional Water Board Executive Officer a Watershed Management Program that addresses all water quality-based effluent limitations and receiving water limitations to which the City of Long Beach is subject pursuant to established TMDLs.

C. Commingled Discharges

1. A number of the TMDLs establish WLAs that are assigned jointly to a group of Permittees whose storm water and/or non-storm water discharges are or may be commingled in the MS4 prior to discharge to the receiving water subject to the TMDL.
2. In these cases, pursuant to 40 CFR section 122.26(a)(3)(vi), the City of Long Beach is only responsible for discharges from the MS4 it owns and/or operates.
3. Where the City of Long Beach has commingled discharges to the receiving water, compliance at the outfall to the receiving water or in the receiving water shall be determined for the group of Permittees as a whole unless the City of Long Beach demonstrates that its discharge did not cause or contribute to the exceedance, pursuant to Part VIII.C.5 below.
4. For purposes of compliance determination, the City of Long Beach is responsible for demonstrating that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation(s) at the outfall or receiving water limitation(s) in the target receiving water.

5. The City of Long Beach may demonstrate that its discharge did not cause or contribute to an exceedance of an applicable water quality-based effluent limitation or receiving water limitation in any of the following ways:
 - a. Demonstrate that there is no discharge from the City of Long Beach's MS4 into the applicable receiving water during the time period subject to the water quality-based effluent limitation and/or receiving water limitation; or
 - b. Demonstrate that the discharge from the City of Long Beach's MS4 is controlled to a level that does not exceed the applicable water quality-based effluent limitation; or
 - c. For exceedances of bacteria receiving water limitations or water quality-based effluent limitations, demonstrate through a source investigation pursuant to protocols established under California Water Code Section 13178 or for exceedances of other receiving water limitations or water quality-based effluent limitations, demonstrate using other accepted source identification protocols, that pollutant sources within the jurisdiction of the City of Long Beach or the City of Long Beach's MS4 have not caused or contributed to the exceedance of the receiving water limitation(s).

D. Receiving Water Limitations Addressed by a TMDL

1. For receiving water limitations in Part VI.A associated with water body-pollutant combinations addressed in a TMDL, the City of Long Beach shall achieve compliance with the receiving water limitations in Part VI.A as outlined in this Part VIII of this Order.
2. The City of Long Beach's full compliance with the applicable TMDL requirement(s), including compliance schedules, of this Part VIII constitutes compliance with Part VI.A of this Order for the specific pollutant addressed in the TMDL.
3. As long as the City of Long Beach is in compliance with the applicable TMDL requirements in a time schedule order (TSO) issued by the Regional Water Board pursuant to California Water Code Sections 13300 and 13385(j)(3), it is not the Regional Water Board's intention to take an enforcement action for violations of Part VI.A of this Order for the specific pollutant(s) addressed in the TSO.

E. Interim Water Quality-Based Effluent Limitations and Receiving Water Limitations

1. The City of Long Beach shall be considered in compliance with an applicable interim water quality-based effluent limitation and interim receiving water limitation for a pollutant associated with a specific TMDL if any of the following is demonstrated:
 - a. There are no violations of the interim water quality-based effluent limitation for the pollutant associated with a specific TMDL at the City of Long Beach's applicable MS4 outfall(s),²⁹ including an outfall to the receiving water that collects discharges from multiple Dischargers' jurisdictions;

²⁹ An outfall may include a manhole or other point of access to the MS4 at the Permittee's jurisdictional boundary.

- b. There are no exceedances of the applicable receiving water limitation for the pollutant 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 water quality-based effluent limitation and/or receiving water limitation for the pollutant associated with a specific TMDL; or
- d. The City of Long Beach has submitted and is fully implementing an approved WMP or EWMP pursuant to Part VII.C.
 - i. To be considered fully implementing an approved WMP or EWMP, the City of Long Beach must be implementing all actions consistent with the approved program and applicable compliance schedules, including structural BMPs.
 - ii. Structural storm water BMPs or systems of BMPs should be designed and maintained to treat storm water runoff from the 85th percentile, 24-hour storm, where feasible and necessary to achieve applicable WQBELs and receiving water limitations, and maintenance records must be up-to-date and available for inspection by the Regional Water Board.
 - iii. If the City of Long Beach does not implement the WMP in accordance with the milestones and compliance schedules, the City shall demonstrate compliance with its interim water quality-based effluent limitations and/or receiving water limitations pursuant to Part VIII.E.1.a-c above.
 - iv. Upon notification of the City of Long Beach's intent to develop a WMP or EWMP and prior to approval of its WMP or EWMP, the City of Long Beach's full compliance with all of the following requirements shall constitute the City of Long Beach's compliance with provisions pertaining to interim WQBELs with compliance deadlines occurring prior to approval of a WMP or EWMP. This subdivision d shall not apply to interim trash WQBELs.
 - (1) Provides timely notice of its intent to develop a WMP or EWMP,
 - (2) Meets all interim and final deadlines for development of a WMP or EWMP,
 - (3) For the area to be covered by the WMP or EWMP, targets implementation of watershed control measures in its existing storm water management program, including watershed control measures to eliminate non-storm water discharges of pollutants through the MS4 to receiving waters, to address known contributions of pollutants from MS4 discharges that cause or contribute to the impairment(s) addressed by the TMDL(s), and

- (4) Receives final approval of its WMP or EWMP within the applicable timeframe in Table 8, respectively.

F. Final Water Quality-based Effluent Limitations and/or Receiving Water Limitations

1. The City of Long Beach shall be deemed in compliance with an applicable final water quality-based effluent limitation and final receiving water limitation for the pollutant(s) associated with a specific TMDL if any of the following is demonstrated:
 - a. There are no violations of the final water quality-based effluent limitation for the specific pollutant at the City of Long Beach's applicable MS4 outfall(s)³⁰;
 - 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 water quality-based effluent limitation and/or receiving water limitation for the pollutant(s) associated with a specific TMDL; or
 - d. In drainage areas where the City 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 project. This provision (iv) shall not apply to final trash WQBELs.

G. US EPA Established TMDLs

1. TMDLs established by the US EPA, to which the City of Long Beach is subject, do not contain an implementation plan adopted pursuant to California Water Code Section 13242. However, US EPA has included implementation recommendations as part of these TMDLs. In lieu of inclusion of numeric water quality based effluent limitations at this time, this Order requires the City of Long Beach, where subject to WLAs in US EPA established TMDLs, to propose and implement best management practices (BMPs) that will be effective in achieving compliance with US EPA established numeric WLAs. The Regional Water Board may, at its discretion, revisit this decision within the term of this Order or in a future permit, as more information is developed to support the inclusion of numeric water quality based effluent limitations.
 - a. The City of Long Beach shall propose BMPs to achieve the WLAs contained in the applicable US EPA established TMDL(s), and a schedule for implementing the BMPs that is as short as possible, in a WMP or EWMP.
 - b. The City of Long Beach may either individually submit a WMP, or may jointly submit a WMP or EWMP with other Permittees subject to the WLAs contained in the US EPA established TMDL.

³⁰ Ibid.
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- c. At a minimum, the City of Long Beach shall include the following information in its Watershed Management Program or EWMP, relevant to each applicable US EPA established TMDL:
 - i. Available data demonstrating the current quality of the City of Long Beach's 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 description of BMPs that have been implemented, and/or are currently being implemented by the City of Long Beach to achieve the WLA(s), if any;
 - iii. A detailed time schedule of specific actions the City of Long Beach will take in order to achieve compliance with the applicable WLA(s);
 - iv. A demonstration that the time schedule requested is as short as possible, taking into account the time since US 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);
 - (1) For the Long Beach City Beaches Bacteria TMDL established by US EPA in 2012, for all locations with the exception of the Los Angeles River Estuary, in no case shall the time schedule to achieve the final numeric WLAs during dry weather exceed five years from the effective date of this Order; and
 - v. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and numeric milestones and the date(s) for their achievement.
- d. For the TMDLs established by US EPA, the City of Long Beach shall submit a draft of a WMP or EWMP to the Regional Water Board Executive Officer for approval per the schedule in Table 8.
- e. If the City of Long Beach does not submit a WMP, or the plan is determined to be inadequate by the Regional Water Board Executive Officer and the City of Long Beach does not make the necessary revisions within 90 days of written notification that plan is inadequate, the City of Long Beach shall be required to demonstrate compliance with the numeric WLAs immediately based on monitoring data collected under the MRP (Attachment E) for this Order.

H. State Adopted TMDLs where Final Compliance Deadlines have Passed

1. The City of Long Beach shall comply immediately with water quality-based effluent limitations and/or receiving water limitations to implement WLAs in state-adopted TMDLs for which final compliance deadlines have passed pursuant to the TMDL implementation schedule.
2. If the City of Long Beach believes that additional time to comply with the final water quality-based effluent limitations and/or receiving water limitations is

necessary, the City of Long Beach may request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

3. The City of Long Beach may either individually request a TSO, or may jointly request a TSO with all other Permittees subject to the water quality-based effluent limitations and/or receiving water limitations, to implement the WLAs in the state-adopted TMDL.
4. At a minimum, a request for a time schedule order shall include the following:
 - i. 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 description and chronology of structural controls and source control efforts, since the effective date of the TMDL, to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;
 - iii. Justification of the need for additional time to achieve the water quality-based effluent limitations and/or receiving water limitations;
 - iv. 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;
 - v. A demonstration that the time schedule requested is as short as possible, 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
 - vi. 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:
 - (1) Effluent limitation(s) for the pollutant(s) of concern; and
 - (2) Actions and milestones leading to compliance with the effluent limitation(s).

I. Colorado Lagoon OC Pesticides, PAHs, PCBs, Metals and Sediment Toxicity TMDL

1. The City of Long Beach shall comply with the following interim water quality-based effluent limitations as of the effective date of this Order, for sediments within Colorado Lagoon:

Table 19. Colorado Lagoon Interim Water Quality-based Effluent Limitations

Constituent	Interim Concentration-based Effluent Limitations Monthly Average (µg/dry kg)
Chlordane	129.65
Dieldrin	26.20
Lead	399,500
Zinc	565,000
PAHs	4,022
PCBs	89.90
DDT	149.80

- The City of Long Beach shall comply with the following final water quality-based effluent limitations no later than July 28, 2018, for sediments within Colorado Lagoon:

Table 20. Colorado Lagoon Final Water Quality-based Effluent Limitations

Constituent	Final Concentration Based Effluent Limitations Monthly Average (µg/dry kg)
Chlordane	0.50
Dieldrin	0.02
Lead	46,700
Zinc	150,000
PAHs	4,022
PCBs	22.70
DDT	1.58

- The mass-based water quality-based effluent limitations are shared by MS4 Permittees, which includes the City of Long Beach along with LACFCD and Caltrans. The City of Long Beach shall comply with the following grouped final water quality-based effluent limitations no later than July 28, 2018, expressed as an annual discharge of sediment to Colorado Lagoon:
- Compliance with the concentration-based water quality-based effluent limitations shall be determined by pollutant concentrations in the sediment in Colorado Lagoon at points in the West Arm, North Arm and Central Arm that represent the cumulative inputs from the MS4 drainage to the lagoon.

Table 21. Colorado Lagoon Annual Mass-based Effluent Limitations

Constituent	Annual Mass-based Effluent Limitations (mg/yr)				
	Project 452	Line I	Termino Ave	Line K	Line M
Chlordane	5.10	3.65	12.15	1.94	0.73
Dieldrin	0.20	0.15	0.49	0.08	0.03
Lead	476,646.68	340,455.99	1,134,867.12	181,573.76	68,116.09
Zinc	1,530,985.05	1,093,541.72	3,645,183.47	583,213.37	218,788.29
PAHs	41,050.81	29,321.50	97,739.52	15,637.89	5,866.44
PCBs	231.69	165.49	551.64	88.26	33.11
DDT	16.13	11.52	38.40	6.14	2.30

J. Los Cerritos Channel Metals TMDL (USEPA established)

1. The City of Long Beach shall comply with the following dry weather³¹ WLAs, expressed as total recoverable metals discharged to Los Cerritos Channel, per the provisions in Part VIII.G:

Table 22. Los Cerritos Channel Dry Weather Waste Load Allocations

Constituent	WLA Daily Maximum (g/day)
Copper	41.4

2. The City of Long Beach shall comply with the following wet weather³² WLA, expressed as total recoverable metals discharged to Los Cerritos Channel, per the provisions in Part VIII.G:

Table 23. Los Cerritos Channel Wet Weather Waste Load Allocations

Constituent	WLA Daily Maximum (g/day)
Copper	2.904×10^{-6} x daily storm volume (L)
Lead	16.560×10^{-6} x daily storm volume (L)
Zinc	28.385×10^{-6} x daily storm volume (L)

³¹Dry weather is defined as any day when the maximum daily flow in Los Cerritos Channel is less than 23 cubic feet per second (cfs) measured at Stearns Street Monitoring Station.

³²Wet weather is defined as any day when the maximum daily flow in Los Cerritos Channel is equal to or greater than 23 cfs measured at Stearns Street Monitoring Station.

K. Beach City Beaches and Los Angeles River Estuary TMDLs for Indicator Bacteria (USEPA established)

1. The City of Long Beach shall comply with the following final WLAs per the provisions in Part VIII.G:

Table 24. Long Beach City Beaches and Los Angeles River Estuary Final Waste Load Allocations

Constituent	WLA (MPN or cfu)	
	Daily Maximum	Geometric Mean
Total coliform*	10,000/100 mL	1,000/100 mL
Fecal coliform	400/100 mL	200/100 mL
Enterococcus	104/100 mL	35/100 mL

Total coliform density shall not exceed a daily maximum of 1,000/100 mL, if the ratio of fecal-to-total coliform exceeds 0.1.

*

2. Receiving Water Limitations

The City of Long Beach shall comply with the following geometric mean receiving water limitations for all compliance monitoring locations per the provisions in Part VIII.G:

Table 25. Long Beach City Beaches and Los Angeles River Estuary Geometric Mean Receiving Water Limitations

Constituent	Geometric Mean (MPN or cfu)
Total coliform	1,000/100 mL
Fecal coliform	200/100 mL
Enterococcus	35/100 mL

The City of Long Beach shall comply with the following final single sample bacteria WLAs per the provisions of Part VIII.G:

Table 26. Allowable Exceedance Days of the Single Sample Maximum for Daily and Weekly Sampling

Site Id	Monitoring Location	Summer Dry*		Winter Dry*		Wet	
		Daily	Weekly	Daily	Weekly	Daily	Weekly
LARE	LA River Estuary	0	0	9	2	17	3
B63	Long Beach City Beach 3 rd Place	0	0	9	2	17	3
B5	Long Beach City Beach Projection	0	0	9	2	17	3

Site Id	Monitoring Location	Summer Dry*		Winter Dry*		Wet	
		Daily	Weekly	Daily	Weekly	Daily	Weekly
	of 5 th Place						
B56	Long Beach City Beach projection of 10 th Place	0	0	9	2	17	3
B6	Long Beach City Beach projection of 16th Place	0	0	9	2	17	3
B60	Long Beach City Beach Projection of Molino Ave	0	0	9	2	17	3
B7	Long Beach City Beach Projection of Coronado Ave	0	0	9	2	17	3
B62	Long Beach City Beach Projection of 36 th Place	0	0	9	2	17	3
B8	LBCB – W/side of Belmont Pier	0	0	9	2	17	3
B3	LBCB – E/side of Belmont Pier	0	0	9	2	17	3
B9	Long Beach City Beach Projection of Prospect Ave	0	0	9	2	17	3
B64	Long Beach City Beach Projection of Granada Ave	0	0	7	1	17	3
B65	Long Beach City Beach Projection of 54 th Place	0	0	6	1	17	3
B10	Long Beach City Beach Projection of 55 th Place	0	0	5	1	17	3

Site Id	Monitoring Location	Summer Dry*		Winter Dry*		Wet	
		Daily	Weekly	Daily	Weekly	Daily	Weekly
B66	Long Beach City Beach Projection of 62nd Place	0	0	7	1	17	3
B11	Long Beach City Beach Projection of 72nd Place	0	0	9	2	17	3

L. Los Angeles River Metals TMDL

1. Final Water Quality-Based Effluent Limitations

- a. The watershed is divided into five jurisdictional groups based on the subwatersheds of the tributaries that drain to each reach of the river. Each jurisdictional group shall achieve compliance in prescribed percentages of its subwatershed(s). Jurisdictional groups can be reorganized or subdivided upon approval by the Regional Water Board Executive Officer.
- b. The City of Long Beach shall comply with the following grouped³³ dry weather³⁴ water quality-based effluent limitations no later than January 11, 2024, expressed as total recoverable metals.³⁵

Table 27. Los Angeles River Grouped Dry Weather Water Quality-based Effluent Limitations

Waterbody	Effluent Limitations Daily Maximum (kg/day)		
	Copper	Lead	Zinc
LA River Reach 2	WER ¹ x 0.13	WER ¹ x 0.07	---
LA River Reach 1	WER ¹ x 0.14	WER ¹ x 0.07	---
Compton Creek	WER ¹ x 0.04	WER ¹ x 0.02	---

WER(s) have a default value of 1.0 unless site-specific WER(s) are approved via the Basin Plan Amendment process.

- c. In lieu of calculating loads, the City of Long Beach may demonstrate compliance with the following concentration-based water quality-based effluent limitations during dry weather no later than January 11, 2024, expressed as total recoverable metals:

³³The dry weather water quality-based effluent limitations are grouped-based and shared by the MS4 Permittees that are located within the drainage area.

³⁴Dry weather is defined as any day when the maximum daily flow in the Los Angeles River is less than 500 cfs measured at the Wardlow gage station.

³⁵Dry weather effluent limitations are equal to storm drain flows (critical flows minus median POTW flows minus median open space flows) multiplied by reach specific numeric targets, minus the contribution from direct air deposition.

Table 28. Los Angeles River Concentration-based Water Quality-based Effluent Limitations

Waterbody	Effluent Limitations Daily Maximum (µg total recoverable metals/L)		
	Copper	Lead	Zinc
LA River Reach 2	WER ¹ x 22	WER ¹ x 11	---
LA River Reach 1	WER ¹ x 23	WER ¹ x 12	---
Compton Creek	WER ¹ x 19	WER ¹ x 8.9	---

WER(s) have a default value of 1.0 unless site-specific WER(s) are approved via the Basin Plan Amendment process.

- d. The City of Long Beach shall comply with the following grouped³⁶ wet weather³⁷ water quality-based effluent limitations no later than January 11, 2028, expressed as total recoverable metals discharged to all reaches of the Los Angeles River and its tributaries.

Table 29. Los Angeles River Metals TMDL Grouped Wet Weather Water Quality-based Effluent Limitations

Constituent	Effluent Limitation Daily Maximum (kg/day)
Cadmium	WER ¹ x 2.8×10^{-9} x daily volume (L) – 1.8
Copper	WER ¹ x 1.5×10^{-8} x daily volume (L) – 9.5
Lead	WER ¹ x 5.6×10^{-8} x daily volume (L) – 3.85
Zinc	WER ¹ x 1.4×10^{-7} x daily volume (L) – 83

¹ WER(s) have a default value of 1.0 unless site-specific WER(s) are approved via the Basin Plan Amendment process.

- e. The City of Long Beach shall comply with interim and final water quality-based effluent limitations for metals discharged to the Los Angeles River and its tributaries, per the schedule below:

Table 30. Los Angeles River Metals TMDL Interim and Final Water Quality-based Effluent Limitations Schedule

Deadline	Total Drainage Area Served by the MS4 required to meet water quality-based effluent limitations (%)	
	Dry weather	Wet weather
January 11, 2012	50	25
January 11, 2020	75	--
January 11, 2024	100	50
January 11, 2028	100	100

³⁶The wet weather water quality-based effluent limitations are grouped-based and shared among all MS4 Permittees located within the drainage area.

³⁷Wet weather is defined as any day when the maximum daily flow in the Los Angeles River is equal to or greater than 500 cfs measured at the Wardlow gage station.

M. Los Angeles River Nitrogen TMDL

1. The City of Long Beach shall comply with the following water quality-based effluent limitations as of the effective date of this Order:

Table 31. Los Angeles River Nitrogen TMDL Water Quality-based Effluent Limitations

Water Body	NH ₃ -N (mg/L)		NO ₃ -N (mg/L)	NO ₂ -N (mg/L)	NO ₃ -N+NO ₂ -N (mg/L)
	One-hour Average	Thirty-day Average	Thirty-day Average	Thirty-day Average	Thirty-day Average
Los Angeles River below LA-Glendale WRP	8.7	2.4	8.0	1.0	8.0
Los Angeles Tributaries	10.1	2.3	8.0	1.0	8.0

N. Los Angeles River Bacteria TMDL

1. The City of Long Beach shall comply with the following final water quality-based effluent limitations for discharges to the Los Angeles River and its tributaries during dry weather according to the schedule in Table 36, and during wet weather no later than March 23, 2037:

Table 32. Los Angeles River Bacteria TMDL Final Water Quality-based Effluent Limitations

Constituent	Effluent Limitation (MPN or cfu per 100 mL)	
	Daily Maximum	Geometric Mean
E.coli	235	126

2. The City of Long Beach shall comply with the following grouped³⁸ interim dry weather single sample bacteria water quality-based effluent limitations for specific river segments and tributaries as listed in the table, below, according to the schedule in Table 36:

Table 33: Los Angeles River Bacteria TMDL Grouped Interim Dry Weather Single Sample Bacteria Water Quality-based Effluent Limitations

River Segment or Tributary	Daily Maximum E. coli Load (10 ⁹ MPN/Day)
Los Angeles River Segment A (Willow to Rosecrans)	301
Compton Creek	7

- a. Unexpectedly high-loading outfalls may be excluded from interim compliance calculations under the following circumstances: If an outfall which was 1) loading

³⁸The interim dry weather water quality-based effluent limitations are group-based and shared among all MS4 Permittees located within the drainage area. However, the interim dry weather water quality-based effluent limitations may be distributed based on proportional drainage area, upon approval of the Regional Water Board Executive Officer.

E. coli at a rate less than the 25th percentile of outfalls during the monitoring events used to develop the “MS4 Load Reduction Strategy” (LRS), but, at the time of compliance monitoring, is 2) loading E. coli at a rate greater than the 90th percentile of outfalls, and 3) actions are taken prior to the end of the first phase (i.e. 10 years after the beginning of the segment or tributary specific phase) such that the outfall is returned to a loading less than the 50th percentile of the outfalls at compliance monitoring, then the 90th percentile data from the outfall can be excluded from the compliance loading calculations.

- b. Likewise, if an outfall which was 1) the subject of a dry weather diversion is found, at the time of compliance monitoring, to be 2) contributing greater than the 90th percentile loading rate, and 3) actions are taken such that the outfall is returned to a loading less than the 50th percentile of the outfalls at compliance monitoring, and a maintenance schedule for the diversion is submitted with the compliance report, then the 90th percentile data from the outfall can be excluded from the compliance loading calculations.

3. Receiving Water Limitations

- a. The City of Long Beach shall comply with the following grouped³⁹ final single sample bacteria receiving water limitations for discharges to the Los Angeles River and its tributaries during dry weather according to the schedule in Table 36, and during wet weather no later than March 23, 2037:

Table 34. Los Angeles River Bacteria TMDL Grouped Final Single Sample Bacteria

Time Period	Annual Allowable Exceedance Days of the Single-sample Objective	
	Daily Sampling	Weekly Sampling
Dry Weather	5	1
Non-HFS ⁴⁰ Waterbodies Wet Weather	15	2
HFS Waterbodies Wet Weather	10 (not including HFS days)	2 (not including HFS days)

- b. The City of Long Beach shall comply with the following geometric mean receiving water limitation for discharges to the segments of the Los Angeles River and its tributaries during dry weather according to the schedule in Table 36, and during wet weather no later than March 23, 2037:

Table 35. Los Angeles River Bacteria TMDL Geometric Mean Receiving Water Limitation

Constituent	Geometric Mean (MPN or cfu)	Allowable Exceedances
E. coli	126/100 mL	0

³⁹The final receiving water limitations are group-based and shared among all MS4 Permittees, which includes applicable Permittees covered under the LA County MS4 Permit as well as the City of Long Beach and Caltrans.

⁴⁰HFS stands for high flow suspension as defined in Chapter 2 of the Basin Plan.

Table 36. Los Angeles River Bacteria Implementation Schedule for Dry Weather

Implementation Action	Responsible Parties	Deadline
SEGMENT A (lower Reach 2 and Reach 1 – Rosecrans Avenue to Willow Street)		
First phase – Segment A		
Submit a Load Reduction Strategy (LRS) for Segment A (or submit an alternative compliance plan)	MS4 Permittees discharging to Segment A	September 23, 2016
Complete implementation of LRS	MS4 Permittees discharging to Segment A, if using LRS	March 23, 2021
Achieve interim (or final) water quality-based effluent limitations and submit report to Regional Water Board	MS4 Permittees discharging to Segment A, if using LRS	March 23, 2024
Achieve final water quality-based effluent limitations or demonstrate that non-compliance is due to upstream contributions and submit report to Regional Board	MS4 Permittees discharging to Segment A, if using alternative compliance plan	March 23, 2024
Second phase, if necessary – Segment A for LRS approach only		
Submit a new LRS	MS4 Permittees discharging to Segment A	March 23, 2025
Complete implementation of LRS	MS4 Permittees discharging to Segment A, if using LRS	September 23, 2029
Achieve final water quality-based effluent limitations in Segment A or demonstrate that non-compliance is due to upstream contributions and submit report to Regional Board	MS4 Permittees discharging to Segment A, if using LRS	September 23, 2031
SEGMENT A TRIBUTARY (Compton Creek)		
First phase – Segment A Tributary		
Submit a Load Reduction Strategy (LRS) for Segment A tributary (or submit an alternative compliance plan)	MS4 Permittees discharging to Segment A tributary	March 23, 2018
Complete implementation of LRS	MS4 Permittees discharging to Segment A tributary if using LRS	September 23, 2022
Achieve interim (or final) water quality-based effluent limitations and submit report to Regional Board	MS4 Permittees discharging to Segment A tributary if using LRS	September 23, 2025
Achieve final water quality-based effluent limitations or demonstrate that non-compliance is due to upstream contributions and submit report to Regional Board	MS4 Permittees discharging to Segment A tributary, if using alternative compliance plan	September 23, 2025
Second phase, if necessary – Segment A Tributary for LRS approach only		
Submit a new LRS	MS4 Permittees discharging to Segment A tributary	September 23, 2026
Complete implementation of LRS	MS4 Permittees discharging to Segment A tributary, if using LRS	March 23, 2030
Achieve final water quality-based effluent limitations in Segment A tributary or demonstrate that non-compliance is due to upstream contributions and submit report to Regional Board	MS4 Permittees discharging to Segment A tributary, if using LRS	March 23, 2032

4. Compliance

- a. The City of Long Beach may demonstrate compliance with the final dry weather limitations by demonstrating that final receiving water limitations are met in the receiving waters or by demonstrating one of the following conditions at outfalls to the receiving waters:
 - i. Flow-weighted concentration of *E. coli* in MS4 discharges during dry weather is less than or equal to 235 MPN/100mL, based on a weighted-average using flow rates from all measured outfalls; or
 - ii. Zero discharge during dry weather.
- b. In addition, the City of Long Beach may differentiate their dry weather discharges from other dischargers or upstream contributions by demonstrating one of the following conditions at outfalls to the receiving waters or at segment, tributary or jurisdictional boundaries:
 - i. The flow-weighted concentration of *E. coli* in the City's individual discharge or in a group of Permittees' collective discharge during dry weather is less than or equal to 235 MPN/100mL, based on a weighted-average using flow rates from all measured outfalls; or
 - ii. Zero discharge from the City's individual outfall(s) or from a group of Permittees' outfall(s) during dry weather; or
 - iii. Demonstration that the MS4 loading of *E. coli* to the segment or tributary during dry weather is less than or equal to the calculated loading rate that would not cause or contribute to exceedances based on the loading capacity representative of conditions in the River at the time of compliance.
- c. The interim dry weather water quality-based effluent limitations are group-based, shared among all MS4 Permittees that drain to a segment or tributary. However, the interim dry weather water quality-based effluent limitations may be distributed based on proportional drainage area, upon approval of the Regional Water Board Executive Officer.

O. Los Angeles River Trash TMDL

- 1. The City of Long Beach shall comply with the final water quality-based effluent limitation of zero trash discharged to the Los Angeles River no later than September 30, 2016 and every year thereafter.
- 2. The City of Long Beach shall comply with interim and final water quality-based effluent limitations for trash discharged to the Los Angeles River, per the schedule below:

Table 37. Los Angeles River Watershed Trash Effluent Limitations⁴⁰ per Storm Year⁴¹ (gallons of uncompressed Trash)

	Baseline	2013 (20%)	2014 (10%)	2015 (3.3%)	2016 ⁴¹ (0%)
Long Beach	87135	17427	8713.5	2875.46	0

⁴¹Permittees shall achieve their final effluent limitation of zero trash discharge for the 2015-2016 storm year and every year thereafter.

