

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

LOS ANGELES REGION

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MONITORING AND REPORTING PROGRAM - No. CI-6948

FOR

**ORDER R4-2012-0175
NPDES PERMIT NO. CAS004001**

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

November 8, 2012

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I. MONITORING AND REPORTING PROGRAM (MRP)

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 require 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 C.F.R. §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 further authorizes the California Regional Water Quality Control Board, Los Angeles Region (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. PURPOSE 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 wasteload allocations (WLAs).
3. Characterize pollutant 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 in Los Angeles County.

C. Provision for Integrated Approach

The Monitoring Program provides flexibility to allow Permittees to develop an integrated monitoring program to address all of the monitoring requirements of this Order and other monitoring obligations or requirements in a cost efficient and effective manner.

D. Provision for a Coordinated Integrated Approach

The Monitoring Program provides flexibility to allow Permittees to 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.

E. Monitoring Program Elements

The Monitoring Program shall include the following elements:

- 1. Receiving water monitoring** shall be performed at previously designated mass emission stations, TMDL receiving water compliance points, as designated in Regional Water Board Executive Officer approved TMDL Monitoring Plans (see Table E-1 for a list of approved TMDL Monitoring Plans), and additional receiving water locations representative of the impacts from MS4 discharges. The objectives of the receiving water monitoring include the following:
 - a. Determine whether the receiving water limitations are being achieved,
 - b. Assess trends in pollutant concentrations over time, or during specified conditions,
 - c. Determine whether the designated beneficial uses are fully supported as determined by water chemistry, as well as aquatic toxicity and bioassessment monitoring.
- 2. Storm water outfall based monitoring;** including TMDL monitoring requirements 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. Determine the quality of a Permittee's discharge relative 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 TMDL WLAs,
 - c. Determine whether a Permittee's discharge causes or contributes to an exceedance of receiving water limitations.
- 3. Non-storm water outfall based monitoring;** including TMDL monitoring requirements specified in approved TMDL Monitoring Plans (see Table E-1). Outfalls with significant non-storm water discharges that remain unaddressed after source identification shall be monitored. 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. Determine whether a Permittee's discharge exceeds non-storm water action levels, as described in Attachment G of this Order,
 - c. Determine whether a Permittee's discharge contributes to or causes an exceedance of receiving water limitations,

- d. Assist a Permittee in identifying illicit discharges as described in Part VI.D.10 of this Order.
4. **New Development/Re-development effectiveness tracking.** The objectives of best management practices (BMP) effectiveness tracking is to track whether the conditions in the building permit issued by the Permittee are implemented to ensure the volume of storm water associated with the design storm is retained on-site as required by Part VI.D.7.c.i. of this Order.
5. **Regional studies** are required to further characterize the impact of the MS4 discharges on the beneficial uses of the receiving waters. Regional studies shall include 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 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 each Permittee'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 Permittees' 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 VI.E.5 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 VI.E.5 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 this Order and Part XIV of this MRP.

H. Reporting

1. Reporting requirements related to the monitoring of trash shall be conducted in accordance with Part VI.E.5.c of this Order.
2. Monitoring results submitted to the Regional Water Board shall be consistent with the requirements identified in Part XVIII.A.5 and Part XVIII.A.7 of this MRP.

IV. INTEGRATED MONITORING PROGRAMS

A. Integrated Monitoring Program (IMP)

1. Each Permittee may develop an Integrated Monitoring Program designed to satisfy the monitoring requirements of this Order.
2. The monitoring requirements contained in TMDL Monitoring Plans approved by the Executive Officer of the 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 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 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 Permittees 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 basis.
 - b. A CIMP may be employed to implement regional studies, where a single Permittee takes the lead in directing the study, and the other Permittees provide funding or in lieu services.
2. Permittees are encouraged to coordinate their monitoring programs with other Permittees 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 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 Regional Water Board.
 4. A Permittee shall not be required to submit an IMP if all of the applicable monitoring requirements in this Order are addressed in a CIMP, to which the Permittee is a participant.
 5. If the CIMP addresses some but not all of the applicable monitoring requirements required under this Order, then each Permittee shall submit an IMP that references the CIMP. The Permittees must describe how together, the IMP and CIMP, fulfill all of the applicable monitoring requirements contained in this Order.

6. Where appropriate, the CIMP may develop and utilize alternative approaches to meet the Primary Objectives (Part II.A). Sufficient justification shall be provided in the CIMP for the alternative approach(es). Such alternative approaches shall be subject to public review and final approval by the Regional Water Board Executive Officer.

C. Schedule for Submitting the Monitoring Plan to the Regional Water Board and Conducting Outfall Screening

1. Within six (6) months after the effective date of this Order, each Permittee shall submit a letter of intent to the Executive Officer of the Regional Water Board describing whether it intends to follow an IMP or CIMP approach for each of the required monitoring plan elements.
2. Each Permittee not electing to develop a Watershed Management Program (WMP) or Enhanced Watershed Management Program (EWMP) shall submit an IMP plan addressing monitoring requirements that the Permittee intends to implement individually to the Executive Officer of the Regional Water Board within twelve (12) months after the effective date of this Order.
3. Permittees electing to develop a WMP or EWMP shall submit an IMP or CIMP plan, to the Executive Officer of the Regional Water Board concurrently with their draft WMP.
4. Permittees electing to develop an enhanced WMP shall submit an IMP or CIMP plan to the Executive Officer of the Regional Water Board within 18 months after the effective date of this Order.
5. If upon finalization of the CIMP plan, a Permittee that has developed an IMP determines that its IMP plan must be revised to include monitoring requirements not covered under the final CIMP, the revised IMP plan shall be submitted to the Executive Officer of the Regional Water Board within 60 days after approval of the CIMP plan by the Executive Officer of the Regional Water Board.
6. 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 Regional Water Board.
7. If a Permittee elects not to develop or participate in an IMP or CIMP, monitoring shall be conducted on a jurisdictional basis per the requirements of this MRP, beginning six (6) months after the effective date of this Order.
8. Monitoring requirements pursuant to Order No. 01-182 and Monitoring and Reporting Program CI 6948, and pursuant to approval TMDL monitoring plans identified in Table E-1, shall remain in effect until the Executive Officer of the Regional Water Board approves a Permittee(s) IMP and/or CIMP plan(s).

