HAND DELIVERED
mp m to

CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

1149 SOUTH BROADWAY, 10TH FLOOR
LOS ANGELES, CA 90015
TEL: (213) 485-0587
FAX: (213) 485-3939
WWW.LACITYSAN.ORG

June 24, 2014

Mr. Samuel Unger, Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West Fourth Street, Suite 200
Los Angeles, CA 90013

Dear Mr. Unger:

SUBMITTAL OF COORDINATED INTEGRATED MONITORING PROGRAM FOR THE DOMINGUEZ CHANNEL WATERSHED AREA GROUP

Please find attached the Coordinated Integrated Monitoring Program (CIMP) for the Dominguez Channel Watershed Area Group. The City of Los Angeles, as lead agency for the Dominguez Channel Watershed Area Group, has prepared this CIMP on behalf of itself - the City of Los Angeles, the City of El Segundo, the City of Hawthorne, the City of Inglewood, the City of Lomita, the Los Angeles County, the Los Angeles County Flood Control District (LACFCD). All agencies have reviewed the CIMP for submission to the Regional Water Board, and we appreciate the collaboration by all partner agencies in the preparation of the document.

The CIMP for the Dominguez Channel Watershed Area Group satisfies the requirements provided by Attachment E, the Monitoring and Reporting Program (MRP), of the new MS4 Permit (Order No. R4-2012-0175). The CIMP provides a discussion of the monitoring locations, constituents, and monitoring frequencies, details of analytical and monitoring procedures, and an approach for implementation of the CIMP. Concurrently with this CIMP, we are submitting a GIS database to satisfy the requirements of Part VII.A of the MRP.

We appreciate the discussions with and the input received from Regional Water Board staff during the development of this CIMP. The Dominguez Channel Watershed Area Group looks forward to the review of the CIMP by your staff and finalization of this document.

Should you have any questions about this submittal, please contact Shahram Kharaghani at Shahram.Kharaghani@lacity.org or phone (213) 485-0587, or your staff may contact Donna Chen at Donna.Chen@lacity.org or phone (213) 485-3928.

Sincerely,

Robert Vega for

SHAHRAM KHARAGHANI, Ph.D., P.E., BCEE
Program Manager

ECZ:SK:AM
WPDCR9137

Attachment

cc: Renee Purdy, California Regional Water Quality Board, Los Angeles Region
Ivar Ridgeway, California Regional Water Quality Board, Los Angeles Region
Traci Minamide, City of Los Angeles, Bureau of Sanitation
Adel Hagekhalil, City of Los Angeles, Bureau of Sanitation
Donna Toy-Chen, City of Los Angeles, Bureau of Sanitation
Alfredo Magallanes, City of Los Angeles, Bureau of Sanitation
Gary Hildebrand, County of Los Angeles, Department of Public Works
LiFan Xu, City of El Segundo
Doug Krauss, City of Hawthorne
Lauren Amimoto, City of Inglewood
Tom Shahbazi, City of Lomita

COORDINATED INTEGRATED MONITORING PROGRAM FOR THE DOMINGUEZ CHANNEL WATERSHED MANAGEMENT AREA GROUP

June 2014

DRAFT

Submitted to:
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013-2343

Prepared by:
Dominguez Channel Watershed Management Area Group
City of Los Angeles
County of Los Angeles
Los Angeles County Flood Control District
City of Hawthorne
City of Inglewood
City of El Segundo
City of Lomita

PAGE INTENTIONALLY LEFT BLANK

Table of Contents

LIST OF FIGURES ..... **III**

LIST OF TABLES ..... **IV**

ATTACHMENTS ..... **IV**

ACRONYMS ..... **V**

ACRONYMS (CONTINUED) ..... **VI**

UNITS ..... **VI**

1 INTRODUCTION **1**

1.1 Watershed Management Plan Area 2
1.2 Water Quality Priorities 5
1.3 CIMP Overview 6
1.3.1 Receiving Water Monitoring *7*
1.3.2 Storm Water Outfall Monitoring *7*
1.3.3 Non-Storm Water Outfall Program *8*
1.3.4 New Development and Re-development Effectiveness Tracking *8*
1.3.5 Regional Studies *9*
1.3.6 Special Studies *9*

