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"To Enrich Lives Through Effective and Caring Service"

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June 26, 2014

Mr. Samuel Unger, P.E.
Executive Officer
California Regional Water Quality
Control Board – Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Attention Ms. Renee Purdy

Dear Mr. Unger:

SUBMITTAL OF ENHANCED WATERSHED MANAGEMENT PROGRAM WORK PLAN AND COORDINATED INTEGRATED MONITORING PROGRAM PLAN FOR THE MARINA DEL REY ENHANCED WATERSHED MANAGEMENT PROGRAM GROUP

The County of Los Angeles, Los Angeles County Flood Control District, Cities of Los Angeles and Culver City, collectively the Marina del Rey Enhanced Watershed Management Program (EWMP) Group, are submitting the enclosed EWMP Work Plan and Coordinated Integrated Monitoring Program (CIMP) Plan. The Marina del Rey EWMP Group is submitting these documents to fulfill the requirements of Order No. R4-2012-0175 Municipal Separate Storm Sewer System (MS4) Permit.

The enclosed EWMP Work Plan fulfills the requirements identified in Section VI.C.4.c.iv of the MS4 Permit and the enclosed CIMP Plan fulfills the requirements identified in Attachment E Sections IV.C.4 of the MS4 Permit.

If you have any questions, please contact me at (626) 458-4300 or ghildeb@dpw.lacounty.gov or your staff may contact Mr. Bruce Hamamoto at (626) 458-5918 or bhamamo@dpw.lacounty.gov.

Very truly yours,

GAIL FARBER
Director of Public Works

GARY HILDEBRAND
Assistant Deputy Director
Watershed Management Division

MR:ba
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Enc.

cc: City of Los Angeles
City of Culver City

Marina del Rey
Coordinated Integrated Monitoring Program

Prepared For:

Marina del Rey Enhanced Watershed Management Program Agencies

County of Los Angeles
Los Angeles County Flood Control District
City of Los Angeles
City of Culver City

June 28, 2014

Marina del Rey Watershed
Coordinated Integrated Monitoring Program

Prepared For:

Marina del Rey Enhanced Watershed Management Program Agencies

Prepared By:

Weston Solutions, Inc.
5817 Dryden Place, Suite 101
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June 28, 2014

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LIST OF ACRONYMS

%	percent
BC	Ballona Creek
BMP	best management practice
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
CIMP	Coordinated Integrated Monitoring Program
CMP	Coordinated Monitoring Plans
CRA	Coastal Resource Area
CWA	Clean Water Act
DDT	Dichlorodiphenyltrichloroethane
DO	Dissolved Oxygen
EWMP	Enhanced Watershed Management Program
GIS	Geographic Information System
IC/ID	illicit connection/illicit discharge
LA	load allocation
LACFCD	Los Angeles County Flood Control District
LADPW	Los Angeles County Department of Public Works
LAMC	Los Angeles Municipal Code
LARWQCB	Los Angeles Regional Water Quality Control Board, also Regional Board
LFD	low flow diversion
LID	Low Impact Development
MAL	Municipal Action Levels
MDL	Maximum Daily Load
MdR	Marina del Rey
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
Permit	Municipal Separate Storm Sewer System Permit
NPDES	National Pollution Discharge Elimination System
OEHHA	Office of Environmental Health Hazard Assessment
PCB	polychlorinated biphenyl
pH	hydrogen ion concentration
PMRP	Plastic Pellet Monitoring and Reporting Plan
p p'-DDE	p p'-dichlorodiphenyldichloroethylene
QA	quality assurance
QA/QC	quality assurance/quality control
QC	quality control
RWL	Receiving Waters Limitation
SEA	significant ecological area
SMB	Santa Monica Bay
SMC	Stormwater Monitoring Coalition
SOP	standard operating procedure
SQO	Sediment Quality Objective
SQDV	Stormwater Quality Design Volume
SS	Settleable solids

SUSMP	Standard Urban Stormwater Mitigation Plan
SWAMP	Surface Water Ambient Monitoring Program
TDS	Total dissolved solids
TIE	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TMRP	Trash Monitoring and Reporting Plan
TOC	Total Organic Carbon
TPH	Total petroleum hydrocarbons
TSS	total suspended solids
USEPA	U.S. Environmental Protection Agency
WDID	Waste Discharge Identification Number
Weston	Weston Solutions, Inc.
WLA	waste load allocation
WMA	Watershed Management Area
WQBEL	Water quality based effluent limitations
WQO	Water Quality Objective

EXECUTIVE SUMMARY

The Marina del Rey (MdR) watershed is a small sub-watershed located in the larger, Santa Monica Bay watershed. The Marina del Rey Harbor (MdRH) was officially opened in 1965 and is the world's largest man-made small craft harbor.

The tributary area served by an MS4 that drains to MdRH is approximately 1,409 acres and consists of portions of the cities of Culver City and Los Angeles, as well as portions of the unincorporated County of Los Angeles (County). The MdR Watershed Management Area (WMA) is one of the smallest WMAs in the County of Los Angeles, but it is also one of the most important and active watersheds.

The MdR watershed has the one of most aggressive Total Maximum Daily Load (TMDL) schedules for both Toxics and Bacteria and often leads the way in TMDL implementation for the rest of the County.

The extensive ongoing efforts of the County, the Los Angeles County Flood Control District (LACFCD), and the Cities of Culver City and Los Angeles to improve water quality in the MdR watershed include conducting activities and implementing best management practices (BMPs) to help reduce pollutants from stormwater runoff from the watershed to the harbor. Over the past 10 years, responsible agencies in the MdR watershed have spent tens of millions of dollars in special studies, low-flow diversions, non-structural BMPs, structural BMPs, and monitoring efforts.

The water quality in the harbor has significantly improved due to the cooperative efforts of the the County, the LACFCD, and the cities of Culver City and Los Angeles (collectively known as the MdR Enhanced Watershed Management Program [EWMP] Agencies). The MdR EWMP agencies look forward to working with interested stakeholders and the Regional Board to further improve water quality in the watershed.

Background

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175 (Permit) was adopted on November 8, 2012, by the Los Angeles Regional Water Quality Control Board (LARWQCB or Regional Board) and became effective December 28, 2012. This Permit replaced the previous permit (Order No. 01-182). The purpose of the Permit is to ensure the municipal separate storm sewer systems (MS4s) in Los Angeles County are not causing or contributing to exceedances of water quality objectives set to protect the beneficial uses in the receiving waters in the Los Angeles region. The requirements for the Monitoring and Reporting Program (MRP) are included as Attachment E to the Permit. The primary objectives of the MRP are as follows (II.A of the MRP):

1. Assess the chemical, physical, and biological impacts of discharges from the MS4 on receiving waters.

2. Assess compliance with receiving water limitations and water quality-based effluent limitations (WQBELs) established to implement TMDL wet weather and dry weather waste load 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 the Permit.

Section II.D of the MRP provides flexibility to allow Permittees the option to develop a Coordinated Integrated Monitoring Program (CIMP) that uses alternative approaches to meet the primary objectives of the Permit. The agencies with jurisdiction in the Marina del Rey WMA, including the unincorporated areas of the County of Los Angeles, the LACFCD, and the cities of Los Angeles and Culver City, have elected to pursue a CIMP and have provided justification in this document demonstrating fulfillment of monitoring requirements of the Permit and TMDLs.

The monitoring requirements outlined in this CIMP are in accordance with the requirements of the Permit, the Bacteria TMDL, and the Toxics TMDL. An overview of these regulatory drivers is presented in Appendix A. Monitoring requirements differ between these three regulatory drivers on issues such as monitoring station locations, definition of wet/dry weather, monitoring duration, and monitoring constituents. One objective of this CIMP is to leverage resources to create an efficient and effective monitoring program to represent conditions within the receiving water and tributary MS4. An overview of the CIMP monitoring programs is presented in this section.

Receiving Water Monitoring

The 18 receiving water monitoring stations in the Marina del Rey Enhanced Watershed Management Program (EWMP) are shown in Figure ES-1 below. The stations were selected to address both Bacteria and Toxics TMDLs and Permit monitoring requirements. Nine receiving water stations were selected for Bacteria TMDL monitoring, eight receiving water stations were selected for only the Toxics TMDL monitoring, and one receiving water station was selected for Permit-required receiving water monitoring and the Toxics TMDL monitoring. Constituents for monitoring were selected based on water quality priorities, developed during the writing of the Marina del Rey EWMP Work Plan (Submitted June 28, 2014). The water quality priorities were based on existing TMDLs, Clean Water Act Section (§) 303(d) lists, and exceedance of water quality objectives for other non-TMDL constituents equivalent to the (§) 303(d) listing policy.

Figure ES-1. Marina del Rey WMA Agencies Receiving Water and Outfall Monitoring Locations

Storm Water Outfall Monitoring

Five outfall monitoring locations were selected for monitoring; they are displayed on Figure ES-1, above. One station (MdR-3) was selected for both Permit monitoring and Toxics TMDL monitoring, along with four additional stations which will be monitored as part of the Toxics TMDL outfall monitoring. These stations will capture runoff from representative land use areas, represented in Figure 4-1 through Figure 4-4, of the Marina del Rey watershed and will also be used to assess Permit and Toxics TMDL compliance in accordance with applicable storm water municipal action levels (MALs) and WQBELS.

Non-Storm Water Outfall Program

Non-storm water outfall monitoring is considered to be neither feasible nor necessary in the MS4 of the MdR Watershed. The watershed is strongly tidally influenced and the receiving waters of MdR Harbor function differently than the linear river systems used to model the Permit monitoring requirements. Non-storm water flows to the MS4 are currently addressed through the use of low flow diversions (LFDs) in the Marina del Rey watershed for three major outfalls discharging to the MdR Harbor (Basin E). The fourth major outfall is below tide level and inundated with marine waters at all times (Basin G). Findings of the storm drain outfall identification report (LACDBH, 2004a) show that approximately 700 small drains discharge directly to the MdR Harbor at or below the tide line. The tidal inundation to the MS4 system surrounding the MdR Harbor does not allow for the sampling of outfall discharge. Potential discharge (where not addressed by a LFD) is co-mingled with marine waters, making it impossible to discern the impact of potential non-storm water runoff to the receiving water. Therefore, for the purposes of the MdR Watershed CIMP, the MdR EWMP Agencies will not conduct non-storm water monitoring at the outfalls.

Trash and Plastic Pellet Monitoring

The Permit requires Permittees to develop a Trash Monitoring and Reporting Plan (TMRP) to describe the methodologies that will be used to assess and monitor trash from source areas in the Santa Monica Bay (SMB) WMA and shoreline of the Santa Monica Bay. In 2012, the County submitted a TMRP to the Regional Board. The City of Los Angeles will not be developing a TMRP for MdR because the implementation program for the Ballona Creek (BC) Trash TMDL covers the City's area in MdR. The City does not have plastic pellet facilities in MdR and is therefore not subject to the pellet monitoring requirements of the PMRP; subsequently, the City will coordinate plastic pellets spill and response requirements in conjunction with SMB and BC watersheds.

The City of Culver City is in compliance with the TMRP for the Ballona Creek Trash TMDL and is considered in compliance with the Debris TMDL's trash component. These plans are considered to be independent of this CIMP.

Plastic Pellet Monitoring and Reporting Plans (PMRPs) quantifying potential plastic pellet discharges to Santa Monica Bay, along with supplemental Spill Response Plans (SRPs) to

address containment of spilled plastic pellets, were submitted to the Regional Board by the City of Culver City (2012), County (2013), and LACFCD (2013).

New Development and Redevelopment Effectiveness Tracking

The MdR EWMP Agencies have developed mechanisms for tracking new development/re-development projects that include post-construction BMPs pursuant to Permit Section VI.D.7. The specific tracking information for each jurisdiction is unique to each Permittee, and therefore this CIMP provides a general overview of tracking requirements and data necessary to show compliance with the Permit.

Regional Studies

The MRP requires participation in regional studies, including participation in the Southern California Monitoring Coalition's (SMC) Regional Watershed Monitoring Program (Bioassessment Program) and special studies as specified in approved TMDLs.

The LACFCD currently participates in the SMC Monitoring Program. The LACFCD will continue to participate in the Bioassessment Program being managed by the SMC. The LACFCD, on behalf of the MdR EWMP Agencies, will continue to coordinate and assist in implementing the bioassessment monitoring requirement of the MS4 permit on behalf of the permittees in Los Angeles County. Initiated in 2008, the SMC's Bioassessment Program is designed to run over a five-year cycle. Monitoring under the first cycle concluded in 2013, with reporting of findings and additional special studies planned to occur in 2014. The SMC Joint Executive Workgroup is currently working on designing the Bioassessment Program for the next five-year cycle, which is scheduled to run from 2015 to 2019.

In addition to the SMC monitoring program, the MdR EWMP Agencies plan to participate in Bight '18, which is also a regional monitoring program conducted by the Southern California Coastal Water Research Project (SCCWRP). The program is focused on regional assessment of marine waters in Southern California, including assessments of water quality, sediment quality, and bioaccumulation of toxins in fish tissue.

1.0 INTRODUCTION

1.1 CIMP Regulatory Background

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175 (Permit) was adopted on November 8, 2012, by the Los Angeles Regional Water Quality Control Board (LARWQCB or Regional Board) and became effective December 28, 2012. This Permit replaced the previous permit (Order No. 01-182). The purpose of the Permit is to ensure the MS4s in Los Angeles County are not causing or contributing to exceedances of water quality objectives set to protect the beneficial uses in the receiving waters in the Los Angeles region. The Permit allows the Permittees to customize their storm water programs through the development and implementation of a Watershed Management Program (WMP) or an Enhanced Watershed Management Program (EWMP) to achieve compliance with certain receiving waters limitations (RWLs) and water quality-based effluent limits (WQBELs).