V. TMDL MONITORING PLANS

Table E-1. Approved TMDL Monitoring Plans by Watershed Management Area

TMDL	Comment	Date of Final Plan	Regional Water Board Approval Date
Santa Clara River Watershed Management Area			
Santa Clara River Nitrogen Compounds TMDL	Monitoring Plan was due March 23, 2005.	March 2006	Has not been approved.
Upper Santa Clara River Chloride TMDL	Monitoring Plan was not required.	N/A	N/A
Lake Elizabeth, Munz Lake, and Lake Hughes Trash TMDL (Lake Elizabeth only)	The County of Los Angeles Trash TMDL Monitoring and Reporting Plan for Lake Elizabeth, Munz Lake, and Lake Hughes	June 25, 2009	March 25, 2009
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL	Monitoring Plan is due on March 21, 2013.	---	---
Santa Monica Bay Watershed Management Area			
Santa Monica Bay Beaches Bacteria TMDL (Wet and Dry)	Santa Monica Bay Beaches Bacterial TMDLs Coordinated Shoreline Monitoring Plan	April 7, 2004	January 8, 2004
Santa Monica Bay Nearshore and Offshore Debris TMDL	Monitoring Plan is due on September 20, 2012.	---	---
Santa Monica Bay TMDL for DDTs and PCBs	USEPA Established TMDL	N/A	N/A
Malibu Creek Subwatershed			
Malibu Creek and Lagoon Bacteria TMDL	Malibu Creek and Lagoon Bacteria TMDL Compliance Monitoring Plan	February 25, 2008	April 8, 2008
Malibu Creek Watershed Trash TMDL	Malibu Creek Watershed Trash Monitoring and Reporting Plan (TMRP)	April 28, 2010	Has not been approved.

TMDL	Comment	Date of Final Plan	Regional Water Board Approval Date
Malibu Creek Watershed Nutrients TMDL	USEPA Established TMDL	N/A	N/A
Ballona Creek Subwatershed			
Ballona Creek Trash TMDL	Monitoring Plan was not required.	N/A	N/A
Ballona Creek Estuary Toxic Pollutants TMDL	Ballona Creek Metals TMDL and Ballona Creek Estuary Toxic Pollutants TMDL Coordinated Monitoring Plan	May 4, 2009	June 25, 2009
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL	Ballona Creek, Ballona Estuary, & Sepulveda Channel Bacteria TMDL Coordinated Monitoring Plan	January 29, 2009	December 16, 2008
Ballona Creek Metals TMDL	Ballona Creek Metals TMDL and Ballona Creek Estuary Toxic Pollutants TMDL Coordinated Monitoring Plan	May 4, 2009	June 25, 2009
Ballona Creek Wetlands TMDL for Sediment and Invasive Exotic Vegetation	USEPA Established TMDL	N/A	N/A
Marina del Rey Subwatershed			
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL	Marina Del Rey Harbor Mothers' Beach and Back Basins Bacterial TMDL Coordinated Monitoring Plan	June 25, 2007	February 1, 2007
Marina del Rey Harbor Toxic Pollutants TMDL	Marina Del Rey Harbor Toxic Pollutants Total Maximum Daily Load Coordinated Monitoring Plan	March 31, 2008	March 3, 2009
Dominguez Channel and Greater Harbors Waters Watershed Management Area			

TMDL	Comment	Date of Final Plan	Regional Water Board Approval Date
Los Angeles Harbor Bacteria TMDL (Inner Cabrillo Beach and Main Ship Channel)	Monitoring Plan was not required.	N/A	N/A
Machado Lake Trash TMDL	Trash Monitoring & Reporting Plan: Machado Lake Trash TMDL	September 5, 2008	December 9, 2008
	City of Rolling Hills Trash Monitoring and Reporting Plan Machado Lake Trash TMDL	September 5, 2008	December 9, 2008
Machado Lake Nutrient TMDL	Palos Verdes Peninsula Coordinated Monitoring Plan In Compliance with the Machado Lake Nutrient Total Maximum Daily Load	February 1, 2011	December 14, 2010
	Machado Lake Nutrients TMDL Lake Water Quality Management Plan for City of Los Angeles	August 18, 2010	February 14, 2011
	Machado Lake Nutrient TMDL Monitoring and Reporting Program Plan for the City of Carson	March 27, 2012	March 7, 2012
	Machado Lake Multipollutant TMDL Monitoring and Reporting Program for the Unincorporated Areas of Los Angeles County within the Machado Lake Watershed	September 12, 2011	April 25, 2012

TMDL	Comment	Date of Final Plan	Regional Water Board Approval Date
	Monitoring Plans were due from the City of Lomita on April 25, 2011, City of Redondo Beach on March 11, 2010, and City of Torrance on May 16, 2012.	---	---
Machado Lake Pesticides and PCBs TMDL	Monitoring Plan is due on September 20, 2012 ¹ .	---	---
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			
Los Angeles River Watershed Trash TMDL	Monitoring Plan was not required.	N/A	N/A
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.	---	---
Legg Lake Trash TMDL	Legg Lake Trash Monitoring & Reporting Plan: Legg Lake Trash TMDL	September 5, 2008	March 25, 2009
Long Beach City Beaches and Los Angeles River Estuary Bacteria TMDL	USEPA Established TMDL	N/A	N/A

¹ The deadline for Permittees assigned both WLAs and LAs to submit one document to address both WLA and LA monitoring requirements and implementation activities shall be September 20, 2013.

TMDL	Comment	Date of Final Plan	Regional Water Board Approval Date
Los Angeles Area Lakes TMDLs (Lake Calabazas, Echo Park Lake, Legg Lake and Peck Road Park Lake)	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 Angeles Area Lakes TMDLs (Puddingstone Reservoir)	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
Middle Santa Ana River Watershed Management Area			
Middle Santa Ana River Watershed Bacteria Indicator TMDL	Monitoring Plan was due on November 16, 2007.	---	---

VI. RECEIVING WATER MONITORING

A. IMP Receiving Water Monitoring Requirements

1. All IMP plans must contain the following information for receiving water monitoring:
 - 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 Permittee is fulfilling its obligations for TMDL receiving water monitoring under this IMP, CIMP or other monitoring plans.
- v. A description of how the Permittee is contributing to the monitoring of mass emission stations or a discussion of why monitoring at mass emission stations is not being supported.