Table 38. Los Angeles River Watershed Trash Effluent Limitations³ per Storm Year⁴ (pounds of drip-dry trash)

	Baseline	2013 (20%)	2014 (10%)	2015 (3.3%)	2016 ⁴² (0%)
Long Beach	149759	29951.8	14975.9	4942.05	0

a. Effluent Limitations

The City of Long Beach shall comply with the interim and final WQBELs for trash as follows:

b. Compliance

Pursuant to CWC Section 13360(a), the City of Long Beach may comply with the trash effluent limitations using any lawful means. Such compliance options are broadly classified as *full capture*, *partial capture*, *institutional controls*, or *minimum frequency of assessment and collection*, as described below, and any combination of these may be employed to achieve compliance:

(1) Full Capture Systems:

- (a) The Basin Plan authorizes the Los Angeles Regional Board Executive Officer to certify *full capture systems*, which are systems that meet the operating and performance requirements as described in this Order, and the procedures identified in “Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System.”⁴³
- (b) The City of Long Beach is authorized to comply with the effluent limitations through certified *full capture systems* provided the requirements of paragraph (c), immediately below, and any conditions in the certification, continue to be met.
- (c) The City of Long Beach may comply with the effluent limitations through progressive installation of *full capture systems* throughout their jurisdictional areas until all areas draining to the Los Angeles River system are addressed. For purposes of this Order, attainment of the effluent limitations shall be conclusively presumed for any drainage area to the Los Angeles River (and its tributaries), where certified *full capture systems* treat all drainage from the area, provided that the *full capture systems* are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Los Angeles Regional Board.

⁴² Permittees shall achieve their final effluent limitation of zero trash discharge for the 2015-2016 storm year and every year thereafter.

⁴³ The Regional Water Board currently recognizes eight *full capture systems*. These are: Vortex Separation Systems (VSS) and seven other Executive Officer certified *full capture systems*, including specific types or designs of trash nets; two gross solids removal devices (GSRDs); catch basin brush inserts and mesh screens; vertical and horizontal trash capture screen inserts; and a connector pipe screen device. See August 3, 2004 Los Angeles Regional Water Quality Control Board Memorandum titled “Procedures and Requirements for Certification of a Best Management Practice for Trash Control as a Full Capture System.”

- (d) The City of Long Beach shall be deemed in compliance with its final effluent limitation if the City of Long Beach demonstrates that all drainage areas under its jurisdiction and/or authority are serviced by appropriate certified *full capture systems* as described in paragraph (1)(c).
- (e) The City of Long Beach shall be deemed in compliance with its interim effluent limitations, where applicable:
- (i) By demonstrating that *full capture systems* treat the percentage of drainage areas in the watershed that corresponds to the required trash abatement.
 - (ii) Alternatively, the City of Long Beach may propose a schedule for installation of *full capture systems* in areas under its jurisdiction and/or authority within a given watershed, targeting first the areas of greatest trash generation, for the Los Angeles Regional Board Executive Officer's approval. The Los Angeles Regional Board Executive Officer shall not approve any such schedule that does not result in timely compliance with the final effluent limitations, consistent with the established TMDL implementation schedule and applicable State policies. The City of Long Beach shall be deemed in compliance with its interim effluent limitations provided it is fully in compliance with any such approved schedule.
- (2) Partial Capture Devices and Institutional Controls: The City of Long Beach may comply with the interim and final effluent limitations through the installation of *partial capture devices* and the application of *institutional controls*.⁴⁴
- (a) Trash discharges from areas serviced solely by *partial capture devices* may be estimated based on demonstrated performance of the device(s) in the implementing area.⁴⁵ That is, trash reduction is equivalent to the *partial capture devices*' trash removal efficiency multiplied by the percentage of drainage area serviced by the devices.
 - (b) Except as provided in subdivision (c), immediately below, trash discharges from areas addressed by *institutional controls* and/or *partial capture devices* (where site-specific performance data is not available) shall be calculated using a mass balance approach, based on the daily generation rate (DGR) for a representative area.⁴⁶ The DGR shall be determined from direct measurement of trash deposited in the drainage area during any thirty-day period between June 22nd and September 22nd exclusive of rain events⁴⁷, and shall be re-calculated every year thereafter unless a less frequent period for recalculation is approved by the Regional Water Board Executive Officer. The DGR

⁴⁴ While interim effluent limitations may be complied with using *partial capture devices*, compliance with final effluent limitations cannot be achieved with the exclusive use of *partial capture devices*.

⁴⁵ Performance shall be demonstrated under different conditions (e.g. low to high trash loading).

⁴⁶ The area(s) should be representative of the land uses and activities within the Permittee's authority and shall be approved by the Executive Officer prior to the 30-day collection period.

⁴⁷ Provided no special events are scheduled that may affect the representative nature of that collection period.

shall be calculated as the total amount of trash collected during this period divided by the length of the collection period.

$$DGR = (\text{Amount of trash collected during a 30-day collection period}^{48} / (30 \text{ days}))$$

The DGR for the applicable area under the City of Long Beach's jurisdiction and/or authority shall be extrapolated from that of the representative drainage area(s). A mass balance equation shall be used to estimate the amount of trash discharged during a storm event.⁴⁹ The *Storm Event Trash Discharge* for a given rain event in the City of Long Beach's drainage area shall be calculated by multiplying the number of days since the last street sweeping by the DGR and subtracting the amount of any trash recovered in the catch basins.⁵⁰ For each day of a storm event that generates precipitation greater than 0.25 inch, the City of Long Beach shall calculate a *Storm Event Trash Discharge*.

$$\text{Storm Event Trash Discharge} = [(Days \text{ since last street sweeping} * DGR)] - [Amount \text{ of trash recovered from catch basins}]^{51}$$

The sum of the *Storm Event Trash Discharges* for the storm year shall be the City of Long Beach's calculated annual trash discharge.

$$\text{Total Storm Year Trash Discharge} = \sum \text{Storm Event Trash Discharges from Drainage Area}$$

- (c) The Executive Officer may approve alternative compliance monitoring approaches for calculating total storm year trash discharge, upon finding that the program will provide a scientifically-based estimate of the amount of trash discharged from the City of Long Beach's MS4.

(3) Combined Compliance Approaches:

The City of Long Beach may comply with their interim and final effluent limitations through a combination of *full capture systems*, *partial capture devices*, and *institutional controls*. Where the City of Long Beach relies on a combination of approaches, it shall demonstrate compliance with the interim and final effluent limitations as specified in Part O.2.b(1) in areas where *full capture systems* are installed and as specified in Part O.2.b(2) as appropriate, in areas where *partial capture devices* and *institutional controls* are applied.

(4) Additional Compliance Provisions and Alternatives for revised Los Angeles River Trash TMDL:

For the Los Angeles River Trash TMDL, the City of Long Beach may employ alternative compliance options for FCS; partial capture devices

⁴⁸ Between June 22nd and September 22nd

⁴⁹ Amount of trash shall refer to the uncompressed volume (in gallons) or drip-dry weight (in pounds) of trash collected.

⁵⁰ Any negative values shall be considered to represent a zero discharge.

⁵¹ When more than one storm event occurs prior to the next street sweeping the discharge shall be calculated from the date of the last assessment.

and the application of institutional controls; or scientifically based alternative compliance approaches as detailed below. If using an alternative compliance option, the City of Long Beach shall submit a revised Watershed Management Program for Executive Officer approval prior to use of the alternative compliance option.

(a) FCS Technical Infeasibility: As an alternative to subpart b.i(1)(d) above, in drainage areas where the vast majority of catch basins are retrofitted with 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 trash effluent limitation if all of the following criteria are met:

- (i) 98% of all catch basins within the City's jurisdictional land area in the watershed are retrofitted with FCS (or, alternatively, 98% of the City's drainage area is addressed by FCS) and at least 97% of the catch basins (or, alternatively, drainage area) within the City's jurisdiction in the subwatershed (the smaller of the HUC-12 equivalent area or tributary subwatershed) are retrofitted with FCS.
- (ii) The City of Long Beach submits to the Regional Water Board a report for Executive Officer concurrence, detailing the technical infeasibility of FCS retrofits in the remaining catch basins and evaluating the feasibility of partial capture devices, and the potential to install FCS or partial capture devices along the storm drain or at the MS4 outfall down gradient from the catch basin.
- (iii) The City of Long Beach submits to the Regional Water Board a report for Executive Officer approval, detailing the partial capture devices and/or institutional controls that are currently and will continue to be implemented in the affected subwatershed(s), including an assessment of the effectiveness of the partial capture devices and/or institutional controls using existing data and studies representative of the subwatershed or jurisdictional area.

In addition, the City shall 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). Such re-evaluation shall occur within one year of the identification of the significant changes

- (b) Mass Balance Equivalency:** Compliance with interim and final effluent limitations through the installation of partial capture devices and the application of institutional controls. If the City of Long Beach employs partial capture devices or institutional controls, it shall use a mass balance approach based on the trash daily generation rate (DGR), to demonstrate compliance.

The DGR shall be reassessed annually. The City of Long Beach may request a less frequent assessment of its DGR for Executive Officer approval when the final effluent limitation for trash has been met (as described below) and the the City continues to implement at the same level of effort partial capture devices and institutional controls. A return to annual DGR calculation shall be required for a period of years to be determined by the Executive Officer after significant land use changes.

If the City of Long Beach employs institutional controls or a combination of full capture systems, partial capture devices, and institutional controls, it shall be deemed in compliance with its final effluent limitation for trash when the reduction of trash from the jurisdiction's baseline load, in Part VIII.O.2, 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 trash effluent limitation if all of the following criteria are met:

- (i) The City of Long Beach submits to the Regional Water Board a report for Executive Officer approval, including, two or more consecutive years of data showing that the City of Long Beach's compliance was at or above a 97% reduction in its baseline trash load; an evaluation of institutional controls in the jurisdiction demonstrating continued effectiveness and any potential enhancements; and demonstration that opportunities to implement partial capture devices have been fully exploited

- (c) Scientifically Based Alternative:** If the City of Long Beach employs an alternative compliance approach, it shall conduct studies of institutional controls and partial capture devices for its particular subwatershed(s) or demonstrate that existing studies are representative and transferable to the implementing area for Executive Officer approval. The City of Long Beach shall also provide a schedule for periodic compliance effectiveness demonstration and evaluation. FCS and partial capture devices shall be properly sized, operated, and maintained consistent with sizing, operation, and maintenance schedules used to determine their effectiveness.

(5) If the City of Long Beach is not in compliance with its applicable interim and/or final trash effluent limitation then it shall be in violation of this Order.

(a) If the City of Long Beach relying on *partial capture devices* and/or *institutional controls* has violated its interim and/or final effluent limitation(s), the City of Long Beach shall be presumed to have violated the applicable limitation for each day of each storm event that generated precipitation greater than 0.25 inch during the applicable storm year, except those storm days on which it establishes that its cumulative Storm Event Trash Discharges has not exceeded the applicable effluent limitation.

(b) If the City of Long Beach relying on *full capture systems* has failed to demonstrate that the *full capture systems* for any drainage area are adequately sized and maintained, and that maintenance records are up-to-date and available for inspection by the Regional Water Board, and that it is in compliance with any conditions of its certification, shall be presumed to have discharged trash in an amount that corresponds to the percentage of the baseline waste load allocation represented by the drainage area in question.

(i) The City of Long Beach may overcome this presumption by demonstrating (using any of the methods authorized in Part VIII.O.2.b(2)) that the actual or calculated discharge for that drainage area is in compliance with the applicable interim or final effluent limitation.

(6) The City of Long Beach shall be held liable for violations of the effluent limitations assigned to their area. If the City of Long Beach's compliance strategy includes *full or partial capture devices* and it chooses to install a full or partial capture device in the MS4 physical infrastructure of another public entity, it is responsible for obtaining all necessary permits to do so. If the City of Long Beach believes it is unable to obtain the permits needed to install a full capture or partial capture device within another Discharger's MS4 physical infrastructure, either Discharger may request the Executive Officer to hold a conference between the City and the other discharger. Nothing in this Order shall affect the right of that public entity or a Discharger to seek indemnity or other recourse from the other as they deem appropriate. Nothing in this subsection shall be construed as relieving a Discharger of any liability that the City of Long Beach would otherwise have under this Order.

c. Monitoring and Reporting Requirements (pursuant to California Water Code Section 13383)

i. The City of Long Beach shall submit a TMDL Compliance Report as part of its Annual Report detailing compliance with the applicable interim and/or final effluent limitations. Reporting shall include the information specified below. The report shall be submitted on the reporting form specified by the Los Angeles Regional Water Board Executive Officer. The report shall be signed

under penalty of perjury by the City of Long Beach's principal executive officer or ranking elected official or duly authorized representative of the officer, consistent with Part V.B of Attachment D (Standard Provisions), who is responsible for ensuring compliance with this Order. The City of Long Beach shall be charged with and shall demonstrate compliance with its applicable effluent limitations beginning with its December 15, 2014, TMDL Compliance Report.

(1) Reporting Compliance based on Full Capture Systems: Discharger shall provide information on the number and location of full capture installations, the sizing of each full capture installation, the drainage areas addressed by these installations, and compliance with the applicable interim or final effluent limitation, in its TMDL Compliance Report. The Los Angeles Water Board will periodically audit sizing, performance, and other data to validate that a system satisfies the criteria established for a *full capture system* and any conditions established by the Regional Water Board Executive Officer in the certification.

(2) Reporting Compliance based on Partial Capture Systems and/or Institutional Controls:

(a) Using Performance Data Specific to the City of Long Beach's Area: In its TMDL Compliance Report, a Discharger shall provide: (i) site-specific performance data for the applicable device(s); (ii) information on the number and location of such installations, and the drainage areas addressed by these installations; and (iii) calculated compliance with the applicable effluent limitations.

(b) Using Direct Measurement of Trash Discharge: Discharger shall provide an accounting of DGR and trash removal via street sweeping, catch basin clean outs, etc., in a database to facilitate the calculation of discharge for each rain event. The database shall be maintained and provided to the Regional Water Board for inspection upon request. In its TMDL Compliance Report, a Discharger shall provide information on its annual DGR, calculated storm year discharge, and compliance with the applicable effluent limitation.

(3) Reporting Compliance based on Combined Compliance Approaches:

Discharger shall provide the information specified in Part VIII.5.c.i(1) for areas where *full capture systems* are installed and that are specified in Part VIII.5.c.i(2)(a) or (b), as appropriate, for areas where *partial capture devices* and *institutional controls* are applied. In its TMDL Compliance Report, a Discharger shall also provide information on compliance with the applicable effluent limitation based on the combined compliance approaches.

(4) Reporting Compliance based on an MFAC/BMP Approach:

The MFAC/BMP Program includes a Trash Monitoring and Reporting Plan, and a requirement that the responsible Discharger will self-report any non-compliance with its provisions. The results and report of the Trash Monitoring and Reporting Plan must be submitted to Regional Water Board with the City of Long Beach's Annual Report.

- ii. Violation of the reporting requirements of this Part shall be punishable pursuant to, inter alia, CWC Section 13385, Subdivisions (a)(3) and (h)(1), and/or Section 13385.1.

P. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL

- 1. The City of Long Beach shall comply with the interim water quality-based effluent limitations listed below, as of the effective date of this Order:
 - a. The City of Long Beach shall comply with the following interim water quality-based effluent limitations for discharges to Dominguez Channel freshwater during wet weather:
 - i. The freshwater toxicity interim water quality-based effluent limitation is 2 TUc. The freshwater interim effluent limitation shall be implemented as a trigger requiring initiation and implementation of the TRE/TIE process as outlined in US EPA’s “Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program” (2000).
 - ii. The City of Long Beach shall comply with the following interim metals water quality-based effluent limitations for discharges to the Dominguez Channel freshwater during wet weather:

Table 39. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Interim Metals Water Quality-based Effluent Limitations

Metals	Interim Effluent Limitation Daily Maximum (µg/L)
Total Copper	207.51
Total Lead	122.88
Total Zinc	898.87

- b. The City of Long Beach shall comply with the following interim concentration-based water quality-based effluent limitations for pollutant concentrations in the sediment discharged to the Dominguez Channel Estuary and Greater Los Angeles and Long Beach Harbor Waters:

Table 40. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Interim Concentration-based Water Quality-based Effluent Limitations

Water Body	Interim Effluent Limitations Daily Maximum (mg/kg sediment)					
	Copper	Lead	Zinc	DDT	PAHs	PCBs
Dominguez Channel Estuary (below Vermont Avenue)	220.0	510.0	789.0	1.727	31.60	1.490
Long Beach Inner Harbor	142.3	50.4	240.6	0.070	4.58	0.060
Long Beach Outer Harbor (inside breakwater)	67.3	46.7	150	0.075	4.022	0.248
Los Angeles River Estuary	53.0	46.7	183.5	0.254	4.36	0.683
San Pedro Bay Near/Off Shore Zones	76.9	66.6	263.1	0.057	4.022	0.193

2. The City of Long Beach shall comply with the final water quality-based effluent limitations as listed below no later than March 23, 2032, and every year thereafter:
 - a. Dominguez Channel Freshwater – Wet Weather
 - i. Freshwater Toxicity Effluent Limitation shall not exceed the monthly median of 1 TUc.
 - ii. The City of Long Beach shall comply with the following final metals water quality-based effluent limitations for discharges to Dominguez Channel and all upstream reaches and tributaries of Dominguez Channel above Vermont Avenue:

Table 41. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Final Metals Water Quality-based Effluent Limitations

Metals	Water Column Mass-Based Final Effluent Limitation Daily Maximum ⁵² (g/day)
Total Copper	1,300.3
Total Lead	5,733.7
Total Zinc	9,355.5

- b. Dominguez Channel Estuary and Greater Los Angeles and Long Beach Harbor Waters
 - i. The City of Long Beach shall comply with the following final mass-based water quality-based effluent limitations, expressed as an annual loading of pollutants in the sediment deposited to Dominguez Channel Estuary, Los

⁵²Effluent limitations are based on a hardness of 50 mg/L, and 90th percentile of annual flow rates (62.7 cfs) in Dominguez Channel. Recalculated mass-based effluent limitations using ambient hardness and flow rate at the time of sampling are consistent with the assumptions and requirements of the TMDL. In addition to the effluent limitations above, samples collected during flow conditions less than the 90th percentile of annual flow rates must demonstrate that the acute and chronic hardness dependent water quality criteria provided in the California Toxics Rule (CTR) are achieved.

Angeles River Estuary, and the Greater Los Angeles and Long Beach Harbor Waters:

Table 42. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Final Mass-based Water Quality-based Effluent Limitations

Water Body	Final Effluent Limitations Annual (kg/yr)			
	Total Cu	Total Pb	Total Zn	Total PAHs
Dominguez Channel Estuary	0.6	1.52	7.6	0.0038
Inner Harbor	0.463	9.31	31.71	0.024
Outer Harbor	0.63	18.1	56.4	0.073
San Pedro Bay	137.9	372.2	1449.7	12.0
LA River Estuary	375.8	698.9	2572.7	24.56

- ii. The City of Long Beach shall comply with the following final concentration-based water quality-based effluent limitations for pollutant concentrations in the sediments discharged to the Dominguez Channel Estuary:

Table 43. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Final Concentration-based Water Quality-based Effluent Limitations

Water Body	Effluent Limitations Daily Maximum (mg/kg dry sediment)		
	Cadmium	Chromium	Mercury
Dominguez Channel Estuary	1.2	--	--

- c. The City of Long Beach shall comply with the following final mass-based water quality-based effluent limitations, expressed as an annual loading of total DDT and total PCBs in the sediment deposited to Dominguez Channel Estuary, Los Angeles River Estuary, and the Greater Los Angeles and Long Beach Harbor Waters:

Table 44. Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL Final Mass-based Water Quality-based Effluent Limitations

Water Body	Final Effluent Limitations Annual (g/yr)	
	Total DDTs	Total PCBs
Dominguez Channel Estuary	0.007	0.006
Inner Harbor	0.014	0.016
Outer Harbor	0.004	0.014
San Pedro Bay	0.333	3.01
LA River Estuary	1.067	3.441

3. Compliance Determination

- a.** The City of Long Beach shall be deemed in compliance with the interim concentration-based water quality-based effluent limitations for pollutant concentrations in the sediment as listed above by meeting any one of the following methods:
 - i.** Demonstrate that the sediment quality condition of *Unimpacted* or *Likely Unimpacted* via the interpretation and integration of multiple lines of evidence as defined in the Sediment Quality Objectives (SQO) Part 1, is met; or
 - ii.** Meet the interim water quality-based effluent limitations in bed sediment over a three-year averaging period; or
 - iii.** Meet the interim water quality-based effluent limitations in the discharge over a three-year averaging period.
- b.** The City of Long Beach shall be deemed in compliance with the final fresh water metals water quality-based effluent limitations for discharges to Dominguez Channel as listed above by meeting any one of the following methods:
 - i.** Final metals water quality-based effluent limitations are met; or
 - ii.** CTR total metals criteria are met instream; or
 - iii.** CTR total metals criteria are met in the discharge.
- c.** The City of Long Beach shall be deemed in compliance with the final water quality-based effluent limitations for pollutants in the sediment as listed above by meeting any one of the following methods:
 - i.** Final water quality-based effluent limitations for pollutants in the sediment are met; or
 - ii.** The qualitative sediment condition of *Unimpacted* or *Likely Unimpacted* via the interpretation and integration of multiple lines of evidence as defined in the SQO Part 1, is met, with the exception of chromium, which is not included in the SQO Part 1; or
 - iii.** Sediment numeric targets are met in bed sediments over a three-year averaging period.
- d.** The City of Long Beach shall be deemed in compliance with the final water quality-based effluent limitations for total DDT and total PCBs in the sediment as listed above in Part VIII.P.2.c by meeting any one of the following methods:
 - i.** Fish tissue targets are met in species resident to the specified water bodies⁵³; or
 - ii.** Final water quality-based effluent limitations for pollutants in the sediment are met; or
 - iii.** Sediment numeric targets to protect fish tissue are met in bed sediments over a three-year averaging period; or

⁵³A site-specific study to determine resident species shall be submitted to the Regional Water Board Executive Officer for approval.

- iv. Demonstrate that the sediment quality condition protective of fish tissue is achieved per the State Water Board's Statewide Enclosed Bays and Estuaries Plan.

Q. San Gabriel River Metals and Impaired Tributaries Metals and Selenium TMDL (USEPA established)

1. The City of Long Beach shall comply with the following grouped⁵⁴ wet weather⁵⁵ WLAs, expressed as total recoverable metals discharged to all upstream reaches and tributaries of the San Gabriel River Reach 2 and Coyote Creek per the provisions in Part VIII.G:

Table 45. San Gabriel River Metals and Impaired Tributaries Metals and Selenium TMDL Grouped Wet Weather Waste Load Allocations

Water Body	WLA Daily Maximum (kg/day)		
	Copper	Lead	Zinc
San Gabriel Reach 2	---	81.34 µg/L x daily storm volume (L)	---
Coyote Creek	24.71 µg/L x daily storm volume (L)	96.99 µg/L x daily storm volume (L)	144.57 µg/L x daily storm volume (L)

2. The City of Long Beach shall comply with the following grouped¹ dry weather WLAs, expressed as total recoverable metals discharged to San Gabriel River Reach 1, Coyote Creek, and San Gabriel River Estuary per the provisions in Part VIII. G:

Table 46. San Gabriel River Metals and Impaired Tributaries Metals and Selenium TMDL Grouped Dry Weather Waste Load Allocations

Water Body	WLA Daily Maximum	
	Copper	Selenium
San Gabriel Reach 1	18 µg/L	---
Coyote Creek	0.941 kg/day*	---
San Gabriel River Estuary	3.7 µg/L	---

*Calculated based upon the median flow at LACDPW Station F354-R of 19 cfs multiplied by the numeric target of 20 µg/L, minus direct air deposition of 0.002 kg/d.

3. The City of Long Beach may convert the grouped mass-based WLAs into individual WLAs based on the percentage of the watershed and land uses within the City of Long Beach's jurisdiction, upon approval of the Regional Water Board Executive Officer.

⁵⁴The wet weather and dry weather water WLAs are group-based and shared among all MS4 Permittees, which includes LA County MS4 Permittees, the City of Long Beach, and Orange County MS4 Permittees located within the drainage area and Caltrans.

⁵⁵ In San Gabriel River Reach 2, wet weather TMDLs apply when the maximum daily flow of the river is equal to or greater than 260 cfs as measured at USGS station 11085000, located at the bottom of Reach 3 just above the Whittier Narrows Dam. In Coyote Creek, wet weather TMDLs apply when the maximum daily flow in the creek is equal to or greater than 156 cfs as measured at LACDPW flow gauge station F354-R, located at the bottom of the creek, just above the Long Beach WRP.

ATTACHMENT A – DEFINITIONS

The following are definitions for terms in this Order:

Adverse Impact

A detrimental effect upon water quality or beneficial uses caused by a discharge or loading of a pollutant or pollutants.

Anti-degradation Policies

Laws, policies and regulations set forth and state and federal statutes and regulations e.g., *Statement of Policy with Respect to Maintaining High Quality Water in California*, State Board Resolution No. 68-16; 40 CFR section 131.12.

Applicable Standards and Limitations

All State, interstate, and federal standards are limitations to which a “discharge” or a related activity is subject under the CWA, including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices,” and pretreatment standards under sections 301, 302, 303, 304, 306, 307, 308, 403 and 404 of CWA.

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where:

Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Authorized Discharge

Any discharge that is authorized pursuant to an NPDES permit or meets the conditions set forth in this Order.

Authorized Non-Storm Water Discharge

Authorized non-storm water discharges are discharges that are not composed entirely of storm water and that are either: (1) separately regulated by an individual or general NPDES permit and allowed to discharge to the MS4 when in compliance with all NPDES permit conditions; (2) authorized by USEPA¹ pursuant to sections 104(a) or 104(b) of CERCLA that either (i) will comply with water quality standards as applicable or relevant and appropriate requirements (“ARARs”) under section 121(d)(2) of CERCLA or (ii) are subject to (a) a written waiver of ARARs by USEPA pursuant to section 121(d)(4) of CERCLA or (b) a written determination by USEPA that compliance with ARARs is not practicable considering the exigencies of the situation, pursuant to 40 CFR section 300.415(j); or (3) necessary for emergency responses purposes, including flows from emergency fire fighting activities.

¹ These typically include short-term, high volume discharges resulting from the development or redevelopment of groundwater extraction wells, or USEPA or State-required compliance testing of potable water treatment plants, as part of a USEPA authorized groundwater remediation action under CERCLA.

Automotive Service Facilities

A facility that is categorized in any one of the following Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes. For inspection purposes, Permittees need not inspect facilities with SIC codes 5013, 5014, 5541, 5511, provided that these facilities have no outside activities or materials that may be exposed to storm water.

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Bacteria Total Maximum Daily Load (TMDL) Dry Weather

Defined in the Bacteria TMDLs as those days with less than 0.1 inch of rainfall and those days occurring more than 3 days after a rain.

Bacteria Total Maximum Daily Load (TMDL) Wet Weather

Defined in the Bacteria TMDLs as a day with 0.1 inch or more of rain and 3 days following the rain event.

Baseline Waste Load Allocation

The Waste Load Allocation assigned to a Permittee before reductions are required. The progressive reductions in the Waste Load Allocations are based on a percentage of the Baseline Waste Load Allocation. The Baseline Waste Load Allocation for each jurisdiction was calculated based on the annual average amount of trash discharged to the storm drain system from a representative sampling of land use areas, as determined during the Baseline Monitoring Program. The Baseline Waste Load Allocations are incorporated into the Basin Plan at Table 7-2.2.

Basin Plan

The Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Water Board on June 13, 1994 and subsequent amendments.

Beneficial Uses

The existing or potential uses of receiving waters in the permit area as designated by the Regional Water Board in the Basin Plan.

Best Management Practices (BMPs)

BMPs are practices or physical devices or systems designed to prevent or reduce pollutant loading from storm water or non-storm water discharges to receiving waters, or designed to reduce the volume of storm water or non-storm water discharged to the receiving water.

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Biofiltration

A LID BMP that reduces storm water pollutant discharges by intercepting rainfall on vegetative canopy, and through incidental infiltration and/or evapotranspiration, and filtration. As described in the *Ventura County Technical Guidance Manual*, studies have demonstrated that biofiltration of 1.5 times the storm water quality design volume (SWQDv) provides approximately equivalent or greater reductions in pollutant loading when compared to bioretention or infiltration of the SWQDv.² Incidental infiltration is an important factor in achieving the required pollutant load reduction. Therefore, the term “biofiltration” as used in this Order is defined to include only systems designed to facilitate incidental infiltration or achieve the equivalent pollutant reduction as biofiltration BMPs with an underdrain (subject to Executive Officer approval). Biofiltration BMPs include bioretention systems with an underdrain and bioswales.

Bioretention

A LID BMP that reduces storm water runoff by intercepting rainfall on vegetative canopy, and through evapotranspiration and infiltration. The bioretention system typically includes a minimum 2-foot top layer of a specified soil and compost mixture underlain by a gravel-filled temporary storage pit dug into the *in-situ* soil. As defined in this Order, a bioretention BMP may be designed with an overflow drain, but may not include an underdrain. When a bioretention BMP is designed or constructed with an underdrain it is regulated in this Order as biofiltration.

Bioswale

A LID BMP consisting of a shallow channel lined with grass or other dense, low-growing vegetation. Bioswales are designed to collect storm water runoff and to achieve a uniform sheet flow through the dense vegetation for a period of several minutes.

Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)

CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Commercial Development

Any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities; mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

Commercial Malls

Any development on private land comprised of one or more buildings forming a complex of stores which sells various merchandise, with interconnecting walkways enabling visitors to easily walk from store to store, along with parking area(s). A commercial mall includes, but is

² Geosyntec Consultants and Larry Walker Associates. 2011. *Ventura County Technical Guidance Manual for Stormwater Quality and Control Measures, Manual Update 2011. Appendix D*. Prepared for the Ventura Countywide Stormwater Quality Management Program. July 13, 2011. pp. D-6 – D-15.

not limited to: mini-malls, strip malls, other retail complexes, and enclosed shopping malls or shopping centers.