Although extensive default monitoring requirements are specified in the Permit Monitoring and Reporting Plan (MRP), the Permittees have the option to develop a Coordinated Integrated Monitoring Program (CIMP) that uses alternative approaches to meet the primary objectives of the Permit. The agencies with jurisdiction in the Marina del Rey (MdR) Watershed, including the unincorporated areas of the County, the LACFCD, and the cities of Los Angeles and Culver City have elected to pursue a CIMP and have provided justification in this document demonstrating fulfillment of monitoring requirements of the Permit and TMDLs. More information about LACFCD participation in the CIMP is in Appendix J.

As defined in the MRP, the MdR Watershed CIMP has the potential to be a vehicle to modify TMDL monitoring requirements and other previously implemented monitoring program requirements. Modifications to the MRP and/or TMDL monitoring requirements must satisfy the primary objectives for the CIMP to be considered approvable by the Regional Board Executive Officer. Two TMDL Coordinated Monitoring Plans (CMPs) have been approved by the Regional Board for the MdR Watershed, the *Marina Del Rey Harbor Mothers' Beach and Back Basins Bacterial TMDL Coordinated Monitoring Plan* (Bacteria TMDL CMP) (LADPW, 2007) and the *Marina Del Rey Harbor Toxic Pollutants TMDL Coordinated Monitoring Plan* (Toxics TMDL CMP) (LADPW, 2008b). The MdR Watershed CIMP reflects modifications to these existing TMDL CMPs based on the Bacteria TMDL, Toxics TMDL, new Permit requirements, implemented Best Management Practices (BMPs), recent monitoring data, and findings and recommendations of the 2013 *Multi-Pollutant TMDL Implementation Plan for the Unincorporated Area of MdR Harbor Back Basins* (LADPW, 2013), the 2012 *Toxics Pollutant TMDL Implementation Plan* prepared by the California Department of Transportation (Caltrans) and the Cities of Los Angeles and Culver City (City of Los Angeles, 2012).

1.2 Enhanced Watershed Management Plan Area

The MdR Watershed is bordered by the Santa Monica Bay Watershed to the west and the Ballona Creek Watershed to the north and east. The MdR Harbor is open to the Santa Monica Bay through the Main Channel and shares a common breakwater with Ballona Creek. The MdR Harbor is an active harbor for pleasure craft, consisting of the Main Channel and eight basins (A through H). Basins A, B, C, G, and H are known as the Front Basins. Basins D, E, and F are known as the Back Basins. The MdR Watershed includes the Venice Canals and the tributary area to the Ballona Lagoons, which discharge to the MdR Harbor, near the exit to the Santa Monica Bay.

For the purposes of this CIMP, the MdR Watershed does not include the Caltrans-owned right-of-way or lands within the jurisdiction of the State of California (e.g., Ballona Wetland Area). Therefore, for the purposes of this CIMP, the MdR Watershed is limited to approximately 1,409 acres that are served by an MS4 under the jurisdiction of the MdR EWMP Agencies participating in the MdR Watershed CIMP. Four subwatersheds make up the MdR Watershed as shown in Figure 1-1. The acreage by jurisdiction and subwatershed is presented in Table 1-1.

Table 1-1. Subwatersheds and Jurisdictions within the MdR Watershed

Agency	CIMP Participant	Sub-watershed 1 (Acres)	Sub-watershed 2 (Acres)	Sub-watershed 3 (Acres)	Sub-watershed 4 (Acres)	CIMP Watershed (Acres)	% CIMP Watershed Area
City of Los Angeles	Yes	32.9	278.1	70.5	589.8	971.3	69%
City of Culver City	Yes	0.0	0.0	0.0	42.2	42.2	3%
County	Yes	336.2	46.8	0.0	12.7	395.7	28%
LACFCD	Yes	N/A	N/A	N/A	N/A	N/A	N/A
MS4 Area of MdR Agencies		**369.1**	**324.9**	**70.5**	**644.7**	**1,409.2**	**100%**
Caltrans	No	5.4	0.0	0.0	26.4	31.8	N/A
State of California	No	49.3	0.0	0.0	0.0	49.3	N/A
MdR Watershed Area		**423.8**	**324.9**	**70.5**	**671.1**	**1,490.3**	--

Figure 1-1 presents the MdR MS4, the subwatershed boundaries, and the jurisdictional area for each agency within the MdR Watershed. The MdR Harbor land area in Subwatershed 1 (369.1 acres) is composed of 336.2 acres of unincorporated County land and 32.9 acres within the boundaries of the City of Los Angeles; it has many small drains that discharge into all the Basins. Subwatershed 2 (approximately 324.9 acres) is composed of 46.8 acres of unincorporated County land and 278.1 acres within the boundaries of the City of Los Angeles; it does not drain into the MdR Harbor Front or Back Basins but drains into the Venice Canal and the Ballona Lagoon, which discharge into the Main Channel near the harbor mouth. Boone Olive Pump Plant serves Subwatershed 3, a tributary area of 70.5 acres that lies entirely within the boundaries of the City of Los Angeles. The pump station discharges into Basin E. Subwatershed

4 lies mainly within the jurisdiction of the cities of Los Angeles and Culver City and totals approximately 644.7 acres. The acreages given exclude the Caltrans and State of California areas. Runoff discharges into Oxford Retention Basin, a storm water retention basin occupying approximately 10 acres within the County. Situated north of the Back Basins, Oxford Retention Basin is operated by the LACFCD and drains into Basin E through two tide gates.

The MdR Watershed includes residential, commercial, recreational, vacant, institutional, and mixed commercial/industrial land uses. The land use area by subwatershed is presented in Table 1-2 and Figure 1-2. Subwatershed 1 consists of right-of-ways, parking lots, and high-density residential land uses immediately surrounding the MdR Harbor, as well as marine waters within the Harbor. Subwatershed 2 consists of residential areas tributary to the Grand Canal (i.e., Venice Canals and Ballona Lagoon). Subwatersheds 3 and 4 consist of a mix of residential, commercial, and mixed commercial/industrial land uses.

Table 1-2. Summary of MdR Watershed Acreage

Land Use Class	Subwatershed Acreage*				Total
	1	2	3	4	
Single Family Residential	1.8	45.8	22.9	167.2	237.7
Multi-Family Residential	137.1	131.8	21.1	96.3	386.3
Institutional/Public Facilities	8.0	10.1	2.6	67.2	87.9
Commercial and Services	120.0	22.8	1.6	124.2	268.6
Industrial/Mixed with Industrial	0.2	0.2	0.3	27	27.7
Transportation/Road Right-of-Way	38.2	83.3	22.0	153.8	297.3
Developed Recreation/Marina Parking	41.6	0.7	0	1.9	44.2
Beach	8.2	0	0	0	8.2
Water**	6.4	30.3	0	7.1	43.8
Vacant	7.6	0	0	0	7.6
Total	369.1	325	70.5	644.7	1,409

*Acreage excludes Caltrans- and State-owned land (Ballona Wetland) not in CIMP Area.

**Marina Boat Area Water and MdR Harbor Water are not included in "Water" class acreage provided here. The Water class includes Ballona Lagoon (14.4 acres), Venice Canals (15.9 acres), Oxford Retention Basin (7.1 acres), and Ballona Shoreline and other water (6.4 acres).

Figure 1-1. Marina del Rey Watershed with MS4, Catch Basins, and Subwatershed Areas

Figure 1-2. MdR Watershed Land Uses and Subwatersheds

1.3 Water Quality Priorities

Multiple monitoring programs and special studies have sought to assess conditions in the MdR receiving waters and surrounding MdR Watershed. All readily available monitoring data, source assessments, and special studies were assessed for interrelationships in terms of pollutants, potential sources, and potential data gaps. Through this evaluation, water-body pollutant combinations were classified into one of the three following categories:

- **Category 1 (Highest Priority):** Pollutants with receiving water limitation or WQBELs as established in Part V1.E and Attachments L through R of the Permit.
- **Category 2 (High Priority):** Section §303(d) listed pollutants in the receiving water that MS4 discharges may be contributing to the impairment.
- **Category 3 (Medium Priority)**: Pollutants with insufficient data to list as §303(d), but which exceed RWLs contained in the permit, and for which MS4 discharges may be causing or contributing to the exceedance.

As presented in Table 1-3, the pollutants currently addressed by the Bacteria TMDL and Toxics TMDL capture all of the Category 1 waterbody-pollutant classifications. The Venice Canal is the only other waterbody in addition to the MdR Harbor that falls within the MdR EWMP Agencies jurisdiction. However, there are no available data assessing the receiving water or discharges to the Venice Canal receiving water. The only Section (§)303(d)-listed constituent for MdR Harbor not currently addressed by a TMDL and, therefore, the only potential Category 2 pollutant, is Dieldrin. However, the USEPA made a finding of non-impairment for this constituent so it will not be considered a Category 2 pollutant. An assessment of the historical datasets (Table 9-1) using the monitoring data completed for the MdR Watershed EWMP Work Plan Draft (submitted to the Regional Board June 28, 2014) did not result in any constituents being classified as a Category 3 pollutant.

Table 1-3. Waterbody – Pollutant Classification

Waterbody	Pollutant	Classification	Notes
Harbor Receiving Water	Dissolved Copper	Category 1	Subject to Toxics TMDL
	Copper	Category 1	Subject to Toxics TMDL
	Lead	Category 1	Subject to Toxics TMDL
	Zinc	Category 1	Subject to Toxics TMDL
	Total PCBs	Category 1	Subject to Toxics TMDL
	Total DDTs	Category 1	Subject to Toxics TMDL
	p p'-DDE	Category 1	Subject to Toxics TMDL
	Chlordane	Category 1	Subject to Toxics TMDL
	Fecal coliform	Category 1	Subject to Bacteria TMDL
	Enterococcus	Category 1	Subject to Bacteria TMDL
	Total coliform	Category 1	Subject to Bacteria TMDL
Venice Canals	None known	None	No Data for assessment.

To date, historical priority sources of non-storm water/dry weather flows have been addressed in the MdR Watershed through the installation of LFDs and re-direction of flow (Table 3-3).

1.4 CIMP Overview

The primary purpose of this CIMP is to outline the process for collecting data to meet the goals and requirements of the MRP. This CIMP is designed to provide the MdR EWMP Agencies the information necessary to guide water quality program management decisions. This CIMP provides information on sample collection and analysis methodologies. Additionally, the monitoring will provide a means to measure compliance with the Permit. The MRP, as outlined in the Permit, is composed of five elements, including:

1. Receiving Water Monitoring
2. Storm Water Outfall Monitoring
3. Non-Storm Water (NSW) Outfall Monitoring
4. New Development/Redevelopment Effectiveness Tracking
5. Regional Studies

In addition to the five elements, which are presented as sections in this CIMP, a specific trash and plastic pellets monitoring section is included. An overview of each of the monitoring types and their monitoring objectives are described in the following subsections.

The monitoring requirements outlined in this CIMP are in accordance with the requirements of the Permit, the Bacteria TMDL, and the Toxics TMDL. An overview of these regulatory drivers is presented in Appendix A. Monitoring requirements differ between these three regulatory drivers on issues such as monitoring station locations, definition of wet/dry weather, monitoring duration, and monitoring constituents. One objective of this CIMP is to leverage resources to create an efficient and effective monitoring program to represent conditions within the receiving water and tributary MS4. This CIMP discusses the following in the context of the MdR Watershed.

1.4.1 Receiving Water Monitoring

The objectives of the receiving water monitoring include the following:

- Determine whether the RWLs are being achieved;
- Assess trends in pollutant concentrations over time, or during specified conditions; and
- Determine whether the designated beneficial uses are fully supported as determined by water chemistry, as well as aquatic toxicity and bioassessment monitoring.

The receiving water monitoring will provide data to determine whether the RWLs and water quality objectives are being achieved in the MdR EWMP area and support management decisions related to EWMP implementation. Over time, the monitoring will allow the assessment of trends in pollutant concentrations. Receiving water monitoring consists of a mass emission monitoring designed to meet all receiving water permit requirements and additional TMDL monitoring locations necessary to evaluate TMDL requirements, 303(d) listings, and other exceedances of RWLs. Implementation of the MdR CIMP will replace existing TMDL monitoring programs.

1.4.2 Storm Water Outfall Monitoring

Storm water outfall monitoring of discharges from the MS4 support meeting three objectives including:

- Determine the quality of storm water discharge relative to municipal action levels.
- Determine whether storm water discharge is in compliance with applicable storm water WQBELs derived from TMDL WLAs.
- Determine whether the discharge causes or contributes to an exceedance of RWLs.

The storm water outfall monitoring is designed to characterize storm water discharges from MS4s at representative outfall locations within the EWMP area and support management decisions related to EWMP implementation. Additionally, implementation of the MdR CIMP will meet the TMDL outfall monitoring requirements.

1.4.3 Non-Storm Water Outfall Program

Objectives of the NSW outfall monitoring include the following:

- Determine whether a discharge is in compliance with applicable NSW WQBELs derived from TMDL WLAs.
- Determine whether a discharge exceeds NSW action levels.
- Determine whether a discharge contributes to or causes an exceedance of RWLs.
- Assist in identifying illicit discharges.

The NSW Outfall Screening and Monitoring Program (NSW Outfall Program) is focused on dry weather discharges to receiving waters from major outfalls. Because dry weather discharges are addressed through LFDs and the MdR watershed MS4 system is tidally inundated, this Permit requirement does not apply for the MdR watershed.

1.4.4 New Development and Redevelopment Effectiveness Tracking

The objective of the New Development/Redevelopment 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 Part VI.D.7.c.i. of the Permit. Permittees are required to maintain a database to track specific information related to new and redevelopment projects subject to the minimum control measure (MCM) requirements in VI.D.7. The Permit contains data tracking requirements in Part X.A of the MRP and in Part VI.D.7.d.iv.

1.4.5 Trash and Plastic Pellet Monitoring

The objective of the trash and plastic pellet monitoring is to satisfy the monitoring requirements of the *Santa Monica Bay Nearshore and Offshore Debris TMDL* (Debris TMDL) in accordance with the requirement in Part III of the MRP.