B. CIMP Receiving Water Monitoring Requirements

1. The CIMP plan must contain the following information for receiving water monitoring:
 - a. A list of the participating Permittees.
 - 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), 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. 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 addressed by a TMDL shall be conducted 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. Mass Emission Stations
 - a. Location of mass emission stations,

- b. Description of monitoring at mass emission stations or justification of why monitoring at the mass emission stations will be discontinued.

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 the Santa Monica Bay or other 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. Permittees 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. Permittees 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. 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 Regional Water Board.
 - i. Flow

- ii. Pollutants assigned a receiving water limitation derived from TMDL WLAs (See Attachments L-R 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 section 303(d) list for sedimentation, siltation or turbidity,²
 - 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 plan shall incorporate the following minimum requirements for monitoring the receiving water during dry weather conditions:
 - 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 Santa Monica Bay or other 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.

² 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.

- 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 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 and hardness, when metals are monitored,
 - v. Field measurements for monitoring of inland freshwater bodies: dissolved oxygen, pH, temperature, and specific conductivity,
 - 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)³

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

³ 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
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
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

CONSTITUENTS	MLs
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
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

CONSTITUENTS	MLs
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
Prometryn	2
Simazine	2
HERBICIDES	µg/L
2,4-D	10
Glyphosate	5
2,4,5-TP-SILVEX	0.5

VII. OUTFALL BASED MONITORING

A. Storm Drains, Channels and Outfalls Map(s) and/or Database. The IMP and/or CIMP plan(s) shall include a map(s) and/or database of the MS4 to include the following information:

1. Surface water bodies within the Permittee(s) jurisdiction
2. Sub-watershed (HUC 12) 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 Permittee'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 Permittee(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. 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 BASED 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 Permittee's jurisdictional boundary.
2. The Permittee 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) 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 Permittee's jurisdiction.

- c. If a Permittee is implementing an IMP, to the extent possible, the selected outfalls shall not receive drainage from another jurisdiction. If this is not possible, and a Permittee is pursuing an individual outfall based IMP program, the Permittee shall conduct “upstream” and “downstream” monitoring as the system enters and exits the Permittee’s jurisdiction.
- d. The Permittee shall select outfalls with configurations that facilitate accurate flow measurement and in 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:
 - 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 Santa Monica Bay or other 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. Permittees 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. Permittees 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 Regional Water Board:

- i. Flow
 - ii. Pollutants assigned a WQBEL derived from TMDL WLAs (See Attachments L-R 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 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 a Permittee 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 Regional Water Board Executive Officer approves an alternate protocol.

IX. NON-STORM WATER OUTFALL BASED 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 VI.D.10 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 III.A.2 and III.A.3 of this Order and take appropriate actions pursuant to Part III.A.4.d of this Order for those discharges that have been found to be a source of pollutants. Any future reclassification shall occur per the conditions in Parts III.A.2 or III.A.6 of this Order.
 9. Maximize the use of Permittee 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, each Permittee 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 Permittee's program. The plan may be a separate stand-alone document or may be part of an IMP or CIMP.
2. Each Permittee 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 Permittee shall make the changes in its written program documents, implement these changes in practice, and describe the changes within the next annual report.

C. Identification of Outfalls with Significant with Non-Storm Water Discharge

1. Based on the inventory of MS4 outfalls required under Part VII of this MRP, each Permittee 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 Permittee.
- e. Other characteristics as determined by the Permittee and incorporated within their screening program plan.

D. Inventory of MS4 Outfalls with Non-Storm Water Discharges

1. Each Permittee 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. GIS is preferred.
2. As a component of the inventory, each Permittee 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

- I. 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. Each Permittee 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, a Permittee may request an alternative prioritization and schedule from the 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, each Permittee 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 III.A.d of this Order, document the source and report to the 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, each Permittee shall conduct monitoring required in Part IX.G of this MRP.
4. If the discharge is comprised of more than one source, the Permittee 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 Permittee 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 Permittee shall inform in writing both the upstream jurisdiction and the 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 be maintained 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 Executive Officer of the Regional Water Board approves the IMP or CIMP, whichever is later, each Permittee 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 Attachments L - R 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.D.1.d.
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 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 Regional Water Board.
4. Except as required by an applicable TMDL Monitoring Plan, IMP, or CIMP approved by the Executive Officer of the 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 Permittee may submit a written request to the Executive Officer of the 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 Regional Water Board Executive Officer approves an alternate protocol.

X. NEW DEVELOPMENT/RE-DEVELOPMENT EFFECTIVENESS TRACKING

- A. Each Permittee shall maintain a database providing the following information for each new development/re-development subject to the requirements of Part VI.D.6 of this Order that is approved by the Permittee 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. 95th percentile storm event for projects draining to natural water bodies (inches per 24 hours),
6. Other design criteria required to meet hydromodification requirements for drainages to natural water bodies,
7. Project design storm (inches per 24-hours),
8. Project design storm volume (gallons or MGD),
9. Percent of design storm volume to be retained on site,
10. Design volume for water quality mitigation treatment BMPs, if any.
11. 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,
12. Percent of design storm volume to be infiltrated at an off-site mitigation or groundwater replenishment project site,
13. Percent of design storm volume to be retained or treated with biofiltration at an off-site retrofit project,
14. 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,
15. 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, each Permittee shall be responsible for supporting the monitoring described at the sites within the watershed management area(s) that overlap with the Permittee's jurisdictional area. These include six random sites annually in the Santa Monica Bay Watershed Management area and at three random sites annually in the Santa Clara River Watershed (the other three sites are funded by the Ventura County MS4 Permittees). Permittees 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 Regional Water Board Executive Officer may direct the Permittee(s) to replace current toxicity program elements with standardized procedures in the policy.
- B. The Permittee(s) 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 Permittee(s) 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 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 1000.0⁴).
- 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 Permittee(s) 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

⁴ Daily observations for mortality make it possible to calculate acute toxicity for desired exposure periods (e.g., a 7-day acute endpoint).