Conditionally Exempt Essential Non-Storm Water Discharge

Conditionally exempt essential non-storm water discharges are certain categories of discharges that are not composed entirely of storm water and that are allowed by the Regional Water Board to discharge to the MS4, if in compliance with all specified requirements; are not otherwise regulated by an individual or general NPDES permit; and are essential public services that are directly or indirectly required by other State or federal statute and/or regulation. These include non-storm water discharges from drinking water supplier distribution system releases and non-emergency fire fighting activities. Conditionally exempt essential non-storm water discharges may contain minimal amounts of pollutants, however, when in compliance with industry standard BMPs and control measures, do not result in significant environmental effects. (See 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990)).

Conditionally Exempt Non-Storm Water Discharge

Conditionally exempt non-storm water discharges are certain categories of discharges that are not composed entirely of storm water and that are either not sources of pollutants or may contain only minimal amounts of pollutants and when in compliance with specified BMPs do not result in significant environmental effects. (See 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990)).

Construction Activity

Construction activity includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance activities required to maintain the integrity of structures by performing minor repair and restoration work, maintain the original line and grade, hydraulic capacity, or original purposes of the facility. See "Routine Maintenance" definition for further explanation. Where clearing, grading or excavating of underlying soil takes place during a repaving operation, State General Construction Permit coverage is required if more than one acre is disturbed or the activities are part of a larger plan.

Control

To minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Daily Discharge

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the

arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Daily Generation Rate (DGR)

The estimated amount of trash deposited within a representative drainage area during a 24-hour period, derived from the amount of trash collected from streets and catch basins in the area over a 30-day period.

Dechlorinated/Debrominated Swimming Pool Discharge

Swimming pool discharges which have no measurable chlorine or bromine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term does not include swimming pool filter backwash.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Development

Any construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Directly Adjacent

Situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area.

Director

The Director of a municipality and Person(s) designated by and under the Director's instruction and supervision.

Discharge

When used without qualification the "discharge of a pollutant."

Discharging Directly

Outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

Discharge of a Pollutant

Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source" or, any addition of any pollutant or combination of pollutants to the

waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term discharge includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

Disturbed Area

An area that is altered as a result of clearing, grading, and/or excavation.

Drinking Water Supplier Distribution Systems Releases

Sources of flows from drinking water supplier storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, distribution line testing, fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and minor non-invasive well maintenance activities not involving chemical addition(s). It does not include wastewater discharges from activities that occur at wellheads, such as well construction, well development (i.e., aquifer pumping tests, well purging, etc.), or major well maintenance. For the purposes of this Order, drinking water supplier distribution system releases include treated and raw water (from raw water pipelines, reservoirs, storage tanks, etc.) that are dedicated for drinking water supply.

Effective Impervious Area (EIA)

EIA is the portion of the surface area that is hydrologically connected to a drainage system via a hardened conveyance or impervious surface without any intervening median to mitigate the flow volume.

Effluent Concentration Allowance (ECA)

ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Effluent Limitation

Any restriction imposed on quantities, discharge rates, and concentrations of pollutants, which are discharged from point sources to waters of the U.S. (40 CFR § 122.2).

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake’s Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Environmentally Sensitive Areas (ESAs)

An area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments (California Public Resources Code § 30107.5). Areas subject to storm water mitigation requirements are: areas designated as Significant Ecological Areas by the County of Los Angeles (Los Angeles County Significant Areas Study, Los Angeles County Department of Regional Planning (1976) and amendments) and an area listed in the Basin Plan as supporting the "Rare, Threatened, or Endangered Species (RARE)" beneficial use; and an area identified by a Permittee as environmentally sensitive.

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in California Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Existing Discharger

Any discharger that is not a new discharger. An existing discharger includes an "increasing discharger" (i.e., any existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its permitted discharge after the effective date of this Order).

Flow-through treatment BMPs

Flow-through treatment BMPs include modular, vault type "high flow biotreatment" devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain.

Full Capture System

Any single device or series of devices, certified by the Executive Officer, that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour storm in the sub-drainage area. The Rational Equation is used to compute the peak flow rate:

$$Q = C \times I \times A,$$

Where:

Q = design flow rate (cubic feet per second, cfs);

C = runoff coefficient (dimensionless);

I = design rainfall intensity (inches per hour, as determined per the Los Angeles County rainfall isohyetal maps relevant to the Los Angeles River watershed), and

A = sub-drainage area (acres).

General Construction Activities Storm Water Permit (GCASP)

The general NPDES permit adopted by the State Board which authorizes the discharge of storm water from construction activities under certain conditions.

General Industrial Activities Storm Water Permit (GIASP)

The general NPDES permit adopted by the State Board which authorizes the discharge of storm water from certain industrial activities under certain conditions.

Green Roof

A LID BMP using planter boxes and vegetation to intercept rainfall on the roof surface. Rainfall is intercepted by vegetation leaves and through evapotranspiration. Green roofs may be designed as either a bioretention BMP or as a biofiltration BMP. To receive credit as a bioretention BMP, the green roof system planting medium shall be of sufficient depth to provide capacity within the pore space volume to contain the design storm depth and may not be designed or constructed with an underdrain.

Hillside

Property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes.

Hydrologic Unit Code (HUC)

A standardized watershed classification system in which each hydrologic unit is identified by a unique hydrologic unit code (HUC). The HUC may consist of an eight (8) to twelve (12) digit number. The 8-digit HUC identifies an area based on four levels of classification: region, sub-region, hydrologic basin, and hydrologic sub-basin. The Watershed Boundary Dataset includes the 12-digit HUC delineation, which further divides each hydrologic unit into watersheds and sub-watersheds based on scientific information and not administrative boundaries. The Watershed Boundary Dataset is the highest resolution and the most detailed delineation of the watershed boundaries. The mapping precision has been improved to a scale of 1:24,000.

Illicit Connection

Any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge

Any discharge into the MS4 or from the MS4 into a receiving water that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes any non-storm water discharge, except authorized non-storm water discharges; conditionally exempt non-storm water discharges; and non-storm water discharges resulting from natural flows specifically identified in Part IV.B.

Illicit Disposal

Any disposal, either intentionally or unintentionally, of material(s) or waste(s) that can pollute storm water.

Improved drainage system

An improved drainage system is a drainage system that has been channelized or armored. The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system.

Industrial/Commercial Facility

Any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by either the Standard Industrial Classifications (SIC) or the North American Industry Classification System (NAICS). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Industrial Park

A land development that is set aside for industrial development. Industrial parks are usually located close to transport facilities, especially where more than one transport modalities coincide: highways, railroads, airports, and navigable rivers. It includes office parks, which have offices and light industry.

Infiltration BMP

A LID BMP that reduces storm water runoff by capturing and infiltrating the runoff into in-situ soils or amended on-site soils. Examples of infiltration BMPs include infiltration basins, dry wells, and pervious pavement.³

Inland Surface Waters

All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Inspection

Entry and the conduct of an on-site review of a facility and its operations, at reasonable times, to determine compliance with specific municipal or other legal requirements. The steps involved in performing an inspection, include, but are not limited to:

1. Pre-inspection documentation research.;
2. Request for entry;
3. Interview of facility personnel;
4. Facility walk-through.
5. Visual observation of the condition of facility premises;
6. Examination and copying of records as required;
7. Sample collection (if necessary or required);
8. Exit conference (to discuss preliminary evaluation); and,
9. Report preparation, and if appropriate, recommendations for coming into compliance.

³ Some types of infiltration BMPs such as dry wells, may meet the definition of a Class V, deep well injection facility and may be subject to permitting under U.S. EPA requirements.

In the case of restaurants, a Permittee may conduct an inspection from the curbside, provided that such "curbside" inspection provides the Permittee with adequate information to determine an operator's compliance with BMPs that must be implemented per requirements of this Order, Regional Water Board Resolution No. 98-08, County and municipal ordinances, and the SQMP.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Institutional Controls

Programmatic trash control measures that do not require construction or structural modifications to the MS4. Examples include street sweeping, public education, and clean out of catch basins that discharge to storm drains.

Integrated Pest Management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.

Large Municipal Separate Storm Sewer System (MS4)

All MS4s that serve a population greater than 250,000 (1990 Census) as defined in 40 CFR 122.26 (b)(4). In 1990, the Regional Water Board designated the MS4s owned and/or operated by the Los Angeles County Flood Control District, 85 incorporated cities within Los Angeles County, including the City of Long Beach, and Los Angeles County unincorporated areas within the Coastal Watersheds of Los Angeles County as a large MS4 due to the total population of Los Angeles County, including that of unincorporated and incorporated areas, and the interrelationship between the Permittees' MS4s, pursuant to 40 CFR section 122.26(b)(4). In 1990, the City of Long Beach's population alone was 429,433.

Local SWPPP

The Storm Water Pollution Prevention Plan required by the local agency for a project that disturbs one or more acres of land.

Low Impact Development (LID)

LID consists of building and landscape features designed to retain or filter storm water runoff.

Major Outfall

Major municipal separate storm sewer outfall (or "major outfall") means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe

with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). (40 CFR § 122.26(b)(5))

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Maximum Extent Practicable (MEP)

In 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 following factors may be useful to consider:

1. Effectiveness: Will the BMP address a pollutant of concern?
2. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
3. Public acceptance: Does the BMP have public support?
4. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?
5. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc.?

After selecting a menu of BMPs, it is of course the responsibility of the discharger to insure that all BMPs are implemented.

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Attachment B (revised as of July 3, 1999).

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Municipal Separate Storm Sewer System (MS4)

A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade 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.

(40 CFR § 122.26(b)(8))

National Pollutant Discharge Elimination System (NPDES)

The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA §307, 402, 318, and 405. The term includes an “approved program.”

Natural Drainage System

A natural drainage system is a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system.

New Development

Land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

Non-Storm Water Discharge

Any discharge into the MS4 or from the MS4 into a receiving water that is not composed entirely of storm water.

Not Detected (ND)

Sample results which are less than the laboratory’s MDL.

Nuisance

Anything that meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance

or damage inflicted upon individuals may be unequal.; (3) occurs during, or as a result of, the treatment or disposal of wastes.

Ocean Waters

The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Outfall

A point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances with connect segments of the same stream or other waters of the United States and are used to convey waters of the United States. (40 CFR § 122.26(b)(9))

Parking Lot

Land area or facility for the parking or storage of motor vehicles used for businesses, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces.

Partial Capture Device

Any structural trash control device that has not been certified by the Executive Officer as meeting the "full capture" performance requirements.

Persistent Pollutants

Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Planning Priority Projects

Those projects that are required to incorporate appropriate storm water mitigation measures into the design plan for their respective project. These types of projects include:

1. Ten or more unit homes (includes single family homes, multifamily homes, condominiums, and apartments)
2. A 100,000 or more square feet of impervious surface area industrial/ commercial development (1 ac starting March 2003)
3. Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539)
4. Retail gasoline outlets
5. Restaurants (SIC 5812)
6. Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces
7. Redevelopment projects in subject categories that meet Redevelopment thresholds
8. Projects located in or directly adjacent to or discharging directly to an ESA, which meet thresholds; and9. Those projects that require the implementation of a site-specific plan to mitigate post-development storm water for new development not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality, where the following project characteristics exist:

- a) Vehicle or equipment fueling areas;
- b) Vehicle or equipment maintenance areas, including washing and repair;
- c) Commercial or industrial waste handling or storage;
- d) Outdoor handling or storage of hazardous materials;
- e) Outdoor manufacturing areas;
- f) Outdoor food handling or processing;
- g) Outdoor animal care, confinement, or slaughter; or
- h) Outdoor horticulture activities.

Point Source

Any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. (40 CFR § 122.2)

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to California Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollutants

Those "pollutants" defined in CWA §502(6) (33.U.S.C.§1362(6)), and incorporated by reference into California Water Code §13373

Pollution Prevention

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in California Water Code Section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Potable Water

Water that meets the drinking water standards of the US Environmental Protection Agency.

Project

All development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code §21065).

Rain Event

Any rain event greater than 0.1 inch in 24 hours except where specifically stated otherwise.

Rainfall Harvest and Use

Rainfall harvest and use is an LID BMP system designed to capture runoff, typically from a roof but can also include runoff capture from elsewhere within the site, and to provide for temporary storage until the harvested water can be used for irrigation or non-potable uses. The harvested water may also be used for potable water uses if the system includes disinfection treatment and is approved for such use by the local building department.

Rare, Threatened, or Endangered Species (RARE)

A beneficial use for waterbodies in the Los Angeles Region, as designated in the Basin Plan (Table 2-1), that supports habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.

Raw Water

Water that is taken from the environment by drinking water suppliers with the intent to subsequently treat or purify it to produce potable water. Raw water does not include wastewater discharges from activities that occur at wellheads, such as well construction, well development (i.e., aquifer pumping tests, well purging, etc.), or major well maintenance.

Receiving Water

A "water of the United States" into which waste and/or pollutants are or may be discharged.

Receiving Water Limitation

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 CFR § 131.38.

Redevelopment

Land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Regional Administrator

The Regional Administrator of the Regional Office of the USEPA or the authorized representative of the Regional Administrator.

Reporting Level (RL)

RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the State Implementation Policy (SIP) in accordance with Section 2.4.2 of the SIP or established in accordance with Section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Residual Water

In the context of this Order, water remaining in a structural BMP subsequent to the drawdown or drainage period. The residual water typically contains high concentration(s) of pollutants.

Restaurant

A facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

Retail Gasoline Outlet

Any facility engaged in selling gasoline and lubricating oils.

Routine Maintenance

Routine maintenance projects include, but are not limited to projects conducted to:

1. Maintain the original line and grade, hydraulic capacity, or original purpose of the facility.
2. Perform as needed restoration work to preserve the original design grade, integrity and hydraulic capacity of flood control facilities.
3. Includes road shoulder work, regrading dirt or gravel roadways and shoulders and performing ditch cleanouts.
4. Update existing lines* and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.
5. Repair leaks

Routine maintenance does not include construction of new** lines or facilities resulting from compliance with applicable codes, standards and regulations.

* Update existing lines includes replacing existing lines with new materials or pipes.

** New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines.

Runoff

Any runoff including storm water and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather it is typically comprised of base flow either contaminated with pollutants or uncontaminated, and nuisance flows.

Screening

Using proactive methods to identify illicit connections through a continuously narrowing process. The methods may include: performing baseline monitoring of open channels, conducting special investigations using a prioritization approach, analyzing maintenance records for catch basin and storm drain cleaning and operation, and verifying all permitted connections into the storm drains. Special investigation techniques may include: dye testing, visual inspection, smoke testing, flow monitoring, infrared, aerial and thermal photography, and remote control camera operation.

Sidewalk Rinsing

Means pressure washing of paved pedestrian walkways with average water usage of 0.006 gallons per square foot, with no cleaning agents, and properly disposing of all debris collected, as authorized under Regional Water Board Resolution No. 98-08.

Significant Ecological Areas (SEAs)

An area that is determined to possess an example of biotic resources that cumulatively represent biological diversity, for the purposes of protecting biotic diversity, as part of the Los Angeles County General Plan.

Areas are designated as SEAs, if they possess one or more of the following criteria:

1. The habitat of rare, endangered, and threatened plant and animal species.
2. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.
3. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind or are restricted in distribution in Los Angeles County.
4. Habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or within Los Angeles County.
5. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent an unusual variation in a population or community.
6. Areas important as game species habitat or as fisheries.
7. Areas that would provide for the preservation of relatively undisturbed examples of natural biotic communities in Los Angeles County.
8. Special areas.

Site

The land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

Source Control BMP

Any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

SQMP

The Los Angeles Countywide Stormwater Quality Management Program.

Standard Deviation (σ)

Standard Deviation is a measure of variability that is calculated as follows:

$$\sigma = \left(\frac{\sum[(x - \mu)^2]}{(n - 1)} \right)^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

State Storm Water Pollution Prevention Plan (State SWPPP)

A plan, as required by a State General Permit, identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-stormwater Discharges and reduce Pollutants in Stormwater Discharges during activities covered by the General Permit.

Storm Water

Storm water runoff, snow melt runoff, and surface runoff and drainage related to precipitation events (pursuant to 40 CFR § 122.26(b)(13); 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990)).

Storm Water Discharge Associated with Industrial Activity

Industrial discharge as defined in 40 CFR 122.26(b)(14).

Stormwater Quality Management Program

The Los Angeles Countywide Stormwater Quality Management Program, which includes descriptions of programs, collectively developed by the Permittees in accordance with provisions of the NPDES Permit, to comply with applicable federal and state law, as the same is amended from time to time.

Structural BMP

Any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs.

SUSMP

The Los Angeles Countywide Standard Urban Stormwater Mitigation Plan. The SUSMP shall address conditions and requirements of new development.

Total Maximum Daily Load (TMDL)

The sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background.

Toxicity Identification Evaluation (TIE)

A set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

Toxicity Reduction Evaluation (TRE)

TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Trash Excluders

Any structural trash control device that prevents the discharge of trash to the storm drain system or to receiving waters. A trash exclude may or may not be certified by the Executive Officer as meeting the “full capture” performance requirements.

Treatment

The application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

Treatment Control BMP

Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

Unconfined ground water infiltration

Water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (See 40 CFR § 35.2005(20).)

Uncontaminated Ground Water Infiltration

Water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. (See 40 CFR § 35.2005(20).)

USEPA Phase I Facilities

Facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include:

- i. facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N)
- ii. manufacturing facilities
- iii. oil and gas/mining facilities
- iv. hazardous waste treatment, storage, or disposal facilities
- v. landfills, land application sites, and open dumps
- vi. recycling facilities
- vii. steam electric power generating facilities

- viii. transportation facilities
- ix. sewage of wastewater treatment works
- x. light manufacturing facilities

Vehicle Maintenance/Material Storage Facilities/Corporation Yards

Any Permittee owned or operated facility or portion thereof that:

- i. Conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase I facilities;
- ii. Performs fleet vehicle service/maintenance on ten or more vehicles per day including repair, maintenance, washing, and fueling;
- iii. Performs maintenance and/or repair of heavy industrial machinery/equipment; and
- iv. Stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Countermeasures (SPCC) plan.

Water Quality-based Effluent Limitation

Any restriction imposed on quantities, discharge rates, and concentrations of pollutants, which are discharged from point sources to waters of the U.S. necessary to achieve a water quality standard.

Waters of the State

Any surface water or groundwater, including saline waters, within the boundaries of the state.

Waters of the United States or Waters of the U.S.

- a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- b. All interstate waters, including interstate "wetlands";
- c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
 - 1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - 2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - 3. Which are used or could be used for industrial purposes by industries in interstate commerce;
- d. All impoundments of waters otherwise defined as waters of the United States under this definition;
- e. Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- f. The territorial sea; and
- g. "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR section 423.22(m), which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to man-made bodies of water, which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with USEPA.

Wet Season

The calendar period beginning October 1 through April 15.

ACRONYMS AND ABBREVIATIONS

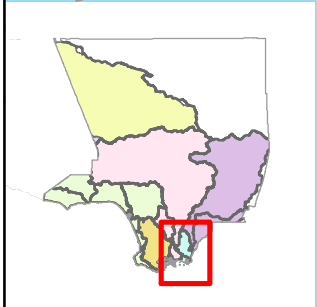
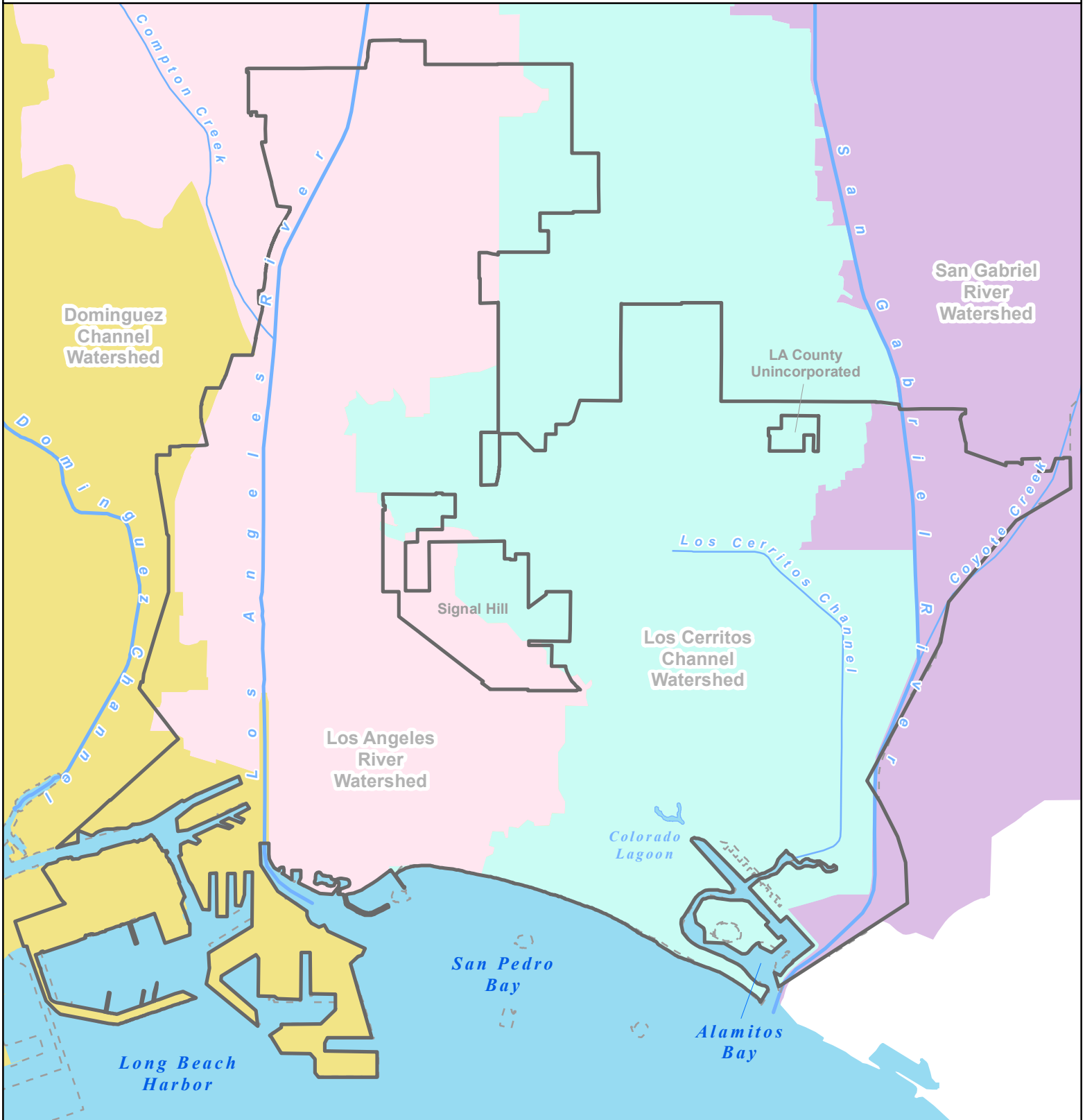
AMEL	Average Monthly Effluent Limitation
B	Background Concentration
BAT	Best Available Technology Economically Achievable
Basin Plan	<i>Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties</i>
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BMPP	Best Management Practices Plan
BPJ	Best Professional Judgment
BOD	Biochemical Oxygen Demand 5-day @ 20 °C
BPT	Best Practicable Treatment Control Technology
C	Water Quality Objective
CCR	California Code of Regulations
CEEIN	California Environmental Education Interagency Network
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CTR	California Toxics Rule
CV	Coefficient of Variation
CWA	Clean Water Act
CWC	California Water Code
Discharger	City of Long Beach
DMR	Discharge Monitoring Report
DNQ	Detected But Not Quantified
ELAP	California Department of Public Health Environmental Laboratory Accreditation Program
ELG	Effluent Limitations, Guidelines and Standards
Ep	Erosion potential
ESCP	Erosion and Sediment Control Plan
EWMP	Enhanced Watershed Management Program
Facility	MS4 within City of Long Beach
GIS	Geographical Information System
gpd	gallons per day
HUC	Hydrologic Unit Code
IC	Inhibition Coefficient
IC ₁₅	Concentration at which the organism is 15% inhibited
IC ₂₅	Concentration at which the organism is 25% inhibited
IC ₄₀	Concentration at which the organism is 40% inhibited
IC ₅₀	Concentration at which the organism is 50% inhibited
IC/ID	Illicit Connection and Illicit Discharge Elimination
IPM	Integrated Pest Management
LA	Load Allocations
LID	Low Impact Development
LOEC	Lowest Observed Effect Concentration
LUPs	Linear Underground/Overhead Projects
µg/L	micrograms per Liter

MCM	Minimum Control Measure
mg/L	milligrams per Liter
MDEL	Maximum Daily Effluent Limitation
MEC	Maximum Effluent Concentration
MGD	Million Gallons Per Day
ML	Minimum Level
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NAICS	North American Industry Classification System
ND	Not Detected
NOEC	No Observable Effect Concentration
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
NTR	National Toxics Rule
OAL	Office of Administrative Law
PIPP	Public Information and Participation Program
PMP	Pollutant Minimization Plan
POTW	Publicly Owned Treatment Works
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
Ocean Plan	<i>Water Quality Control Plan for Ocean Waters of California</i>
RAA	Reasonable Assurance Analysis
REAP	Rain Event Action Plan
Regional Water Board	California Regional Water Quality Control Board, Los Angeles Region
RGOs	Retail Gasoline Outlets
RPA	Reasonable Potential Analysis
SCP	Spill Contingency Plan
SEA	Significant Ecological Area
SIC	Standard Industrial Classification
SIP	State Implementation Policy (<i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California</i>)
SMR	Self Monitoring Reports
State Water Board	California State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
SWQDv	Storm Water Quality Design Volume
SWQPA	State Water Quality Protected Area
TAC	Test Acceptability Criteria
Thermal Plan	<i>Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California</i>
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon



TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document
TSS	Total Suspended Solid
TU _c	Chronic Toxicity Unit
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirements
WDID	Waste Discharge Identification
WET	Whole Effluent Toxicity
WLA	Waste Load Allocations
WMA	Watershed Management Area
WMP	Watershed Management Program
WQBELs	Water Quality-Based Effluent Limitations
WQS	Water Quality Standards
%	Percent

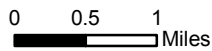


Attachment B - Watershed Management Areas within the City of Long Beach



LEGEND

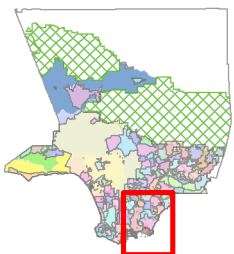
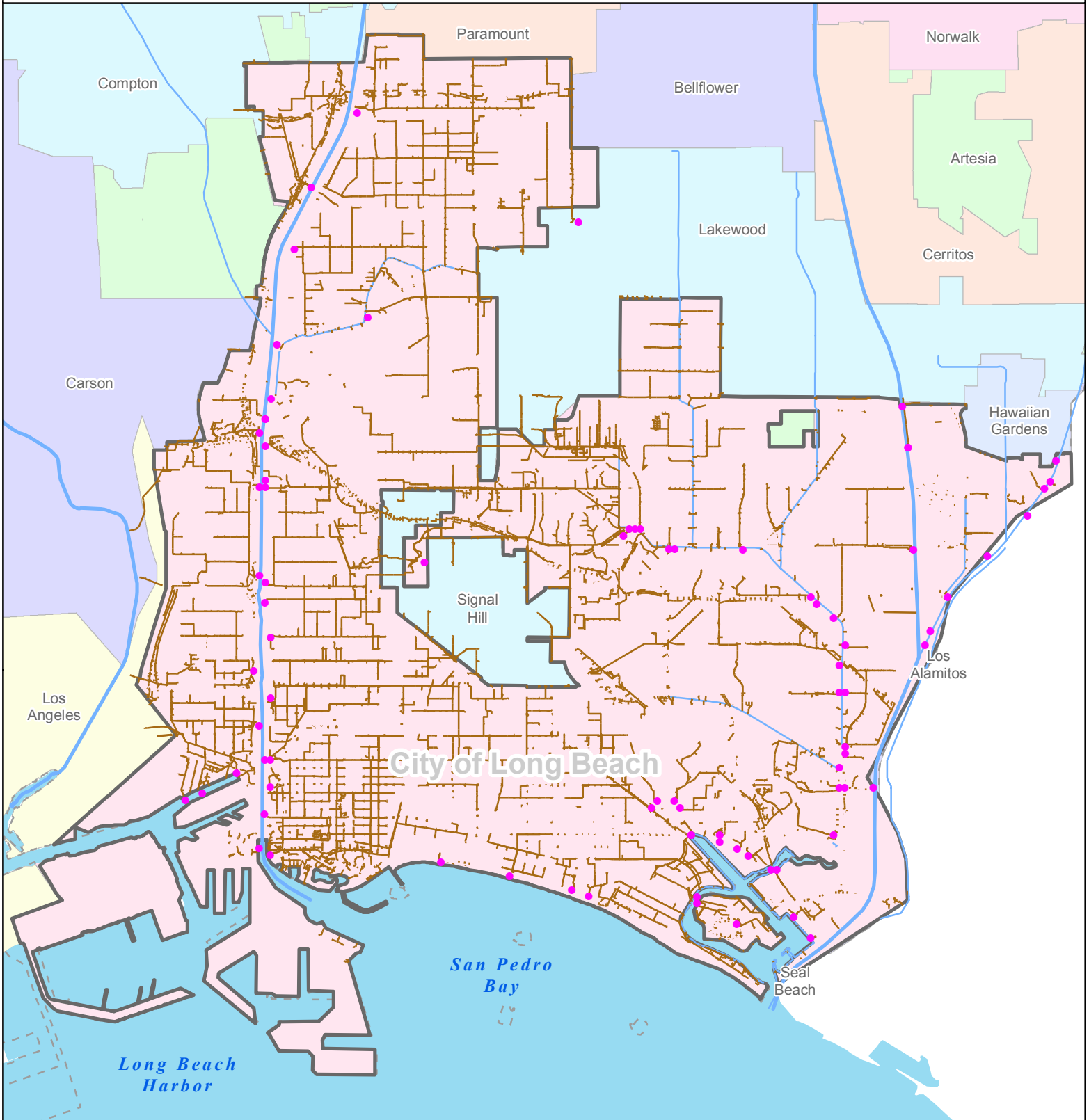
-  City Boundary
-  LA County Boundary



Pacific Ocean

Attachment C - City of Long Beach MS4

0 0.5 1 Miles



LEGEND

- MS4 Major Outfalls
- Storm Drains
- Receiving Water
- City Boundary
- - - LA County Boundary

Pacific Ocean

ATTACHMENT D – STANDARD PROVISIONS**I. STANDARD PROVISIONS – PERMIT COMPLIANCE****A. Duty to Comply**

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act, its regulations, and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof [40 CFR Section 122.41(a); California Water Code Sections 13261, 13263, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350, 13385].
2. The Discharger must comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement [40 CFR Section 122.41(a)(1)].