1.4.6 Regional Studies

The MRP requires participation in regional studies, including participation in the Southern California Monitoring Coalition's (SMC) Regional Watershed Monitoring Program (Bioassessment Program) and special studies as specified in approved TMDLs.

The Los Angeles County Flood Control District (LACFCD) currently participates in the SMC Monitoring Program. The LACFCD, on behalf of the MdR EWMP Group, will continue to

participate in the Bioassessment Program being managed by the SMC. The LACFCD will continue to coordinate and assist in implementing the bioassessment monitoring requirement of the MS4 permit on behalf of the permittees in Los Angeles County. Initiated in 2008, the SMC's Bioassessment Program is designed to run over a five-year cycle. Monitoring under the first cycle concluded in 2013, with reporting of findings and additional special studies planned to occur in 2014. The SMC Joint Executive Workgroup is currently working on designing the bioassessment monitoring program for the next five-year cycle, which is scheduled to run from 2015 to 2019.

The MdR EWMP Agencies also plan to participate in the Regional Bight monitoring program, expected to be conducted during 2018.

2.0 RECEIVING WATER MONITORING PROGRAM

The objectives of the receiving water monitoring (Part II.E.1 of the MRP) 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; and
c. Determine whether the designated beneficial uses are fully supported as determined by water chemistry, as well as aquatic toxicity and bioassessment monitoring.

The following presents the CIMP Receiving Water monitoring program, including monitoring sites, monitoring parameters and frequency, as well as monitoring coordination. The MdR CIMP will integrate the MRP, the TMDLs, as well as existing monitoring requirements in the MdR Watershed into a single efficient and effective program; as such, its implementation will replace the existing TMDL CMPs applicable to the MdR Watershed.

2.1 Receiving Water Monitoring Sites

The MRP specifies that receiving water monitoring shall be performed at previously designated mass emission stations, TMDL receiving water stations (as designated in TMDL CMPs approved by the Regional Board Executive Officer), and additional receiving water locations representative of the impacts from MS4 discharges, and that in the case where monitoring at a station will be discontinued, justification should be provided. The receiving water monitoring programs in this CIMP are based on the monitoring requirements defined in the Bacteria TMDL CMP, the Toxics TMDL CMP, and the Permit.

Monitoring stations selected to conduct this monitoring are discussed below. More information about these stations can be found in Appendix B based on a site reconnaissance, performed January 2014, in support of the sites selection process. Detailed parameter lists, analytical methods and method detection limits are detailed in Appendix D. Sampling protocols, sample handling procedures, field quality control sampling requirements, and laboratory analytical methods and quality assurance/quality control (QA/QC) requirements detailed in Appendix C, with reference to Appendix D.

2.1.1 Mass Emission Monitoring Site

Mass emission (ME) receiving water monitoring is intended to determine if RWLs are achieved, assess trends in pollutant concentrations over time, and determine whether designated uses are supported. ME monitoring provides a long-term record to understand conditions within the EWMP area, for the full suite of parameters, including TMDL parameters.

The mass emission station receiving water monitoring requirement of the Permit does not apply to the MdR CIMP. There are ME stations in seven major watersheds throughout the County. These stations are monitored per the existing NPDES Permit (CAS004001) in an effort to estimate the mass emissions from the collective MS4. The closest ME station, Ballona Creek Monitoring Station (S01), is located outside the MdR Watershed.

2.1.2 Permit Monitoring Site

MdRH-MC, located in the Main Channel of MdR Harbor, was selected as the MdR Harbor receiving water station for Permit compliance monitoring. The intent of the Permit is to assess the impacts of storm water runoff on receiving waters, and therefore MdRH-MC is located at the confluence of Basins D, E, and F. The station is located to assess storm water runoff from the major outfalls located in Basin E and other outfalls located in Basin F. Storm water flows are expected to impact the area in the Back Basins near the confluence of Basins D, E, and F.

The location of this station is shown in Figure 2-1.

This receiving water monitoring site meets the MRP objectives and data collected at MdRH-MC will support an understanding of potential impacts associated with MS4 discharges.

2.1.3 TMDL Monitoring Sites

The MdR Watershed is impacted by three TMDLs, including the Bacteria TMDL, Toxics TMDL, and Debris TMDL. Harbor receiving water stations monitored as part of the Bacteria and Toxics TMDLs CMPs are summarized below (Table 2-1 and Table 2-2, respectively). More information about these stations is provided in Appendix B. The analytical procedures, sampling methods, QA/QC procedures are provided in Appendix C.

2.1.3.1 Bacteria TMDL Sites

The Bacteria TMDL requires receiving water monitoring in the Back Basins and at three shoreline stations along Marina Beach, and in the Harbor at major outfalls. Bacteria TMDL receiving water monitoring is conducted at nine receiving water locations; the type and location of the Bacteria TMDL monitoring stations are summarized in Table 2-1 and Figure 2-1. Note that monitoring for Bacteria is scheduled; Dry/Wet Weather classifications are assigned post-monitoring, based on prevailing weather conditions during a scheduled sampling event.

Table 2-1. MdR Receiving Water Bacteria Monitoring Stations

CIMP Station ID	Media Sampled	Monitoring Station Location
MdRH-1	Water	Shoreline Site along Marina Beach at playground
MdRH-2	Water	Shoreline Site along Marina Beach at Main Lifeguard Tower
MdRH-3	Water	Shoreline Site along Marina Beach between the boat dock and lifeguard station
MdRH-4	Water	Basin D, near first slip outside swim area (surface and depth)
MdRH-5	Water	Basin E, in front of tide-gate from Oxford Retention Basin
MdRH-6	Water	Basin E, center of basin (surface and depth)
MdRH-7	Water	Basin E, in front of Boone-Olive Pump Outlet
MdRH-8	Water	Back of the Main Channel at the intersection of Basins D, E, and F (surface and depth)
MdRH-9	Water	Basin F, center of basin (surface and depth)
Monitoring Station in Harbor Receiving Water Basins A, B, C, G, and H, designated by MdRH-10, MdRH-11, MdRH-12, MdRH-13, and MdRH-14, respectively are former monitoring station where monitoring was discontinued.		

2.1.3.2 Toxics TMDL Sites

The CIMP's monitoring includes a total of nine receiving water monitoring stations, one in each of the Basins and one in the Main Channel, to comply with the Toxics TMDL monitoring requirement. These locations are summarized in Table 2-2 and Figure 2-1. Monitoring will be performed at five of these stations each year, two in the Back Basins, two in the Front Basins, and one in the main channel. Based on an assessment of dissolved copper concentrations in the Harbor, Station MdRH-D will be the station to be monitored every year in the Back Basins. More details are provided in Appendix I.

Table 2-2. MdR Receiving Water Toxics Monitoring Stations

CIMP Station ID	Toxics TMDL CMP Station ID	Media Sampled	Monitoring Station Description
MdRH-A	MdRH-F-1	Water	Mid-channel of Basin A
MdRH-B	MdRH-F-2	Water	Mid-channel of Basin B
MdRH-C	MdRH-F-3	Water	Mid-channel of Basin C
MdRH-D	MdRH-B-1	Water	Mid-channel of Basin D
MdRH-E	MdRH-B-2	Water	Mid-channel of Basin E
MdRH-F	MdRH-B-3	Water	Mid-channel of Basin F
MdRH-G	MdRH-F-4	Water	Mid-channel of Basin G
MdRH-H	MdRH-F-5	Water	Mid-channel of Basin H
MdRH-MC	---	Water	Main Channel
Monitoring will be performed at five Toxics TMDL receiving water stations every year, alternating every year between two of the three Basins in the Back Basins and two of the five Basins in the Front Basins along with the main channel monitoring location. See Table in Figure 2-1 for the Permit's five-year schedule.			

2.1.3.3 Bioaccumulation Monitoring

Fish swim throughout MdR Harbor, therefore, for the purposes of CIMP compliance monitoring, the entire Harbor is considered to be a single representative area for fish sampling. Trawl transects will be run throughout the Harbor to collect targeted fish species.

Mussels are filter feeders that rely on collecting organic particles as food from a large volume of water. Resident mussels have been observed throughout MdR Harbor; however, in order to control for the period of bioaccumulation, the use of planted mussels is recommended in place of

resident mussels. Mussels will be planted in the Back Basins and the Front Basins areas, and then composited into two samples representing these two areas.

More information about bioaccumulation monitoring, including the analytical procedures, sampling methods, and QA/QC procedures, are provided in Appendix C.

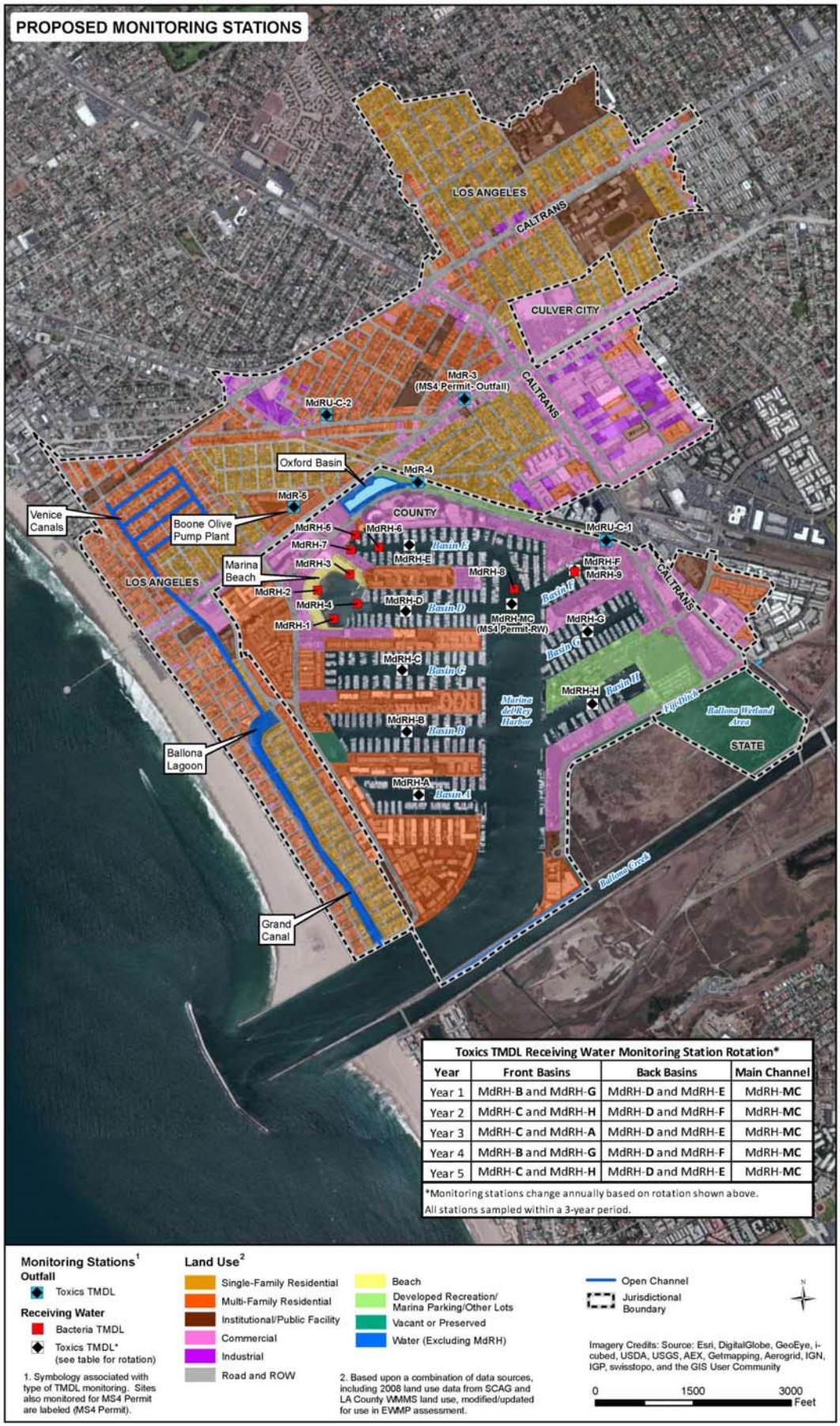

Figure 2-1. MdR Watershed CIMP Monitoring Stations

The rotation is based on observed Harbor Copper water sampling results (See Appendix I)

2.2 Monitored Parameters and Frequency of Monitoring

The CIMP monitoring programs are summarized in Table 2-3. The table lists all the receiving water stations, their corresponding monitored parameters, and frequency of monitoring for compliance with Bacteria and Toxics TMDL monitoring requirements as well as the Permit monitoring requirements. These monitoring requirements include physical, bacterial, chemical, and toxicity analyses of water, sediment, and tissue samples from the MdR receiving water. Detailed parameter lists, analytical methods and method detection limits are detailed in Appendix D. Sampling protocols, sample handling procedures, field quality control sampling requirements, and laboratory analytical methods and quality assurance/quality control (QA/QC) requirements detailed in Appendix C, with reference to Appendix D.

2.2.1 Permit Compliance Monitoring

Receiving water monitoring will be conducted only during wet weather conditions because there is minimal dry weather flow from the MdR Watershed MS4 system to the receiving water due to LFDs. Grab sampling will be conducted at the MdRH-MC receiving water station three times per year, including the first storm of the year equal to or greater than 0.1 inch. The parameter lists of the entire Table E-2 of the MRP will be monitored during the first large storm of the first monitoring year. The remaining 2 wet events of the year will be limited to those parameters in Table E-2 that fall under Category 1 and 2 described in Section 1.2 of this CIMP.

In addition, toxicity monitoring shall be conducted at this station to evaluate a sublethal effect (e.g., reduced growth, reproduction) twice per year. Year 1 results for Permit compliance storm water monitoring will shape monitoring requirements and parameter lists for subsequent storm events and monitoring years beginning in Year 2, dependent upon results below the MLs on Table E-2 of the permit and/or less than the lowest applicable WQO. Appendix D monitoring lists will be revised and reported as part of the Annual Monitoring Report.