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

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 Permittee(s) 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, Permittees 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 Permittee(s) 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.

XIII. SPECIAL STUDIES

- A.** Each Permittee 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 section 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 section 122.41(j)(2)] [California Water Code § 13383(a)]
 - i.** Permittees 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 section 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 section 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 section 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:
 - 1. Certified for such analyses by an appropriate governmental regulatory agency.
 - 2. Participated in "Intercalibration Studies" for storm water pollutant analysis conducted by the SMC.⁵
 - 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 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.

⁵ 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.

- E.** For priority toxic pollutants, if the Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 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 Permittee 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 a Permittee 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 a Permittee 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 Permittees.
- J.** Permittees must provide a copy of the Standard Operation Procedures (SOPs) for the Monitoring and Reporting Program No. CI 6948 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 a Permittee'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 to the Regional Water Board's Storm Water site at MS4stormwaterRB4@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. Each Permittee or group of Permittees shall submit by December 15th of each year beginning in 2013, an Annual Report to the Regional Water Board Executive Officer in the form of three compact disks (CD) (or equivalent electronic format).

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:
 - a. Each Permittee's participation in one or more Watershed Management Programs.
 - b. The impact of each Permittee(s) storm water and non-storm water discharges on the receiving water.
 - c. Each Permittee's compliance with receiving water limitations, numeric water quality-based effluent limitations, and non-storm water action levels.
 - d. The effectiveness of each Permittee(s) control measures in reducing discharges of pollutants from the MS4 to receiving waters.
 - e. 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 Minimum Control Measures.
 - f. Whether changes in water quality can be attributed to pollutant controls imposed on new development, re-development, or retrofit projects.
 2. Present detailed data and information in an accessible format to allow the Regional Water Board to verify conclusions presented in a Permittee's summary information.

3. Provide the Permittee(s) a forum to discuss the effectiveness of its past and ongoing control measure efforts and to convey its plans for future control measures.
4. Present data and conclusions in a transparent manner so as to allow review and understanding by the general public.
5. Focus each Permittee's reporting efforts on watershed condition, water quality assessment, and an evaluation of the effectiveness of control measures.

XVII. WATERSHED SUMMARY INFORMATION, ORGANIZATION AND CONTENT

B. Each Permittee 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 Permittee's jurisdiction. Alternatively, Permittees participating in a Watershed Management Program may provide the requested information through the development and submission of a Watershed Management Program plan and any updates thereto.

1. Watershed Management Area. Where a Permittee has individually or collaboratively developed a Watershed Management Program Plan (WMPP) as described in Part VI.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 Permittee(s) 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.** A description of known hydromodifications to receiving waters and a description, including locations, of natural drainage systems
- v.** Description of groundwater recharge areas including number and acres
- vi.** Maps and/or aerial photographs identifying the location of ESAs, ASBS, natural drainage systems, and groundwater recharge areas

2. Subwatershed (HUC-12) Description. The following information shall be included for each Subwatershed (HUC-12) within the Permittee(s) jurisdiction. Where a Permittee has individually or collaboratively developed a WMPP as described in Part VI.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 Permittee(s) Drainage Area within the Subwatershed.** Where a Permittee has individually or collaboratively developed a WMPP as described in Part VI.C of this Order, reference to the WMPP and any revisions thereto may suffice for baseline information regarding the Permittee'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 Permittee(s) jurisdictional area and the MS4, including major outfalls (with identification numbers), and low flow diversions (with identifying names or numbers) located, within the Permittee's jurisdiction.
 - b. Provide the estimated baseline percent of effective impervious area (EIA) within the Permittee(s) jurisdictional area as existed at the time that this Order became effective.

XVIII. ANNUAL ASSESSMENT AND REPORTING

- A.** Each Permittee or group of Watershed Permittees 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 Permittee's jurisdiction. Each Permittee shall format its Annual Report to align with the reporting requirements identified in Parts A.1 through A.7 below.

Annual Reports submitted on behalf of a group of Watershed Permittees shall clearly identify all data collected and strategies, control measures, and assessments implemented by each Permittee within its jurisdiction as well as those implemented by multiple Permittees on a watershed scale.

- 1. Storm Water Control Measures.** Each Permittee 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 Permittee(s) 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 VI.E and Attachments L-R 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 Permittee 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 Permittee 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. For natural drainage systems, develop a reference watershed flow duration curve and compare it to a flow duration curve for the subwatershed under current conditions.
- e. 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 Permittee 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).
- f. Provide an assessment as to whether wet-weather receiving water quality within the jurisdiction of the Permittee is improving, staying the same or declining, when normalized for variations in rainfall patterns. The Permittee 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.
- g. 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 Permittee 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 Permittee'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 III.A of this Order.
- f. Provide the number of outfalls where significant non-storm water discharges were abated as a result of the Permittee'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 Permittee 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 Permittee is impaired, improving, staying the same or declining during dry-weather conditions. Each Permittee 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 Permittee(s) 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 Regional Water 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 Water 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 Permittee 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

Permittees shall report on the progress of TMDL implementation per the schedules identified below in Sections A – G.