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a The Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order [40 CFR Section 122.41(c)].

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment [40 CFR Section 122.41(d)].

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the The Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a The Discharger only when necessary to achieve compliance with the conditions of this Order [40 CFR Section 122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort, or any exclusive privileges [40 CFR Section 122.41(g)].
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations [40 CFR Section 122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, USEPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [33 U.S.C. Section 1318(a)(4)(B); 40 CFR Section 122.41(i); California Water Code Sections 13267 and 13383]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [33 U.S.C. Section 1318(a)(4)(B)(i); 40 CFR Section 122.41(i)(1); California Water Code Sections 13267 and 13383];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [33 U.S.C. Section 1318(a)(4)(B)(ii); 40 CFR Section 122.41(i)(2); California Water Code Sections 13267 and 13383];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [33 U.S.C. Section 1318(a)(4)(B)(ii); 40 CFR Section 122.41(i)(3); California Water Code Sections 13267 and 13383; and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the California Water Code, any substances or parameters at any location [33 U.S.C. Section 1318(a)(4)(B)(ii); 40 CFR Section 122.41(i)(4); California Water Code Sections 13267 and 13383].

G. Bypass

1. Definitions

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR Section 122.41(m)(1)(i)].
- b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [40 CFR Section 122.41(m)(1)(ii)].

2. *Bypass not exceeding limitations.* The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below [40 CFR Section 122.41(m)(2)].
3. *Prohibition of bypass.* Bypass is prohibited, and the Regional Water Board may take enforcement action against a The Discharger for bypass, unless [40 CFR Section 122.41(m)(4)(i)]:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR Section 122.41(m)(4)(i)(A)];
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [40 CFR Section 122.41(m)(4)(i)(B)]; and
 - c. The Discharger submitted notices to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below [40 CFR Section 122.41(m)(4)(i)(C)].
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR Section 122.41(m)(4)(ii)].
5. Notice
 - a. *Anticipated bypass.* If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [40 CFR Section 122.41(m)(3)(i)].
 - b. *Unanticipated bypass.* The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice) [40 CFR Section 122.41(m)(3)(ii)].

H. Upset

“Upset” means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation [40 CFR Section 122.41(n)(1)].

1. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 CFR Section 122.41(n)(2)].
2. *Conditions necessary for a demonstration of upset.* If the Discharger wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 CFR Section 122.41(n)(3)]:
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR Section 122.41(n)(3)(i)];
 - b. The permitted facility was, at the time, being properly operated [40 CFR Section 122.41(n)(3)(ii)];
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) [40 CFR Section 122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR Section 122.41(n)(3)(iv)].
3. *Burden of proof.* In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR Section 122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition [40 CFR Section 122.41(f)].

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [40 CFR Section 122.41(b)].

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and

reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the California Water Code [40 CFR Sections 122.41(l)(3) and 122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR Section 122.41(j)(1)].
- B. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 for the analysis of pollutants unless another test procedure is required under 40 CFR Subchapters N or O or is otherwise specified in this Order for such pollutants [40 CFR Sections 122.41(j)(4) and 122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

- A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [40 CFR Section 122.41(j)(2)].
- B. Records of monitoring information shall include:
 - 1. The date, exact place, and time of sampling or measurements [40 CFR Section 122.41(j)(3)(i)];
 - 2. The individual(s) who performed the sampling or measurements [40 CFR Section 122.41(j)(3)(ii)];
 - 3. The date(s) analyses were performed [40 CFR Section 122.41(j)(3)(iii)];
 - 4. The individual(s) who performed the analyses [40 CFR Section 122.41(j)(3)(iv)];
 - 5. The analytical techniques or methods used [40 CFR Section 122.41(j)(3)(v)]; and
 - 6. The results of such analyses [40 CFR Section 122.41(j)(3)(vi)].
- C. Claims of confidentiality for the following information will be denied [40 CFR Section 122.7(b)]:
 - 1. The name and address of any permit applicant or The Discharger [40 CFR Section 122.7(b)(1)]; and

2. Permit applications and attachments, permits, and effluent data [40 CFR Section 122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, The Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR Section 122.41(h); California Water Code Section 13383].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below [40 CFR Section 122.41(k)(1)].
2. All applications submitted to the Regional Water Board shall be signed by either a principal executive officer or ranking elected official. For purposes of this Section, a principal executive officer includes: (i) the chief executive officer of the agency (e.g., Mayor), or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., City Manager, Director of Public Works, City Engineer, etc.).[40 CFR Section 122.22(a)(3)].
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above [40 CFR Section 122.22(b)(1)];
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) [40 CFR Section 122.22(b)(2)]; and
 - c. The written authorization is submitted to the Regional Water Board [40 CFR Section 122.22(b)(3)].

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR Section 122.22(c)].
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” [40 CFR Section 122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order [40 CFR Section 122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR Section 122.41(l)(4)(i)].
3. If a The Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136, or another method required for an industry-specific waste stream under 40 CFR subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [40 CFR Section 122.41(l)(4)(ii)].
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified by the Regional Water Board in this Order [40 CFR Section 122.41(l)(4)(iii)].

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [40 CFR Section 122.41(l)(5)].

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR Section 122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR Section 122.41(l)(6)(ii)]:
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR Sections 122.41(l)(6)(ii)(A) and 122.41(g)].
 - b. Any upset that exceeds any effluent limitation in this Order [40 CFR Section 122.41(l)(6)(ii)(B)].
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Water Board in this Order to be reported within 24 hours [40 CFR Section (l)(6)(ii)(C) and 122.44(g)].
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR Section 122.41(l)(6)(iii)].

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when [40 CFR Section 122.41(l)(1)]:

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Section 122.29(b) [40 CFR Section 122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order [40 CFR Section 122.41(l)(1)(ii)].

The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application

process or not reported pursuant to an approved land application plan [40 CFR Section 122.41(l)(1)(iii)].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements [40 CFR Section 122.41(l)(2)].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above [40 CFR Section 122.41(l)(7)].

I. Other Information

When a The Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 CFR Section 122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Regional Water Board and State Water Board is authorized to enforce the terms of this Order under several provisions of the California Water Code, including, but not limited to, Sections 13268, 13385, 13386, and 13387.
- B.** The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any such Sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Sections 402(a)(3) or 402(b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. The CWA provides that any person who negligently violates Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the CWA, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment of not more than one (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who knowingly violates such Sections, or such conditions or limitations is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318

or 405 of the CWA, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions [40 CFR Section 122.41(a)(2)] [California Water Code Sections 13385 and 13387].

- C. Any person may be assessed an administrative penalty by the Regional Water Board for violating Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any of such Sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000 [40 CFR Section 122.41(a)(3)].
- D. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both [40 CFR Section 122.41(j)(5)].
- E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR Section 122.41(k)(2)].

VII. ADDITIONAL STANDARD CONDITIONS APPLICABLE TO SPECIFIC CATEGORIES OF NPDES PERMITS [40 CFR SECTION 122.42]

- A. *Municipal separate storm sewer systems.* The operator of a large or medium MS4 or a municipal separate storm sewer that has been designated by the Regional Water Board or USEPA under 40 CFR Section 122.26(a)(1)(v) must submit an annual report by the anniversary of the date of the issuance of the permit for such MS4. The report shall include [40 CFR Section 122.42(c)]:
 1. The status of implementing the components of the storm water management program that are established as permit conditions [40 CFR Section 122.42(c)(1)];

2. Proposed changes to the storm water management programs that are established as permit condition. Such proposed changes shall be consistent with 40 CFR Section 122.26(d)(2)(iii) [40 CFR Section 122.42(c)(2)]; and
 3. Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under 40 CFR Section 122.26(d)(2)(iv) and (d)(2)(v) [40 CFR Section 122.42(c)(3)];
 4. A summary of data, including monitoring data, that is accumulated throughout the reporting year [40 CFR Section 122.42(c)(4)];
 5. Annual expenditures and budget for year following each annual report [40 CFR Section 122.42(c)(5)];
 6. A summary describing the number and nature of enforcement actions, inspections, and public education programs [40 CFR Section 122.42(c)(6)];
 7. Identification of water quality improvements or degradation [40 CFR Section 122.42(c)(7)];
- B. Storm water discharges.** The initial permits for discharges composed entirely of storm water issued pursuant to 40 CFR Section 122.26(e)(7) shall require compliance with the conditions of the permit as expeditiously as practicable, but in no event later than three years after the date of issuance of the permit. [40 CFR Section 122.42(d)].

**CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

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

**MONITORING AND REPORTING PROGRAM – CI No. 8052
WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL SEPARATE STORM
SEWER SYSTEM DISCHARGES FROM THE CITY OF LONG BEACH**

**February 6, 2014
(amended on September 8, 2016)**

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I. LEGAL BASIS FOR THE MONITORING AND REPORTING PROGRAM

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 (40 CFR) requires that all National Pollutant Discharge Elimination System (NPDES) Permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements (40 CFR §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), and 122.42(c)). Section 13383 of the California Water Code further authorizes the Regional Water Board, to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and California laws and/or regulations.

II. MONITORING OBJECTIVES AND SCOPE

A. Primary Objectives

The primary objectives of the Monitoring Program are to:

1. Assess the chemical, physical, and biological impacts of discharges from the municipal storm water sewer system (MS4) on receiving waters.
2. Assess compliance with receiving water limitations and water quality-based effluent limitations (WQBELs) established to implement Total Maximum Daily Load (TMDL) wet weather and dry weather waste load allocations (WLAs).
3. Characterize pollutant concentrations and loads in MS4 discharges.
4. Identify sources of pollutants in MS4 discharges.
5. Measure and improve the effectiveness of pollutant controls implemented under this Order.

B. Purpose

The results of the monitoring requirements outlined below shall be used to refine control measures for the reduction of pollutant loading and the protection and enhancement of the beneficial uses of the receiving waters and to implement the provisions listed in Order R4-2014-0024.

C. Integrated and Coordinated Monitoring Strategies

1. The Discharger may develop or participate in an integrated monitoring program to address all or part of the monitoring requirements of this Order and other monitoring obligations or requirements in a cost efficient and effective manner.
2. The Discharger may coordinate monitoring efforts on a watershed or subwatershed basis to leverage monitoring resources in an effort to increase cost-efficiency and effectiveness and to closely align monitoring with TMDL monitoring requirements and Watershed Management Programs.

D. Monitoring Program Elements

The Monitoring Program shall include the following elements:

1. Receiving water monitoring

Receiving water monitoring shall be performed at all surface waters downstream of the Discharger's MS4 discharges, and at TMDL receiving water compliance points as designated in TMDL monitoring plans approved by the Los Angeles Regional Water Board Executive Officer (see Table E-1 for a list of approved TMDL Monitoring Plans). The objectives of the receiving water monitoring include the following:

- a. Determine whether the receiving water limitations are being achieved ,
- b. To assess trends in pollutant concentrations over time, or during specified conditions, and
- c. To determine compliance with water quality standards and determine if the designated beneficial uses are fully supported by conducting water chemistry, aquatic toxicity and biological monitoring (bioassessment).

2. Storm water outfall based monitoring; including

3. The Discharger shall perform storm water outfall monitoring and include any TMDL monitoring requirements as specified in approved TMDL Monitoring Plans (see Table E-1). Outfall monitoring locations shall be representative of the land uses within the Permittee's jurisdiction. The objectives of the storm water outfall based monitoring program include the following:
 - a. Compare concentrations of pollutants in the Discharger's MS4 effluent to municipal action levels, as described in Attachment G of this Order,

- b. Determine whether a Permittee's discharge is in compliance with applicable storm water WQBELs derived from WLAs,
- c. To determine if the discharges from the MS4 cause or contribute to an exceedance of receiving water limitations.
- d. To determine the annual load of pollutants from the MS4.
- e. To determine relationships between the range of concentration of pollutants and storm size and intensity, elevation, watershed, and any other variables that may provide an insight on improving the storm water program.

4. Non-storm water outfall based monitoring

The Discharger shall conduct outfall monitoring for non-storm water discharges and include any TMDL monitoring requirements specified in approved TMDL Monitoring Plans (see Table E-1). At a minimum, the Discharger shall monitor outfalls with significant non-storm water discharges that remain unaddressed after source identification. The objectives of the non-storm water outfall based monitoring program include the following:

- a. Determine whether a Permittee's discharge is in compliance with applicable non-storm water WQBELs derived from TMDL WLAs,
- b. To determine if the discharge exceeds non-storm water action levels, as described in Attachment G of this Order,
- c. To determine if the discharge contributes to or causes an exceedance of receiving water limitations,
- d. To assist in identifying illicit discharges as described in Part VII.D of this Order.
- e. To characterize the discharge's quantity, and quality and annual pollutant load if applicable.

5. New Development/Re-development effectiveness tracking.

The objectives of best management practices (BMP) effectiveness tracking is to determine if the conditions in the building permit issued by the Discharger are being implemented to ensure the volume of storm water associated with the design storm is retained on-site as required by Part VII.D of Order R4-2014-0024x.

6. Regional studies

The objectives of regional studies are to further characterize the impact of the MS4 discharges on the beneficial uses of receiving waters. Regional studies shall include the Southern California bight studies, the Southern California Stormwater Monitoring Coalition (SMC) Regional Watershed Monitoring Program (bioassessment) and special studies as specified in approved TMDLs (see Section XIX TMDL Reporting, below).

III. GENERAL MONITORING AND REPORTING REQUIREMENTS

- A. Monitoring shall be conducted in accordance with the requirements specified in Attachment D to this Order (Part III, Standard Provisions - Monitoring).
- B. Records of monitoring information shall include information required under Attachment D to this Order (Part IV, Standard Provisions - Records).
- C. All applications, reports, plans, or other information submitted to the Los Angeles Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Attachment D to this Order (Part V.B, Standard Provisions - Reporting, Signatory and Certification Requirements).
- D. Monitoring results shall be reported in accordance with the requirements specified in Attachment D to this Order (Part V.C, Standard Provisions - Reporting, Monitoring Reports).
- E. All monitoring and reporting shall be conducted in accordance with the Standard Monitoring Provisions specified in Part XIV of this MRP.
- F. **Sampling Methods**
 - 1. Sampling methods shall be fully described in the Discharger's Integrated Monitoring Program (IMP) or Coordinated Integrated Monitoring Program (CIMP) and according to the provisions of the Standard Provisions for Monitoring described in Attachment D to this Order and Part XIV of this MRP.
 - 2. Grab samples shall be taken for constituents that are required to be collected as such (e.g., pathogen indicator bacteria, oil and grease, cyanides, and volatile organics); in instances where grab samples are generally expected to be sufficient to characterize water quality conditions (primarily dry weather); and where the sample location limits the Discharger's ability to install an automated sampler, as provided for in an approved IMP or CIMP.
 - 3. At a minimum, a sufficient volume of sample must be collected to perform all of the required biological and chemical tests, including TIEs where aquatic toxicity is observed during the sample event.
 - 4. Sampling and monitoring methods for trash shall be conducted in accordance with the applicable requirements specified in Part VIII of this Order.
 - 5. Flow may be estimated using USEPA methods at receiving water monitoring stations where flow measuring equipment is not in place.
 - 6. Flow may be estimated for storm water outfall monitoring based on drainage area, impervious cover, and precipitation data as approved in an IMP or CIMP.

G. Analytical Procedures

1. Suspended-Sediment Concentration (SSC) shall be analyzed per American Society for Testing and Materials (ASTM) Standard Test Method D-3977-97.
2. Monitoring methods for trash shall be conducted in accordance with the applicable requirements specified in Part VIII of this Order.
3. Aquatic toxicity shall be monitored in accordance with Part XI of this MRP.
4. All other parameters shall be analyzed according to the provisions of the Standard Provisions for Monitoring described in Attachment D to Order No. R4-2014-0024 and Part XIV of this MRP.

H. Reporting

1. Monitoring results shall be submitted to the Los Angeles Regional Board in a manner consistent with the requirements identified in Part XVIII.A.5 and Part XVIII.A.7 of this MRP.
2. Reporting requirements related to the monitoring of trash shall be conducted in accordance with Part VIII of Order No. R4-2014-0024.

IV. INTEGRATED MONITORING PROGRAMS

A. Integrated Monitoring Program (IMP)

1. The Discharger may develop an Integrated Monitoring Program designed to satisfy the monitoring requirements of Order No. R4-2014-0024.
2. The monitoring requirements contained in TMDL Monitoring Plans approved by the Executive Officer of the Los Angeles Regional Water Board are incorporated by reference into this MRP (See Table E-1 for a list of approved TMDL Monitoring Plans).
3. The Integrated Monitoring Program may leverage monitoring resources by selecting monitoring locations, parameters, or monitoring techniques that will satisfy multiple monitoring requirements.
4. Where appropriate, the Integrated Monitoring Program may develop and utilize alternative approaches to meet the Primary Objectives (Part II.A). Sufficient justification shall be provided in the IMP for the alternative approach(es). Such alternative approaches shall be subject to public review and final approval by the Los Angeles Regional Water Board Executive Officer.
5. The requirements of an approved TMDL Monitoring Plan may be modified by an IMP that is subsequently approved by the Executive Officer of the Los Angeles Regional Water Board.

6. At a minimum, the IMP 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, except as provided in Parts IV.B.2 and 3 of this MRP.

B. Coordinated Integrated Monitoring Program (CIMP)

1. Benefits of the CIMP Approach

- a. The CIMP provides opportunities to increase the cost efficiency and effectiveness of the monitoring program. The greatest efficiency may be achieved when a CIMP is designed and implemented on a watershed/receiving water basis.
 - b. A CIMP may be employed to implement regional studies, where the Discharger or other entity leads the effort in directing the study, or the Discharger entity provides funding or in lieu services.
2. The Discharger may coordinate their monitoring programs with other entities to develop and implement a CIMP. A CIMP may be developed to address one or more of the required monitoring elements (i.e., receiving water monitoring, outfall based monitoring, regional monitoring or special studies) and may be county-wide or limited to a single receiving water/ watershed, sub-watershed or defined jurisdictional boundary.
 3. The requirements of an approved TMDL Monitoring Plan may be modified by an IMP or CIMP that is subsequently approved by the Executive Officer of the Los Angeles Regional Water Board.
 4. The Discharger shall not be required to submit an IMP if the Discharger participates in a CIMP that complies with all the applicable monitoring requirements in this Order.
 5. If the CIMP addresses some but not all of the applicable monitoring requirements required under this Order, the Discharger shall submit an IMP that references the CIMP and addresses those requirements not included in the CIMP. The Discharger must describe how the IMP and CIMP fulfill all of the applicable monitoring requirements contained in Order R4-2014-0024.
 6. Where appropriate, the Discharger may include in the CIMP alternative approaches to meet the primary objectives in Part II.A. The Discharger shall provide sufficient justification in the CIMP for the alternative approach(es). Such alternative approaches shall be subject to public review and final approval by the Los Angeles Regional Water Board Executive Officer.

C. Schedule for Submitting the Monitoring Plan to the Los Angeles Regional Water Board and Conducting Outfall Screening

1. Within three (3) months after the effective date of this Order, the Discharger shall submit a letter of intent to the Executive Officer of the Los Angeles Regional Water Board describing the Discharger's intention to follow an IMP

or a CIMP approach for each of the required monitoring plan elements in conjunction with its notification regarding development of a WMP or EWMP.

2. If the Discharger elects to develop a WMP, the Discharger shall submit an IMP or CIMP to the Executive Officer of the Los Angeles Regional Water Board concurrently with the draft WMP.
3. If the Discharger elects to develop an EWMP, the Discharger shall submit an IMP or CIMP to the Executive Officer of the Los Angeles Regional Water Board by June 28, 2014.
4. If upon finalization of the CIMP, the Discharger developed an IMP and determines the IMP must be revised to include monitoring requirements not covered under the final CIMP, the revised IMP shall be submitted to the Executive Officer of the Los Angeles Regional Water Board within 60 days after approval of the CIMP by the Executive Officer of the Los Angeles Regional Water Board.
5. Monitoring shall commence within 30 days after approval of the IMP, or within 90 days after approval of the CIMP, by the Executive Officer of the Los Angeles Regional Water Board.
6. If the Discharger does not elect to develop a Watershed Management Program (WMP) or Enhanced Watershed Management Program (EWMP) and corresponding IMP or CIMP, monitoring shall be conducted on per the requirements of this MRP, beginning six (6) months after the effective date of this Order.
7. Monitoring requirements pursuant to Order No. 99-060, and pursuant to approved TMDL monitoring plans identified in Table E-1, shall remain in effect until the Executive Officer of the Los Angeles Regional Board approves the Discharger's IMP and/or CIMP.

V. TMDL MONITORING PLANS

Table E-1. Approved TMDL Monitoring Plans by Watershed Management Area

TMDL	Comment	Date of Final Plan	Los Angeles Regional Water Board Approval Date
Dominguez Channel and Greater Harbors Waters Watershed Management Area			
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL	Monitoring Plan is due on November 23, 2013.	---	---
Los Angeles River Watershed Management Area			

TMDL	Comment	Date of Final Plan	Los Angeles Regional Water Board Approval Date
Los Angeles River Watershed Trash TMDL	TMRP is due by December 30, 2016. PMRP is due by March 8, 2018 or as part of the first adaptive management process for the approved Lower Los Angeles River WMP and CIMP.	---	---
Los Angeles River Nitrogen Compounds and Related Effects TMDL	Monitoring Plan was due on March 23, 2005.	March 23, 2005	Has not been approved.
Los Angeles River and Tributaries Metals TMDL	Los Angeles River Metals TMDL Coordinated Monitoring Plan	March 25, 2008	April 11, 2008
Los Angeles River Watershed Bacteria TMDL	Monitoring Plan is due on March 23, 2013.	---	---
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL	USEPA Established TMDL	N/A	N/A
San Gabriel River Watershed Management Area			
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL	USEPA Established TMDL	N/A	N/A
Los Cerritos Channel and Alamitos Bay Watershed Management Area			
Los Cerritos Channel Metals TMDL	USEPA Established TMDL	N/A	N/A
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL	Colorado Lagoon TMDL Monitoring Plan (CLTMP)	June 15, 2012	August 23, 2012

VI. RECEIVING WATER MONITORING

A. Integrated Monitoring Program Receiving Water Monitoring Requirements

1. The IMP shall contain the following information for receiving water monitoring requirements:
 - a. Declaration of whether receiving water monitoring is conducted under an IMP, CIMP or both.
 - b. If receiving water monitoring is performed under the IMP, the plan must contain the following information:
 - i. A map (preferably GIS) identifying the proposed receiving water monitoring stations for both dry weather and wet weather monitoring.
 - ii. An explanation of how and why monitoring at the proposed locations will provide representative measurement of the effects of the Permittee's MS4 discharges on the receiving water.
 - iii. Identification of applicable TMDLs and TMDL compliance points, based on approved TMDL Monitoring Plans and/or as identified in the Basin Plan for the applicable TMDLs.
 - iv. A description of how the Discharger is fulfilling its obligations for TMDL receiving water monitoring under this IMP, CIMP or other monitoring plans.
 - v. A description of how the Discharger's MS4 effluent is contributing to outfall monitoring locations and to mass emission station monitoring locations. .

B. Coordinated and Integrated Monitoring Program Receiving Water Monitoring Requirements

1. The CIMP shall contain the following information for receiving water monitoring requirements:
 - a. A list of the participants.
 - b. A map (preferably GIS) delineating the geographic boundaries of the monitoring plan including the receiving waters, the MS4 catchment drainages and outfalls, subwatershed boundaries (i.e., HUC-12 or HUC-12 equivalent), political boundaries, land use, and the proposed receiving water monitoring stations for both dry weather and wet weather receiving water monitoring.
 - c. An explanation of how and why monitoring at the proposed locations will provide representative measurement of the effects of the MS4 discharges on the receiving water.
2. The CIMP shall contain the following receiving water monitoring requirements pertaining to TMDLs:

- a. A list of applicable TMDLs and TMDL compliance points, based on approved TMDL Monitoring Plans and/or as identified in the Basin Plan for the applicable TMDLs.
 - b. Identification of the proposed receiving water monitoring stations that fulfill the TMDL Monitoring Plan(s) requirements.
 - c. Shoreline Monitoring Stations monitored pursuant to a bacteria TMDL. Sampling for bacterial indicators (total coliform, fecal coliform (or *E. coli*), and enterococcus) at shoreline monitoring locations associated with an MS4 outfall and addressed by a TMDL shall be conducted 3-5 times per week at sites subject to the reference system criterion for allowable exceedance days, and weekly at sites subject to the antidegradation criterion for allowable exceedance days.
3. The CIMP shall contain the following receiving water monitoring requirements pertaining to mass emission stations
- a. Location of mass emission stations,
 - b. Description of monitoring at outfalls and at mass emission stations.

C. Minimum Wet Weather Receiving Water Monitoring Requirements

1. The IMP or CIMP shall incorporate the following minimum requirements for monitoring the receiving water during wet weather conditions:
 - a. The receiving water shall be monitored a minimum of three times per year for all parameters except aquatic toxicity, which must be monitored at least twice per year, or more frequently if required by applicable TMDL Monitoring Plans.
 - b. Monitoring shall be performed in the receiving water during wet weather conditions, defined for the purposes of this monitoring program as follows:
 - i. When the receiving water is an ocean or estuarine water body, wet weather occurs during a storm event of greater than or equal to 0.1 inch of precipitation, as measured from at least 50 percent of the Los Angeles County controlled rain gauges within the watershed, or based on an alternative precipitation threshold as provided for in an approved IMP or CIMP.
 - ii. When the receiving water body is a river, stream or creek, wet weather shall be defined as when the flow within the receiving water is at least 20 percent greater than the base flow or an alternative threshold as provided for in an approved IMP or CIMP, or as defined by effective TMDLs within the watershed.
 - iii. Monitoring shall occur during wet weather conditions, including targeting the first significant rain event of the storm year following the criteria below, and at least two additional wet weather events within the same wet weather season. The Discharger shall target the first storm event of the storm year with a predicted rainfall of at least 0.25 inch at

a seventy percent probability of rainfall at least 24 hours prior to the event start time. The Discharger shall target subsequent storm events that forecast sufficient rainfall and runoff to meet program objectives and site specific study needs. Sampling events shall be separated by a minimum of three days of dry conditions (less than 0.1 inch of rain each day).

- c. Wet weather receiving water monitoring shall begin as soon as possible after storm water outfall-based monitoring, in order to be reflective of potential impacts from MS4 discharges.
- d. At a minimum, the following parameters shall be monitored unless a surrogate pollutant has been approved by the Executive Officer of the Los Angeles Regional Water Board.
 - i. Flow
 - ii. Pollutants assigned a receiving water limitation derived from TMDL WLAs (See Part VIII of this Order),
 - iii. Other pollutants identified on the CWA Section 303(d) List for the receiving water or downstream receiving waters,
 - iv. Total Suspended Solids (TSS) and Suspended-Sediment Concentration (SSC) if the receiving water is listed on the CWA 303(d) list for sedimentation, siltation or turbidity,¹
 - v. Field measurements applicable to inland freshwater bodies only: hardness, pH, dissolved oxygen, temperature, and specific conductivity,
 - vi. Aquatic Toxicity (twice per year, once during first storm event of the storm year as specified above).
- e. Additionally, the screening parameters in Table E-2 shall be monitored in the first year of monitoring during the first significant rain event of the storm year. If a parameter is not detected at the Method Detection Limit (MDL) for its respective test method or the result is below the lowest applicable water quality objective, and is not otherwise identified in subparts d.i.-d.vi. above, it need not be further analyzed. If a parameter is detected exceeding the lowest applicable water quality objective then the parameter shall be analyzed for the remainder of the Order during wet weather at the receiving water monitoring station where it was detected.

D. Minimum Dry Weather Receiving Water Monitoring

1. The IMP and/or CIMP shall incorporate the following minimum requirements for monitoring the receiving water during dry weather conditions:

¹ Gray, John, R., G. Douglas Glysson, Lisa M. Turcios, and Gregory E. Schwarz. 2000. *Comparability of Suspended-Sediment Concentration and Total Suspended Solids Data*. United States Geological Survey. Water Resources Investigations Report 00-4191. August 2000.