2.2.2 Bacteria TMDL Compliance Monitoring

For Bacteria TMDL compliance monitoring, sampling is performed on a scheduled basis. The MdR EWMP Agencies conduct weekly compliance monitoring at all Bacteria TMDL stations, except at two stations along the Marina Beach shoreline where enhanced monitoring efforts have been implemented voluntarily for informational purposes. Daily sampling (Monday through Saturday) has been initiated at Station MdRH-1. At Station MdRH-2, samples are collected twice per week (Monday and Saturday). Bacteria grab samples are collected from the Harbor receiving water from a boat/skiff or from the ankle deep water of an incoming wave along the Marina Beach. As a safety consideration, samples are not collected during rainfall. Grab samples are collected on a scheduled basis. Bacteria grab samples collected within the 72-hour window after a storm event are classified as wet weather samples, whereas all other samples are classified as dry weather samples.

2.2.3 Toxics TMDL Compliance Monitoring

The existing Toxics TMDL CMP monitoring program has been modified to improve the effectiveness and efficiency of the program, and to take advantage of the increased knowledge of the environmental conditions within the Harbor as a result of the past 10 years of monitoring. For Toxics TMDL receiving water compliance monitoring, water, sediment and tissue samples will be collected from a boat/skiff. Modifications to the existing CMP have been made based on the

historical monitoring experience and data gained by the MdR EWMP Agencies. Data analysis supporting the changes below is included in Appendix I.

Samples will be collected as follows:

- Dry weather water quality grab samples will be collected from five Harbor receiving water stations on a monthly basis for copper and a bi-annual (summer/winter) basis for Total PCBs. Four of the receiving water stations will rotate each year, so that each Basin is represented over the course of the Permit cycle. See Figure 2-1 for a schedule of monitoring.
    - Monthly monitoring of dissolved copper has been conducted in both the Front and Back Basins of the Harbor since 2010. Monitoring results have remained relatively consistent over time, and while they do vary somewhat between Basins, it is possible to monitor a sub-set of Basins each year and rotate the monitoring stations without losing important information regarding dissolved copper concentrations. (See Appendix I for details).
    - Total PCBs will be monitored in the Harbor water column twice per year (summer and winter) in five locations within the Harbor instead of required monthly schedule due to the logistical, technical and cost issues for the low-detection limit analysis (see more details in Appendix I).
- Sediment analysis will be conducted consistent with the SQO guidelines. SQO monitoring will be conducted in 2015 for the Stressor Identification Study and in 2018 as part of the Bight Program instead of required annual schedule due to low variability of pollutant concentrations from year to year in the historical dataset collected between 2002-2013 (see more details in Appendix I). The MdR EWMP Agencies will coordinate with the Bight Program to the maximum extent possible to ensure that the sediment analysis in the Harbor continues every 5 years thereafter. Sampling sites will be selected in coordination with the Bight Program. Sampling will include chemistry, toxicity, and benthic infaunal assessment. Required Toxics TMDL constituents will be monitored as part of the SQO chemistry analysis.
- Tissue monitoring (fish and mussel), which provides a strong measure of environmental contamination, will be conducted annually within the Harbor, and will provide a measure of bioaccumulation of Total PCBs and other organics from the water column. Sites for resident mussel installation will be selected based on prevailing conditions, as determined by a field reconnaissance conducted prior to sampling. Nine individuals from two species of fish will be collected (halibut and white croaker), in accordance with OEHHA guidance. See Appendix C for more information.

Table 2-3. MdR Receiving Water Monitoring Stations Sampling Parameters and Frequency for Wet and Dry Weather

Parameter	Permit (Wet Weather*)	Toxics TMDL (Dry Weather)									Bacteria TMDL								
	MdRH-MC	MdRH-A	MdRH-B	MdRH-C	MdRH-D	MdRH-E	MdRH-F	MdRH-G	MdRH-H	MdRH-MC	MdRH-1	MdRH-2	MdRH-3	MdRH-4	MdRH-5	MdRH-6	MdRH-7	MdRH-8	MdRH-9
WATER QUALITY																			
Field Parameters[a]	3x/year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pollutants identified in Table E-2 of Permit *(not otherwise listed below)*[#]	1x/year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aquatic Toxicity	2x/year	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indicator Bacteria: Total Coliform, *E. coli*, *Enterococcus*	3x/year	-									6x/week[b]	2x/week[d]	1x/Week[c]	1x/week[c] at surface 1x/week at depth	1xWeek[c]	x/week[c] at surface 1x/week at depth	1x/Week[c]	x/week[c] at surface 1x/week at depth	x/week[c] at surface 1x/week at depth
Copper (total/dissolved)	3x/year	1x/month (at 2 Back Basin Stations and 2 Front Basin stations alternating stations every year))**								1x/month**									
Total PCBs	3x/year	2x/year (summer/winter)**								2x/year**									
FISH / MUSSEL TISSUE QUALITY – DRY WEATHER SAMPLING																			
Chlordane Total PCBs Total DDTs p,p'-DDE	-	1x/year[e] (Harbor-wide sampling, all basins and Main Channel)																	
TRIAD ASSESSMENT – DRY WEATHER SEDIMENT SAMPLING																			
Grain Size and Percent Solids SQO Parameters[g] Sediment Toxicity Benthic Infaunal Analysis	2x/5 years[f][g][h]	2x/5 years[f][g][h]																	

* There is no dry weather flow from the MdR Watershed to the receiving water due to LFDs; therefore, dry weather monitoring required by the permit will not be conducted.
** Toxics TMDL receiving water monitoring to occur during dry weather. Four of the receiving water stations will rotate each year, so that each Basin is represented over the course of the Permit cycle. MdRH-D and MdRH-MC will be monitored every year.
[#] All the parameters listed in Table E-2 of the MRP will be monitored during the first large storm of the first monitoring year. Only constituents detected above the lowest applicable water quality objective will be monitored from the second year at the frequency specified in the permit (i.e. 3 wet weather events)
(a) Field parameters are defined as dissolved oxygen (DO), pH, temperature, and specific conductivity.
(b) Samples collected daily (Mondays through Saturdays). Samples collected during an incoming wave.
(c) Monitoring frequency is weekly regardless of the weather condition. A dry/wet classification is assigned post-monitoring.
(d) Samples collected twice a week, on Mondays and Saturdays. Samples collected during an incoming wave.
(e) Historically, tissue sampling occurs in October of each year.
(f) Random locations throughout the MdR Harbor Basins and Main Channel
(g) SQO Parameters include: TOC, Cadmium, Copper, Lead, Mercury, Zinc; lower and higher molecular weighted PAHs; PCBs (congeners); DDTs; Chlordane; and Dieldrin.
(h) SQO will be performed twice the first five years of the CIMP implementations, once as part of the Stressor Identification to be completed by December 2016 and once as part of BIGHT '18 program. Future sediment monitoring will be conducted as part of the Bight program every 5 years after 2018.

2.3 Weather Conditions

The Permit requires storm water monitoring during the first significant storm of the year. MRP Section C.1.b(iii) of the Permit establishes mobilization criteria for the first significant storm as the first storm of the year with a 70% probability of at least 0.25-inch rainfall, at least 24 hours prior to the start of a rainfall event. The Permit generally defines a storm event as greater than or equal to 0.1 inch of precipitation, as measured from at least 50% of the County controlled rain gauges within the region. The Bacteria TMDL also defines Wet Weather as rainfall of 0.1 inch or more. Although the Toxics TMDL does not establish storm mobilization criteria, the Toxics TMDL CMP established a 0.1-inch threshold for storm water monitoring, and capped the number of monitoring events to 24 storms per year. According to both the Permit and the Bacteria TMDL, Wet Weather events shall be separated by a minimum of 3 days of dry conditions (e.g., less than 0.1 inch of rain each day). A minimum of 3 days of dry conditions (i.e., 72 hours) is also required between a qualified storm event and a non-storm water monitoring event.

The MdR EWMP Agencies propose capping the number of Toxics TMDL Wet Weather monitored storm events to seven events per year, one storm per month, for schedule optimization and cost efficiencies. The Bacteria TMDL compliance monitoring program will not be impacted because bacteria samples are collected and analyzed on a scheduled basis (daily and/or weekly) and not collected during rainfall periods. The Wet/Dry Weather season classification of bacteria samples will continue to be characterized based on the 0.1-inch storm threshold of the Bacteria TMDL.

Because a significant storm event is based on predicted rainfall, it is recognized that this monitoring may be triggered without 0.25 inches of rainfall actually occurring. In this case, the monitoring event will still qualify as meeting this requirement provided that sufficient sample volume is collected to do all required laboratory analysis. Documentation will be provided showing the predicted rainfall amount.

2.4 Monitoring Coordination

Monitoring requirements of the Permit, Bacteria TMDL, and Toxics TMDL include several iterative elements that are incorporated into the overall design and implementation of this CIMP. Considering the multiple possible avenues to demonstrate TMDL compliance, such as BMP implementation and/or water quality monitoring, development of the monitoring approaches will likely require ongoing stakeholder engagement with the Regional Board and affected responsible parties.

Monitoring under the Bacteria and Toxics TMDLs is conducted by two different agencies. The Toxics TMDL monitoring, in accordance with the Toxics TMDL CMP, is conducted by the County. The Bacteria TMDL monitoring, in accordance with the TMDL CMP, is conducted by the City of Los Angeles and samples are collected and analyzed by Hyperion Laboratory.

Currently, compliance monitoring for the Permit is conducted regionally by the County. It is anticipated that new Permit monitoring requirements in the MdR Watershed will continue to be coordinated and implemented by the County on behalf of the other MdR EWMP Agencies.

2.5 Receiving Water Monitoring Summary

Eighteen receiving water stations in the MdR EWMP were selected to address both Bacteria and Toxics TMDLs and Permit monitoring requirements. Nine receiving water stations were selected for Bacteria TMDL monitoring, eight receiving water stations were selected for only the Toxics TMDL monitoring, and one receiving water station was selected for Permit-required receiving water monitoring and Toxics TMDL monitoring. Monitoring parameters and frequency by regulatory driver and station are summarized in Table 2-3.

3.0 MS4 INFRASTRUCTURE DATABASE

To meet the requirements of Part VII.A of the MRP, a map(s) and/or database of the MS4's storm drains, channels, and outfalls must be submitted with this CIMP and include detailed information (as described in the Permit, page E20-21). An inventory of storm drains, channels, and MS4 outfalls (Inventory) will be maintained by each of the MdR EWMP Agencies in accordance with these Permit requirements. The Inventory will be developed using existing data from Illicit Connection/Illegal Discharge (IC/ID) investigations, institutional knowledge of the MdR Watershed, and other data and observations documenting outfall conditions from historical studies (i.e., Weston, 2008a; LACDBH, 2004a). Each EWMP Agency is responsible for the development, maintenance, and upkeep of the MS4 outfall database and will be maintained for Permit compliance.

The Non-Storm Water Outfall Program requires the development of an MS4 outfall database by the time that this CIMP is submitted. The objective of the MS4 database is to geographically link the characteristics of the outfalls within the MdR Watershed with watershed characteristics including: subwatershed, waterbody, land use, and effective impervious area (EIA). The information will be compiled into GIS layers as described below.

3.1 Available Information

This section summarizes the GIS database submitted with the CIMP and the existing infrastructure information available for the MdR Watershed.

3.1.1 CIMP GIS Database

The GIS database submitted concurrently with this CIMP (Appendix G) was developed using a compilation of data described in this section. Data are continually gathered by the MdR EWMP Agencies and are continually imported into the GIS database. The information is summarized in Table 3-1 .

Table 3-1. GIS Database Elements Submitted with CIMP

Permit Section	Database Element	Status
VII.A.1	Surface water bodies within MdR Watershed	Submitted
VII.A.2	HUC-12 boundary	Submitted
VII.A.3	Land Use overlay	Submitted
VII.A.4	Effective Impervious Area (EIA) overlay (if available)	Submitted
VII.A.5	Jurisdictional boundaries	Submitted
VII.A.6	Location and length of all open channel and underground pipes 18 inches in diameter or greater	Submitted
VII.A.7	Location of all Dry Weather Diversions	Submitted
VII.A.8	Location of all major MS4 Outfalls* within the EWMP Agency's jurisdictional boundary. Each major outfall has been assigned an alphanumeric identifier and mapped.(1)	Submitted
VII.A.10	Storm drain outfall catchment areas of each major outfall within the MdR Agencies' jurisdiction.(2)	Submitted

Table 3-1. GIS Database Elements Submitted with CIMP

Permit Section	Database Element	Status
VII.A.11a	MS4 Outfall Ownership(3)	Submitted
VII.A.11b	MS4 Outfall Coordinates	Submitted
VII.A.11c	Physical Description of MS4 Outfall	Submitted
VII.A.11d	Photographs of the Outfall, where possible, to provide baseline information to track operation and maintenance needs over time.(4)	Ongoing/ Submitted

*All major Outfalls greater than 36 inches have been identified and defined.
(1) Permit MRP Section VII.A.6 requires the MS4 database and maps to include "all open channel and underground pipes 18 inches in diameter or greater" as part of the Outfall-based assessment program and MS4 database. Due to tidal inundation, these Outfalls have been included for reference purposes only and generally are not considered monitorable for non-storm water assessment.
(2) Drainage areas were not built for the four 36" outfalls identified in Venice Canal.
(3) To the maximum extent feasible.
(4) Photographs were included in historic Outfall assessments and have been provided as an electronic attachment to this CIMP in support of field reconnaissance activities. The MdR EWMP Agencies also collect and manage photos which are maintained and managed by each member separately.