A. Reporting Requirements for Santa Clara River WMA TMDLs

Deliverable	Description	Due Date(s)
Santa Clara River Nitrogen Compounds TMDL		
Progress Reports	Annual progress reports on the Implementation Plan must be submitted to the Regional Water Board.	December 15, 2013, and annually thereafter
Upper Santa Clara River Chloride TMDL		
Monitoring Results	Permittees shall conduct chloride, TDS, and sulfate monitoring to ensure that water quality objectives are being met.	December 15, 2013, and annually thereafter
Lake Elizabeth, Munz Lake, and Lake Hughes Trash		
Progress Reports	Report compliance with the installation of full capture systems.	December 15, 2013, and annually thereafter
Santa Clara River Estuary and Reaches 3, 5, 6, and 7 Indicator Bacteria TMDL		
Receiving Water Monitoring Plan and Outfall Monitoring Plan	Permittees must submit a comprehensive in-stream bacteria water quality monitoring plan for the Santa Clara River Watershed. The monitoring plan should include all applicable bacteria water quality objectives and the sampling frequency must be adequate to assess compliance with the geometric mean objectives. At a minimum, at least one sampling station shall be located in each impaired reach. The outfall monitoring plan shall propose an adequate number of representative outfalls to be sampled, a sampling frequency, and protocol for enhanced outfall monitoring as a result of an in-stream exceedance. The Monitoring Plans must be approved by the Regional Water Board Executive Officer before the monitoring data can be considered during the implementation of the TMDL. Once the monitoring plan is approved by the Executive Officer, monitoring shall commence within 30 days.	March 21, 2013, or Submit an IMP or CIMP plan concurrently with the Permittee’s draft WMP.
Draft Implementation Plan	Permittees must submit a draft Implementation Plan outlining how each intends to cooperatively or individually achieve compliance with the water quality-based effluent limitations and the receiving water limitations. The Implementation Plan shall include implementation methods, an implementation schedule and proposed milestones.	March 21, 2015
Final Implementation Plan	Permittees must submit a final Implementation Plan.	Six months after receipt of Regional Water Board comments on the draft Implementation Plan.
Board Briefing	Permittees shall provide a verbal update to the Regional Water Board on the progress of TMDL implementation.	March 21, 2017

B. Reporting Requirements for Santa Monica Bay WMA TMDLs

Deliverable	Description	Due Date(s)
Santa Monica Bay Beaches Bacteria TMDL		
Monitoring Results	Monthly data summary reports shall be submitted to the Regional Water Board by the last day of each month for data collected during the previous month. Two agencies will submit the monthly reports on behalf of all Permittees: City of Los Angeles, Department of Public Works, Bureau of Sanitation, Environmental Monitoring Division (on behalf of Jurisdictional Groups 1 through 6, 8, and 9); and Los Angeles County Sanitation Districts (on behalf of Jurisdictional Group 7).	Monthly on the last day of the month.
Santa Monica Bay Nearshore and Offshore Debris TMDL		
Trash Monitoring and Reporting Plan (TMRP)	Permittees shall develop a Trash Monitoring and Reporting Plan (TMRP) for Regional Water Board Executive Officer approval that describes the methodologies that will be used to assess and monitor trash in their responsible areas within the Santa Monica Bay WMA or along Santa Monica Bay. The TMRP shall include a plan to establish a site specific trash baseline water quality-based effluent limitation if Permittees elect to not use the default baseline effluent limitation. Requirements for the TMRP shall include, but are not limited to, assessment and quantification of trash collected from source areas in the Santa Monica Bay WMA, and shoreline of the Santa Monica Bay. The monitoring plan shall provide details on the frequency, location, and reporting format. Permittees shall propose a metric (e.g., weight, volume, pieces of trash) to measure the amount of trash discharged from their jurisdictional areas.	Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or If a WMP or IMP or CIMP will not be developed then submitted the TMRP 12 months after the effective date of this Order.
Implement TMRP	Implement TMRP	If TMRP is submitted by September 20, 2012, then implement the TMRP 6 months from receipt of letter of approval from Regional Water Board Executive Officer, or the date a plan is established by the Executive Officer; or If an IMP or CIMP is submitted, then monitoring shall commence within 30 days after approval of the IMP or CIMP plan by the Executive Officer.
Plastic Pellets Monitoring and Reporting Plan	Permittees identified as responsible jurisdictions and agencies for point sources of trash in the Santa Monica Bay Debris TMDL and in the existing Malibu Creek and Ballona Creek Trash TMDLs, including the Los Angeles County Flood Control District, shall either prepare a Plastic	September 20, 2013, or Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP.

	<p>Pellet Monitoring and Reporting Plan (PMRP) or demonstrate that a PMRP is not required.</p> <p>The PMRP shall include protocols for a timely and appropriate response to possible plastic pellets spills within a Permittees' jurisdictional area, and a comprehensive plan to ensure that plastic pellets are contained.</p>	
Implement PMRP	Implement PMRP	March 20, 2016
Submit results of implementing TMRP and PMRP	Submit results of implementing TMRP and PMRP, recommend trash baseline water quality-based effluent limitations, and propose prioritization of Full Capture System installation or implementation of other measures to attain the required trash and plastic pellet reduction.	December 15, 2013, and annually thereafter
Santa Monica Bay TMDL for DDTs and PCBs (USEPA established)		
Monitoring and Reporting Plan	<p>Permittees shall develop a Monitoring and Reporting Plan for Regional Water Board Executive Officer approval that describes the methodologies that will be used to monitor and assess sediment for DDT and PCBs. The monitoring design and assessment framework should be designed to provide credible estimates of the total mass loadings to the Santa Monica Bay. Monitoring should be conducted on a coordinated watershed-wide basis using sufficiently sensitive analytical methods for DDT and PCBs. Monitoring sediments in catch basins designed for pollutant prevention may be a way for Permittees to quantify load reductions to the Santa Monica Bay.</p>	<p>Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or</p> <p>If a WMP or IMP or CIMP will not be developed then submitted the Monitoring and Reporting Plan 12 months after the effective date of this Order.</p>
Malibu Creek and Lagoon Bacteria TMDL		
Monitoring Results	Monthly data summary reports shall be submitted to the 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.
Malibu Creek Watershed Trash TMDL		
Submit results of TMRP	Submit results of Trash Monitoring and Reporting Plan (TMRP), recommend trash baseline water quality-based effluent limitations, and propose prioritization of Full Capture System installation or implementation of other measures to attain the required trash.	December 15, 2013, and annually thereafter
Malibu Creek Watershed Nutrients TMDL (USEPA established)		
Monitoring and Reporting Plan	<p>Permittees shall develop a Monitoring and Reporting Plan for Regional Water Board Executive Officer approval that demonstrates compliance with the water quality-based effluent limitations for total nitrogen and total phosphorus.</p>	<p>Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or</p> <p>If a WMP or IMP or CIMP will not be developed then submitted the Monitoring and Reporting Plan 12 months after the effective date of this Order.</p>