- a. The receiving water shall be monitored a minimum of two times per year for all parameters, or more frequently if required by applicable TMDL Monitoring Plans. One of the monitoring events shall be during the month with the historically lowest instream flows, or where instream flow data are not available, during the historically driest month.
- b. Monitoring shall be performed in the receiving water during dry weather conditions, defined as follows:
 - i. When the receiving water is the ocean or estuary water body, dry weather occurs on days with less than 0.1 inch of rain and those days not less than three days after a rain event of 0.1 inch or greater within the watershed, as measured from at least 50 percent of Los Angeles County controlled rain gauges within the watershed, or an alternative criterion as provided for in an approved IMP or CIMP.
 - ii. When the receiving water body is a river, stream or creek, dry weather shall be defined as when the flow is less than 20 percent greater than the base flow or as defined by effective TMDLs within the watershed, or an alternative criterion as provided for in an approved IMP or CIMP.
- c. At a minimum the following parameters shall be monitored during dry weather conditions, unless a surrogate pollutant has been approved by the Executive Officer of the Los Angeles Regional Water Board:
 - i. Flow
 - ii. Pollutants assigned receiving water limitations derived from TMDL dry weather WLAs,
 - iii. Other pollutants identified on the CWA Section 303(d) List for the receiving water or downstream receiving waters,
 - iv. TSS, pH, and hardness, when metals are monitored,
 - v. Field measurements for monitoring of inland freshwater bodies: dissolved oxygen, pH, temperature, and specific conductance,
 - vi. Aquatic Toxicity (once per year, during the month with the historically lowest flows).
- d. Additionally, the parameters in Table E-2 shall be monitored in the first year of monitoring during the critical dry weather event. If a parameter is not detected at the Method Detection Limit (MDL) for its respective test method or the result is below the lowest applicable water quality objective, and is not otherwise identified in subparts c.i.-c.iii. or c.v.-c.vii. above, it need not be further analyzed. If a parameter is detected exceeding the lowest applicable water quality objective then the parameter shall be analyzed for the remainder of the Order during dry weather at the receiving water monitoring station where it was detected.

Table E-2. Storm Water Monitoring Program’s Constituents with Associated Minimum Levels (MLs)²

CONSTITUENTS	MLs
CONVENTIONAL POLLUTANTS	mg/L
Oil and Grease	5
Total Phenols	0.1
Cyanide	0.005
pH	0 - 14
Temperature	N/A
Dissolved Oxygen	Sensitivity to 5 mg/L
BACTERIA (single sample limits)	MPN/100ml
Total coliform (marine waters)	10,000
Enterococcus (marine waters)	104
Fecal coliform (marine & fresh waters)	400
E. coli (fresh waters)	235
GENERAL	mg/L
Dissolved Phosphorus	0.05
Total Phosphorus	0.05
Turbidity	0.1 NTU
Total Suspended Solids	2
Total Dissolved Solids	2
Volatile Suspended Solids	2
Total Organic Carbon	1
Total Petroleum Hydrocarbon	5
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Total Ammonia-Nitrogen	0.1
Total Kjeldahl Nitrogen	0.1
Nitrate-Nitrite	0.1
Alkalinity	2
Specific Conductance	1 umho/cm
Total Hardness	2
MBAS	0.5
Chloride	2
Fluoride	0.1
Methyl tertiary butyl ether (MTBE)	1
Perchlorate	4 µg/L
METALS (Dissolved & Total)	µg/L
Aluminum	100
Antimony	0.5
Arsenic	1
Beryllium	0.5
Cadmium	0.25
Chromium (total)	0.5
Chromium (Hexavalent)	5
Copper	0.5
Iron	100

² For priority pollutants, MLs published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (SIP) shall be used for all analyses, unless otherwise specified. Method Detection Levels (MDLs) must be lower than or equal to the ML value, unless otherwise approved by the Regional Board.

CONSTITUENTS	MLs
Lead	0.5
Mercury	0.5
Nickel	1
Selenium	1
Silver	0.25
Thallium	1
Zinc	1
SEMIVOLATILE ORGANIC COMPOUNDS	
ACIDS	µg/L
2-Chlorophenol	2
4-Chloro-3-methylphenol	1
2,4-Dichlorophenol	1
2,4-Dimethylphenol	2
2,4-Dinitrophenol	5
2-Nitrophenol	10
ACIDS	µg/L
4-Nitrophenol	5
Pentachlorophenol	2
Phenol	1
2,4,6-Trichlorophenol	10
BASE/NEUTRAL	µg/L
Acenaphthene	1
Acenaphthylene	2
Anthracene	2
Benzidine	5
1,2 Benzanthracene	5
Benzo(a)pyrene	2
Benzo(g,h,i)perylene	5
3,4 Benzoflouranthene	10
Benzo(k)flouranthene	2
Bis(2-Chloroethoxy) methane	5
Bis(2-Chloroisopropyl) ether	2
Bis(2-Chloroethyl) ether	1
Bis(2-Ethylhexl) phthalate	5
4-Bromophenyl phenyl ether	5
Butyl benzyl phthalate	10
2-Chloroethyl vinyl ether	1
2-Chloronaphthalene	10
4-Chlorophenyl phenyl ether	5
Chrysene	5
Dibenzo(a,h)anthracene	0.1
1,3-Dichlorobenzene	1
1,4-Dichlorobenzene	1
1,2-Dichlorobenzene	1
3,3-Dichlorobenzidine	5
Diethyl phthalate	2
Dimethyl phthalate	2
di-n-Butyl phthalate	10
2,4-Dinitrotoluene	5
2,6-Dinitrotoluene	5
4,6 Dinitro-2-methylphenol	5
1,2-Diphenylhydrazine	1

CONSTITUENTS	MLs
di-n-Octyl phthalate	10
Fluoranthene	0.05
Fluorene	0.1
Hexachlorobenzene	1
Hexachlorobutadiene	1
Hexachloro-cyclopentadiene	5
Hexachloroethane	1
Indeno(1,2,3-cd)pyrene	0.05
Isophorone	1
Naphthalene	0.2
Nitrobenzene	1
N-Nitroso-dimethyl amine	5
N-Nitroso-diphenyl amine	1
N-Nitroso-di-n-propyl amine	5
Phenanthrene	0.05
BASE/NEUTRAL	µg/L
Pyrene	0.05
1,2,4-Trichlorobenzene	1
CHLORINATED PESTICIDES	µg/L
Aldrin	0.005
alpha-BHC	0.01
beta-BHC	0.005
delta-BHC	0.005
gamma-BHC (lindane)	0.02
alpha-chlordane	0.1
gamma-chlordane	0.1
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
Dieldrin	0.01
alpha-Endosulfan	0.02
beta-Endosulfan	0.01
Endosulfan sulfate	0.05
Endrin	0.01
Endrin aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Toxaphene	0.5
POLYCHLORINATED BIPHENYLS	µg/L
Aroclor-1016	0.5
Aroclor-1221	0.5
Aroclor-1232	0.5
Aroclor-1242	0.5
Aroclor-1248	0.5
Aroclor-1254	0.5
Aroclor-1260	0.5
ORGANOPHOSPHATE PESTICIDES	µg/L
Atrazine	2
Chlorpyrifos	0.05
Cyanazine	2
Diazinon	0.01
Malathion	1

CONSTITUENTS	MLs
Prometryn	2
Simazine	2
HERBICIDES	µg/L
2,4-D	10
Glyphosate	5
2,4,5-TP-SILVEX	0.5

VII. OUTFALL MONITORING

A. Storm Drains, Channels and Outfalls Map(s) and/or Database. The IMP and/or CIMP shall include a map(s) and/or database of the MS4 to include the following information:

1. Surface water bodies receiving discharges from the MS4
2. Sub-watershed (HUC-12 or HUC-12 equivalent) boundaries
3. Land use overlay
4. Effective Impervious Area (EIA) overlay (if available)
5. Jurisdictional boundaries
6. The location and length of all open channel and underground pipes 18 inches in diameter or greater (with the exception of catch basin connector pipes)
7. The location of all dry weather diversions
8. The location of all major MS4 outfalls within the Discharger's jurisdictional boundary. Each major outfall shall be assigned an alphanumeric identifier, which must be noted on the map
9. Notation of outfalls with significant non-storm water discharges (to be updated annually)
10. Storm drain outfall catchment areas for each major outfall within the Discharger's jurisdiction
11. Each mapped MS4 outfall shall be linked to a database containing descriptive and monitoring data associated with the outfall. The data shall include:
 - a. Ownership
 - b. Latitude and longitude coordinates
 - c. Physical description
 - d. Photographs of the outfall, where possible, to provide baseline information to track operation and maintenance needs over time
 - e. Determination of whether the outfall conveys significant non-storm water discharges
 - f. Storm water and non-storm water monitoring data

VIII. STORM WATER OUTFALL MONITORING

A. Storm Water Outfall Based Monitoring

1. Storm water discharges from the MS4 shall be monitored at outfalls and/or alternative access points such as manholes or in channels at the Discharger's jurisdictional boundary.
2. The Discharger shall consider the following criteria when selecting outfalls for storm water discharge monitoring:
 - a. The storm water outfall based monitoring program should ensure representative data by monitoring at least one major outfall per subwatershed (HUC-12 or HUC-12 equivalent) drainage area, within the Permittee's jurisdiction, or alternate approaches as approved in an IMP or CIMP.
 - b. The drainage(s) to the selected outfall(s) shall be representative of the land uses within the Discharger's jurisdiction.
 - c. If the Discharger implements an IMP, to the extent possible, the selected outfalls shall not receive drainage from another jurisdiction. If this is not possible, the Discharger shall conduct "upstream" and "downstream" monitoring as the system enters and exits the Discharger's jurisdiction.
 - d. The Discharger shall select outfalls with configurations that facilitate accurate flow measurement and consideration of safety of monitoring personnel.
 - e. The specific location of sample collection may be within the MS4 upstream of the actual outfall to the receiving water if field safety or accurate flow measurement require it.

B. Minimum Storm Water Outfall Based Monitoring Requirements

1. The IMP and/or CIMP shall incorporate the following minimum requirements for monitoring storm water outfalls:
 - a. Storm water discharges shall be monitored a minimum of three times per year for all parameters except aquatic toxicity.
 - b. Monitoring shall be performed at the selected outfalls during wet weather conditions, defined for the purposes of this monitoring program as follows:
 - i. When the receiving water is the ocean or estuary water body, wet weather occurs during a storm event equal to or greater than 0.1 inch of precipitation, as determined by the closest Los Angeles County rain gauge to the catchment area draining to the outfall, or based on an alternative precipitation threshold as provided for in an approved IMP or CIMP.
 - ii. When the receiving water body is a river, stream or creek, wet weather shall be defined as when the flow within the receiving water is at least 20 percent greater than the base flow or an alternative threshold as

provided for in an approved IMP or CIMP, or as defined by effective TMDLs within the watershed.

- iii. Monitoring of storm water discharges shall occur during wet weather conditions resulting from the first rain event of the year, and at least two additional wet weather events within the same wet weather season. The Discharger shall target the first storm event of the storm year with a predicted rainfall of at least 0.25 inch at a seventy percent probability of rainfall at least 24 hours prior to the event start time. The Discharger shall target subsequent storm events that forecast sufficient rainfall and runoff to meet program objectives and site specific study needs. Sampling events shall be separated by a minimum of three days of dry conditions (less than 0.1 inch of rain each day).
- c. At a minimum, the following parameters shall be monitored unless a surrogate pollutant has been approved by the Executive Officer of the Los Angeles Regional Water Board:
 - i. Flow
 - ii. Pollutants assigned a WQBEL derived from TMDL WLAs (See Part VIII of this Order),
 - iii. Other pollutants identified on CWA Section 303(d) List for the receiving water or downstream receiving waters,
 - iv. Total Suspended Solids (TSS) and Suspended-Sediment Concentration (SSC) if the receiving water is listed on the CWA Section 303(d) list for sedimentation, siltation or turbidity,
 - v. Field measurements applicable to inland freshwater bodies only: hardness, pH, dissolved oxygen, temperature, and specific conductivity,
 - vi. Pollutants identified in a TIE conducted at the downstream receiving water monitoring station during the most recent sample event, or where the TIE conducted on the receiving water sample was inconclusive, aquatic toxicity. If the discharge exhibits aquatic toxicity, then a TIE shall be conducted.
- d. Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.C.1.e.

C. Sampling Methods

1. Samples shall be collected during the first 24 hours of the storm water discharge or for the entire storm water discharge if it is less than 24 hours.
2. If the Discharger is not participating in a IMP or CIMP, the flow-weighted composite sample for a storm water discharge shall be taken with a continuous sampler, or it shall be taken as a combination of a minimum of 3 sample aliquots, taken in each hour of discharge for the first 24 hours of the

discharge or for the entire discharge if the storm event is less than 24 hours, with each aliquot being separated by a minimum of 15 minutes within each hour of discharge, unless the Los Angeles Regional Water Board Executive Officer approves an alternate protocol.

IX. NON-STORM WATER OUTFALL SCREENING AND MONITORING

A. Objectives of the Non-Storm Water Outfall Screening and Monitoring Program

The outfall screening and monitoring process is intended to meet the following objectives.

1. 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.
2. 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, natural flows, or from unknown sources.
3. Refer information related to identified IC/IDs to the IC/ID Elimination Program (Part VII.D of this Order) for appropriate action.
4. 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.
5. Prioritize monitoring of outfalls considering the potential threat to the receiving water and applicable TMDL compliance schedules.
6. Conduct monitoring or assess existing monitoring data to determine the impact of non-storm water discharges on the receiving water.
7. Conduct monitoring or other investigations to identify the source of pollutants in non-storm water discharges.
8. Use results of the screening process to evaluate the conditionally exempt non-storm water discharges identified in Parts IV.B.2 of this Order and take appropriate actions pursuant to Part IV.B.3 of this Order for those discharges that have been found to be a source of pollutants. Any future reclassification shall occur per the conditions in Parts IV.B.3 of this Order.
9. Maximize Discharger resources by integrating the screening and monitoring process into existing or planned IMP and/or CIMP efforts.

B. Outfall Screening and Monitoring Plan

1. Concurrent with the development of an IMP or CIMP, or within one (1) year of the effective date of this Order, the Discharger shall submit a non-storm water outfall-based screening and monitoring program plan that documents with written procedures an explanation of how the program is to be implemented.

The procedures must be updated as needed to reflect the Discharger's program. The plan may be a separate stand-alone document or may be part of an IMP or CIMP.

2. The Discharger shall conduct at least one re-assessment of its non-storm water outfall-based screening and monitoring program during the term of this Order to determine whether changes or updates are needed. Where changes are needed, the Discharger shall make the changes in its written program documents, implement these changes in practice after obtaining approval from the Los Angeles Regional Board Executive Officer, and describe the changes within the next annual report.

C. Identification of Outfalls with Significant Non-Storm Water Discharge

1. Based on the inventory of MS4 outfalls required under Part VII of this MRP, the Discharger shall identify MS4 outfalls with significant non-storm water discharges. Significant non-storm water discharges may be determined by one or more of the following characteristics:
 - a. Discharges from major outfalls subject to dry weather TMDLs.
 - b. Discharges for which existing monitoring data exceeds non-storm water Action Levels identified in Attachment G of this Order.
 - c. Non-storm water discharges that have caused or have the potential to cause overtopping of downstream diversions.
 - d. Discharges exceeding a proposed threshold discharge rate as determined by the Discharger.
 - e. Discharges with the largest pollutant loading into the receiving waters;
 - f. Other characteristics as determined by the Discharger and incorporated within their screening program plan.

D. Inventory of MS4 Outfalls with Non-Storm Water Discharges

1. The Discharger shall develop and maintain an inventory of MS4 outfalls and identify those with known significant non-storm water discharges and those requiring no further assessment. If the MS4 outfall requires no further assessment, the inventory must include the rationale for the determination of no further action required. This inventory shall be recorded in a database with outfall locations linked to the storm drains, channels and outfalls map required in Part VII.A of this MRP. A GIS version is preferred.
2. As a component of the inventory, the Discharger shall record existing data from past outfall screening and monitoring and initiate data collection efforts as warranted. The data shall include the physical attributes of those MS4 outfalls or alternative monitoring locations determined to have significant non-storm water discharges. Attributes to be obtained shall, at a minimum, include:
 - a. Date and time of last visual observation or inspection

- b. Outfall alpha-numeric identifier
 - c. Description of outfall structure including size (e.g., diameter and shape)
 - d. Description of receiving water at the point of discharge (e.g., natural, soft-bottom with armored sides, trapezoidal, concrete channel)
 - e. Latitude/longitude coordinates
 - f. Nearest street address
 - g. Parking, access, and safety considerations
 - h. Photographs of outfall condition
 - i. Photographs of significant non-storm water discharge (or indicators of discharge) unless safety considerations preclude obtaining photographs
 - j. Estimation of discharge rate
 - k. All diversions either upstream or downstream of the outfall
 - l. Observations regarding discharge characteristics such as turbidity, odor, color, presence of debris, floatables, or characteristics that could aid in pollutant source identification.
4. Each year, the storm drains, channels and outfalls map and associated outfall database required in Part VII.A of the MRP shall be updated to incorporate the most recent characterization data for outfalls with significant non-storm water discharge.

E. Prioritized Source Identification

1. Outfalls within the inventory shall be prioritized in the following order (a= highest priority, etc.) for source identification activities:
 - a. Outfalls discharging directly to receiving waters with WQBELs or receiving water limitations in the TMDL provisions for which final compliance deadlines have passed.
 - b. All major outfalls and other outfalls that discharge to a receiving water subject to a TMDL shall be prioritized according to TMDL compliance schedules.
 - c. Outfalls for which monitoring data exist and indicate recurring exceedances of one or more of the Action Levels identified in Attachment G of this Order.
 - d. All other major outfalls identified to have significant non-storm water discharges.
2. The Discharger shall 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 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 in the inventory within 5 years of the effective date of this Order.

3. Alternatively, the Discharger may request an alternative prioritization and schedule from the Los Angeles Regional Water Board if it can demonstrate an equivalent level of source investigation and abatement through an approved IMP or CIMP.

F. Identify Source(s) of Significant Non-Storm Water Discharge

1. If the source is determined to be an illicit discharge, the Discharger shall implement procedures to eliminate the discharge consistent with IC/ID requirements and document the actions in the next annual report.
2. If the source is determined to be an NPDES permitted discharge, a discharge subject to a Record of Decision approved by USEPA pursuant to Section 121 of CERCLA, a conditionally exempt essential non-storm water discharge, or entirely comprised of natural flows as defined at Part IV.B.2 of this Order, the Discharger shall document the source and report it to the Los Angeles Regional Water Board in the next annual report.
3. If the source is either unknown or a conditionally exempt, but non-essential, non-storm water discharge, the Discharger shall conduct monitoring required in Part IX.G of this MRP.
4. If the discharge is comprised of more than one source, the Discharger shall attempt to quantify the relative contribution from the individual or group of similar sources (e.g., irrigation overspray) and classify the contributions as authorized, conditionally exempt essential, natural, illicit discharge, conditionally exempt non-essential, or unknown.
5. If the source of non-storm water discharge is unknown, the Discharger shall describe the efforts undertaken to identify the source. Methods for identifying the source of non-storm water discharge may include inspection and/or surveillance, discharge monitoring and data loggers, video or physical inspection, monitoring for indicator parameters (e.g., surfactants, chlorine, Pyrethroids), or other means.
6. If a source originates within an upstream jurisdiction, the Discharger shall inform in writing both the upstream jurisdiction and the Los Angeles Regional Water Board within 30 days of determination of the presence of the discharge, all available characterization data, contribution determination efforts, and efforts taken to identify its source.
7. MS4 outfalls requiring no further action shall continue to be included in the storm drains, channels and outfalls map and associated database (see Part VII.A. of this MRP).

G. Monitor Non-Storm Water Discharges Exceeding Criteria

1. Within 90 days after completing the source identification or after the Los Angeles Regional Board Executive Officer approves the IMP or CIMP, whichever is later, the Discharger shall monitor outfalls that have been determined to convey significant discharges comprised of either unknown or

conditionally exempt non-storm water discharges, or continuing discharges attributed to illicit discharges. The following parameters shall be monitored:

- a. Flow,
 - b. Pollutants assigned a WQBEL or receiving water limitation to implement TMDL Provisions for the respective receiving water, as identified in Part VIII of this Order,
 - c. Other pollutants identified on the CWA Section 303(d) List for the receiving water or downstream receiving waters,
 - d. Pollutants identified in a TIE conducted in response to observed aquatic toxicity during dry weather at the nearest downstream receiving water monitoring station during the last sample event or, where the TIE conducted on the receiving water sample was inconclusive, aquatic toxicity. If the discharge exhibits aquatic toxicity, then a TIE shall be conducted.
 - e. Other parameters in Table E-2 identified as exceeding the lowest applicable water quality objective in the nearest downstream receiving water monitoring station per Part VI.A.
2. For outfalls subject to a dry weather TMDL, monitoring frequency shall be per the approved TMDL Monitoring Plan or as otherwise specified in the TMDL, or as specified in an IMP or CIMP approved by the Executive Officer of the Los Angeles Regional Water Board.
 3. For outfalls not subject to dry weather TMDLs, monitoring frequency shall be four times during the first year following source identification, distributed approximately quarterly, during dry weather conditions or as specified in an IMP or CIMP approved by the Executive Officer of the Los Angeles Regional Water Board.
 4. Except as required by an applicable TMDL Monitoring Plan, IMP, or CIMP approved by the Executive Officer of the Los Angeles Regional Water Board, monitoring frequency may be reduced to twice per year, beginning in the second year of monitoring, if pollutant concentrations measured during the first year do not exceed WQBELs, non-storm water Action Levels or water quality standards for other pollutants identified on the CWA Section 303(d) List for the receiving water or downstream receiving waters.
 5. Following one year of monitoring, the Discharger may submit a written request to the Executive Officer of the Los Angeles Regional Water Board to reduce or eliminate monitoring of specified pollutants, based on an evaluation of the monitoring data.

H. Sampling Methods

1. For the purposes of this monitoring program, non-storm water discharges shall be monitored during days when precipitation is < 0.1 inch and those days not less than 3 days after a rain day unless an alternative criterion is

provided for in an approved IMP or CIMP. A rain day is defined as those with ≥ 0.1 inch of rain.

2. Flow-weighted composite samples shall be taken for a non-storm water discharge using a continuous sampler, or it shall be taken as a combination of a minimum of 3 sample aliquots, taken in each hour during a 24-hour period, unless the Los Angeles Regional Water Board Executive Officer approves an alternate protocol.

X. NEW DEVELOPMENT/RE-DEVELOPMENT EFFECTIVENESS TRACKING

A. The Discharger shall maintain a database providing the following information for each new development/re-development subject to the requirements of Part VII.D of this Order that is approved by the Discharger on or after the effective date of this Order:

1. Name of the Project and Developer,
2. Project location and map (preferably linked to the GIS storm drain map),
3. Date of Certificate of Occupancy,
4. 85th percentile storm event for the project design (inches per 24 hours),
5. Project design storm (inches per 24-hours),
6. Project design storm volume (gallons or MGD),
7. Percent of design storm volume to be retained on site,
8. Design volume for water quality mitigation treatment BMPs, if any.
9. If flow through, water quality treatment BMPs are approved, provide the one-year, one-hour storm intensity as depicted on the most recently issued isohyetal map published by the Los Angeles County Hydrologist,
10. Percent of design storm volume to be infiltrated at an off-site mitigation or groundwater replenishment project site,
11. Percent of design storm volume to be retained or treated with biofiltration at an off-site retrofit project,
12. Location and maps (preferably linked to the GIS storm drain map required in Part VII.A of this MRP) of off-site mitigation, groundwater replenishment, or retrofit sites,
13. Documentation of issuance of requirements to the developer.

XI. REGIONAL STUDIES

A. Southern California Stormwater Monitoring Coalition Watershed Monitoring Program

1. The Southern California Stormwater Monitoring Coalition (SMC) Regional Watershed Monitoring Program was initiated in 2008. This program is conducted in collaboration with the Southern California Coastal Water

Research Project (SCCWRP), State Water Board's Surface Water Ambient Monitoring Program, three Southern California Regional Water Quality Control Boards (Los Angeles, Santa Ana, and San Diego) and several county storm water agencies (Los Angeles, Ventura, Orange, Riverside, San Bernardino and San Diego). SCCWRP acts as the facilitator to organize the program and completes data analysis and report preparation.

2. The SMC monitoring program seeks to coordinate and leverage existing monitoring efforts to produce regional estimates of condition, improve data comparability and quality assurance, and maximize data availability, while conserving monitoring expenditures. The primary goal of this program is to implement an ongoing, large-scale regional monitoring program for southern California's coastal streams and rivers. The monitoring program addresses three main questions:
 - a. What is the condition of streams in southern California?
 - b. What are the stressors that affect stream condition?; and
 - c. Are conditions getting better or worse?
3. A comprehensive program was designed by the SMC, in which each participating group assesses its local watersheds and then contributes their portion to the overall regional assessment. The program utilizes the following indicators: benthic macroinvertebrate community bioassessment, benthic algal community bioassessment (soft algae and diatoms), riparian wetland evaluation (using California Rapid Assessment Methodology), water chemistry (nutrients and certain pesticides), water toxicity (using *Ceriodaphnia*), and physical habitat. Sampling occurs in 15 coastal southern California watersheds from Ventura to the US-Mexico border, and sites are sampled randomly across three land use types (open space, urban and agriculture). Six sites are sampled per year per watershed, resulting in monitoring of 90 sites per year and 450 sites overall over a five-year period (reaching the statistically desirable target of 30 data points per watershed).
4. To continue to implement the SMC design, the Discharger shall be responsible for supporting the monitoring described at the sites within the watershed management area(s) that overlap with the Discharger's jurisdictional area. The Discharger shall continue to contribute monitoring resources to the San Gabriel River and Los Angeles River Regional Watershed Monitoring Programs (overall, both of these programs fund six sites per year to contribute to the SMC Program).

XII. AQUATIC TOXICITY MONITORING METHODS

- A. Aquatic Toxicity Monitoring as required in Parts VI (Receiving Water Monitoring), VIII (Storm Water Outfall Based Monitoring), and IX (Non-storm Water Outfall Based Monitoring) of this MRP, shall be conducted according to the procedures described in this Part. When the State Water Board's *Policy for Toxicity Assessment and Control* is fully approved and in effect, the Los Angeles Regional Water Board Executive Officer may direct the Discharger to replace current toxicity program elements with standardized procedures in the policy.
- B. The Discharger shall collect and analyze samples taken from receiving water monitoring locations to evaluate the extent and causes of toxicity in receiving waters.
- C. Toxicity samples may be flow-weighted composite samples, or grab samples, for wet and dry event sampling.
- D. The total sample volume shall be determined both by the specific toxicity test method used and the additional volume necessary for TIE studies. Sufficient sample volume shall be collected to perform both the required toxicity tests and TIE studies.
- E. Holding Times. All toxicity tests shall be conducted as soon as possible following sample collection. The 36-hour sample holding time for test initiation shall be targeted. However, no more than 72 hours shall elapse before the conclusion of sample collection and test initiation.
- F. Definition of Chronic Toxicity. Chronic toxicity measures a sublethal effect (e.g., reduced growth, reproduction) to experimental test organisms exposed to an effluent or receiving waters compared to that of the control organisms.
- G. Chronic Toxicity Monitoring Programs.**
 - 1. Freshwater Test Species and Methods.

If samples are collected in receiving waters with salinity <1 ppt, or from outfalls discharging to receiving waters with salinity <1 ppt, then the Discharger shall conduct the following critical life stage chronic toxicity tests on undiluted samples in accordance with species and short-term test methods 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). In no case shall the following test species be substituted with another organism unless written authorization from the Los Angeles Regional Water Board Executive Officer is received.

 - i. A static renewal toxicity test with the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0³).

³ Daily observations for mortality make it possible to calculate acute toxicity for desired exposure periods (e.g., a 7-day acute endpoint).

- ii. A static renewal toxicity test with the daphnid, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0⁵).
- iii. A static renewal toxicity test with the green alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0).

2. Marine and Estuarine Test Species and Methods.

If samples are collected in receiving waters with salinity ≥ 1 ppt, or from outfalls discharging to receiving waters with salinity ≥ 1 ppt, then the Discharger shall conduct the following critical life stage chronic toxicity tests on undiluted samples in accordance with species and short-term test methods in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). Artificial sea salts shall be used to increase sample salinity. In no case shall the following test species be substituted with another organism unless written authorization from the Regional Water Board Executive Officer is received.

- a. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01⁵);
- b. A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus* (Fertilization Test Method 1008.0); and
- c. A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

3. Test Species Sensitivity Screening.

To determine the most sensitive test species, the Discharger 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.

4. Chronic toxicity test biological endpoint data shall be analyzed using the Test of Significant Toxicity t-test approach specified in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (U.S. Environmental Protection Agency, Office of Wastewater Management, Washington, D.C. EPA 833-R-10-003, 2010). For this monitoring program, the critical chronic instream waste concentration (IWC) is set at 100% receiving water for receiving water samples and 100% effluent

for wet- and dry-weather outfall samples. A 100% receiving water/outfall effluent sample and a control shall be tested.

H. Quality Assurance.

1. If the receiving water or outfall effluent test does not meet all test acceptability criteria (TAC) specified in the test methods manuals (*Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002) and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995)), then the Discharger must re-sample and re-test at the earliest time possible.
2. Control water, including brine controls, shall be laboratory water prepared and used as specified in the test methods manuals.
3. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

I. Toxicity Identification Evaluation (TIE).

1. A toxicity test sample is immediately subject to TIE procedures to identify the toxic chemical(s), if either the survival or sublethal endpoint demonstrates a percent effect value equal to or greater than 50% at the IWC. Percent effect is defined as the effect value—denoted as the difference between the mean control response and the mean IWC response, divided by the mean control response—multiplied by 100.
2. A TIE shall be performed to identify the causes of toxicity using the same species and test method and, as guidance, U.S. EPA manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).
3. The TIE should be conducted on the test species demonstrating the most sensitive toxicity response at a sampling station. A TIE may be conducted on a different test species demonstrating a toxicity response with the caveat that once the toxicant(s) are identified, the most sensitive test species triggering the TIE shall be further tested to verify that the toxicant has been identified and addressed.
4. A TIE Prioritization Metric (see Appendix 5 in SMC Model Monitoring Program) may be utilized to rank sites for TIEs.