3.1.2 Existing Infrastructure

In 2004, the County, City of Los Angeles, City of Culver City, and Caltrans conducted an assessment of small storm drains across the MdR Watershed (LACDBH, 2004a). The MS4 infrastructure in the MdR Watershed includes four MS4 major outfalls. For the purposes of this MdR CIMP, an MS4 major outfall, as defined by Attachment A of the Permit, is an MS4 outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe that is associated with a drainage area of more than 50 acres; or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe). The characteristics and locations of each major outfall have been summarized in Table 3-2 and are represented on Figure 1-1 as yellow dots. Outfalls with an inner diameter of greater than or equal to 18 inches and less than 36 inches are represented on Figure 1-1 as green dots. The available infrastructure information from digitized MS4 data provided by the MdR EWMP Agencies is summarized in Table 3-4. As indicated by the 2004 Small Drain Report (LACDBH, 2004a) and MS4 reconnaissance conducted in 2013 as part of the development of this CIMP (Appendix B), the MS4 system in the MdR Watershed is strongly influenced by tide and a majority of the drains that discharge to the Harbor are partially or fully submerged at their discharge to the receiving water. Due to tidal inundation, these outfalls have been included for reference purposes only and generally are not considered monitorable for non-storm water assessment.

Major outfall CSTL-022A represents discharge from Subwatershed 3 to Basin E, approximately 17.5% (324.7 acres) of the total drainage area of the MdR Watershed. Major outfalls CSTL-022B and C are connected to Oxford Retention Basin, which receives discharge from Subwatershed 4. These major outfalls discharge to Basin E and represent approximately 36.2% (671.1 acres) of the total drainage area of the MdR Watershed. All three major outfalls in Basin

E are fully submerged during a majority of the tide cycle. The tides gates protecting CSTL-022A are located upstream within the MS4 near the Boone Olive Pump Station. Tide gates have been installed at adjoining outfalls CSTL-022B and CSTL-022C for flow regulation and flood control protection for Oxford Retention Basin. The fourth major outfall in the MdR Watershed (CSTL-023B) discharges from MdR subwatershed 1 to Basin G. CSTL-023B drains roads and parking lots within the County and Caltrans jurisdictional areas. The drainage area is flat and the publicly available MS4 data are limited. The tributary area was approximated using a combination of Geographic Information System (GIS) software and field observations. Based on this desktop analysis, CSTL-023B represents approximately 2.3% (41.8 acres) of the total drainage area of the MdR Watershed. CSTL-023B is fully submerged during the entire tidal cycle and the upstream MS4 is tidally inundated.

The MS4 network tributary to the Grand Canal (i.e., Venice Canals and Ballona Lagoon) includes four major outfalls. It is, however, separated from the MdR Harbor receiving water by a large tide gate.

The characteristics and locations of these major outfalls have been summarized in Table 3-2 and are represented on Figure 1-1 as yellow dots.

Table 3-2. Major Outfalls in the MdR Watershed (Diameter ≥ 36 inches)

Outfall ID	Location	MdR Subwatershed	Diameter (inches)	Material	Tidal Influence
CSTL-022A	Basin E	3	51	RCP	Yes; Fully submerged Majority of Tide Cycle; Tide Gate
CSTL-022B	Basin E	4	72	RCP	
CSTL-022C	Basin E	4	72	RCP	
CSTL-023B	Basin G	1	54	RCP	Yes; Always Submerged
22	Grand Canal	2	64	RCB	Half Submerged, Controlled by Tide Gate
21	Grand Canal	2	66	RCB	
7	Grand Canal	2	84	RCB	Fully Submerged
10	Grand Canal	2	84	RCB	Fully submerged, Controlled by Tide Gate

RCB - Reinforced Concrete Box; RCP - Reinforced Concrete Pipe

Several improvements have been made to control runoff to the MS4 infrastructure in the MdR Watershed. Immediately upstream of the tidally influenced zone, LFDs have been installed to redirect non-storm water discharges from the MS4 to the sanitary sewer, that otherwise would have discharged through outfalls CSTL-023A, B, and C into Basin E. Details of the three LFD projects are summarized in Table 3-3. In 2007, Line A, a storm water diversion system, was constructed. This system captured storm water runoff from parking lots and land uses surrounding Marina Beach and directed it to Basin C (Figure 1-1). The outfall for storm drain Line A is a 30-inch RCP that diverts the 10-year frequency runoff storm event from Parking Lots 10 and 11, neighboring restaurants, and streets (an approximate 11-acre area, adjacent to Basin D) into Basin C.

Table 3-3. Existing Low Flow Diversion Structures in MdR Watershed

Location of Diversion	Design	Outfall ID	Receiving Water	Diversion Discharge Endpoint
Project 5243: Intersection of Washington Blvd. and Thatcher Ave[(a)]	Low Flow Diversion with a capacity of 92,000 GPD and overtopping flow (significant flow) of 0.22 CFS.	CSTL-022B, CSTL-022C	Basin E	Sanitary Sewer
Project 3872: Oxford Flood Control Basin Pump House[(a)]	Low Flow Diversion with a capacity of 288,000 GPD and overtopping flow (significant flow) of 0.45 CFS.	CSTL-022B, CSTL-022C	Basin E	Sanitary Sewer
Project 3874: Boone-Olive Pump Station Control House[(a)]	Low Flow Diversion with a capacity of 92,000 GPD and overtopping flow (significant flow) of 0.22 CFS.	CSTL-022A	Basin E	Sanitary Sewer
[(a)] Completed 03/2007 CFS – cubic feet per second; GPD – gallons per day				

Table 3-4. MdR Watershed Outfalls with Diameters Greater than or Equal to 18 Inches and Less than 36 Inches

Outfall ID	Location	MdR Subwatershed	Diameter (inches)	Material	Tidal Influence
MdR Harbor					
CSTL-019	Main Channel	1	18	CMP	Likely None
CSTL-020A	Basin A	1	18	RCP	Fully Submerged
CSTL-020B	Basin A	1	18	RCP	Fully Submerged
CSTL-020C	Basin B	1	18	RCP	Possibly submerged at High tides
CSTL-021	Basin B	1	18	RCP	Possibly submerged at High tides
CSTL-022D	Main Channel	1	18	CMP	Tidal
CSTL-023A	Basin F	1	18	RCP	Tidal
CSTL-024A	Basin H	1	18	CMP	Fully Submerged
CSTL-024B	Main Channel	1	21	RCP	Possibly submerged at High tides
CSTL-024C	Main Channel	1	18	ACP	Fully Submerged
Storm Drain Line A	Basin D → Basin C	1	30	RCP	Possibly submerged at High tides

Table 3-4. MdR Watershed Outfalls with Diameters Greater than or Equal to 18 Inches and Less than 36 Inches

Outfall ID	Location	MdR Subwatershed	Diameter (inches)	Material	Tidal Influence
Grand Canal (Venice Canals / Ballona Lagoon)					
33	Ballona Lagoon	2	18	Unknown	Fully Submerged
30	Ballona Lagoon	2	18	Unknown	Fully Submerged
9	Ballona Lagoon	2	18	Unknown	Fully Submerged
6	Ballona Lagoon	2	18	Catch basin	Fully Submerged
5	Ballona Lagoon	2	18	Catch basin	Fully Submerged
4	Ballona Lagoon	2	18	Concrete	Fully Submerged
3	Ballona Lagoon	2	18	Concrete	Fully Submerged
23	Ballona Lagoon	2	18	PVC	Visible[#]
31	Ballona Lagoon	2	18	Concrete	Visible
24	Ballona Lagoon	2	18	Concrete	Visible
11	Ballona Lagoon	2	18	PVC	Half Submerged[#]
8	Ballona Lagoon	2	18	Concrete	Half Submerged[#]
12	Ballona Lagoon	2	18	PVC	Visible[#], Controlled by Tide Gate
13	Ballona Lagoon	2	18	PVC	Visible[#]
15	Ballona Lagoon	2	18	PVC	Half Submerged[#]
16	Ballona Lagoon	2	18	PVC	1/3 Submerged[#]
18	Ballona Lagoon	2	18	PVC	Half Submerged[#]
19	Ballona Lagoon	2	18	PVC	1/3 Submerged[#]
20	Ballona Lagoon	2	18	PVC	Half Submerged[#]
17	Ballona Lagoon	2	18	PVC	Submerged[#]
14	Ballona Lagoon	2	18	PVC	Half Submerged[#]
32	Ballona Lagoon	2	22	Concrete	Visible
26	Ballona Lagoon	2	24	Concrete	Visible[#]
28	Ballona Lagoon	2	24	Concrete	Tide Gate
29	Ballona Lagoon	2	34	Concrete	Half Submerged

ACP - Asbestos Cement Pipe; CMP - Corrugated Metal Pipe; RCB - Reinforced Concrete Box; RCP - Reinforced Concrete Pipe
d/s – downstream; u/s – upstream.
#Downstream End of Venice Canals

3.2 Pending Information and Schedule for Completion

The elements described in Table 3-5 represent pending information that is primarily expected to be an outcome of implementing this CIMP and outfall-based monitoring programs. As such, a schedule for completing each of the elements is provided. As the data become available, they will be entered into the GIS and water quality databases. Each year, the storm drains, channels, outfalls, and associated databases will be updated to incorporate the most recent characterization data for outfalls. The updates will be included as part of the annual reporting to the Regional Board.

Table 3-5. Pending Information for MS4 Database and Elements to be developed through CIMP Implementation

Permit Section	MS4 Database Requirement/Element	Status	Date of Submission
VII.A.9	Notation of outfall with significant non-storm water discharges	Generally not applicable	December 2015
VII.A.10	Details of analysis of outfall catchment areas for potential new outfall monitoring locations	As needed	Ongoing assessment of Venice Canals
VII.A.11.e	Determination of whether the outfall conveys significant non-storm water discharges	Generally not applicable	December 2015
VII.A.11.f	Outfall monitoring data	Ongoing. Anticipated to be limited to storm water data.	Ongoing

4.0 STORM WATER OUTFALL MONITORING

As outlined in the MRP (Part VIII.A of the MRP), storm water discharges from the MS4 shall be monitored at outfalls and/or alternative access points upstream of outfalls, such as manholes or in channels representative of the land uses within the Permittee's jurisdiction to support meeting the three objectives of the storm water outfall based monitoring program:

a. Determine the quality of a Permittee's discharge relative to municipal action levels, as described in Attachment G of Permit;
b. Determine whether a Permittee's discharge is in compliance with applicable WQBELs derived from TMDL WLAs; and
c. Determine whether a Permittee's discharge causes or contributes to an exceedance of RWLs.

4.1 Storm Water Outfall Monitoring Sites

Outfall monitoring stations are monitoring stations within the MS4 system of the MdR Watershed. These stations are used to evaluate watershed conditions in accordance with the Toxics TMDL CMP and related special studies. The sites were selected based on an evaluation of the representativeness of the land uses draining to the outfall location, the jurisdictions draining to the outfall location, the safety and accessibility of the site, and the ability to use autosampling equipment at the location. The data collected at the monitored outfalls will be considered representative of all MS4 discharge within the MdR Watershed EWMP area and will be applied to all MdR EWMP Agencies, regardless of whether a site is located within a particular jurisdiction. Assessment of whether an MdR Agency caused or contributed to exceedances of WQBELs and/or RWLs may be based on the evaluation comingled discharges. This approach will provide the representative data needed to meet the specific MRP objectives for storm water outfall monitoring and support management decisions of the MdR EWMP Agencies.

The MdR Watershed includes five outfall stations MdR-3, MdR-4, MdR-5, MdRU-C-1, and MdRU-C-2. The location of these outfalls is summarized in Table 4-1. The tributary drainage area, MS4, jurisdictional boundaries, land uses, and downstream outfall for these Toxics TMDL monitoring stations are presented in Figure 4-1 through Figure 4-4. Note that in 2013, outfall stations MdR-1 and MdR-2 were removed from the Toxics TMDL monitoring program and CMP due to redundancy with downstream outfall station MdR-3 and a decision to focus on an integrated compliance monitoring approach rather than a jurisdiction-specific pollutant reduction compliance monitoring approach.

Table 4-1. MdR Outfall Monitoring Stations

CIMP Station ID[a]	Media Sampled	Monitoring Station Description
MdR-3[b]	Water, Storm-Borne Sediment	Permit Compliance Outfall Station/Toxics TMDL Outfall Station, at the intersection of Washington Blvd. and Thatcher Ave. LFD Project No. 5243
MdR-4[b]	Water, Storm-Borne Sediment	Toxics TMDL Outfall Station at the Oxford Flood Control Basin pump house. LFD Project No. 3872
MdR-5[b]	Water, Storm-Borne Sediment	Toxics TMDL Outfall Station at the Boone-Olive Pump Station control house. LFD Project No. 3874

Table 4-1. MdR Outfall Monitoring Stations

CIMP Station ID[a]	Media Sampled	Monitoring Station Description
MdRU-C-1	Water, Storm-Borne Sediment	Toxics TMDL Outfall Station at the catch basin located north of Bali Way and Admiralty Way
MdRU-C-2	Water, Storm-Borne Sediment	Toxics TMDL Outfall Station at the catch basin located north of Abbot Kinney Blvd. and Woodlawn Ave.

[a]Former Outfall monitoring stations MdR-1 and MdR-2 were removed from the Toxics TMDL CMP with Regional Board approval.
[b]Low flow diversions (LFDs) have been installed and divert all known significant Non-storm Water flows to the sanitary sewer. Only Storm Water monitoring is anticipated to be necessary.

Outfall station, MdR-3, is the representative Permit monitoring station. The station selected for Permit compliance monitoring is the most representative of Watershed impacts to the Harbor. MdR-3 was selected as the MdR outfall Station based on total tributary drainage area, mix of land uses, diversity of jurisdictions, and presence of BMPs (see Appendix B). A map of the tributary drainage area to MdR-3, as well as the land uses and jurisdictional boundaries within the drainage area, is presented in Figure 4-1.

All five outfall Stations MdR-3, MdR-4, MdR-5, MdRU-C-1, and MdRU-C-2 are monitoring stations under the Toxics TMDL compliance monitoring.

4.2 Monitored Parameters and Frequency

Outfalls will be monitored for all required constituents in accordance with Part VIII.B.c. of the MRP. Toxicity sampling will be conducted at the MdR-3 outfall station for Permit compliance monitoring, only if a toxicity identification evaluation (TIE) conducted at the downstream receiving water station (MdRH-MC) during the most recent sampling event was inconclusive. Toxicity testing shall be conducted on a flow-weighted composite sample. If this outfall discharge exhibits aquatic toxicity, then a TIE shall be conducted in accordance with the requirements outlined in Appendix C.