Ballona Creek Trash TMDL		
Annual Progress Reports	Report compliance with the required percent reduction of trash discharged to Ballona Creek.	December 15, 2013, and annually thereafter.
Ballona Creek Estuary Toxic Pollutants TMDL		
Annual Monitoring Report	Permittees shall submit annual monitoring reports, which include compliance summary tables, to the Regional Water Board.	December 15, 2013, and annually thereafter.
Ballona Creek, Ballona Estuary and Sepulveda Channel Bacteria TMDL		
Monitoring Results	Monthly data summary reports shall be submitted to the 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.
Ballona Creek Metals TMDL		
Annual Monitoring Report	Permittees shall submit annual monitoring reports, which include compliance summary tables, to the Regional Water Board.	December 15, 2013, and annually thereafter.
Ballona Creek Wetlands TMDL for Sediment and Invasive Exotic Vegetation (USEPA established)		
Monitoring and Reporting Plan	Permittees shall develop a Sediment Monitoring and Reporting Plan for Regional Water Board Executive Officer approval to quantify the annual loading of sediment from the Ballona Creek Watershed and the impact of the sediment loading into the Ballona Creek Wetlands.	Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or If a WMP or IMP or CIMP will not be developed then submitted the Monitoring and Reporting Plan 12 months after the effective date of this Order.
Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL		
Monitoring Results	Monthly data summary reports shall be submitted to the 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.
Marina del Rey Harbor Toxic Pollutants TMDL		
Annual Monitoring Report	Permittees shall submit annual monitoring reports, which include compliance summary tables, to the Regional Water Board.	December 15, 2013, and annually thereafter.

C. 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 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.
Machado Lake Trash TMDL		
Progress Reports	Report compliance with the required percent reduction of trash discharged to Machado Lake.	December 15, 2013, and annually thereafter.
Machado Lake Nutrient TMDL		
Annual Monitoring Report	The Cities of Palos Verdes Estates, Ranch Palos Verdes, Rolling Hills and Rolling Hills Estates shall submit annual monitoring reports that demonstrate compliance with the concentration-based water quality-based effluent limitations.	December 15, 2013, and annually thereafter.
Annual Monitoring Report	The City of Los Angeles shall submit annual monitoring reports that demonstrate compliance with the Lake Water Quality Management Plan and reduces the external nutrient loading to attain the receiving water limitations for Machado Lake.	December 15, 2013, and annually thereafter.
Annual Monitoring Report	The City of Carson shall submit annual monitoring reports that demonstrate compliance with the concentration-based water quality-based effluent limitations.	December 15, 2013, and annually thereafter.
Annual Monitoring Report	The County of Los Angeles shall submit annual monitoring reports that demonstrate compliance with the mass-based water quality-based effluent limitations.	December 15, 2013, and annually thereafter.
Annual Monitoring Report	The City of Torrance shall submit annual monitoring reports that demonstrate compliance with the mass-based water quality-based effluent limitations.	December 15, 2013, and annually thereafter.
Annual Monitoring Report	The Cities of Lomita and Redondo Beach shall submit annual monitoring reports that demonstrate compliance with the concentration-based water quality-based effluent limitations.	December 15, 2013, and annually thereafter.
Machado Lake Pesticides and PCBs TMDL		
Monitoring and Reporting Plan and Quality Assurance Project Plan	Permittees shall develop a Monitoring and Reporting Plan (MRP) and Quality Assurance Project Plan (QAPP) for Regional Water Board Executive Officer approval. The MRP shall demonstrate compliance and non-compliance with the water quality-based effluent limitations as part of reports submitted to the Regional Water Board. The QAPP shall include protocols for sample collection, standard analytical procedures, and	The deadline for Permittees assigned both WLAs and LAs to submit one document to address both the WLA and LA monitoring requirements and implementation activities shall be September 20, 2013.

	laboratory certification. All samples shall be collected in accordance with applicable SWAMP protocols.	Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or If a WMP or IMP or CIMP will not be developed then submitted the work plan 12 months after the effective date of this Order.
Begin Phase 1 Monitoring	Begin Phase 1 Monitoring as outlined in the approved MRP and QAPP.	30 days from date of Executive Officer approval of MRP and QAPP
Phase 1 Monitoring	Conduct Phase 1 Monitoring for 2 years.	2 year monitoring period
Draft Implementation Plan	Based on the results of Phase 1 Monitoring, Permittees shall submit an Implementation Plan to attain water quality-based effluent limitations or document that water quality-based effluent limitations are attained.	6 months from completion of Phase 1 Monitoring
Final Implementation Plan	Permittees shall submit Final Implementation Plan.	1 year from completion of Phase 1 Monitoring
Implementation	Permittees shall begin implementation actions to attain water quality-based effluent limitation, as necessary.	30 days from date of Implementation Plan approval
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters Toxic Pollutants TMDL		
Monitoring and Reporting Plan and Quality Assurance Project Plan	Permittees shall develop Monitoring and Reporting Plans (MRPs) and Quality Assurance Project Plans (QAPPs) for 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 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 Permittee's draft WMP.
Monitoring Plan	Permittees shall implement monitoring as outlined in the approved MRP and QAPP.	30 days after MRP and QAPP is approved by Regional Water Board Executive Officer.
Annual Monitoring Reports	Permittees shall submit annual monitoring reports to the Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan and Contaminated Sediment Management Plan (CSMP)	Permittees in the Dominguez Channel and Greater Harbors Waters Watershed Management Area shall develop and submit an Implementation Plan and Contaminated Sediment Management Plan (CSMP). The CSMP shall include concrete milestones with numeric estimates of load reductions or removal, including milestones for remediating hot spots, including but not limited to Dominguez Channel Estuary, Consolidated Slip and Fish Harbor, for Regional Water Board Executive Officer approval.	Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or If a WMP or IMP or CIMP will not be developed then submitted the Implementation Plan and CSMP 12 months after the effective date of this Order.
Report of Implementation	Permittees in the Los Angeles River and San Gabriel River Watersheds shall submit a Report of Implementation to the Regional Water Board.	December 15, 2013, and annually thereafter
Implementation Reports	Permittees shall submit annual implementation reports to the Regional	December 15, 2014, and annually thereafter