J. Toxicity Reduction Evaluation (TRE).

1. When a toxicant or class of toxicants is identified through a TIE conducted at a receiving water monitoring station, the Discharger shall analyze for the toxicant(s) during the next scheduled sampling event in the discharge from the outfall(s) upstream of the receiving water location.
2. If the toxicant is present in the discharge from the outfall at levels above the applicable receiving water limitation, a TRE shall be performed for that toxicant.
3. The TRE shall include all reasonable steps to identify the source(s) of toxicity and discuss appropriate BMPs to eliminate the causes of toxicity. No later than 30 days after the source of toxicity and appropriate BMPs are identified, the Discharger shall submit a TRE Corrective Action Plan to the Regional Water Board Executive Officer for approval. At minimum, the plan shall include a discussion of the following:
 - a. The potential sources of pollutant(s) causing toxicity.
 - b. A list of municipalities and agencies that may have jurisdiction over sources of pollutant(s) causing toxicity.
 - c. Recommended BMPs to reduce the pollutant(s) causing toxicity.
 - d. Proposed post-construction control measures to reduce the pollutant(s) causing toxicity.
 - e. Follow-up monitoring to demonstrate that the toxicants have been reduced or eliminated.
4. The TRE process shall be coordinated with TMDL development and implementation (i.e., if a TMDL for 4,4'-DDD is being implemented when a TRE for 4,4'-DDD is required, then efforts shall be coordinated to avoid overlap).

K. Chronic Toxicity Reporting

1. Aquatic toxicity monitoring results submitted to the Regional Water Board shall be consistent with the requirements identified in Part XIV.L and M and Part XVIII.A.5 and A.7 of the MRP.
2. The Annual Report in Part XVIII of the MRP shall include:
 - a. A full laboratory report for each chronic toxicity test prepared according to the appropriate test methods manual chapter on Report Preparation, including:
 - i. The chronic toxicity test results for the t-test, reported as "Pass" or "Fail", and the "Percent Effect".
 - ii. The dates of sample collection and initiation of each toxicity test.
 - iii. Test species with biological endpoint values for each concentration tested.

- iv. Reference toxicant test results.
 - v. Water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).
 - vi. TRE/TIE testing results.
 - vii. A printout of CETIS (Comprehensive Environmental Toxicity Information System) program results.
- b. All results for receiving water or outfall effluent parameters monitored concurrently with the toxicity test.
 - c. TIEs (Phases I, II, and III) that have been completed or are being conducted, by monitoring station.
 - d. The development, implementation, and results for each TRE Corrective Action Plan, beginning the year following the identification of each pollutant or pollutant class causing chronic toxicity.

XIII. SPECIAL STUDIES

- A. The Discharger shall be responsible for conducting special studies required in an effective TMDL or an approved TMDL Monitoring Plan applicable to a watershed that transects its political boundary.

XIV. STANDARD MONITORING AND REPORTING PROVISIONS

- A. All monitoring and reporting activities shall meet the following requirements.
 - 1. Monitoring and Records [40 CFR § 122.41(j)(1)]
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - b. Monitoring and Records [40 CFR § 122.41(j)(2)] [California Water Code § 13383(a)]
 - i. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge (ROWD) and application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Water Board Executive Officer or USEPA at any time.
 - c. Monitoring and Records [40 CFR § 122.41(j)(3)]
 - i. Records of monitoring information shall include:
 - 1. The date, time of sampling or measurements, exact place, weather conditions, and rain fall amount.

2. The individual(s) who performed the sampling or measurements.
 3. The date(s) analyses were performed.
 4. The individual(s) who performed the analyses.
 5. The analytical techniques or methods used.
 6. The results of such analyses.
 7. The data sheets showing toxicity test results.
- d. Monitoring and Records [40 CFR § 122.41(j)(4)]. All monitoring, sampling, sample preservation, and analyses must be conducted according to test procedures approved under 40 CFR Part 136 for the analysis of pollutants, unless another test procedure is required under 40 CFR subchapter N or O or is otherwise specified in this Order for such pollutants. If a particular Minimum Level (ML) is not attainable in accordance with procedures set forth in 40 CFR Part 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.
- e. Monitoring and Records [40 CFR § 122.41(j)(5)]. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.
- B.** All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory that is:
1. Certified for such analyses by an appropriate governmental regulatory agency.
 2. A participant in “Intercalibration Studies” for storm water pollutant analysis conducted by the SMC.⁴
 3. Which performs laboratory analyses consistent with the storm water monitoring guidelines as specified in, the *Stormwater Monitoring Coalition Laboratory Guidance Document*, 2nd Edition R. Gossett and K. Schiff (2007), and its revisions.
- C.** For priority toxic pollutants that are identified in the CTR (40 CFR § 131.38), the MLs published in Appendix 4 of the *Policy for Implementation of Toxics*

⁴ The ‘Intercalibration Studies’ are conducted periodically by the SMC to establish a consensus based approach for achieving minimal levels of comparability among different testing laboratories for storm water samples to minimize analytical procedure bias. Stormwater Monitoring Coalition Laboratory Document, Technical Report 420 (2004) and subsequent revisions and augmentations.

Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (SIP) shall be used for all analyses, unless otherwise specified.

- D. The Monitoring Report shall specify the analytical method used, the Method Detection Level (MDL) and the ML for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with one of the following methods, as appropriate:
1. An actual numerical value for sample results greater than or equal to the ML.
 2. "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used.
 3. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.
- E. For priority toxic pollutants, if the Discharger can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR Part 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Discharger must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to raising the ML for any constituent.
- F. Monitoring Reports [40 CFR § 122.41(I)(4)(ii)].**
1. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136, or another method specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the Annual Monitoring Reports.
- G. Monitoring Reports [40 CFR § 122.41(I)(4)(iii)]**
1. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.
- H. If no flow occurred during the reporting period, then the Monitoring Report shall so state.
- I. The Regional Water Board or its Executive Officer, consistent with 40 CFR section 122.41, may approve changes to the Monitoring and Reporting Program, after providing the opportunity for public comment, either:
1. By request of the Discharger or by an interested person after submittal of the Monitoring Report. Such request shall be in writing and filed not later than 60 days after the Monitoring Report submittal date, or

2. As deemed necessary by the Regional Water Board Executive Officer, following notice to the Discharger.
- J. The Discharger must provide a copy of the Standard Operation Procedures (SOPs) for the Monitoring and Reporting Program to the Regional Water Board upon request. The SOP will consist of five elements: Title page, Table of Contents, Procedures, Quality Assurance/ Quality Control (QA/ QC), and References. Briefly describe the purpose of the work or process, including any regulatory information or standards that are appropriate to the SOP process, and the scope to indicate what is covered. Denote what sequential procedures should be followed, divided into significant Sections; e.g., possible interferences, equipment needed, equipment/instrument maintenance and calibration, personnel qualifications, and safety considerations. Describe QA/ QC activities, and list any cited or significant references.
 - K. When monitoring cannot be performed to comply with the requirements of this Order due to circumstances beyond the Discharger's control, then within two working days, the following shall be submitted to the Regional Water Board Executive Officer:
 1. Statement of situation.
 2. Explanation of circumstance(s) with documentation.
 3. Statement of corrective action for the future.
 - L. Results of monitoring from each receiving water or outfall based monitoring station conducted in accordance with the Standard Operating Procedure submitted under Standard Provision 14 of this MRP shall be sent electronically per the Regional Water Board's paperless office guidelines to the Regional Water Board's Storm Water at losangeles@waterboards.ca.gov, semi-annually, highlighting exceedances of applicable WQBELs, receiving water limitations, action levels, or aquatic toxicity thresholds for all test results, with corresponding sampling dates per receiving water monitoring station. The sample data transmitted shall be in the most recent update of the Southern California Municipal Storm Water Monitoring Coalition's (SMC) Standardized Data Transfer Formats (SDTFs).

XV. ANNUAL REPORT SUBMITTAL TIMELINES

- A.** The Discharger shall submit an annual report no later than December 15, 2014 and annually thereafter to the Regional Water Board. The Discharger shall submit the annual report in hard copy and electronically to losangeles@waterboards.ca.gov per the Regional Board's paperless office guidelines. The monitoring data shall be submitted in SWAMP format compatible with Microsoft Excel 2010 or newer version.

XVI. ANNUAL REPORTING REQUIREMENT OBJECTIVES

- A.** The annual reporting process is intended to meet the following objectives.
- 1.** Present summary information that allows the Regional Water Board to assess overall compliance with this Order and answer the following:
 - a.** Are the surface waters receiving the Discharger's MS4 discharge meeting water quality standards during the wet and dry season?
 - b.** What are the annual MS4 pollutant loadings to the receiving waters during the wet and dry season?
 - c.** What are the individual and median pollutant concentrations in the outfalls by season?
 - d.** What are the general sources (areas of concern) of the pollutant loadings into receiving waters during the dry and wet season?
 - e.** What are the specific sources of the pollutant loadings into receiving waters during the dry and wet season?
 - f.** How many facilities did the Discharger inspect during the year? How many of these facilities have coverage under the General Permit for Stormwater Discharges Associated with Industrial Facilities? What are the SIC codes of these facilities? What types of enforcement actions were taken this year for these facilities? What percentage of the facilities located within the discharger's jurisdiction did the Discharger inspect during the year? What type of follow up actions did the Discharger implement to ensure the facilities implemented corrective actions?
 - g.** How many Discharger owned/operated facilities did the Discharger inspect during the year? What percentage of the Discharger owned/operated facilities did the Discharger inspect during the year? What corrective actions were required of these facilities? What type of follow up actions did the Discharger implement to ensure the facilities implemented corrective actions?
 - h.** How many construction sites were inspected during the year? How many of these construction projects were inspected more than once? How many of these construction projects are covered under the General Permit for Discharges Associated with Construction Activity. What types of enforcement actions were taken this year for these construction projects? What percentage of the construction projects located within the

discharger's jurisdiction did the Discharger inspect? What type of follow up actions did the Discharger implement to ensure the facilities implemented corrective actions?

- i. How much did the Discharger spend during the year in complying with Order No.R4-2014-0024 and how much does the Discharger plan on spending in the upcoming year? The Discharger shall divide the funding into the various categories in Order R4-2014-0024, these include but are not limited to: industrial inspections and enforcement, construction inspections and enforcement, new development plan reviews, non TMDL monitoring, TMDL monitoring, public education, source identification, illegal discharge identification and enforcement, program planning and implementation. What are the sources of funding for the past and upcoming year?
- j. What is the legal authority the Discharger has to control the contribution of pollutants to the MS4 (storm water and non-storm water), prohibit non-storm water discharges, eliminate and prohibit illicit discharges or connections to the MS4, require compliance with conditions in the Discharger's ordinances, permits, contracts or orders to hold dischargers to its MS4 accountable for their contributions of pollutants and flows, control the contribution of pollutants form one portion of the MS4 to another ? What measures does the Discharger implement to address discharges from facilities outside of the Discharger's jurisdiction? Please provide the citation of applicable municipal ordinances or other appropriate legal authorities and their relationship to the requirements of 40 CFR sections 122.26(d)(2)(i)(A)-(F) and of this Order; and the local administrative and legal procedures available to mandate compliance with applicable municipal ordinances identified and a statement as to whether enforcement actions can be completed administratively or whether they must be commenced and completed in the judicial system.
- k. How many watershed management programs does the Discharger participate in? Please list the watershed management programs and the status of the participation.
- l. Are annual pollutant loadings and concentrations in each surface water body receiving the MS4 discharge increasing decreasing or staying the same?
- m. How often does the MS4 discharge exceed receiving water limitations, numeric water quality-based effluent limitations, prohibitions, and non-storm water action levels for each receiving water body per year during the wet and dry season?
- n. What is the status of compliance with all applicable water quality based effluent limitations and receiving water limitations in Part VI.A. and VIII of this Order?

- o. How effective are the current control measures in reducing discharges of pollutants from the MS4 to receiving waters to the MEP?
 - p. How effective is the monitoring program at meeting the objectives specified above?
 - q. Can changes in water quality be attributed to pollutant controls imposed on new development, re-development, or retrofit projects?
 - r. What detailed data or information has the Discharger included in the annual report to demonstrate compliance with Order No.R4-2014-xxx?
 - s. What public education programs did the Discharger implement this year and plans to implement the upcoming year?
 - t. What progress has the Discharger made in implementing the provisions of this Order?
2. Provide a forum to discuss the effectiveness of past and ongoing control measure efforts and to convey plans for future control measures and propose any changes to the storm water management programs.
 3. Present data and conclusions in a transparent manner so as to allow review and understanding by the general public.
 4. Focus the reporting efforts on watershed condition, water quality assessment, and an evaluation of the effectiveness of control measures.

XVII. WATERSHED SUMMARY INFORMATION, ORGANIZATION AND CONTENT

- A.** The Discharger shall include the information requested in A.1 through A.3 below in its odd year Annual Report (e.g., Year 1, 3, 5). The requested information shall be provided for each watershed within the Discharger's jurisdiction. Alternatively, if the Discharger is participating in a Watershed Management Program, the Discharger may provide the requested information through the development and submission of a Watershed Management Program plan and any updates thereto.

1. Watershed Management Area

If the Discharger has individually or collaboratively developed a Watershed Management Program Plan (WMPP) as described in Part VII.C of this Order, reference to the Watershed Management Program plan and any revisions thereto may suffice for baseline information regarding the Watershed Management Area.

- a. The following information shall be included for each Watershed Management Area within the Discharger jurisdiction, where not included in a WMPP:
 - i. A description of effective TMDLs, applicable WQBELs and receiving water limitations, and implementation and reporting requirements, and compliance dates

- ii. CWA Section 303(d) listings of impaired waters not addressed by TMDLs
 - iii. Results of regional bioassessment monitoring
 - iv. Description of groundwater recharge areas including number and acres
 - v. Maps and/or aerial photographs identifying the location of ESAs, ASBS, and groundwater recharge areas
- 2. Subwatershed (HUC-12) Description.** The following information shall be included for each Subwatershed (HUC-12 or HUC-12 equivalent) within the Discharger's jurisdiction. If the Discharger has individually or collaboratively developed a WMPP as described in Part VII.C of this Order, reference to the WMPP and any revisions thereto may suffice for baseline information regarding the subwatershed (HUC-12) descriptions, where the required information is already included in the WMPP. The summary information describing the subwatershed shall include the following information:
- a. Description including HUC-12 number, name and a list of all tributaries named in the Basin Plan
 - b. Land Use map of the HUC-12 subwatershed
 - c. 85th percentile, 24-hour rainfall isohyetal map for the subwatershed
 - d. One-year, one-hour storm intensity isohyetal map for the subwatershed
 - e. MS4 map for the subwatershed, including major MS4 outfalls and all low-flow diversions
- 3. Description of the Discharger Drainage Area within the Subwatershed.** Where a Discharger has individually or collaboratively developed a WMP as described in Part VII.C of this Order, reference to the WMP and any revisions thereto may suffice for baseline information regarding the Discharger's Drainage Area within the subwatershed (HUC-12), where the required information is already included in the Watershed Management Program. The following information shall be included for each jurisdiction within the subwatershed (HUC-12):
- a. A subwatershed map depicting the Discharger's jurisdictional area and the MS4, including major outfalls (with identification numbers), and low flow diversions (with identifying names or numbers) located, within the Discharger's jurisdiction.
 - b. Provide the estimated baseline percent of effective impervious area (EIA) within the Discharger jurisdictional area as existed at the time that this Order became effective.

XVIII. ANNUAL ASSESSMENT AND REPORTING

- A. The Discharger shall include the information requested in A.1 through A.7 below in its Annual Report. The requested information shall be provided for each watershed within the Discharger's jurisdiction. The Discharger shall format its Annual Report to align with the reporting requirements identified in Parts A.1 through A.7 below.

The Annual Report shall clearly identify all data collected and strategies, control measures, and assessments implemented by the Discharger within its jurisdiction as well as those implemented by the Discharger in coordination with other entities on a watershed scale.

- 1. Storm Water Control Measures.** The Discharger shall make all reasonable efforts to determine, compile, analyze, and summarize the following information.

- a. Estimated cumulative change in percent EIA since the effective date of this Order and, if possible, the estimated change in the storm water runoff volume during the 85th percentile storm event.
- b. Summary of New Development/Re-development Projects constructed within the Discharger jurisdictional area during the reporting year.
- c. Summary of Retrofit Projects that reduced or disconnected impervious area from the MS4 during the reporting year.
- d. Summary of other projects designed to intercept storm water runoff prior to discharge to the MS4 during the reporting year.
- e. For the projects summarized above in 1.b through 1.d, estimate the total runoff volume retained on site by the implemented projects.
- f. Summary of actions taken in compliance with TMDL implementation plans or approved Watershed Management Programs to implement TMDL provisions in Part VIII of this Order.
- g. Summary of riparian buffer/wetland restoration projects completed during the reporting year. For riparian buffers include width, length and vegetation type; for wetland include acres restored, enhanced or created.
- h. Summary of other Minimum Control Measures implemented during the reporting year, as the Discharger deems relevant.
- i. Status of all multi-year efforts that were not completed in the current year and will therefore continue into the subsequent year(s). Additionally, if any of the requested information cannot be obtained, the Discharger shall provide a discussion of the factor(s) limiting its acquisition and steps that will be taken to improve future data collection efforts.

2. Effectiveness Assessment of Storm Water Control Measures

- a. Rainfall summary for the reporting year. Summarize the number of storm events, highest volume event (inches/24 hours), highest number of

consecutive days with measureable rainfall, total rainfall during the reporting year compared to average annual rainfall for the subwatershed. Precipitation data may be obtained from Los Angeles County Department of Public Works rain gauge stations available at <http://www.ladpw.org/wrd/precip/>.

- b. Provide a summary table describing rainfall during storm water outfall and wet-weather receiving water monitoring events. The summary description shall include the date, time that the storm commenced and the storm duration in hours, the highest 15-minute recorded storm intensity (converted to inches/hour), the total storm volume (inches), and the time between the storm event sampled and the end of the previous storm event.
- c. Where control measures were designed to reduce impervious cover or storm water peak flow and flow duration, provide hydrographs or flow data of pre- and post-control activity for the 85th percentile, 24-hour rain event, if available.
- d. Provide an assessment as to whether the quality of storm water discharges as measured at designed outfalls is improving, staying the same or declining. The Discharger may compare water quality data from the reporting year to previous years with similar rainfall patterns, conduct trends analysis, or use other means to develop and support its conclusions (e.g., use of non-storm water action levels or municipal action levels as provided in Attachment G of this Order).
- e. Provide an assessment as to whether wet-weather receiving water quality within the jurisdiction of the Discharger is improving, staying the same or declining, when normalized for variations in rainfall patterns. The Discharger may compare water quality data from the reporting year to previous years with similar rainfall patterns, conduct trends analysis, draw from regional bioassessment studies, or use other means to develop and support its conclusions.
- f. Status of all multi-year efforts, including TMDL implementation, that were not completed in the current year and will continue into the subsequent year(s). Additionally, if any of the requested information cannot be obtained, the Discharger shall provide a discussion of the factor(s) limiting its acquisition and steps that will be taken to improve future data collection efforts.

3. Non-Storm Water Control Measures

- a. Estimate the number of major outfalls within the Discharger's jurisdiction in the subwatershed.
- b. Provide the number of outfalls that were screened for significant non-storm water discharges during the reporting year.

- c. Provide the cumulative number of outfalls that have been screened for significant non-storm water discharges since the date this Order was adopted through the reporting year.
- d. Provide the number of outfalls with confirmed significant non-storm water discharge.
- e. Provide the number of outfalls where significant non-storm water discharge was attributed to other NPDES permitted discharges; other authorized non-storm water discharges; or conditionally exempt discharges pursuant to Part IV.B of this Order.
- f. Provide the number of outfalls where significant non-storm water discharges were abated as a result of the Discharger's actions.
- g. Provide the number of outfalls where non-storm water discharges was monitored.
- h. Provide the status of all multi-year efforts, including TMDL implementation, that were not completed in the current year and will continue into the subsequent year(s). Additionally, if any of the requested information cannot be obtained, the Discharger shall provide a discussion of the factor(s) limiting its acquisition and steps that will be taken to improve future data collection efforts.

4. Effectiveness Assessment of Non-Storm Water Control Measures

- a. Provide an assessment as to whether receiving water quality within the jurisdiction of the Discharger is impaired, improving, staying the same or declining during dry-weather conditions. The Discharger may compare water quality data from the reporting year to previous years with similar dry-weather flows, conduct trends analysis, draw from regional bioassessment studies, or use other means to develop and support its conclusions.
- b. Provide an assessment of the effectiveness of the Discharger control measures in effectively prohibiting non-storm water discharges through the MS4 to the receiving water.
- c. Provide the status of all multi-year efforts that were not completed in the current year and will continue into the subsequent year(s).

5. Integrated Monitoring Compliance Report

- a. Provide an Integrated Monitoring Report that summarizes all identified exceedances of (1) outfall-based storm water monitoring data, (2) wet weather receiving water monitoring data, (3) dry weather receiving water data, and (4) non-storm water outfall monitoring data against all applicable receiving water limitations, water quality-based effluent limitations, non-storm water action levels, and aquatic toxicity thresholds as defined in Sections XII.F and G of this MRP. All sample results that exceeded one or more applicable thresholds shall be readily identified.

- b. If aquatic toxicity was confirmed and a TIE was conducted, identify the toxic chemicals as determined by the TIE. Include all relevant data to allow the Los Angeles Regional Board to review the adequacy and findings of the TIE. This shall include, but not be limited to, the sample(s) date, sample(s) start and end time, sample type(s) (flow-weighted composite, grab, or field measurement), sample location(s) as depicted on the map, the parameters, the analytical results, and the applicable limitation.
- c. Provide a description of efforts that were taken to mitigate and/or eliminate all non-storm water discharges that exceeded one or more applicable water quality based effluent limitations, non-storm water action levels, or caused or contributed to aquatic toxicity.
- d. Provide a description of efforts that were taken to address storm water discharges that exceeded one or more applicable water quality based effluent limitations, or caused or contributed to aquatic toxicity.
- e. Where Receiving Water Limitations were exceeded, provide a description of efforts that were taken to determine whether discharges from the MS4 caused or contributed to the exceedances and all efforts that were taken to control the discharge of pollutants from the MS4 to those receiving waters in response to the exceedances.

6. Adaptive Management Strategies

- a. Identify the most effective control measures and describe why the measures were effective and how other control measures will be optimized based on past experiences.
- b. Identify the least effective control measures and describe why the measures were deemed ineffective and how the control measures will be modified or terminated.
- c. Identify significant changes to control measures during the prior year and the rationale for the changes.
- d. Describe all significant changes to control measures anticipated to be made in the next year and the rationale for the changes. Those changes requiring approval of the Regional Board or its Executive Officer shall be clearly identified at the beginning of the Annual Report.
- e. Include a detailed description of control measures to be applied to New Development or Re-development projects disturbing more than 50 acres.
- f. Provide the status of all multi-year efforts that were not completed in the current year and will continue into the subsequent year(s).

7. Supporting Data and Information

- a. All monitoring data and associated meta-data used to prepare the Annual Report shall be summarized in an Excel spreadsheet and sorted by watershed, subwatershed and monitoring station/outfall identifier linked to

the subwatershed map. The data summary must include the date, sample type (flow-weighted composite, grab, field measurement), sample start and stop times, parameter, analytical method, value, and units. The date field must be linked to a database summarizing the weather data for the sampling date including 24-hour rainfall, rainfall intensity, and days since the previous rain event.

- b.** Optional. The Discharger may at its option, provide an additional detailed summary table describing control measures that are not otherwise described in the reporting requirements.

XIX. TMDL REPORTING

The Discharger shall report on the progress of TMDL implementation per the schedules identified below in Sections A – G.

A. Reporting Requirements for Dominguez Channel and Greater Harbors Waters WMA TMDLs

Deliverable	Description	Due Date(s)
Los Angeles Harbor Bacteria TMDL		
Monitoring Results	Monthly data summary reports shall be submitted to the Los Angeles Regional Water Board by the last day of each month for data collected during the previous month.	Monthly on the last day of the month.
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL		
Monitoring and Reporting Plan and Quality Assurance Project Plan	The Discharger shall develop Monitoring and Reporting Plans (MRPs) and Quality Assurance Project Plans (QAPPs) for Los Angeles Regional Water Board Executive Officer approval in accordance with the TMDL. The MRPs shall include a requirement that the responsible parties report compliance and non-compliance with water quality-based effluent limitations as part of annual reports submitted to the Los Angeles Regional Water Board. The QAPPs shall include protocols for sample collection, standard analytical procedures, and laboratory certification. All samples shall be collected in accordance with applicable SWAMP protocols.	November 23, 2013, or Submit an IMP or CIMP plan concurrently with the Discharger’s draft WMP.
Monitoring Plan	The Discharger shall implement monitoring as outlined in the approved MRP and QAPP.	30 days after MRP and QAPP is approved by Los Angeles Regional Water Board Executive Officer.
Annual Monitoring Reports	The Discharger shall submit annual monitoring reports to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	The Discharger in the Dominguez Channel and Greater Harbors Waters Watershed Management Area shall develop and submit an Implementation Plan.	Submit concurrently with WMP or EWMP. If a WMP or EWMP will not be developed then submit the Implementation Plan 12 months after the effective date of this Order.
Report of Implementation	The Discharger in the Los Angeles River and San Gabriel River Watersheds shall submit a Report of Implementation to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter
Implementation Reports	The Discharger shall submit annual implementation reports to the Los Angeles Regional Water Board. Report on implementation progress and demonstrate progress toward meeting the water quality-based effluent limitations.	December 15, 2014, and annually thereafter
Updated Implementation Plan	The Discharger in the Dominguez Channel and Greater Harbors Waters Watershed Management Area shall submit an updated Implementation Plan).	March 23, 2017

B. Reporting Requirements for the Los Angeles River WMA TMDLs

Deliverable	Description	Due Date(s)
Los Angeles River Watershed Trash TMDL		
Reporting	Report compliance with the installation of full capture systems and/or installation/implementation of partial capture devices and institutional controls.	December 15, 2013, and annually thereafter.
Trash Monitoring and Reporting Plan / Update CIMP or IMP	<p>The City of Long Beach shall propose and implement a Trash Monitoring and Reporting Plan (TMRP) for Executive Officer approval. The Regional Water Board's Executive Officer will have full authority to review, to modify, to select alternate monitoring sites, and to approve or disapprove the monitoring plans. The City of Long Beach may report receiving water monitoring through a separate TMRP annual report, if approved by the Executive Officer, or in conjunction with annual reporting under MS4 permits.</p> <p>Receiving water monitoring shall be consistent with prescribed elements listed in the Surface Water Ambient Monitoring Program's Rapid Trash Assessment or shall be an alternative protocol proposed by the City of Long Beach and approved by the Executive Officer.</p> <p>Monitoring Plan: The City of Long Beach will submit a TMRP with the proposed receiving monitoring sites and at least two additional alternate monitoring locations. The TMRP must include maps of the proposed monitoring locations and rationale for their selection. Trash monitoring shall focus on visible trash at representative and critical locations.</p> <p>Sampling Site and Frequency: The TMRP shall detail the monitoring frequency and number and location of sites, including at least one monitoring station per reach and tributary. Each sampling evaluation should consider trash levels over time and under different seasonal conditions. Sampling assessment shall be repeated at the same site where trash was collected during the previous assessment(s) unless an alternate location has been approved.</p> <p>The City of Long Beach shall submit either a revised Integrated Monitoring Program or Coordinated Integrated Monitoring Program incorporating the TMRP requirements by December 30, 2016.</p>	December 30, 2016
Plastic Pellet Monitoring and Reporting Plan	The City of Long Beach shall prepare a Plastic Pellet Monitoring and Reporting Plan (PMRP) to (i) monitor the amount of plastic pellets being discharged from the MS4;	By March 8, 2018, or as part of the first adaptive management process for the

	<p>(ii) establish triggers for increased industrial facility inspections and enforcement of SWPPP requirements for industrial facilities identified as responsible for the plastic pellet WLA herein; and (iii) address possible plastic pellet spills. The PMRP shall include protocols for a timely and appropriate response to possible plastic pellets spills within their jurisdictional area, including notification to the Regional Water Board, and a comprehensive plan to ensure that plastic pellets are contained.</p> <p>The City of Long Beach will fall into one of the following three categories for requirements of a PMRP:</p> <ol style="list-style-type: none"> 1. Permittees that have industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets within their jurisdiction must prepare a PMRP. 2. Permittees that have no industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets may not be required to conduct monitoring at MS4 outfalls, but must have a response plan in place to address plastic pellet spills. If satisfactory documentation is provided that shows there are no industrial facilities or activities related to plastic pellets within the jurisdiction, the Permittee may be excused of the requirement to monitor MS4 outfalls. <p>Permittees that only have residential areas within their respective jurisdictions, and have limited commercial or industrial transportation corridors (including railways and roadways), may be exempted from the requirements of preparing a PMRP. In order for a responsible jurisdiction to be exempted from this requirement, sufficient documentation including municipal zoning plans must be submitted to the Regional Water Board and approved by the Executive Officer.</p>	<p>approved Lower Los Angeles River WMP.</p>
Los Angeles River Nitrogen Compounds and Related Effects TMDL		
Reporting	Annual reporting of monitoring results to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter.
Los Angeles River and Tributaries Metals TMDL		
Annual Monitoring Report	The Discharger shall submit annual monitoring reports as detailed in the approved coordinated monitoring plan to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter.
Los Angeles River Watershed Bacteria TMDL		

<p>Bacteria Coordinated Monitoring Plan</p>	<p>The Discharger shall submit a Bacteria Coordinated Monitoring Plan (CMP), which shall be submitted for Los Angeles Regional Water Board Executive Officer approval. The CMP shall detail: the number and location of sites, including at least one monitoring station per each river segment, reach and tributary addressed under this TMDL; measurements and sample collection methods; and monitoring frequencies. The Discharger may also include in the CMP, for Executive Officer consideration, other meteorological stations which may be more representative of the existing hydrology and climate.</p> <p>Each segment, reach, and tributary addressed under this TMDL shall be monitored at least monthly until the subject segment, reach or tributary is at the end of the execution part of its first implementation phase (i.e. 7 years after beginning the segment or tributary-specific phase), to determine compliance with the interim water quality based effluent limitations. Each segment, reach and tributary addressed under this TMDL shall be monitored at least weekly to determine compliance with the instream targets after the first implementation phase.</p> <p>For parties pursuing a Load Reduction Strategy (LRS), intensive outfall monitoring will be conducted before and after implementation of the LRS. Pre-LRS monitoring will be used to estimate the <i>E. coli</i> loading from MS4 outfalls to the segment or tributary, and identify the outfalls and types of implementation actions that are expected to be necessary to attain the water quality based limits. Post-LRS monitoring will be used to evaluate compliance with the interim water quality based limits and to plan for additional implementation actions to meet the final water quality based limits, in a second implementation phase, if necessary.</p> <p>When applicable, outfall monitoring shall including <i>E. coli</i> by USEPA- approved methods and flow rate at <i>all</i> MS4 outfalls (“snapshots”) that are discharging to a segment or tributary or across jurisdictional boundaries during a given monitoring event. For each LRS, at least six (6) snapshots shall be conducted for pre-LRS monitoring, and at least three (3) snapshots shall be conducted for post- LRS monitoring. For MS4s that choose to follow a non-LRS implementation approach, but choose to demonstrate compliance with Equivalent Conditions, at least six (6) snapshots shall be conducted.</p>	<p>March 23, 2013, or</p> <p>Submit an IMP or CIMP plan concurrently with the Discharger’s draft WMP.</p>
<p>Implement CMP</p>	<p>The Discharger shall begin implementation actions to attain water quality-based effluent limitation, as necessary.</p>	<p>30 days after approval of the CMP</p>
<p>Annual Monitoring Report</p>	<p>Annual reporting of monitoring results to the Los Angeles Regional Water Board.</p>	<p>December 15, 2013, and annually thereafter.</p>
<p>Implementation Plan</p>	<p>The Discharger shall submit an Implementation Plan for wet weather with interim</p>	<p>March 23, 2022</p>

	milestones for approval of the Los Angeles Regional Water Board Executive Officer.	
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL		
Compliance Monitoring	<p>To evaluate compliance with numeric targets, monitoring shall take place at existing monitoring sites as well as any new monitoring locations in the ambient water. For beach monitoring locations, daily or systematic weekly sampling in the wave wash at all major drains and creeks, existing monitoring stations at beaches without storm drains, and freshwater outlets is recommended to evaluate compliance. At all beach locations, samples should be taken at ankle depth and on an incoming wave, consistent with Section 7961(b) of title 17 of the California Code of Regulations. At locations where there is a freshwater outlet, during wet weather, samples should be taken as close as possible to the wave wash, and no further away than 10 meters down current of the storm drain or outlet.</p> <p>A robust monitoring program shall be developed for the LAR Estuary. Available data includes bi-weekly monitoring from May through September of 2009, and 2010. Monitoring shall be expanded to include year round monitoring requirements, and at least three monitoring locations within the Estuary. We understand that adequate data to establish a reference estuary approach is currently not available. If in the future, adequate data from reference estuary studies become available, it may be appropriate to consider a reference estuary approach to evaluate compliance with these TMDLs.</p>	<p>Submit an IMP or CIMP plan concurrently with the Discharger’s draft WMP.</p> <p>If a WMP or IMP or CIMP will not be developed then submitted the Monitoring Plan 12 months after the effective date of this Order.</p>
Annual Monitoring Report	Annual reporting of monitoring results to the Los Angeles Regional Board.	December 15, 2013, and annually thereafter.