An overview of the constituents for monitoring, including physical, bacterial, chemical, and toxicity analyses of water and stormborne sediment samples from the MdR outfalls, is presented in Table 4-2. Refined parameter lists, completed with analytical methods and detection limits are provided in Appendix D. Sampling methods, sample handling procedures, and details regarding the collection of QA/QC samples are detailed in Appendix C.

In general, a higher concentration of constituents from urban runoff enters the MS4 during the initial stages of flow and during peak flow and/or peak rainfall intensity for small rainfall events, which are typical in southern California (Tiefenthaler et al., 2001). Therefore, a successful storm water monitoring event for sampling within the MS4 will be determined by capturing (at a minimum) the initial rise and peak of runoff from the storm event, and by demonstrating that water levels have decreased in relation to the overall storm hydrograph when monitoring is discontinued. A minimum of 3 days of dry conditions (i.e., 72 hours) is required between qualified storm events.

Flow-weighted storm water composite sampling will be conducted at all outfall station for Permit compliance, Toxics TMDL compliance, and watershed assessments for special studies. The duration of monitoring at the outfalls will be determined by the characteristics of the storm event and will consist of a minimum of 3 hours and a maximum of 24 hours.

For storm-borne sediment collection, the passive collection devices will be deployed the day of the storm event or, if the rain is expected overnight, the devices will be deployed the afternoon before. For the pumped collection systems, the submersible pumps will be placed in the wet well in advance but will not be turned on until the storm discharge begins. The typical cycle for observations during a storm event is approximately once an hour. The observations at the passive sediment sites (MdR-3, MdR-4, MdRU-C1 and MdRU-C2) will primarily focus on checking for debris build up and snags on the devices. The observations at the two pumped samplers (both at MdR-5) will focus on monitoring the filter processing rate to identify pump clogs and/or filter saturation.

Parameters of Table E-2 of the MRP identified as exceeding the lowest applicable water quality objective at MdRH-MC will be monitored during subsequent storm events. Year 1 monitoring at MdR-3 will be focused on Toxics TMDL monitoring requirements.

Table 4-2. Stormwater Outfall Monitoring Stations Sampling Parameters and Frequency

Parameter	Permit, Toxics TMDL	Toxics TMDL			
	MdR-3	MdR-4	MdR-5	MdR-CU-1	MdR-CU-2
WATER QUALITY					
Flow	1x/month*	1x/month*	1x/month*	1x/month*	1x/month*
Field Parameters(a)	1x/month*	-	-	-	-
Pollutants identified in Table E-2 of Permit *(and not otherwise listed below)*#	1x/month*	-	-	-	-
Aquatic Toxicity	(b)	-	-	-	-
Hardness	1x/month*	-	-	-	-
Copper (total/dissolved)	1x/month*	-	-	-	-
Lead (total/dissolved)	1x/month*	-	-	-	-
Zinc (total/dissolved)	1x/month*	-	-	-	-
Total Dissolved Solids (TDS)	1x/month*	1x/month*	1x/month*	1x/month*	1x/month*
Total Suspended Solids (TSS)	1x/month*	1x/month*	1x/month*	1x/month*	1x/month*
Suspended Solids	1x/month*	1x/month*	1x/month*	1x/month*	1x/month*
STORM-BORNE SEDIMENT					
Total Organic Carbon (TOC)	1x/month*				
Copper					
Lead					
Zinc					
Chlordane	Composited over the year				
Total PCBs					
Total Dichlorodiphenyltrichloroethane (DDTs)					
p,p'-DDE					

*Monitoring will be performed for one storm/month with a minimum of three storms and a maximum of seven storms per year.
Table E-2 constituents detected above relevant objectives at the MS4 receiving water monitoring station.
(a) Field parameters are defined as dissolved oxygen (DO), pH, temperature, and specific conductivity.
(b) Toxicity sampling at outfall stations for Permit compliance will be as needed and conducted only if toxicity is observed at the downstream receiving water station and qualifying conditions outlined in the (Appendix C).

Figure 4-1. Outfall Station MdR-3 – Permit and Toxics TMDL Monitoring

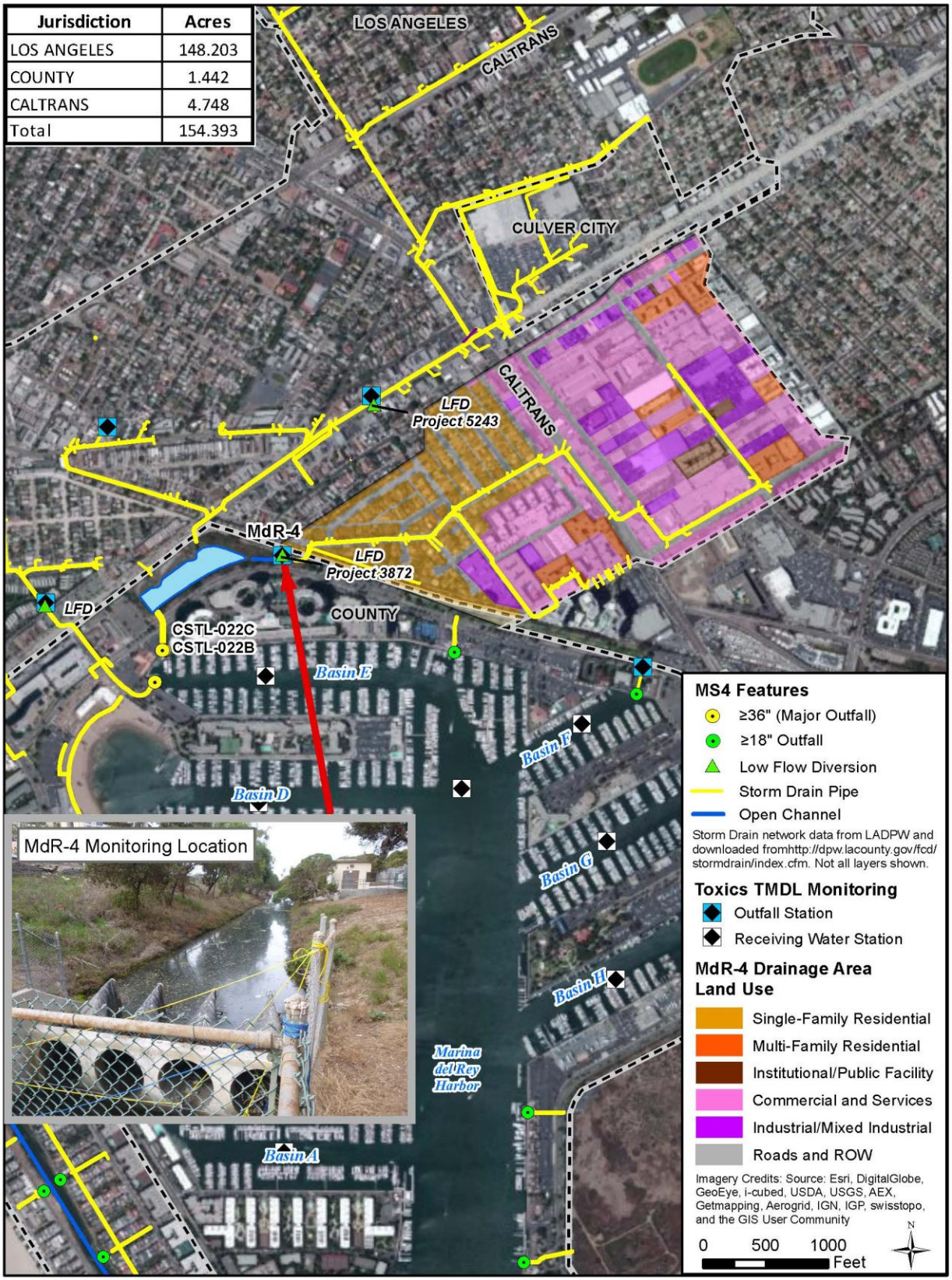

Figure 4-2. Outfall Station MdR-4 – Toxics TMDL Monitoring

Figure 4-3. Outfall Station MdRU-C-1 (Toxics TMDL Monitoring) and Tidally Submerged MS4 Tributary to Major Outfall CSTL-023B

Figure 4-4. Outfall Stations MdR-5 and MdRU-C-2 – Toxics TMDL Monitoring

4.3 Storm Water Outfall Monitoring Summary

Five outfall monitoring locations were selected for monitoring. One station (MdR-3) was selected for both Permit monitoring and Toxics TMDL monitoring, along with four additional stations which will be monitored as part of the Toxics TMDL outfall monitoring. These stations will capture runoff from representative land use areas, represented in Figure 4-1 through Figure 4-4, of the MdR Watershed and will also be used to assess Permit and Toxics TMDL compliance in accordance with applicable storm water MALs and WQBELs.

5.0 NON-STORM WATER OUTFALL PROGRAM

The objectives of the NSW Outfall Program include the following (Part II.E.3 of the MRP):

a. Determine whether a Permittee's discharge is in compliance with applicable NSW WQBELs derived from TMDL WLAs;
b. Determine whether a Permittee's discharge exceeds NSW action levels, as described in Attachment G of the Permit;
c. Determine whether a Permittee's discharge contributes to or causes an exceedance of RWLs; and
d. Assist a Permittee in identifying illicit discharges as described in Part VI.D.10 of the Permit.

The intent of the NSW Outfall Program is to demonstrate that the Permittees are effectively prohibiting NSW discharges that are not exempt or conditionally exempt discharges to receiving waters and to assess whether NSW discharges are causing or contributing to exceedances of RWLs. By detecting, identifying, and eliminating illicit discharges, the NSW Outfall Program will demonstrate Permittees' efforts to effectively prohibit NSW discharges to and from the MS4. Where NSW discharges are deemed "significant", the program will discern whether they are illicit, exempt, or conditionally exempt, and demonstrate whether the discharges may be causing or contributing to exceedances of RWLs.

The NSW Outfall Program is focused on NSW discharges to receiving waters from major outfalls (i.e., discharges occurring during dry weather).

5.1 Non-Storm Water Outfall Screening and Monitoring Program

Non-storm water outfall monitoring is considered to be neither feasible nor necessary in the MS4 of the MdR Watershed. The Watershed is strongly tidally influenced and the receiving waters of MdR Harbor function differently than the linear river systems used to model the Permit monitoring requirements. There are four major outfalls in the MdR Watershed. There are LFDs installed upstream of three major outfalls CSTL-022A, B, and C) that divert non-storm water flows to the sanitary sewer, making a comparison of impact to the Harbor receiving water from the upstream MS4 unnecessary. Major outfall CSTL-0023B is strongly tidally influenced throughout the system and tidal flow is not discernable from non-storm water discharges. Therefore, for the purposes of the MdR Watershed CIMP, the MdR EWMP Agencies will not conduct non-storm water monitoring at the outfalls.

5.2 Identification of Outfalls with Significant Non-Storm Water Discharges

Field reconnaissance conducted in January 2014 confirmed that the MS4 in the MdR Watershed is strongly tidally influenced, limiting opportunities for identification of new monitorable stations representative of all watershed drainage areas (Appendix B). Aside from the three LFDs upstream of three of the four major outfalls in the watershed, the remaining MdR Watershed MS4 infrastructure that discharges to the Harbor is frequently submerged during a period of or the entire tidal cycle. Marine water and other signs of tidal inundation, such as mussels and shells, may be found far up into the watershed. For these reasons, non-storm water monitoring is

not considered applicable for the MdR Watershed. Figure 5-1 draws an approximation of the boundary of tidal influence in the MdR Watershed based on the field reconnaissance summarized in Appendix B.

5.3 Non-Storm Water Outfall Monitoring Summary

Non-storm water outfall monitoring is considered to be neither feasible nor necessary in the MS4 of the MdR Watershed. The watershed is strongly tidally influenced and tidal flow is not discernable from non-storm water discharges. In addition, improvements have been made to the MS4 infrastructure to mitigate and eliminate potential water quality impacts of the MS4 on the Harbor receiving waters. These improvements include the installation of LFDs upstream of the three major outfalls to Basin E, thus eliminating the need for outfall-based non-storm water monitoring in these systems.

Figure 5-1. Extent of Tidal Influence in the MdR Watershed

6.0 TRASH AND PLASTIC PELLET MONITORING

The monitoring and reporting requirements of the Santa Monica Bay Nearshore and Offshore Debris TMDLs (Debris TMDL) may be broken up into two categories: (1) Trash and (2) Plastic Pellets. The following subsections detail how the MdR EWMP Agencies will meet the requirements specific to each category.

6.1 Trash

The Santa Monica Bay Nearshore and Offshore Debris TMDL (Debris TMDL) came into effect on March 20, 2012. The Responsible Agencies identified in the Debris TMDL that also have jurisdiction in the MdR Watershed include the County, LACFCD, City of Los Angeles, City of Culver City, and Caltrans. The Debris TMDL requires Responsible Agencies to comply with the final WQBEL of zero trash discharge into waterbodies within the Santa Monica Bay Watershed Management Area (WMA) and then into Santa Monica Bay or the shoreline of Santa Monica Bay.

The Permit requires Permittees to develop a Trash Monitoring and Reporting Plan (TMRP) to describe the methodologies that will be used to assess and monitor trash from source areas in the Santa Monica Bay (SMB) WMA and shoreline of the Santa Monica Bay. In 2012, the County submitted a TMRP to the Regional Board. The City of Los Angeles will not be developing a TMRP for MdR because the implementation program for the Ballona Creek (BC) Trash TMDL covers the City's area in MdR. The City does not have plastic pellet facilities in MdR and is therefore not subject to the pellet monitoring requirements of the PMRP; subsequently, the City will coordinate plastic pellets spill and response requirements in conjunction with SMB and BC watersheds. The City of Culver City is in compliance with the TMRP for the Ballona Creek Trash TMDL and is considered in compliance with the Debris TMDL's trash component.