2 RECEIVING WATER MONITORING PROGRAM **10**

2.1 Receiving Water Monitoring Objectives 10
2.2 Receiving Water Monitoring Sites 10
2.2.1 New DCWMA ME Station, DOM-RW-DC01 ..... *13*
2.2.2 DCWMA TMDL Sites *15*
2.3 Monitored Parameters, Frequency, and Duration of Monitoring 15
2.4 Monitoring Coordination 15
2.5 Receiving Water Monitoring Summary 15

3 MS4 INFRASTRUCTURE DATABASE **21**

3.1 Storm Drains, Channels and Outfalls Map and/or Database Requirements 21
3.2 DC Watershed Management Area Group's Map and Database Information 22
3.3 Requirements Table and Schedule for Implementation 22

4 STORM WATER OUTFALL MONITORING PROGRAM **28**

4.1 Storm Water Outfall Monitoring Sites 28
4.1.1 NPDES Storm Water Outfall Sites *28*
4.1.2 TMDL Outfall Sites *29*
4.2 Monitored Parameters, Frequency, and Duration 29
4.3 Storm Water Outfall Monitoring Summary 30

5 NON-STORM WATER OUTFALL PROGRAM **34**

5.1 Objectives of the NSW Program 34
5.2 Approach Overview 34
5.3 NSW Outfall Screening and Monitoring Program 37
5.4 Identification of Outfalls with Significant NSW Discharge 37
5.5 Inventory of MS4 Outfalls with NSW Discharge 37
5.6 Prioritized Source Identification 38
5.7 Identify Sources of Significant NSW Discharge 39

5.8 Monitor NSW Discharge Exceeding Criteria 39
5.9 Non-Storm Water Outfall Monitoring Program Summary 40

6 NEW DEVELOPMENT/RE-DEVELOPMENT EFFECTIVENESS TRACKING 42

6.1 Program Objectives 42
6.2 Existing New Development/Re-Development Tracking Procedures 42
6.3 Special Considerations for Data Management and Reporting 42
6.3.1 Data Management 42
6.3.2 Additional Data 42
6.3.3 Reporting 43
6.4 Summary of New Development/Re-Development Effectiveness Tracking 44

7 REGIONAL STUDIES 45

7.1 Regional Study Participation 45
7.2 Other Potentially Relevant Regional Studies 45
7.2.1 Contaminated Sediment Management Plan 45
7.2.2 Southern California Bight (SCB) 46

8 SPECIAL AND PRELIMINARY STUDIES 47

8.1 Special Studies Requirements 47
8.2 DCWMA Group Preliminary Studies 47
8.2.1 DCE Fish Species Identification 47
8.2.2 Storm-borne Sediment Samples 47

9 NON-DIRECT MEASUREMENTS 49

9.1 Non-Direct Measurements for the DCWMA Group CIMP 49

10 ADAPTIVE MANAGEMENT 50

10.1 Integrated Monitoring and Assessment Program 50
10.1.1 Outfall Based Monitoring, Storm Drains, Channels, and Outfall Map(s) and/or Database 50
10.1.2 Storm Water Outfall Monitoring Program 50
10.1.3 Non Storm Water (NSW) Outfall Monitoring 51
10.2 CIMP Revision Process 51

11 DATA MANAGEMENT AND REPORTING 53

12 SCHEDULE FOR DCWMA CIMP IMPLEMENTATION 54

12.1 CIMP Implementation Requirements 54
12.2 Schedule Constraints 54
12.3 Monitoring Sites with Autosamplers 54
12.4 Receiving Water Monitoring Phased Schedule 54
12.5 Storm Water Outfall Monitoring Phase Schedule 55
12.6 Non-Storm Water Monitoring Program Schedule Requirements 56
12.7 NSW Outfall Monitoring Program 57

13 REFERENCES 59

List of Figures

Figure ES-1. Overview of Receiving Water Monitoring Sites ES-1
Figure ES-2. Storm Water Outfall Monitoring Locations Overview ES-7
Figure ES-3. DCWMA Group CIMP Implementation Schedule ES-13
Figure 1-1. DCWMA Group Boundary 3
Figure 1-2. Land Use in the Dominguez Channel Watershed 4
Figure 2-1. Map of Receiving Water Monitoring Program 12
Figure 3-1. Dominguez Channel Watershed Management Area with Land Use and HUC 12 drainage areas 23
Figure 3-2. Dominguez Channel Watershed Management Area with DCWMA Group and Jurisdictional Agencies 24
Figure 4-1. DCWMA Group Storm Water Outfall Monitoring Sites 31
Figure 5-1. NSW Monitoring Program Process Chart 36
Figure 12-1. Implementation Schedule for Major CIMP Elements 58