C. Reporting Requirements for San Gabriel River WMA TMDLs

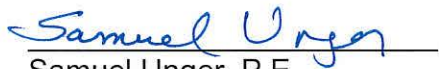
Deliverable	Description	Due Date(s)
San Gabriel River and Impaired Tributaries Metals and Selenium TMDL		
Coordinated Monitoring Plan	<p>The Discharger shall develop a Coordinated Monitoring Plan, to be approved by the Los Angeles Regional Water Board Executive Officer, which includes both TMDL effectiveness monitoring and ambient monitoring. The ambient monitoring program shall contain monitoring in all reaches and major tributaries of the San Gabriel River, including but not limited to additional dry- and wet-weather monitoring in the San Gabriel River Reaches 4 and 5 and Walnut Creek, additional dry-weather monitoring in San Gabriel River Reach 2, and additional wet-weather monitoring in San Jose Creek, San Gabriel River Reaches 1 and 3, and the Estuary. Sediment samples shall be collected semi-annually in the Estuary and analyzed for sediment toxicity resulting from copper, lead, selenium, and zinc.</p> <p>The TMDL effectiveness monitoring shall demonstrate the effectiveness of the phased implementation schedule for reducing pollutant loads to achieve the dry- and wet-weather water</p>	<p>Submit an IMP or CIMP plan concurrently with the Discharger’s draft WMP, or</p> <p>If a WMP or IMP or CIMP will not be developed then submitted the Coordinated Monitoring Plan 12 months after the effective date of this Order.</p>

	<p>quality based effluent limitations. Monitoring stations specified for the ambient monitoring program may be used for the TMDL effectiveness monitoring. The final dry-weather monitoring stations shall be located in San Jose Creek Reach 1 and the Estuary. The final wet-weather TMDL effectiveness monitoring stations may be located at the existing Los Angeles County Department of Public Works mass emission sites in San Gabriel River Reach 2 and Coyote Creek.</p> <p>The Discharger shall sample once per month, during dry-weather conditions, at each proposed TMDL effectiveness monitoring location. The Discharger shall sample at least 4 wet-weather events where flow meets wet-weather conditions (260 cfs in San Gabriel River Reach 2 and 156 cfs in Coyote Creek) in a given storm season (November to March), unless there are fewer than 4 wet-weather events, at each proposed TMDL effectiveness monitoring location. The Discharger are encouraged to coordinate with the San Gabriel watershed-wide monitoring program to avoid duplication and leverage resources.</p>	
Annual Monitoring Report	Annual reporting of monitoring results to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	The Discharger shall submit an Implementation Plan outlining how to achieve compliance with the water quality based effluent limitations, for approval of the Los Angeles Regional Water Board Executive Officer. The Plan shall include implementation methods, an implementation schedule, and proposed milestones.	1 year after the effective date of this Order

D. Reporting Requirements for Los Cerritos Channel WMA TMDLs

Deliverable	Description	Due Date(s)
Los Cerritos Channel Metals TMDL		
Coordinated Monitoring Plan	<p>The Discharger shall develop a Coordinated Monitoring Plan, to be approved by the Los Angeles Regional Water Board Executive Officer, which includes both TMDL effectiveness monitoring and ambient monitoring. The ambient monitoring program shall be developed to track trends in water quality improvements in Los Cerritos Channel; to provide background information on hardness values; and the partitioning of metals between the total recoverable and dissolved fraction.</p> <p>TMDL effectiveness monitoring shall demonstrate the effectiveness of the phased implementation schedule for reducing pollutant loads to achieve the water quality based effluent limitations. Monitoring stations specified for the ambient monitoring program may be used for the TMDL effectiveness monitoring. The Discharger shall sample at least 4 wet-weather events where flow meets wet-weather conditions (>23 cfs in Los Cerritos Channel above the tidal prism) in a given storm season.</p>	<p>Submit an IMP or CIMP plan concurrently with the Discharger’s draft WMP, or</p> <p>If a WMP or IMP or CIMP will not be developed then submitted the Coordinated Monitoring Plan 12 months after the effective date of this Order.</p>
Annual Monitoring Report	Annual reporting of monitoring results to the Los Angeles Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	The Discharger shall submit an Implementation Plan outlining how to achieve compliance with the water quality based effluent limitations, for approval of the Los Angeles Regional Water Board Executive Officer. The Plan shall include implementation methods, an implementation schedule, and proposed milestones.	1 year after the effective date of this Order
Colorado Lagoon OC Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals TMDL		
Monitoring	Water column and sediment samples will be collected at the outlet of the storm drains discharging to the lagoon, while water column, sediment, and fish tissue samples will be collected in the West Arm, Central Arm, North Arm, at the outlet of the lagoon to Marine Stadium during an incoming tide, and at the outfall of Termino Avenue Drain to Marine Stadium as specified in the Colorado Lagoon TMDL Monitoring Plan (CLTMP).	February 1, 2013
Annual Monitoring Reports	The Discharger shall submit annual monitoring reports to the Los Angeles Regional Water Board. All compliance monitoring must be conducted in conjunction with a Los Angeles Regional Water Board approved Quality Assurance Project Plan.	December 15, 2013, and annually thereafter.
Implementation Progress	The Discharger shall submit annual progress reports on the status of implementation actions performed under the TMDL. The plan shall contain mechanisms for demonstration progress toward meeting the water quality based effluent limitations.	December 15, 2013, and annually thereafter.

I, Samuel Unger, Executive Officer, do hereby certify that this Monitoring and Reporting Program is a full, true, and correct copy of the Monitoring and Reporting Plan adopted by the California Regional Water Quality Control Board, Los Angeles Region, on February 6, 2014 and amended by the California Regional Water Quality Control Board, Los Angeles Region, on September 8, 2016.



Samuel Unger, P.E.

Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LOS ANGELES REGION

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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)

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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. 9 th 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.”

<p>Receiving Water</p>	<p>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</p>
<p>Receiving Water Type</p>	<p>Inland surface waters, estuarine waters, and marine waters, including wetlands, lakes, rivers, estuaries, lagoons, harbors, bays, and beaches</p>

III. FACILITY DESCRIPTION

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

The City of Long Beach is the owner and/or operator² 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:

Part 1 – Receiving Water Limitations

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 131.12³ 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 reopen 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 antidegradation 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 language¹³:

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 dewatering¹⁹
NPDES Permit No. CAG990002 – Discharges from Utility Vaults and Underground Structures to Surface Waters	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Discharges of low threat hydrostatic test water²⁰
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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Discharges of ground water from potable water supply wells²¹

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	<ul style="list-style-type: none"> 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 discharge²²; 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.

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 BMPs³⁵ 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.

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	<u>Dewatering of Lakes</u> – 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	<u>Dechlorinated/debrominated swimming pool/spa discharges</u> – 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	<u>Dewatering of decorative fountains</u> – 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)	<u>Progressive Enforcement and Interagency Coordination</u> – 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	<u>Progressive Enforcement and interagency Coordination</u> –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	<u>Public Information and Participation Program</u> – 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	<u>Industrial/Commercial Business Program</u> –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	<u>Industrial/Commercial Business Program</u> – 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	<u>Industrial/Commercial Business Program</u> –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)	<u>Industrial/Commercial Business Program</u> – 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)	<u>Industrial/Commercial Business Program</u> – 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)	<u>Industrial/Commercial Business Program</u> – 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)	<u>Planning and Land Development Program</u> – 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)	<u>Planning and Land Development Program</u> – 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	<u>Planning and Land Development Program</u> – 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)	<u>Planning and Land Development Program</u> – 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)	<u>Planning and Land Development Program</u> – 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)	<u>Planning and Land Development Program</u> – 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	<u>Development Construction Program</u> – 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	<u>Development Construction Program</u>	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	<u>Development Construction Program</u> – 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	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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)	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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	<u>Public Agency Activities Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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)	<u>Illicit Connections and Illicit</u>	Within 30 days of such	This ensures the ID is

Part Number	Requirement Summary	Timeframe	Basis for Timeframe
	<u>Discharges Elimination Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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)	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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)	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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	<u>Illicit Connections and Illicit Discharges Elimination Program</u> – 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 Intervenor 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 term 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 D⁴⁸. 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 CO₂ 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 from 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 jurisdiction⁵² (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:

$$\text{WLA} = \sum \text{for each city (area by land uses} \times \text{allocations for this land use)}$$

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 $\frac{3}{4}$ 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.

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 plans⁶² 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.

	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
TOTAL MAXIMUM DAILY LOADS (TMDL)				
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 is 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:

$$\begin{aligned} \text{ECA} &= C + D(C-B) \quad \text{when } C > B, \text{ and} \\ \text{ECA} &= C \quad \text{when } C \leq B, \end{aligned}$$

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:

$$\text{ECA} = C$$

For nickel the applicable ECAs are:

$$\text{ECA}_{\text{acute}} = 75 \mu\text{g/L}$$

$$\text{ECA}_{\text{chronic}} = 8.3 \mu\text{g/L}$$

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.

$$\text{LTA}_{\text{acute}} = \text{ECA}_{\text{acute}} \times \text{Multiplier}_{\text{acute}}^{99}$$

$$\text{LTA}_{\text{chronic}} = \text{ECA}_{\text{chronic}} \times \text{Multiplier}_{\text{chronic}}^{99}$$

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

$$LTA_{acute} = 75 \mu\text{g/L} \times 0.32 = 24 \mu\text{g/L}$$

$$LTA_{chronic} = 8.3 \mu\text{g/L} \times 0.53 = 4.4 \mu\text{g/L}$$

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

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

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

$$LTA_{nickel} = LTA_{chronic} = 4.4 \mu\text{g/L}$$

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.

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

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

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:

$$AMAL = 4.4 \mu\text{g/L} \times 1.55 = 6.8 \mu\text{g/L}$$

$$MDAL = 4.4 \mu\text{g/L} \times 3.11 = 14 \mu\text{g/L}$$

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

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

For nickel:

$$AMAL_{\text{human health}} = 4,600 \mu\text{g/L}$$

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.

$$MDAL_{\text{human health}} = AMAL_{\text{human health}} \times (\text{Multiplier}_{MDAL} / \text{Multiplier}_{AMAL})$$

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

No. of Samples Per Month	CV	Multiplier _{MDAL 99}	Multiplier _{AMAL 95}	Ratio
4	0.6	3.11	1.55	2.0

For nickel:

$$MDAL_{\text{human health}} = 4,600 \mu\text{g/L} \times 2 = 9,200 \mu\text{g/L}$$

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.

$AMAL_{\text{aquatic life}}$	$MDAL_{\text{aquatic life}}$	$AMAL_{\text{human health}}$	$MDAL_{\text{human health}}$
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 Levels¹

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
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:

$$C_e = C_o + D_m(C_o - C_s)$$

Where:

- C_e = the Action Level ($\mu\text{g/L}$)
- C_o = the water quality objective to be met at the completion of initial dilution ($\mu\text{g/L}$)
- C_s = background seawater concentration ($\mu\text{g/L}$)
- D_m = 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:

$$C_e = C_o$$

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

Copper

$$C_e = 3 \mu\text{g/L (6-Month Median)}$$

$$C_e = 12 \mu\text{g/L (Daily Maximum)}$$

$$C_e = 30 \mu\text{g/L (Instantaneous Maximum)}$$

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
<p>Los Cerritos Channel¹</p>		<p>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</p>
<p>Bouton Creek</p>		<p>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</p>

		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	0/15	10/10	0/15

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

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

³ FW means freshwater

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

Since 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 discharges⁶⁶:

- 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. EPA⁷¹ 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>, last 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.scaq.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 found⁷⁹:

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 $\frac{3}{4}$ ” 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 TreePeople⁸¹ 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 XIII B, 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.

ATTACHMENT G. NON-STORM WATER ACTION LEVELS AND MUNICIPAL ACTION LEVELS

I. LOS ANGELES RIVER WATERSHED MANAGEMENT AREA

Table G-1. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or less than 1 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Chloride	mg/L	4	--
Nitrite Nitrogen, Total (as N)	mg/L	1.0 ⁵	--
Sulfate	mg/L	4	--
Total Dissolved Solids	mg/L	4	--
Turbidity	NTU	5 ⁵	--
Aluminum, Total Recoverable	mg/L	1.0 ⁵	--
Cyanide, Total Recoverable	µg/L	4.3	8.5
Copper, Total Recoverable	µg/L	6	6
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	4.1	8.2

¹ Within the range of 6.5 to 8.5 at all times.

² *E. coli* density shall not exceed a geometric mean of 126/100 ml.

³ *E. coli* density in a single sample shall not exceed 235/100 ml.

⁴ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.

⁵ Applicable only to discharges to receiving waters or receiving waters with underlying groundwater designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.

⁶ Action levels are hardness dependent. See Section IV of this Attachment for a listing of the applicable action levels.

Table G-2. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity between 1 ppt and 10 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Total Coliform Bacteria	#/100 ml	1,000 ⁴	10,000 ⁵
Fecal Coliform Bacteria	#/100 ml	200 ⁴	400 ⁵
Enterococcus Bacteria	#/100 ml	35 ⁴	104 ⁵
Chloride	mg/L	6	--
Nitrite Nitrogen, Total (as N)	mg/L	1.0 ⁷	--
Sulfate	mg/L	6	--
Total Dissolved Solids	mg/L	6	--
Turbidity	NTU	5 ⁷	--
Aluminum, Total Recoverable	mg/L	1.0 ⁷	--
Cyanide, Total Recoverable	µg/L	0.50	1.0
Copper, Total Recoverable	µg/L	8	8
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	4.1	8.2

¹ Within the range of 6.5 to 8.5 at all times.

² *E. coli* density shall not exceed a geometric mean of 126/100 ml.

- ³ *E. coli* density in a single sample shall not exceed 235/100 ml.
- ⁴ Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ⁵ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a single sample density of 104/100 ml.
- ⁶ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.
- ⁷ Applicable only to discharges to receiving waters or receiving waters with underlying groundwater designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.
- ⁸ The applicable action level is the most stringent between corresponding Table G-1 and Table G-3 action levels.

Table G-3. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or greater than 10 ppt 95% or more of the time)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
Total Coliform Bacteria	#/100 ml	1,000 ^{2, 3}	10,000 ^{3, 4}
Fecal Coliform Bacteria	#/100 ml	200 ²	400 ⁴
Enterococcus Bacteria	#/100 ml	35 ²	104 ⁴
Chloride	mg/L	⁵	--
Nitrite Nitrogen, Total (as N)	mg/L	1.0 ⁶	--
Sulfate	mg/L	⁵	--
Total Dissolved Solids	mg/L	⁵	--
Turbidity	NTU	5 ⁶	--
Aluminum, Total Recoverable	mg/L	1.0 ⁶	--
Cyanide, Total Recoverable	µg/L	0.50	1.0
Copper, Total Recoverable	µg/L	2.9	5.8
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	58	117

- ¹ Within the range of 6.5 to 8.5 at all times.
- ² Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ³ In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.
- ⁴ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.
- ⁵ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.
- ⁶ Applicable only to discharges to receiving waters or receiving waters with underlying groundwater designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.

Table G-4. Action Levels for Discharges to Ocean Waters (Surf Zone)

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
pH	Standard units	6.0-9.0 ¹		
Total Coliform Bacteria	#/100 ml	70 ²	230 ²	--
Fecal Coliform Bacteria	#/100 ml	--	200 ³	400 ⁴
Enterococcus Bacteria	#/100 ml	--	35 ³	104 ⁴
Turbidity	NTU	75	100	225
Cyanide, Total Recoverable	µg/L	1	4	10

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	3	12	30
Mercury, Total Recoverable	µg/L	0.04	0.16	0.4
Selenium, Total Recoverable	µg/L	15	60	150

- ¹ Within the range of 6.0 to 9.0 at all times.
- ² In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.
- ³ Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ⁴ Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.

II. DOMINGUEZ CHANNEL WATERSHED MANAGEMENT AREA

Table G-5. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or less than 1 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Cyanide, Total Recoverable	µg/L	4.3	8.5
Copper, Total Recoverable	µg/L	⁴	⁴
Lead, Total Recoverable	µg/L	⁴	⁴
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	4.1	8.2

- ¹ Within the range of 6.5 to 8.5 at all times.
- ² *E. coli* density shall not exceed a geometric mean of 126/100 ml.
- ³ *E. coli* density in a single sample shall not exceed 235/100 ml.
- ⁴ Action levels are hardness dependent. See Section IV of this Attachment for a listing of the applicable action levels.

Table G-6. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity between 1 ppt and 10 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	s.u	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Total Coliform Bacteria	#/100 ml	1,000 ⁴	10,000 ⁵
Fecal Coliform Bacteria	#/100 ml	200 ⁴	400 ⁵
Enterococcus Bacteria	#/100 ml	35 ⁴	104 ⁵
Cyanide, Total Recoverable	µg/L	0.50	1.0
Copper, Total Recoverable	µg/L	⁶	⁶
Lead, Total Recoverable	µg/L	⁶	⁶
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	4.1	8.2

- ¹ Within the range of 6.5 to 8.5 at all times.
- ² *E. coli* density shall not exceed a geometric mean of 126/100 ml.
- ³ *E. coli* density in a single sample shall not exceed 235/100 ml.

- ⁴ Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ⁵ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.
- ⁶ The applicable action level is the most stringent between corresponding Table G-5 and Table G-7 action levels.

Table G-7. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or greater than 10 ppt 95% or more of the time)

Parameter	Units	Average Monthly	Daily Maximum
pH	s.u	6.5-8.5 ¹	
Total Coliform Bacteria	#/100 ml	1,000 ^{2,3}	10,000 ^{3,4}
Fecal Coliform Bacteria	#/100 ml	200 ²	400 ⁴
Enterococcus Bacteria	#/100 ml	35 ²	104 ⁴
Cyanide, Total Recoverable	µg/L	0.50	1.0
Copper, Total Recoverable	µg/L	2.9	5.8
Lead, Total Recoverable	µg/L	7.0	14
Mercury, Total Recoverable	µg/L	0.051	0.10
Selenium, Total Recoverable	µg/L	58	117

- ¹ Within the range of 6.5 to 8.5 at all times.
- ² Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ³ In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.
- ⁴ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.

Table G-8. Action Levels for Discharges to Ocean Waters (Surf Zone)

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
pH	s.u	6.0-9.0 ¹		
Total Coliform Bacteria	#/100 ml	70 ²	230 ²	--
Fecal Coliform Bacteria	#/100 ml	--	200 ³	400 ⁴
Enterococcus Bacteria	#/100 ml	--	35 ³	104 ⁴
Cyanide, Total Recoverable	µg/L	1	4	10
Copper, Total Recoverable	µg/L	3	12	30
Lead, Total Recoverable	µg/L	2	8	20
Mercury, Total Recoverable	µg/L	0.04	0.16	0.4
Selenium, Total Recoverable	µg/L	15	60	150

- ¹ Within the range of 6.0 to 9.0 at all times.
- ² In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.
- ³ Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ⁴ Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.

III. SAN GABRIEL RIVER WATERSHED MANAGEMENT AREA

Table G-9. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or less than 1 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Chloride	mg/L	4	--
Nitrate Nitrogen, Total (as N)	mg/L	4	--
Sulfate	mg/L	4	--
Total Dissolved Solids	mg/L	4	--
Aluminum, Total Recoverable	mg/L	1.0 ⁵	--
Cyanide, Total Recoverable	µg/L	4.3	8.5
Cadmium, Total Recoverable	µg/L	6	6
Copper, Total Recoverable	µg/L	6	6
Lead, Total Recoverable	µg/L	6	6
Mercury, Total Recoverable	µg/L	0.051	0.10
Nickel, Total Recoverable	µg/L	6	6
Selenium, Total Recoverable	µg/L	4.1	8.2
Silver, Total Recoverable	µg/L	6	6
Zinc, Total Recoverable	µg/L	6	6

¹ Within the range of 6.5 to 8.5 at all times.
² *E. coli* density shall not exceed a geometric mean of 126/100 ml.
³ *E. coli* density in a single sample shall not exceed 235/100 ml.
⁴ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.
⁵ Applicable only to discharges to receiving waters or receiving waters with underlying groundwater designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.
⁶ Action levels are hardness dependent. See Section IV of this Attachment for a listing of the applicable action levels.

Table G-10. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity between 1 ppt and 10 ppt)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
<i>E. coli</i> Bacteria	#/100 ml	126 ²	235 ³
Total Coliform Bacteria	#/100 ml	1,000 ⁴	10,000 ⁵
Fecal Coliform Bacteria	#/100 ml	200 ⁴	400 ⁵
Enterococcus Bacteria	#/100 ml	35 ⁴	104 ⁵
Chloride	mg/L	6	--
Nitrate Nitrogen, Total (as N)	mg/L	6	--
Sulfate	mg/L	6	--
Total Dissolved Solids	mg/L	6	--
Aluminum, Total Recoverable	mg/L	1.0 ⁷	--
Cyanide, Total Recoverable	µg/L	0.50	1.0
Cadmium, Total Recoverable	µg/L	8	8

Parameter	Units	Average Monthly	Daily Maximum
Copper, Total Recoverable	µg/L	8	8
Lead, Total Recoverable	µg/L	8	8
Mercury, Total Recoverable	µg/L	0.051	0.10
Nickel, Total Recoverable	µg/L	8	8
Selenium, Total Recoverable	µg/L	4.1	8.2
Silver, Total Recoverable	µg/L	8	8
Zinc, Total Recoverable	µg/L	8	8

¹ Within the range of 6.5 to 8.5 at all times.

² *E. coli* density shall not exceed a geometric mean of 126/100 ml.

³ *E. coli* density in a single sample shall not exceed 235/100 ml.

⁴ Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.

⁵ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.

⁶ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.

⁷ Applicable only to discharges to receiving waters designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.

⁸ The applicable action level is the most stringent between corresponding Table G-9 and Table G-11 action levels.

Table G-11. Action Levels for Discharges to Inland Surface Waters, Enclosed Bays, and Estuaries (with receiving water salinity equal to or greater than 10 ppt 95% or more of the time)

Parameter	Units	Average Monthly	Daily Maximum
pH	Standard units	6.5-8.5 ¹	
Total Coliform Bacteria	#/100 ml	1,000 ^{2, 3}	10,000 ^{2, 4}
Fecal Coliform Bacteria	#/100 ml	200 ²	400 ⁴
Enterococcus Bacteria	#/100 ml	35 ²	104 ⁴
Chloride	mg/L	5	--
Nitrate Nitrogen, Total (as N)	mg/L	5	--
Sulfate	mg/L	5	--
Total Dissolved Solids	mg/L	5	--
Aluminum, Total Recoverable	mg/L	1.0 ⁶	--
Cyanide, Total Recoverable	µg/L	0.50	1.0
Cadmium, Total Recoverable	µg/L	7.7	15
Copper, Total Recoverable	µg/L	2.9	5.8
Lead, Total Recoverable	µg/L	7.0	14
Mercury, Total Recoverable	µg/L	0.051	0.10
Nickel, Total Recoverable	µg/L	6.8	14
Silver, Total Recoverable	µg/L	1.1	2.2
Selenium, Total Recoverable	µg/L	58	117
Zinc, Total Recoverable	µg/L	47	95

¹ Within the range of 6.5 to 8.5 at all times.

² Total coliform density shall not exceed a geometric mean of 1,000/100 ml. Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.

³ In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.

- ⁴ Total coliform density in a single sample shall not exceed 10,000/100 ml. Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.
- ⁵ In accordance with applicable water quality objectives contained in Chapter 3 of the Basin Plan.
- ⁶ Applicable only to discharges to receiving waters designated for Municipal and Domestic Supply (MUN) use as specified in Tables 2-1 and 2-2 of the Basin Plan.

Table G-12. Action Levels for Discharges to Ocean Waters (Surf Zone)

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
pH	Standard units	6.0-9.0 ¹		
Total Coliform Bacteria	#/100 ml	70 ²	230 ²	--
Fecal Coliform Bacteria	#/100 ml	--	200 ³	400 ⁴
Enterococcus	#/100 ml	--	35 ³	104 ⁴
Cyanide, Total Recoverable	µg/L	1	4	10
Cadmium, Total Recoverable	µg/L	1	4	10
Copper, Total Recoverable	µg/L	3	12	30
Lead, Total Recoverable	µg/L	2	8	20
Mercury, Total Recoverable	µg/L	0.04	0.16	0.4
Nickel, Total Recoverable	µg/L	5	20	50
Silver, Total Recoverable	µg/L	0.7	2.8	7.0
Selenium, Total Recoverable	µg/L	15	60	150
Zinc, Total Recoverable	µg/L	20	80	200

- ¹ Within the range of 6.0 to 9.0 at all times.
- ² In areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70/100 ml and not more than 10 percent of the samples shall exceed 230/100 ml.
- ³ Fecal coliform density shall not exceed a geometric mean of 200/100 ml. Enterococcus density shall not exceed a geometric mean of 35/100 ml.
- ⁴ Fecal coliform density in a single sample shall not exceed 400/100 ml. Enterococcus density shall not exceed a geometric mean of 104/100 ml.