Trash monitoring will be conducted to assess the quantities of trash in the Harbor receiving water associated with storm events. Visual observations of trash will be made and photographs will be taken at the MdRH-MC prior to the start of storm event monitoring and again at the end of the storm water monitoring. One photograph will be taken across the Main Channel of MdR Harbor, perpendicular to direction of flow along the channel. The photograph will show as much as possible of both sides of the Main Channel when feasible. The post storm photograph must be taken from the same vantage point. Ideally the two photographs will display relative volumes of trash that were deposited by storm flows, if trash is present.

6.2 Plastic Pellets

Plastic Pellet Monitoring and Reporting Plans (PMRPs) quantifying potential plastic pellet discharges to Santa Monica Bay, along with supplemental Spill Response Plans (SRPs) to address containment of spilled plastic pellets, were submitted to the Regional Board by the City of Culver City (2012), County (2013), and LACFCD (2013).

7.0 NEW DEVELOPMENT/RE-DEVELOPMENT EFFECTIVENESS TRACKING

The MdR EWMP Agencies have developed mechanisms for tracking new development/re-development projects that have been conditioned for post-construction BMPs pursuant to Permit Section VI.D.7. The MdR EWMP Agencies have also developed mechanisms for tracking the effectiveness of these BMPs pursuant to Permit Attachment E.X. A sample tracking mechanism is attached for reference (Appendix E).

In 2002, the Permittees developed and implemented the Standard Urban Stormwater Management Plan (SUSMP), a Development Planning Program that outlines BMP requirements for development and re-development projects. The Permit expanded the requirements of the SUSMP program outlined in the previous version of the NPDES permit. The goal of the revised program is to reduce water quality impacts associated with urban development by minimizing impervious surfaces and controlling runoff from impervious surfaces (i.e., smart growth). New Development and Re-Development Projects, defined in Table 7-1, are required to retain on-site the volume of water produced by the greater of the following sources:

- Stormwater Quality Design Volume (SQDV) (i.e., 0.75-inch, 24-hour rain event).
- 85^{th} percentile 24-hour rain event (in accordance with the County's 85^{th} percentile Precipitation Isohyetal Map).

If the analysis determines that on-site containment of the full design volume is technically infeasible, alternative compliance measures such as groundwater replenishment and off-site management should be considered. The technical infeasibility threshold must be demonstrated through an analysis of the maximum application of green roofs and rainwater harvest and use, and the analysis must be endorsed by a registered professional engineer, geologist, architect, and/or landscape architect.

Table 7-1. New Development and Re-development Projects Subject to the Permit BMP Tracking Program Requirements

	Project Area	New Development	Re-Development
Planning and Land Development Program	≥10,000 sq ft and ≥1 acre disturbed area	All Projects	--
	≥10,000 sq ft	Industrial Parks Commercial Malls Streets/Roads	Existing Single-Family Homes in hillside areas[(a)]
	≥5,000 sq ft	Retail Gas Outlets Restaurants Parking Lots* Automotive Facilities	Alter ≥50% impervious surface at site not subject to post-construction BMPs[(a)]
	≥2,500 sq ft	All projects located in, directly adjacent to, or discharging directly to the Ballona Creek Coastal Resource Area (CRA) [(b)]	--
	Single Family Homes in hillside areas	All Projects	New or replace ≥10,000 sq ft impervious surface area.

*Includes parking lots with ≥25 parking spaces.

(a) For projects with <50% impervious surfaces re-developed, only the altered area must be mitigated.

(b) The Permit applies to all projects located in, directly adjacent to, or discharging directly to a Significant Ecological Area (SEA). The County has given the term Coastal Resource Area (CRA) to SEAs located in the California Coastal Zone. The Ballona Creek CRA includes the salt marsh, Ballona Creek Channel, Ballona Lagoon, and Del Rey Lagoon (LADPW, 2014). This criterion would apply to projects directly adjacent to or discharging directly to, the Ballona Creek Wetlands (Area A), Fiji Ditch, and the Ballona Lagoon (i.e., projects along the Venice Canals).

7.1.1 Existing New Development/Re-Development Programs

In accordance with the Permit, the Permittees that have such land use authority over new developments or re-development projects or development construction sites are responsible for implementing a storm water management program to inspect and control pollutants from new development and re-development projects within their jurisdictional boundaries.

The LACFCD has no planning, zoning, development permitting, or other land use authority over new developments or re-development projects located in the incorporated or unincorporated areas of the MdR Watershed.

7.1.1.1 Existing New Development/Re-Development Program – County

In 2008, the County adopted Ordinance 22.52.2210 (Ord. No. 2008-0063 §3, 2008), which incorporates the Low Impact Development (LID) requirements outlined in the Permit into the County Code. This Ordinance is the Local Ordinance Equivalence of the Permit and applies to all of the development and re-development projects identified in Table 7-1. Prior to issuance of building permits and/or commencement of any construction activity, the LID BMPs in the project is reviewed by County staff using the *Standard Urban Stormwater Mitigation Plan Review Sheet* (LADPW, 2008a) and the *County of Los Angeles LID Standards Manual* (LADPW, 2009) describes LID techniques. The County provided an update of the *LID Standards Manual* (LADPW, 2014) to comply with the LID requirements of the 2012 MS4 Permit.

7.1.1.2 Existing New Development/Re-Development Program – City of Los Angeles

In May 2012, the City of Los Angeles adopted Ordinance 181899 to amend the Los Angeles Municipal Code (LAMC) and expand the applicability of existing SUSMP requirements to include rainwater LID strategies on all projects requiring a building permit. The Ordinance is enforced through a LID Plan Check process, wherein City staff review project drawings and the associated storm water mitigation plan for LID measures prior to issuance of a building permit. The *Development Best Management Practices Handbook* (City of Los Angeles, 2011) describes LID techniques and provides examples and descriptions of how LID systems function.

7.1.1.3 Existing New Development/Re-Development Program – City of Culver City

In 2002, the City of Culver City adopted Ordinance 2002-014 to amend Chapter 5.05 of the Municipal Code to include LID mitigation as part of the SUSMP. The Ordinance is enforced through a LID Plan Check process, wherein City staff review project drawings and the associated storm water mitigation plan for LID measures prior to issuance of all applicable permits. Potential enforcement actions for identified seasonal and/or recurrent violations of SUSMP provisions include cease and desist orders, notice to clean orders, permit revocation (if applicable), and other potential civil and/or criminal remedies deemed appropriate. As currently written, the existing Municipal Code exempts single-family structures from redevelopment requirements. This ordinance is scheduled to be updated during the winter of 2014 in order to achieve a Local Ordinance Equivalence to the Permit.

7.1.2 Data Tracking, Inspection, and Enforcement Requirements for Post-Construction BMPs

Section VI.D.7.d.iv of the Permit requires each Permittee to implement an inspection and enforcement program for new development and redevelopment post-construction BMPs and to track data in an electronic database (preferably with a GIS-interface to the MS4 maps). Figure 7-1 presents an iterative approach to collection, tracking, and reporting and data associated with the New Development and Re-Development Program. Existing SUSMP programs may be standardized between MdR EWMP Agencies and shared using a common electronic tracking platform.

The overall data tracking process may be a linear or an iterative process, as needed, based on the findings of each year of implementation. Potential changes to the program and data collection systems will be considered during the annual reporting process, when all available data from the MdR Watershed is compiled by jurisdiction and reviewed in the context of the Permit and TMDLs. The Permittees will conduct a formal review of the overall data tracking program and make necessary programmatic revisions during Year 3 of the program.

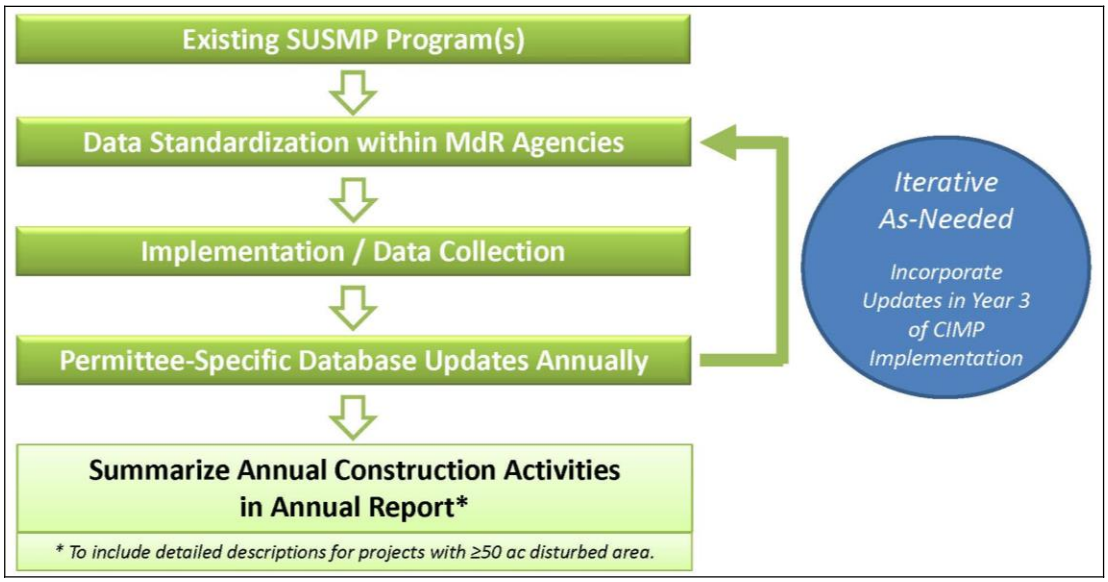

Figure 7-1. Iterative Approach – New Development/Re-Development Program Data Tracking

Existing data tracking protocols and databases, which have been summarized for each Permittee in Appendix E, are based on the SUSMP programs described above. The Permit allows each Permittee to establish Local Ordinance Equivalents to the Permit; therefore, slight variations currently exist for inspection thresholds and data tracking. Therefore, during Year 1 of the program, data review and standardization are necessary to ensure that information collected across the MdR Watershed is consistent and that collected data are tracked and annually shared using consistent methods for reporting purposes.

The Permit minimum data tracking requirements, identified in Table 7-2, establish the basis for data standardization. Key additional data fields, which may allow for more consistent, streamlined data reporting, are also identified in Table 7-2. The additional data fields reflect the following reporting requirements of the Permit:

- A summary of New Development/Re-development Projects are constructed during the reporting year, for each MdR Agency's jurisdictional area.
- A detailed description of control measures applied to projects disturbing more than 50 acres.

An essential factor in overall data standardization between Permittees is agreement on the type of fields to be exported from individual Permittee databases to the master database. This method of standardization may be enhanced through collaborative development of the design and implementation of common inspection forms. Section 7(d)(iv)(1)(c) of the Permit requires Permittees to use a Post-Construction BMP Maintenance Checklist to inspect all BMPs at least once every 2 years after new and re-development projects are completed in order to assess condition, functionality, and maintenance of the BMPs. Checklists, inspection forms, and training materials may be used to establish consistency between Permittees for naming conventions, reporting units, inspection evaluations (e.g., satisfactory/unsatisfactory), corrective actions, and other factors. Example forms are provided in Appendix E.

Table 7-2. Minimum Database Tracking Requirements

Category	2012 Permit Requirements for New Development/Re-Development Database	Minimum Method of Data Tracking By Section of the Permit
Development Project	Jurisdiction	--
	Project Name	MRP - X.A.1
	Municipal Project Identification No.	VI.D.7.d.iv.1.a.i
	State Waste Discharger Identification (WDID) No.	VI.D.7.d.iv.1.a.ii
	Developer Name / Contact Information	MRP - X.A.1
	Construction Start/Completion Dates	--
	Project Location and Site Map *(preferably linked to GIS storm drain map(s), especially for projects with off-site BMPs)*	--
	Location relative to a significant ecological area (SEA) feature	--
BMP Design	Project Area (acres)	VI.D.7.d.iv.1.a.iii
	Total Disturbed Area *(additional reporting requirements for projects ≥50 acres)*	--
	Type of Receiving Water (1)	--
	85th Percentile Storm Event 95th Percentile Storm Event (if "natural" Receiving Water) Other Hydromodification Design Criteria Project Design Storm (inches) Design Storm Volume (gallons/ MGD)	MRP - X.A.4, MRP - X.A.5, MRP - X.A.6, MRP - X.A.7 & 11 MRP - X.A.8 & 10
	Portion of Design Storm to be Retained on-site (%) Portion of Design Storm to be Retained or Treated off-site (%)	MRP - X.A.9 MRP - X.A.12 & 13
BMPs	BMP Type (Infiltration, Biofiltration, Groundwater Replenishment) and Description(2)	VI.D.7.d.iv.1.a.iv
	BMP Location (coordinates)	VI.D.7.d.iv.1.a.v
	BMP Location (on-site / off-site)	--
	Date of Maintenance Agreement	VI.D.7.d.iv.1.a.vii
	BMP Inspection Date and Summary of Findings(3)	VI.D.7.d.iv.1.a.ix
	BMP Corrective Action(s) based on Inspections	VI.D.7.d.iv.1.a.x
	BMP Replacement and/or Repair Date	VI.D.7.d.iv.1.a.xii
	BMP Maintenance Records	VI.D.7.d.iv.1.a.viii
	Date of BMP Acceptance	VI.D.7.d.iv.1.a.vi
	Date Certificate of Occupancy Issued (New Development)	VI.D.7.d.iv.1.a.xi MRP - X.A.3
	BMP Map *(preferably linked to GIS storm drain map(s), especially for off-site BMPs)*	MRP - X.A.2 MRP - X.A.14
	Documentation of Issuance of BMP Requirements to the Developer	MRP - X.A.15

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

(2) In order to identify and inspect for project-specific design specifications and criteria, it is recommended to integrate this description with electronic (PDF) files of Project Design Drawings and Calculations, which may be on record in a separate database, and with electronic copies of all maintenance records.