List of Tables

Table ES-1: List of Participating Permittees under the DCWMA Group ES-1
Table ES-2: Receiving Water Monitoring Program Locations ES-2
Table ES-3: Map and Database Status and Schedule ES-4
Table ES-4: Map and Database Status and Schedule ES-5
Table ES-5: Storm Water Outfall Program Locations ES-6
Table ES-6: NSW Outfall Program Summary Table ES-8
Table ES-7: Receiving Water Monitoring Locations with Sampling Stations ES-10
Table ES-8: Storm Water Outfall Sampling Station Schedule ES-11
Table ES-9: NSW Outfall Program Schedule Overview ES-12
Table 1-1: List of Participating Permittees under the DCWMA Group 2
Table 1-2: DCWMA Group Land Use 5
Table 1-3: Categorized Water Body-Pollutant Combinations 5
Table 2-1: Receiving Water Monitoring Program Locations 11
Table 2-2: Summary of NPDES Receiving Water Monitoring Sites 13
Table 2-3: TMDLs Addressed by Each Site 14
Table 2-4: Constituents and Parameters Measured[1] 17
Table 3-1: Map and Database Status and Schedule 25
Table 4-1: Summary of Storm Water Outfall Monitoring Program Objectives 30
Table 4-2: List of Constituents for NPDES and TMDL Storm Water Outfall Monitoring 32
Table 5-1: NSW Outfall Program Summary Table 35
Table 5-3: List of Constituents for Non-Storm Water Outfall Monitoring 40
Table 6-1: Development Review Process and Data Collection 43
Table 6-2: Required Data to Track for New Development and Re-Development Projects Per Attachment E.X.A 44
Table 6-3: Required Data to Track for New Development and Re-Development Projects Per Part VI.D.7.d.iv 44
Table 12-1: Receiving Water Monitoring Locations with Sampling Stations 55
Table 12-2: Storm Water Outfall Sampling Station Schedule 56

Attachments

Attachment A: Watershed Management Plan Area Background
Attachment B: Monitoring Location Fact Sheets and Justification
Attachment C: Analytical and Monitoring Procedures
Attachment D: Reporting
Attachment E: LACFCD Background Information

Acronyms

BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CIMP	Coordinated Integrated Monitoring Program
CMP	Coordinated Monitoring Program
CSMP	Contaminated Sediment Management Plan
CTR	California Toxics Rule
DC	Dominguez Channel
DCE	Dominguez Channel Estuary
DCWMA	Dominguez Channel Watershed Management Area
DCWMA Group	Dominguez Channel Watershed Management Area Group
EIA	Effective Impervious Area
EWMP	Enhanced Watershed Management Program
GIS	Geographic Information System
HRU	Hydrologic Response Units
HUC	Hydrologic Unit Code
IC/ID	Illicit Connection/Illicit Discharge
LWQMP	Lake Water Quality Management Plan
LACFCD	Los Angeles County Flood Control District
LARWQCB	Los Angeles Regional Water Quality Control Board
LID	Low Impact Development
LWQMP	Lake Water Quality Management Plan
MCM	Minimum Control Measure
ME	Mass Emission
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm and Sewer System
NPDES	National Pollutant Discharge Elimination System
NSW	Non-storm Water
NWS	National Weather Service
QA/QC	Quality Assurance/Quality Control
PERMIT	Order R4-2012-0175
RWL	Receiving Water Limitation
SCB	Southern California Bight
SCCWRP	Southern California Coastal Water Research Project
SMC	Southern California Stormwater Monitoring Coalition
SOP	Standard Operating Procedure
SUSMP	Standard Urban Stormwater Mitigation Plan
SWAMP	Surface Water Ambient Monitoring Program

Acronyms (continued)

TIWRP	Terminal Island Water Reclamation Plant
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
WBPC	Water Body-Pollutant Combination
WLA	Waste Load Allocation
WQBEL	Water Quality Based Effluent Limitation

Units

µg/kg	Microgram per kilogram
µg/L	Microgram per liter
cfu	Colony Forming Unit
g/day	Grams per day
g/yr	Grams per year
kg	Kilogram
kg/yr	Kilograms per year
mg/L	Milligram per liter
mg/kg	Milligram per kilogram
mL	Milliliter
MPN	Most Probable Number
TUc	Toxic Unit Chronic

1 Introduction

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit, Order R4-2012-0175 (Permit) became effective on December 28, 2012. On June 27, 2013, the cities of El Segundo, Hawthorne, Inglewood, and Los Angeles (including the Port of Los Angeles), the County of Los Angeles and the Los Angeles County Flood Control District (LACFCD) (collectively known as the Dominguez Channel Watershed Management Area (DCWMA) Group (DCWMA Group)) submitted a Notice of Intent to develop a collaborative approach to meet the requirements of the Permit, which includes developing an Enhanced Watershed Management Program (EWMP) and Coordinated Integrated Monitoring Program (CIMP) for their respective portion of the DCWMA. In early June, 2014, the City of Lomita joined the DCWMA Group.