	Water Board. Report on implementation progress and demonstrate progress toward meeting the water quality-based effluent limitations.	
Updated Implementation Plan and CSMP	Permittees in the Dominguez Channel and Greater Harbors Waters Watershed Management Area shall submit an updated Implementation Plan and Contaminated Sediment Management Plan (CSMP).	March 23, 2017

D. 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.	December 15, 2013, and annually thereafter.
Los Angeles River Nitrogen Compounds and Related Effects TMDL		
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Los Angeles River and Tributaries Metals TMDL		
Annual Monitoring Report	Permittees shall submit annual monitoring reports as detailed in the approved coordinated monitoring plan to the Regional Water Board.	December 15, 2013, and annually thereafter.
Los Angeles River Watershed Bacteria TMDL		
Bacteria Coordinated Monitoring Plan	<p>Permittees shall submit a Bacteria Coordinated Monitoring Plan (CMP), which shall be submitted for 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. Permittees 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>March 23, 2013, or</p> <p>Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP.</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.	
Implement CMP	Permittees shall begin implementation actions to attain water quality-based effluent limitation, as necessary.	30 days after approval of the CMP
Annual Monitoring Report	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	Permittees shall submit an Implementation Plan for wet weather with interim milestones for approval of the Regional Water Board Executive Officer.	March 23, 2022
Legg Lake Trash TMDL		
TMRP Reports MFAC	Report compliance with the approved MFAC program.	December 15, 2013, and annually thereafter
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 Permittee’s draft WMP, or</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 Regional Water Board.	December 15, 2013, and annually thereafter.
Los Angeles Area Lakes TMDLs		
Lake Calabasas Nutrient TMDL		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids, total dissolved solids and chlorophyll a. Measurements of the temperature, DO, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. All parameters must meet target levels at half the Secchi depth. DO and pH must meet target levels from the surface of the water to 0.3 meters above the lake bottom. Additionally, in order to accurately calculate compliance with water quality based limits to the lake expressed in yearly loads, monitoring should include flow estimation or monitoring as well as the water quality concentration measurements.	At a minimum twice during summer months and once during winter.
Supplemental Water Monitoring	At Lake Calabasas, water quality based limits are assigned to supplemental water additions. This source should be monitoring for at minimum; ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Once a year during the summer months (critical conditions).
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Echo Park Lake Nutrient TMDL		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids, total dissolved solids and chlorophyll a. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. All parameters must meet target levels at half the Secchi depth. DO and pH must meet target levels from the surface of the water to 0.3 meters above the lake bottom. Additionally, in order to accurately calculate compliance with water quality based limits to the lake expressed in yearly loads, monitoring should include flow estimation or monitoring as well as the water quality concentration measurements.	At a minimum twice during summer months and once during winter.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually

		thereafter.
Echo Park Lake PCBs and Organochlorine Pesticide TMDLs		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: total suspended sediments, total PCBs, total chlordane, and dieldrin; as well as the following in-lake sediment parameters: total organic carbon, total PCBs, total chlordane, and dieldrin. Environmentally relevant detection limits should be used (i.e., detection limits lower than applicable target), if available at a commercial laboratory. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement.	December 15, 2013, and annually thereafter.
Fish Tissue Monitoring	Monitoring of fish tissue. For the OC pesticides and PCBs TMDLs, a demonstration that fish tissue targets have been met in any given year must at minimum include a composite sample of skin off fillets from at least five largemouth bass each measuring at least 350mm in length.	At least every three years.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes. Sampling should be designed to collect sufficient volumes of suspended solids to allow for the analysis of at minimum: total organic carbon, total suspended solids, total PCBs, total chlordane, and dieldrin. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken.	Once a year during a wet weather event.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Echo Park Lake Trash TMDL		
Compliance Monitoring	Responsible jurisdictions should monitor the trash quantity deposited in the vicinity of Echo Park Lake as well as on the waterbody to comply with the TMDL target and to understand the effectiveness of various implementation efforts. The Rapid Trash Assessment Method is recommended.	Quarterly.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Legg Lake System Nutrient TMDL		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids, total dissolved solids and chlorophyll <i>a</i> . Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. All parameters must meet target levels at half the Secchi depth. DO and pH must meet target levels from the surface of the water to 0.3 meters above the lake bottom. Additionally, in order to accurately calculate compliance with water quality based limits to the lake expressed in yearly loads, monitoring should include flow estimation or monitoring as well as the water quality concentration measurements.	At a minimum twice during summer months and once during winter.

Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Peck Road Park Lake Nutrient TMDL		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids, total dissolved solids and chlorophyll a. Measurements of the temperature, DO, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. All parameters must meet target levels at half the Secchi depth. Deep lakes, such as Peck Road Park Lake, must meet the DO and pH targets in the water column from the surface to 0.3 meters above the bottom of the lake when the lake is not stratified. However, when stratification occurs (i.e., a thermocline is present) then the DO and pH targets must be met in the epilimnion, the portion of the water column above the thermocline. Additionally, in order to accurately calculate compliance with water quality based limits to the lake expressed in yearly loads, monitoring should include flow estimation or monitoring as well as the water quality concentration measurements.	At a minimum twice during summer months and once during winter.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Peck Road Park Lake PCBs and Organochlorine Pesticide TMDLs		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: total suspended sediments, total PCBs, total chlordane, total DDTs, and dieldrin; as well as the following in-lake sediment parameters: total organic carbon, total PCBs, total chlordane, total DDTs, and dieldrin. Environmentally relevant detection limits should be used (i.e., detection limits lower than applicable target), if available at a commercial laboratory. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement.	December 15, 2013, and annually thereafter.
Fish Tissue Monitoring	Monitoring of fish tissue. For the OC pesticides and PCBs TMDLs, a demonstration that fish tissue targets have been met in any given year must at minimum include a composite sample of skin off fillets from at least five common carp each measuring at least 350mm in length.	At least every three years.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes. Sampling should be designed to collect sufficient volumes of suspended solids to	Once a year during a wet weather event.

	allow for the analysis of at minimum: total organic carbon, total suspended solids, total PCBs, total chlordane, total DDTs, and dieldrin. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken.	
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Peck Road Park Lake Trash TMDL		
Compliance Monitoring	Responsible jurisdictions should monitor the trash quantity deposited in the vicinity of Peck Road Park Lake as well as in the waterbody to comply with the TMDL target and to understand the effectiveness of various implementation efforts. The Rapid Trash Assessment Method is recommended.	Quarterly.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.