(3) Post-Construction BMP descriptions should integrate with the information in the Inspection check-lists. Basic information may be input to the database from design drawings and then field verified during the initial post-construction inspection.

8.0 REGIONAL STUDIES

8.1 Bioassessment Program

The MRP identifies one regional study: the SMC Regional Watershed Monitoring Program. The SMC is a collaborative effort between SCCWRP, State Water Board's Surface Water Ambient Monitoring Program (SWAMP), three Southern California Regional Water Quality Control Boards, and several county stormwater agencies. SCCWRP acts as a facilitator to organize the monitoring program, conducts the data analysis, and prepares monitoring results reports. The goal of the SMC is to develop a monitoring program on a regional level for Southern California's coastal streams and rivers.

Prior to the initiation of the SMC Regional Watershed Monitoring Program, in-stream monitoring in southern California was conducted by over a dozen different organizations, each of which had disparate monitoring programs that varied in design, frequency, and the indicators selected for measurement. Even where the monitoring designs were similar, the field techniques, laboratory methods, and quality assurance requirements were often not comparable, making region-wide assessments impossible. In addition, the lack of an integrated information management system precluded data sharing among programs. To address these problems, SCCWRP helped the SMC design and implement a coordinated and regional watershed monitoring program. The SMC works with local programs in the region to facilitate greater data collection and provide a regional context to address site- and watershed-specific questions.

The LACFCD will continue to participate in the Bioassessment Program being managed by the SMC. The LACFCD will continue to coordinate and assist in implementing the bioassessment monitoring requirement of the MS4 Permit on behalf of all the Permittees in Los Angeles County during the current permit cycle. Initiated in 2008, the SMC's Bioassessment Program is designed to run over a five-year cycle. Monitoring under the first cycle concluded in 2013, with reporting of findings and additional special studies planned to occur in 2014. The SMC Joint Executive Committee is currently working on designing the Bioassessment Program for the next five-year cycle, which is scheduled to run from 2015 to 2019.

8.2 Bight 2013

The Bight program is led and organized by SCCWRP and is considered to be independent of this CIMP. Data from the study, however, will be used to help evaluate long-term assessment of conditions in the MdR Harbor. Historically, the MdR Harbor was included in Bight 2003, Bight 2008 and Bight 2013. The Bight 2013 survey is organized into five technical components: (1) Contaminant Impact Assessment, (2) Shoreline microbiology, (3) Water Quality, (4) Marine Protected Areas, and (5) Trash and Debris. The MdR Harbor has been included in the 2013 Contaminant Impact Assessment, which focuses on sediment contaminants and associated impacts on benthic infauna and demersal fish. Currently, the MdR EWMP Agencies are planning to voluntarily participate in Bight 2018, which will include the SQO analysis required by the Toxics TMDL.

9.0 SPECIAL STUDIES

9.1 Existing Special Studies

An MRP requirement is that each Permittee conduct the special studies required in an effective TMDL or an approved TMDL CMP. As such, in addition to ongoing monitoring efforts, the MdR EWMP Agencies have completed special studies outlined in the existing TMDL CMPs in accordance with the requirements of the Bacteria TMDL and Toxics TMDL to better understand conditions in the MdR Watershed. For each of the special studies, where applicable, Table 2-1 provides the location and description of monitoring station used for the study, media sampled, and the type of data collected based on monitoring history.

Table 9-1. Special Studies Completed To Date

Report	Year	TMDL CMP Monitoring Station IDs	Parameters	Outfalls/MS4 (Storm Water)	Harbor Water	Sediment	Sediment Cores
Storm Borne Sediment Collection Pilot Project (Brown and Caldwell, 2013)	2011-2014	MdR-4, MdR-5, MdRU-C-1	Organics	x			
			Metals	x			
			Conventional*	x			
Special Study - Low-Detection Level(Brown and Caldwell, 2011b)**	2011	MdRH-B-1, MdRH-B-2, MdRH-B-3, MdRH-B-4, MdR-3, MdR-4, MdR-5, MdRU-C-1, MdRU-C-2	Organics	x	x	x	
Special Study - Partitioning Coefficient (Brown and Caldwell, 2011a)	2011	MdRH-B-1, MdRH-B-2, MdRH-B-3, MdRH-B-4, MdRH-F-1, MdRH-F-2, MdRH-F-3, MdRH-F-4, MdRH-F-5, MdR-3, MdR-4, MdR-5, MdRU-C-1, MdRU-C-2	Metals	x	x	x	
			Conventional*	x	x	x	
MdRH Sediment Characterization Study (Weston, 2008b)	2008	Multiple locations in the Harbor Back Basins, Front Basins, and Main Channle	Organics			x	x
			Metals			x	x
			Conventional*		x	x	
			Benthic Community			x	
			Toxicity			x	
Nonpoint Source Bacteria Study (Weston, 2008a)	2006	MdR Watershed	Bacteria	x	x	x	

*Based on Table E-2 of the MRP, conventional pollutants are Oil and Grease, total Phenols, cyanide, PH, Temperature.

**The study included stormwater, Harbor sediment, and Harbor receiving water characterization.

9.2 Proposed Special Studies

Special studies are a tool to be implemented on an as-needed basis for the adaptive management process throughout the EWMP implementation. The toxics TMDL requires a Stressor Identification Study to be performed as a special study.

- **Stressor Identification Study:** Biological testing is a useful tool for determining the presence of toxicity from sediment contamination; however, it does not indicate the cause of toxicity. If sediments fail to meet the SQOs during the Sediment Triad Assessment, the Toxics TMDL requires a stressor identification study to be conducted in accordance with Section VII.F of the *Water Quality Control Plan for Enclosed Bays and Estuaries* (SWRCB and Cal EPA, 2009) and for the final report to be submitted to the Regional Board by December 15, 2016. The stressor identification investigations use a variety of tools to determine whether the reason for the narrative objective not being met is due to generic stressors other than toxic pollutants, such as physical alterations or other pollutant-related stressors. According to the SQO guidelines, "If there is compelling evidence that the SQO exceedances contributing to a receiving water limit exceedance are not due to toxic pollutants, then the assessment area shall be designated as having achieved the receiving water limit." Following a review of the investigation data, conclusions will be made based on the data available and/or recommendations will be developed for future studies to further characterize or identify the condition causing the narrative impairment. To determine whether a site is impacted from toxic pollutants, one or more of the following tools may be applied:
  - Evaluate the spatial extent of the area of concern in relation to anthropogenic sources.
  - Evaluate the body burden of the pollutants accumulated in the animals used for exposure testing.
  - Evaluate the chemical constituent results to mechanistic benchmarks.
  - Compare chemistry and biology data to determine whether correlations exist.
  - Alternative biological assessment such as bioaccumulation experiments, pore water toxicity, or pore water chemistry analyses may be conducted.
  - Phase I TIEs conducted in accordance with USEPA 2007 may also be conducted and are often useful for determining the causative agent or class of compounds causing toxicity.

10.0 NON-DIRECT MEASUREMENTS

Environmental data (water, sediment, and tissue data) collected through other monitoring programs in the MdR Watershed will be incorporated to the extent practicable. The extent practicable will be dictated by the cost of gathering and compiling information from outside programs. It is not the intent or purpose of this CIMP to compile and analyze all available data. Environmental data reported by other entities will be evaluated for suitability for inclusion in this CIMP database and will be accepted if it meets the following requirements:

- Conducted and documented in accordance with the sampling procedures outlined in this CIMP.
- Sampling collection is performed and documented by a competent party in accordance with applicable guidance and this CIMP.
- Sample analysis is conducted using approved analytical method by a certified analytical laboratory.

Non-direct measurements related to tidal measurements (e.g., measurements not physically recoded by field staff during field monitoring activities) will be obtained from the National Oceanic and Atmospheric Administration (NOAA). Additional rainfall information will be obtained from the County, as needed.

11.0 ADAPTIVE MANAGEMENT

11.1 Integrated Monitoring and Assessment Program

One of the main objectives of the MdR Watershed CIMP is to leverage resources and create a regionally efficient and effective monitoring program. Adaptive management is a structured, iterative process designed to use resources both effectively and efficiently, resulting in a robust watershed program adapted to local conditions.

The integrated review of existing monitoring programs, TMDL implementation plans, the Regional Board-approved Bacteria TMDL CMP, Toxics TMDL CMPs, and the monitoring data that was used in the development of the 2014 MdR Watershed CIMP represent the "Initial Assessment" of existing conditions in the MdR Watershed. Lessons learned during Planning and Implementation of Year 1 of the MdR Watershed CIMP (i.e., monitoring station appropriateness and safety considerations for wet weather receiving water monitoring) will be tracked and integrated into the overall program assessment during the quality assurance/quality control review of monitoring data and annual reporting. Each annual report will present a summary of TMDL and Permit compliance and will provide an opportunity to identify, as appropriate, modifications to the MdR Watershed CIMP protocols based on lessons learned and monitoring data. A formal programmatic review will occur during Years 1 and 2 of the program and will be integrated into the Year 3 implementation. A more comprehensive review and update of the MdR Watershed CIMP monitoring protocols may also become necessary, especially when preparing for the Triad Sampling for sediment quality objective (SQO) analysis (required once during the five-year Permit Order period per the SQO guidance).

11.2 CIMP Revision Process

Every two years, hence during Year 3 of the implementation of the Permit monitoring program, available monitoring information will be reviewed in the context of the receiving water monitoring program and outfall-based monitoring objectives.

At any stage of the CIMP implementation, where changes are needed, changes will be made to this CIMP, incorporated into monitoring practice, and described in the next Monitoring Annual Report. Identified changes will be discussed in the annual report and implemented starting no later than the first CIMP monitoring event of the next monitoring year. Such changes include, but are not limited to, adding/removing monitored constituents, modifying laboratories/analytical methods, or amending sampling protocol. Should major changes to the approach be required (e.g., moving or removing a stormwater outfall or receiving water monitoring station location), the modifications will be proposed in the annual report and in a separate letter to the Regional Board requesting Executive Officer approval of the change.

12.0 DATA MANAGEMENT AND REPORTING

Appendix F details the procedures for managing and reporting monitoring data collected under this CIMP. Data management procedures include data review, verification, and validation.

Annual monitoring reports for Permit compliance are required to be submitted by December 15 of every year. These annual monitoring reports will cover the monitoring period of July 1 through June 30. These reports shall clearly identify all data collected during the monitoring year, as well as strategies, control measures, and assessments implemented by each Permittee within its jurisdiction. Annual Reports will also present watershed scale effort implemented by multiple Permittees. Discussion shall be provided in accordance with the requirements laid out in MRP Section XVIII. The annual monitoring reports will include the following:

- Watershed Summary Information
    - Watershed Management Area / Subwatershed (HUC-12) Description,
    - Description of MdR EWMP Agency Drainages Area within the MdR Watershed
- Annual Assessment and Reporting
    - Storm Water Control Measures
    - Effectiveness Assessment of Storm Water Control Measures
    - Non-stormwater Water Control Measures
    - Effectiveness Assessment of Non-Storm Water Control Measures
    - Integrated Monitoring Compliance Report
    - Adaptive Management Strategies
    - Supporting Data and Information.

Additionally, semi-annual annual data reports will be submitted with the annual monitoring report, and six months prior to the annual report (June of each year). The June 15 data submittal will cover the monitoring period of July 1 through December 31, and the December 15 data submittal will cover January 1 through June 30. These semi-annual analytical data reports detail exceedances applicable to WQBELs, RWLs, action levels, or aquatic toxicity thresholds, with corresponding sample dates and monitoring locations.

Monthly monitoring reports are required for Bacteria TMDL compliance and annual monitoring reports are also required for Toxics TMDL compliance. These data reports will be submitted as an attachment to Permit annual reports.

13.0 SCHEDULE FOR CIMP IMPLEMENTATION

The MdR Watershed is impacted by three TMDLs, including the Bacteria TMDL, Toxics TMDL, and Debris TMDL. The compliance schedules for these TMDLs are summarized in Table 13-1. Existing monitoring will continue to be conducted. Implementation of new monitoring programs and modifications to existing monitoring programs will be implemented beginning July 2015 or 90 days after the approval of the CIMP, whichever is later.

Table 13-1. TMDL Compliance Schedules

TMDL	Matrix	Parameters	Goal	Date
Bacteria TMDL	Harbor Water	Total coliform, Fecal coliform, *Enterococcus*	Compliance with allowable exceedance days for summer and winter Dry Weather	3/18/2007
	Harbor Water		Compliance with allowable exceedance days for Wet Weather and geometric mean targets	7/15/2021
Toxics TMDL	Harbor Water	Dissolved Copper (from boats)	Meet LAs	3/22/2024
	Harbor sediments (Back Basins)	Copper, lead, zinc, chlordane, PCBs, DDTs, p p'-DDE	Interim Sediment Allocations	3/22/2016
			Final Compliance	3/22/2018
	Harbor sediments (Front Basins)		Interim Sediment Allocations	3/22/2019
			Final Compliance	3/22/2021
Debris TMDL	Trash		20% reduction	3/20/2016
			40% reduction	3/20/2017
			60% reduction	3/20/2018
			80% reduction	3/20/2019
			100% reduction	3/20/2020

The schedule for MdR CIMP reporting is summarized in Table 13-2. For Bacteria TMDL compliance monitoring, monthly data reports will continue to be submitted to the Regional Board by the City of Los Angeles. For the Toxics TMDL and the Permit, the MdR EWMP Agencies will submit an Annual Monitoring Report to the Regional Board no later than December 15, 2014.

Table 13-2. MdR Watershed Reporting Schedule

Program	Report Type	Due Date(s)
Bacteria TMDL	Data Summary Report	Monthly (last day of month)
Toxics TMDL	Annual Monitoring Report	December 15, 2014, Annually thereafter.
Permit	Annual Monitoring Report	December 15, 2014, Annually thereafter.
	Municipal Action Level Action Plan *(If running storm event average concentrations are only 20% greater than MALs – only applies to MdR-3 for Permit compliance monitored storms)*	December 15, 2014, Annually thereafter

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