IV. HARDNESS-BASED ACTION LEVELS FOR METALS

Cadmium, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
5.0	0.1	0.2	125.0	2.4	4.8	245.0	4.1	8.2
10.0	0.2	0.3	130.0	2.5	5.0	250.0	4.1	8.3
15.0	0.3	0.5	135.0	2.5	5.1	255.0	4.2	8.4
20.0	0.4	0.7	140.0	2.6	5.3	260.0	4.3	8.5
25.0	0.5	0.9	145.0	2.7	5.4	265.0	4.3	8.7
30.0	0.6	1.2	150.0	2.8	5.5	270.0	4.4	8.8
35.0	0.7	1.4	155.0	2.8	5.7	275.0	4.5	8.9

Cadmium, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
40.0	0.8	1.6	160.0	2.9	5.8	280.0	4.5	9.1
45.0	0.9	1.8	165.0	3.0	6.0	285.0	4.6	9.2
50.0	1.0	2.1	170.0	3.1	6.1	290.0	4.6	9.3
55.0	1.1	2.3	175.0	3.1	6.3	295.0	4.7	9.4
60.0	1.3	2.5	180.0	3.2	6.4	300.0	4.8	9.6
65.0	1.4	2.8	185.0	3.3	6.5	310.0	4.9	9.8
70.0	1.5	3.0	190.0	3.3	6.7	320.0	5.0	10.1
75.0	1.6	3.2	195.0	3.4	6.8	330.0	5.1	10.3
80.0	1.7	3.4	200.0	3.5	7.0	340.0	5.3	10.5
85.0	1.8	3.6	205.0	3.5	7.1	350.0	5.4	10.8
90.0	1.9	3.7	210.0	3.6	7.2	360.0	5.5	11.0
95.0	1.9	3.9	215.0	3.7	7.4	370.0	5.6	11.3
100.0	2.0	4.0	220.0	3.7	7.5	380.0	5.7	11.5
105.0	2.1	4.2	225.0	3.8	7.6	390.0	5.9	11.7
110.0	2.2	4.3	230.0	3.9	7.8	400.0	6.0	12.0
115.0	2.2	4.5	235.0	3.9	7.9	>400	6.0	12.0
120.0	2.3	4.7	240.0	4.0	8.0			

Copper, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
5.0	0.4	0.8	125.0	8.6	17.2	245.0	16.2	32.5
10.0	0.8	1.6	130.0	8.9	17.9	250.0	16.5	33.1
15.0	1.2	2.3	135.0	9.2	18.5	255.0	16.8	33.8
20.0	1.5	3.1	140.0	9.6	19.2	260.0	17.1	34.4
25.0	1.9	3.8	145.0	9.9	19.8	265.0	17.4	35.0
30.0	2.2	4.5	150.0	10.2	20.5	270.0	17.8	35.6
35.0	2.6	5.2	155.0	10.5	21.1	275.0	18.1	36.2
40.0	2.9	5.9	160.0	10.8	21.8	280.0	18.4	36.9
45.0	3.3	6.6	165.0	11.2	22.4	285.0	18.6	37.4
50.0	3.6	7.3	170.0	11.5	23.0	290.0	18.9	38.0
55.0	4.0	8.0	175.0	11.8	23.7	295.0	19.2	38.5
60.0	4.3	8.6	180.0	12.1	24.3	300.0	19.5	39.1
65.0	4.6	9.3	185.0	12.4	25.0	310.0	20.0	40.2
70.0	5.0	10.0	190.0	12.8	25.6	320.0	20.6	41.3
75.0	5.3	10.7	195.0	13.1	26.2	330.0	21.1	42.4
80.0	5.6	11.3	200.0	13.4	26.9	340.0	21.7	43.5
85.0	6.0	12.0	205.0	13.7	27.5	350.0	22.2	44.6
90.0	6.3	12.7	210.0	14.0	28.1	360.0	22.8	45.7
95.0	6.6	13.3	215.0	14.3	28.7	370.0	23.3	46.8
100.0	7.0	14.0	220.0	14.6	29.4	380.0	23.8	47.8
105.0	7.3	14.6	225.0	15.0	30.0	390.0	24.4	48.9
110.0	7.6	15.3	230.0	15.3	30.6	400.0	24.9	50.0

Copper, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
115.0	7.9	15.9	235.0	15.6	31.3	>400	24.9	50.0
120.0	8.3	16.6	240.0	15.9	31.9			

Lead, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
5.0	0.1	0.1	125.0	3.5	6.9	245.0	8.1	16.3
10.0	0.1	0.3	130.0	3.6	7.3	250.0	8.3	16.7
15.0	0.2	0.5	135.0	3.8	7.6	255.0	8.6	17.2
20.0	0.3	0.7	140.0	4.0	8.0	260.0	8.8	17.6
25.0	0.4	0.9	145.0	4.2	8.4	265.0	9.0	18.0
30.0	0.6	1.1	150.0	4.4	8.7	270.0	9.2	18.5
35.0	0.7	1.4	155.0	4.5	9.1	275.0	9.4	18.9
40.0	0.8	1.6	160.0	4.7	9.5	280.0	9.6	19.3
45.0	0.9	1.9	165.0	4.9	9.9	285.0	9.9	19.8
50.0	1.1	2.2	170.0	5.1	10.2	290.0	10.1	20.2
55.0	1.2	2.4	175.0	5.3	10.6	295.0	10.3	20.7
60.0	1.4	2.7	180.0	5.5	11.0	300.0	10.5	21.1
65.0	1.5	3.0	185.0	5.7	11.4	310.0	11.0	22.0
70.0	1.7	3.3	190.0	5.9	11.8	320.0	11.4	22.9
75.0	1.8	3.6	195.0	6.1	12.2	330.0	11.9	23.8
80.0	2.0	3.9	200.0	6.3	12.6	340.0	12.3	24.8
85.0	2.1	4.2	205.0	6.5	13.0	350.0	12.8	25.7
90.0	2.3	4.6	210.0	6.7	13.4	360.0	13.3	26.6
95.0	2.4	4.9	215.0	6.9	13.8	370.0	13.7	27.6
100.0	2.6	5.2	220.0	7.1	14.2	380.0	14.2	28.5
105.0	2.8	5.5	225.0	7.3	14.6	390.0	14.7	29.5
110.0	2.9	5.9	230.0	7.5	15.1	400.0	15.2	30.5
115.0	3.1	6.2	235.0	7.7	15.5	>400	15.2	30.5
120.0	3.3	6.6	240.0	7.9	15.9			

Nickel, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
5.0	3.4	6.8	125.0	51.5	103.3	245.0	90.9	182.5
10.0	6.1	12.2	130.0	53.2	106.7	250.0	92.5	185.6
15.0	8.6	17.2	135.0	54.9	110.2	255.0	94.1	188.7
20.0	10.9	21.9	140.0	56.6	113.6	260.0	95.6	191.9
25.0	13.2	26.5	145.0	58.3	117.1	265.0	97.2	195.0
30.0	15.4	30.9	150.0	60.0	120.5	270.0	98.7	198.1
35.0	17.5	35.2	155.0	61.7	123.9	275.0	100.3	201.2

Nickel, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
40.0	19.6	39.4	160.0	63.4	127.2	280.0	101.8	204.3
45.0	21.7	43.5	165.0	65.1	130.6	285.0	103.3	207.4
50.0	23.7	47.6	170.0	66.8	133.9	290.0	104.9	210.4
55.0	25.7	51.6	175.0	68.4	137.3	295.0	106.4	213.5
60.0	27.7	55.5	180.0	70.1	140.6	300.0	107.9	216.6
65.0	29.6	59.4	185.0	71.7	143.9	310.0	111.0	222.7
70.0	31.5	63.2	190.0	73.3	147.1	320.0	114.0	228.7
75.0	33.4	67.0	195.0	75.0	150.4	330.0	117.0	234.7
80.0	35.3	70.8	200.0	76.6	153.7	340.0	120.0	240.7
85.0	37.1	74.5	205.0	78.2	156.9	350.0	123.0	246.7
90.0	39.0	78.2	210.0	79.8	160.2	360.0	125.9	252.7
95.0	40.8	81.9	215.0	81.4	163.4	370.0	128.9	258.6
100.0	42.6	85.5	220.0	83.0	166.6	380.0	131.8	264.5
105.0	44.4	89.1	225.0	84.6	169.8	390.0	134.8	270.4
110.0	46.2	92.7	230.0	86.2	173.0	400.0	137.7	276.2
115.0	48.0	96.2	235.0	87.8	176.1	>400	137.7	276.2
120.0	49.7	99.8	240.0	89.4	179.3			

Zinc, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
5.0	4.7	9.4	125.0	72.0	144.5	245.0	127.4	255.6
10.0	8.5	17.0	130.0	74.5	149.4	250.0	129.6	260.0
15.0	11.9	24.0	135.0	76.9	154.2	255.0	131.8	264.4
20.0	15.2	30.6	140.0	79.3	159.1	260.0	134.0	268.8
25.0	18.4	37.0	145.0	81.7	163.9	265.0	136.1	273.1
30.0	21.5	43.1	150.0	84.1	168.6	270.0	138.3	277.5
35.0	24.5	49.1	155.0	86.4	173.4	275.0	140.5	281.9
40.0	27.4	55.0	160.0	88.8	178.1	280.0	142.6	286.2
45.0	30.3	60.8	165.0	91.1	182.8	285.0	144.8	290.5
50.0	33.1	66.5	170.0	93.5	187.5	290.0	146.9	294.8
55.0	35.9	72.1	175.0	95.8	192.2	295.0	149.1	299.1
60.0	38.7	77.6	180.0	98.1	196.8	300.0	151.2	303.4
65.0	41.4	83.0	185.0	100.4	201.4	310.0	155.5	312.0
70.0	44.1	88.4	190.0	102.7	206.0	320.0	159.7	320.5
75.0	46.7	93.7	195.0	105.0	210.6	330.0	163.9	328.9
80.0	49.3	99.0	200.0	107.3	215.2	340.0	168.1	337.4
85.0	51.9	104.2	205.0	109.5	219.8	350.0	172.3	345.8
90.0	54.5	109.4	210.0	111.8	224.3	360.0	176.5	354.1
95.0	57.1	114.5	215.0	114.0	228.8	370.0	180.6	362.4
100.0	59.6	119.6	220.0	116.3	233.3	380.0	184.8	370.7
105.0	62.1	124.7	225.0	118.5	237.8	390.0	188.9	379.0
110.0	64.6	129.7	230.0	120.7	242.3	400.0	193.0	387.2

Zinc, Total Recoverable								
Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)	Hardness (mg/L as CaCO ₃)	AMAL (µg/L)	MDAL (µg/L)
115.0	67.1	134.7	235.0	123.0	246.7	>400	193.0	387.2
120.0	69.6	139.6	240.0	125.2	251.2			

V. MUNICIPAL ACTION LEVELS

Conventional Pollutants

Pollutants	pH	TSS mg/L	COD mg/L	Kjedahl Nitrogen (TKN) mg/L	Nitrate & Nitrite- total mg/L	P- total mg/L
Municipal Action Level	6.5-8.5	264.1	247.5	4.59	1.85	0.80

Metals

Pollutants	Cd- total µg/L	Cr-total µg/L	Cu- total µg/L	Pb- total µg/L	Ni- total µg/L	Zn- total µg/L	Hg- total µg/L
Municipal Action Level	2.52	20.20	71.12	102.00	27.43	641.3	0.32

This Order establishes Municipal Action Levels (MALs) to identify subwatersheds requiring additional Best Management Practices (BMPs) to reduce pollutant loads and prioritize implementation of additional BMPs. MALs for selected pollutants are based on nationwide Phase I MS4 monitoring data for pollutants in storm water (<http://unix.eng.ua.edu/~rpitt/Research/Research.shtml>, last visited on May 9, 2012). The MALs were obtained by computing the upper 25th percentile for selected pollutants using the statistical program Minitab. Non-detects were removed from the data set and all data from the database were used.

Under this Order, the Municipal Action Levels (MALs) shall be utilized by the Discharger to identify subwatersheds discharging pollutants at levels in excess of the MALs. Within those subwatersheds where pollutant levels in the discharge are in excess of the MALs, the Discharger shall implement controls and measures necessary to reduce the discharge of pollutants.

In order to determine if MS4 discharges are in excess of the MALs, the Discharger shall conduct outfall monitoring as required in the Monitoring and Reporting Program (MRP) (Attachment E). A MAL Assessment Report shall be submitted to the Regional Water Board Executive Officer as part of the Annual Report. The MAL Assessment Report shall present the monitoring data in comparison to the applicable MALs, and identify those subwatersheds with a running average of twenty percent or greater of exceedances of the MALs listed in this attachment in discharges of storm water from the MS4.

Beginning in Year 3 after the effective date of this Order, the Discharger shall submit a MAL Action Plan with the Annual Report (first MAL Action Plan due with December 15, 2017 Annual Report) to the Regional Water Board Executive Officer, for those subwatersheds with a running average of twenty percent or greater of exceedances of the MALs in any discharge of storm water from the MS4. The plan shall include an assessment of the sources responsible for the MAL exceedances, the existing storm water programs and BMPs that address those sources, an assessment of potential program enhancements, alternative BMPs and actions the Permittee shall implement to reduce discharges to a level that is equivalent to or below the MALs, and an implementation schedule for such actions for Executive Officer approval. The MAL Action Plan shall provide the technical rationale to demonstrate the proposed measures and controls will attain the MALs. If the MAL Action Plan is not approved within 90 days of the due date, the Executive Officer may establish an appropriate plan with at least 90 day notification and consultation with the Permittee.

Within 90 days of the plan approval by the Regional Water Board Executive Officer, the Permittee shall initiate the BMPs and actions proposed in the MAL Action Plan, together with any other practicable BMPs or actions that the Executive Officer determines to be necessary to meet the MALs. The Permittee shall complete the proposed actions in accordance with the approved implementation schedule.

Upon completion of the actions specified in the approved MAL Action Plan, the Permittee shall re-monitor the subject subwatershed in accordance with the MRP, and submit a Post-Project MAL Assessment Report to the Regional Water Board Executive Officer.

Implementation of an approved Watershed Management Program per Part VII.C of the Order fulfills all requirements related to the development and implementation of the MAL Action Plan.

As additional data become available through the MRP or from the Regional Subset of the National Dataset, MALs may be revised annually by the Regional Water Board Executive Officer in accordance with an equivalent statistical method as that used to establish the MALs in this attachment with at least 90 day notification and consultation with the Permittee.

ATTACHMENT H. BIORETENTION / BIOFILTRATION DESIGN CRITERIA

Note: A significant portion of the information in this appendix has been copied verbatim from the *Ventura County Technical Guidance Manual*, Updated 2011, and modified to reflect recent changes to the bioretention/biofiltration soil media specifications as adopted by the California Regional Water Quality Control Board, San Francisco Region, on November 28, 2011, Order No. R2-2011-083, Attachment L. Permittees can submit alternate Bioretention/Biofiltration Design Criteria subject to Executive Officer approval.

1. Geometry

- a. Bioretention/biofiltration areas shall be sized to capture and treat the design with an 18-inch maximum ponding depth. *The intention is that the ponding depth be limited to a depth that will allow for a healthy vegetation layer.*
- b. Minimum planting soil depth should be 2 feet, although 3 feet is preferred. *The intention is that the minimum planting soil depth should provide a beneficial root zone for the chosen plant palette and adequate water storage for the SWQDv.*
- c. A gravel storage layer below the bioretention/biofiltration soil media is required as necessary to provide adequate temporary storage to retain the SWQDv and to promote infiltration.

2. Drainage

- a. Bioretention and biofiltration BMPs should be designed to drain below the planting soil in less than 48 hours and completely drain in less than 96 hours. *The intention is that soils must be allowed to dry out periodically in order to restore hydraulic capacity needed to receive flows from subsequent storms, maintain infiltration rates, maintain adequate soil oxygen levels for healthy soil biota and vegetation, and to provide proper soil conditions for biodegradation and retention of pollutants.*
- b. *Biofiltration BMPs are designed and constructed with an underdrain. The underdrain is preferably placed near the top of the gravel storage area to promote incidental infiltration and enhanced nitrogen removal. However, if in-situ, underlying soils do not provide sufficient drainage, the underdrain may need to be placed lower in the gravel storage area (within 6 inches of the bottom) to prevent the unit from holding stagnant water for extended periods of time. At many sites, clay soils will drain sufficiently fast, particularly if they are not compacted. Observing soil moisture and surface conditions in the days following a wet period may provide sufficient information for making this decision and may be more directly applicable than in situ or laboratory testing of soil characteristics¹.*

3. Overflow

An overflow device is required at the 18-inch ponding depth. The following, or equivalent, should be provided:

- a. A vertical PVC pipe (SDR 35) to act as an overflow riser.

¹ Dan Cloak, Dan Cloak Environmental Consulting to Tom Dalziel, Contra Costa County, February 22, 2011.

- b. The overflow riser(s) should be 6 inches or greater in diameter, so it can be cleaned without damage to the pipe.

The inlet to the riser should be at the ponding depth (18 inches for fenced bioretention areas and 6 inches for areas that are not fenced), and be capped with a spider cap to exclude floating mulch and debris. Spider caps should be screwed in or glued, i.e., not removable.

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

- a. When calculating the capacity of an infiltration system, each Permittee shall account for the 24-hour infiltration assuming that the soil is saturated. Infiltration BMPs shall be limited to project sites where the in-situ soil or the amended on-site soils have a demonstrated infiltration rate under saturated conditions of no less than 0.3 inch per hour.
- b. Bioretention BMPs shall be designed to accommodate the minimum design flow at a surface loading rate of 5 inches per hour and no greater than 12 inches per hour, and shall have a total volume, including pore spaces and pre-filter detention volume of no less than the SWQDv.
- c. If rainwater harvested for use in irrigation is to be credited toward the total volume of storm water runoff retained on-site, each Permittee shall require the project proponent to conduct a conservative (assuming reasonable worst-case scenarios) assessment of water demand during the wet-weather season. This volume will be referred to as the "reliable" estimate of irrigation demand. The portion of water to be credited as retained on-site for use in irrigation shall not exceed the reliable estimate of irrigation demand.
- d. Harvested rainwater must be stored in a manner that precludes the breeding of mosquitoes or other vectors or with a draw down not to exceed 96 hours.
- e. When evaluating the potential for on-site retention, each Permittee shall consider the maximum potential for evapotranspiration from green roofs and rainfall harvest and use.
- f. Project requirements shall address at a minimum the potential use of harvested rainwater for non-potable uses including toilet flushing, laundry, and cooling water makeup water. If the municipal, building or county health code(s) does not allow such use of harvested rainwater, each Permittee shall develop a model ordinance and submit it to the city council or County Supervisors for consideration within 24 months after the Order effective date. The model ordinances shall be based on the International Association of Plumbing and Mechanical Officials' (IAPMO's) Green Plumbing and Mechanical Code Supplement to the 2012 National Standard Plumbing Code, or similar guidance to ensure the safe and effective use of harvested rainwater, separate from the existing provisions, if any, for reclaimed wastewater. California is in the process of adopting its 2012 update to the Uniform Plumbing Code that incorporates the IAPMO Green Plumbing and Mechanical Code Supplement. If the State of California update incorporates the IAPMO Green Plumbing and Mechanical Code Supplement, Permittees are not required to adopt a model ordinance addressing the potential use of harvested rainwater for non-potable uses including toilet flushing, laundry, and cooling water makeup water.

5. Hydraulic Restriction Layers

Infiltration pathways may need to be restricted due to the close proximity of roads, foundations, or other infrastructure. A geomembrane liner, or other equivalent water proofing, may be placed along the vertical walls to reduce lateral flows. This liner should have a minimum thickness of 30 mils. Generally, waterproof barriers should not be placed on the bottom of the biofiltration unit, as this would prevent incidental infiltration which is important to meeting the required pollutant load reduction.

6. Planting/Storage Media Specifications

- a. The planting media placed in the cell should achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Higher infiltration rates of up to 12 inches per hour are permissible. Bioretention/biofiltration soil shall retain sufficient moisture to support vigorous plant growth.
- b. Planting media should consist of 60 to 80% fine sand and 20 to 40% compost.
- c. Sand should be free of wood, waste, coating such as clay, stone dust, carbonate, etc. or any other deleterious material. All aggregate passing the No. 200 sieve size should be non-plastic. Sand for bioretention should be analyzed by an accredited lab using #200, #100, #40, #30, #16, #8, #4, and 3/8 sieves (ASTM D 422 or as approved by the local permitting authority) and meet the following gradation (Note: all sands complying with ASTM C33 for fine aggregate comply with the gradation requirements provided in Table H-1):

Table H-1. Sand Texture Specifications

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
3 /8 inch	100	100
No. 4	90	100
No. 8	70	100
No. 16	40	95
No. 30	15	70
No. 40	5	55
No. 110	0	15
No. 200	0	5

Note: The gradation of the sand component of the media is believed to be a major factor in the hydraulic conductivity of the media mix. If the desired hydraulic conductivity of the media cannot be achieved within the specified proportions of sand and compost (#2), then it may be necessary to utilize sand at the coarser end of the range specified in above (“minimum” column).

- d. Compost should be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes, or other organic materials not including manure or biosolids meeting standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program). Compost quality should be verified via a lab analysis to be:

- Feedstock materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.
- Organic matter: 35-75% dry weight basis.
- Carbon and Nitrogen Ratio: 15:1 < C:N < 25:1
- Maturity/Stability: shall have dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120 F) upon delivery or rewetting is not acceptable.
- Toxicity: any one of the following measures is sufficient to indicate non-toxicity:
 - NH₄:NH₃ < 3
 - Ammonium < 500 ppm, dry weight basis
 - Seed Germination > 80% of control
 - Plant trials > 80% of control
 - Solvita® > 5 index value
- Nutrient content:
 - Total Nitrogen content 0.9% or above preferred
 - Total Boron should be <80 ppm, soluble boron < 2.5 ppm
- Salinity: < 6.0 mmhos/cm
- pH between 6.5 and 8 (may vary with plant palette)
- Compost for bioretention should be analyzed by an accredited lab using #200, ¼ inch, ½ inch, and 1 inch sieves (ASTM D 422) and meet the gradation described in Table H-2:

Table H-2. Compost Texture Specifications

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
1 inch	99	100
½ inch	90	100
¼ inch	40	90
#200	2	10

Tests should be sufficiently recent to represent the actual material that is anticipated to be delivered to the site. If processes or sources used by the supplier have changed significantly since the most recent testing, new tests should be requested.

Note: the gradation of compost used in bioretention/biofiltration media is believed to play an important role in the saturated hydraulic conductivity of the media. To achieve a higher saturated hydraulic conductivity, it may be necessary to utilize compost at the coarser end of this range (“minimum” column). The percent passing the #200 sieve (fines) is believed to be the most important factor in hydraulic conductivity.

In addition, a coarser compost mix provides more heterogeneity of the bioretention media, which is believed to be advantageous for more rapid development of soil structure needed to support health biological processes. This may be an advantage for plant establishment with lower nutrient and water input.

- e. Bioretention/Biofiltration soils not meeting the above criteria shall be evaluated on a case by case basis. Alternative bioretention soil shall meet the following specification: “Soils for bioretention facilities shall be sufficiently permeable to infiltrate runoff at a

minimum rate of 5 inches per hour during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation.” The following steps shall be followed by the Permittees to verify that alternative soil mixes meet the specification:

- Submittals – The applicant must submit to the Permittee for approval:
 - A sample of mixed bioretention/biofiltration soil.
 - Certification from the soil supplier or an accredited laboratory that the bioretention/biofiltration soil meets the requirements of this specification.
 - Certification from an accredited geotechnical testing laboratory that the bioretention/biofiltration soil has an infiltration rate of between 5 and 12 inches per hour.
 - Organic content test results of mixed bioretention/biofiltration soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, “Loss-On-Ignition Organic Matter Method”.
 - Organic Grain size analysis results of mixed bioretention/biofiltration soil performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
 - A description of the equipment and methods used to mix the sand and compost to produce the bioretention/biofiltration soil.
- The name of the testing laboratory(s) and the following information:
 - Contact person(s)
 - Address(s)
 - Phone contact(s)
 - email address(s)
 - Qualifications of laboratory(s), and personnel including date of current
 - Certification by STA, ASTM, or approved equal.
- Bioretention/biofiltration soils shall be analyzed by an accredited lab using #200, and 1/2” inch sieves (ASTM D 422 or as approved by municipality), and meet the gradation described in Table H-3).

Table H-3. Alternative Bioretention/Biofiltration Soil Texture Specifications

Sieve Size ASTM D422	Percent Passing by Weight	
	Minimum	Maximum
1/2 inch	97	100
200	2	5

- Bioretention/biofiltration soils shall be analyzed by an accredited geotechnical lab for the following tests:
 - Moisture – density relationships (compaction tests) shall be conducted on bioretention soil. Bioretention/biofiltration soil for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).
 - Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.

7. Mulch for Bioretention/Biofiltration Facilities

Mulch is recommended for the purpose of retaining moisture, preventing erosion and minimizing weed growth. Projects subject to the State's Model Water Efficiency Landscaping Ordinance (or comparable local ordinance) will be required to provide at least two inches of mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Aged mulch can be obtained through soil suppliers or directly from commercial recycling yards. It is recommended to apply 1" to 2" of composted mulch, once a year, preferably in June following weeding.

8. Plants

- a. Plant materials should be tolerant of summer drought, ponding fluctuations, and saturated soil conditions for 48 to 96 hours.
- b. It is recommended that a minimum of three types of tree, shrubs, and/or herbaceous groundcover species be incorporated to protect against facility failure due to disease and insect infestations of a single species.
- c. Native plant species and/or hardy cultivars that are not invasive and do not require chemical inputs should be used to the maximum extent practicable.

References

California Regional Water Quality Control Board, San Francisco Bay Region. 2011. Municipal Regional Stormwater Permit (Order No. R2-2011-0083, Attachment L). Adopted November 28, 2011.

Dan Cloak, Dan Cloak Environmental Consulting to Tom Dalziel, Contra Costa County, February 22, 2011.<<http://www.cccleanwater.org/c3-guidebook.html>>. Accessed on January 31, 2012.

Geosyntec Consultants and Larry Walker Associates. 2011. *Ventura County Technical Guidance Manual for Stormwater Quality Control Measures, Manual Update 2011. Appendix D*. Prepared for the Ventura Countywide Stormwater Quality Management Program. July 13, 2011.

ATTACHMENT I. DEVELOPER TECHNICAL INFORMATION AND GUIDELINES

1. The City of Long Beach shall make available to the Development Community reference information and recommended guidelines. Such information may include the following:
 - a. Links to the State Water Board's Water Balance Calculator
 - b. Expected BMP pollutant removal performance including effluent quality (ASCE/ U.S. EPA International BMP Database, CASQA New Development BMP Handbook, technical reports, local data on BMP performance, and the scientific literature appropriate for southern California geography and climate)
 - c. Selection of appropriate BMPs for stormwater pollutants of concern
 - d. Data on observed local effectiveness and performance of implemented BMPs
 - e. BMP maintenance and cost considerations
 - f. Guiding principles to facilitate integrated water resources planning and management in the selection of BMPs, including water conservation, groundwater recharge, public recreation, multipurpose parks, open space preservation, and existing retrofits
 - g. LID principles and specifications, including the objectives and specifications for integration of LID strategies in the areas of:
 - i. Site Assessment
 - ii. Site Planning and Design
 - iii. Vegetative Protection, Revegetation, and Maintenance
 - iv. Techniques to Minimize Land Disturbance
 - v. Techniques to Implement LID Measures at Various Scales
 - vi. Integrated Water Resources Management Practices
 - vii. LID Design and Flow Modeling Guidance
 - viii. Hydrologic Analysis
 - ix. LID Credits for trees or other features that intercept storm water runoff.
 - h. Recommended Guidelines to include:
 - i. Locate structures on less pervious soils where possible so as to preserve areas with permeable soils (Hydrologic Soil Group Classes A and B, as defined by the National Cooperative Soil Survey), for use in stormwater infiltration and groundwater recharge. Minimize the need to grade the site by concentrating development in areas with minimal non-engineered slopes and existing infrastructure, and mitigate any construction disturbance.
 - ii. The total disturbed area shall be no greater than 110 percent of the final project footprint plus the area of the construction stormwater detention basins, if any, and as required to meet applicable Fire Department regulations for brush clearance.
 - iii. Construction vehicles shall be confined at all times to the area specifically permitted to be disturbed by construction as depicted in the approved

construction documents. Physical barriers shall be used to designate and protect the boundary between disturbed and undisturbed areas.

- iv. Materials staging shall be confined to the area permitted to be disturbed by construction or may be temporarily stored off-site at an approved location at the Contractor's option.
 - v. Construction vehicles shall not traverse areas within the drip lines of those trees and other landscaping to be preserved. Approved visible physical barriers, such as continuous fencing, shall be provided to completely surround all trees and other landscaping to be preserved. Barriers shall be placed not less than 5 feet outside the drip lines of trees.
 - vi. Preserve or restore continuous riparian buffers widths along all natural drainages to a minimum width of 100 feet from each bank top, for a total of 200 feet plus the width of the stream, unless the Watershed Plan demonstrates that a smaller riparian buffer width is protective of water quality, hydrology, and aquatic life beneficial uses within a specific drainage.
 - vii. Identify and avoid development of areas containing habitat with threatened or endangered plant and animal species¹.
- i. The City of Long Beach shall facilitate implementation of LID by providing key industry, regulatory, and other stakeholders with information regarding LID objectives and specifications through a training program. The LID training program will include the following:
- i. LID targeted sessions and materials for builders, design professionals, regulators, resource agencies, and stakeholders
 - ii. A combination of awareness on national efforts and local experience gained through LID pilot projects and demonstration projects
 - iii. Materials and data from LID pilot projects and demonstration projects including case studies
 - iv. Guidance on how to integrate LID requirements at various project scales
 - v. Guidance on the relationship among LID strategies, Source Control BMPs, Treatment Control BMPs, and Hydromodification Control requirements

¹ Federal Endangered Species Act, 16 U.S.C. §§ 1531–1544 (<http://water.epa.gov/lawsregs/guidance/wetlands/eo11990.cfm>); California Endangered Species Act, California Fish and Game Code, §§ 2050 to 2115.5.