E. 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>Permittees shall develop a Coordinated Monitoring Plan, to be approved by the 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 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>Permittees shall sample once per month, during dry-weather conditions, at each proposed TMDL effectiveness monitoring location. Permittees 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. Permittees are encouraged to coordinate with the San Gabriel watershed-wide monitoring program to avoid duplication and leverage resources.</p>	<p>Submit an IMP or CIMP plan concurrently with the Permittee'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 Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	Permittees shall submit an Implementation Plan outlining how to achieve compliance with the water quality based effluent limitations, for approval of the 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
Los Angeles Area Lakes TMDLs		
Puddingstone Reservoir Nutrient TMDL		

Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids, total dissolved solids and chlorophyll a. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. All parameters must meet target levels at half the Secchi depth. DO and pH must meet target levels from the surface of the water to 0.3 meters above the lake bottom when the lake is not stratified. However, when stratification occurs (i.e., a thermocline is present) then the DO and pH targets must be met in the epilimnion, the portion of the water column above the thermocline. Additionally, in order to accurately calculate compliance with water quality based limits to the lake expressed in yearly loads, monitoring should include flow estimation or monitoring as well as the water quality concentration measurements.	At a minimum twice during summer months and once during winter.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: ammonia, TKN or organic nitrogen, nitrate plus nitrite, orthophosphate, total phosphorus, total suspended solids and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Puddingstone Reservoir Mercury TMDL		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: total mercury, methylmercury, chloride, sulfate, total organic carbon, alkalinity, total suspended solids, and total dissolved solids; as well as the following in-lake sediment parameters: total mercury, dissolved methylmercury, total organic carbon, total solids and sulfate. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement. Additionally, in order to accurately calculate compliance with allocations expressed in yearly loads, monitoring should include flow estimation or monitoring as well as water quality concentration measurements.	Twice a year.
Fish Tissue Monitoring	Monitoring should include monitoring of largemouth bass (325-375mm in length) fish tissue (skin-off fillets) for mercury concentration.	At least every three years.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes for at minimum: total mercury, methyl mercury, chloride, sulfate, total organic carbon, alkalinity, total suspended solids, and total dissolved solids.	Twice a year.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.
Puddingstone Reservoir PCBs and Organochlorine Pesticide TMDLs		
Compliance Monitoring	At a minimum, compliance monitoring should measure the following in-lake water quality parameters: total suspended sediments, total PCBs, total chlordane, dieldrin, and total DDTs; as well as the following in-lake sediment parameters: total organic carbon, total PCBs, total chlordane, dieldrin, and total DDTs. Environmentally relevant detection limits should be used (i.e., detection limits lower than applicable target), if available at a commercial laboratory.	Annually.

	Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken throughout the water column with a water quality probe along with Secchi depth measurement.	
Fish Tissue Monitoring	Monitoring of fish tissue. For the OC pesticides and PCBs TMDLs a demonstration that fish tissue targets have been met in any given year must at minimum include a composite sample of skin off fillets from at least five common carp each measuring at least 350mm in length.	At least every three years.
Stormwater Monitoring	Stormwater sources should be measured near the point where they enter the lakes. Sampling should be designed to collect sufficient volumes of suspended solids to allow for the analysis of at minimum: total organic carbon, total suspended solids, total PCBs, total chlordane, dieldrin, and total DDTs. Measurements of the temperature, dissolved oxygen, pH and electrical conductivity should also be taken.	Once a year during a wet weather event.
Reporting	Annual reporting of monitoring results to the Regional Water Board.	December 15, 2013, and annually thereafter.

F. Reporting Requirements for Los Cerritos Channel WMA TMDLs

Deliverable	Description	Due Date(s)
Los Cerritos Channel Metals TMDL		
Coordinated Monitoring Plan	<p>Permittees shall develop a Coordinated Monitoring Plan, to be approved by the 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. Permittees 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 Permittee'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 Regional Water Board.	December 15, 2013, and annually thereafter.
Implementation Plan	Permittees shall submit an Implementation Plan outlining how to achieve compliance with the water quality based effluent limitations, for approval of the 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	Permittees shall submit annual monitoring reports to the Regional Water Board. All compliance monitoring must be conducted in conjunction with a Regional Water Board approved Quality Assurance Project Plan.	December 15, 2013, and annually thereafter.
Implementation Progress	Permittees 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.

G. Reporting Requirements for Middle Santa Ana River WMA TMDL

Deliverable	Description	Due Date(s)
Middle Santa Ana River Watershed Bacteria Indicator TMDL		
Bacterial Indicator Water Quality Monitoring Plan	Permittees shall develop and submit for approval by the Executive Officer of the Regional Water Board a Bacterial Indicator Water Quality Monitoring Plan in accordance with the TMDL.	Submit an IMP or CIMP plan concurrently with the Permittee's draft WMP, or 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.
Bacterial Indicator Urban Source Evaluation Plan	Permittees shall develop and submit for approval by the Regional Water Board a Bacterial Indicator Urban Source Evaluation Plan. This plan shall include steps needed to identify specific activities, operations, and processes in urban areas that contribute bacterial indicators to San Antonio Channel. The plan shall also include a proposed schedule for completion of each of the steps identified.	1 year after the effective date of this Order
Progress Reports	Annual progress reports on implementation shall be submitted to the Regional Water Board.	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 MRP adopted by the California Regional Water Quality Control Board, Los Angeles Region, on November 8, 2012.



Samuel Unger, P.E.
Executive Officer

Date: Dec. 5, 2012