Attachment E of the Permit identifies the requirements of the Monitoring and Reporting Program (MRP). The MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal regulations under the Clean Water Act and the California Water Code. The primary objectives as stated in the MRP are as follows:

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 Total Maximum Daily Load (TMDL) wet weather and dry weather wasteload allocations (WLAs).
3. Characterize pollutant loads in MS4 discharges.
4. Identify sources of pollutants in MS4 discharges.
5. Measure and improve the effectiveness of pollutant controls implemented under the Permit.

The DCWMA CIMP has been prepared by the DCWMA Group to address the requirements of the MRP. The CIMP is composed of the following five MRP elements (Part II.E):

1. Receiving water monitoring
2. Storm water outfall based monitoring
3. Non-Storm Water (NSW) outfall based monitoring
4. New Development/Re-development effectiveness tracking
5. Regional studies

Additionally, the DCWMA CIMP addresses the MS4 infrastructure data requested as part of the CIMP submittal (MRP Section VII.A), presents the adaptive management approach for the CIMP, discusses the data management and reporting process, and outlines the schedule for implementing the CIMP. Attachments to the CIMP provide additional background on the DCWMA, factsheets for the monitoring locations, analytical and sample collection procedures, and additional details on reporting.

The DCWMA Group does not contain all of the MS4 Permittees in the Dominguez Channel watershed as some have elected to develop their own strategy for addressing these requirements under the Permit. Table 1-1 below, provides a list of the participating Permittees under the DCWMA Group.

Table 1-1: List of Participating Permittees under the DCWMA Group		
Participating Permittee	**Jurisdictional Area (ac)**	**% of Jurisdictional Area**
City of Los Angeles	19,243	51.1%
County of Los Angeles	8,141	21.6%
Los Angeles County Flood Control District	NA	NA
City of El Segundo	1,252	3.3%
City of Inglewood	3,884	10.3%
City of Hawthorne	3,892	10.3%
City of Lomita	1,227	3.3%
Total	**37,640**	

1.1 Watershed Management Plan Area

The Dominguez Channel Watershed Management Area (DCWMA) is located in the southern portion of the Los Angeles County and includes the drainage area of the Dominguez Channel, Machado Lake, and the Los Angeles/Long Beach Harbors watersheds. The Dominguez Channel Watershed is an important industrial, commercial, and residential area with unique and important historical and environmental resources, such as the Dominguez Estuary and Cabrillo Beach. The Dominguez Channel Watershed is approximately 133 square miles in area, 120 of which are comprised of land and the remaining is the Los Angeles/Long Beach Harbors. Approximately 72 square miles drains directly to the 15.7 mile long Dominguez Channel which begins in the City of Hawthorne and eventually discharges to the east basin of the Los Angeles Harbor. The other 48 square miles includes areas that directly drain to the Los Angeles/Long Beach Harbors and Machado Lake.

The land area of the DCWMA Group encompasses 58 square miles (37,315 acres) or 43.6% of the total 133 square miles (75,000 acres) of the Dominguez Channel Watershed. Additionally, the DCWMA Group does not have jurisdiction over the land that is owned by the State of California and the US Government. The boundaries of the participating cities within the watershed are shown in Figure 1-1.

The watershed receives an average of approximately 12.11 inches of rain per year, most of it during the winter season (Los Angeles County, ALERT Rain Gage 315, Dominguez Precipitation). The Dominguez Channel Watershed is composed of three subwatershed (hydrologic unit code (HUC) 12) drainage areas as follows.

1. Upper Dominguez Channel
2. Lower Dominguez Channel and Estuary
3. Los Angeles and Long Beach Harbors (including Machado Lake)

The DCWMA is dominated by urban land uses such as residential, industrial, commercial, and transportation, which accounts for approximately 74 percent of the land area. The dominant land uses are presented in Table 1-2 and Figure 1-2.

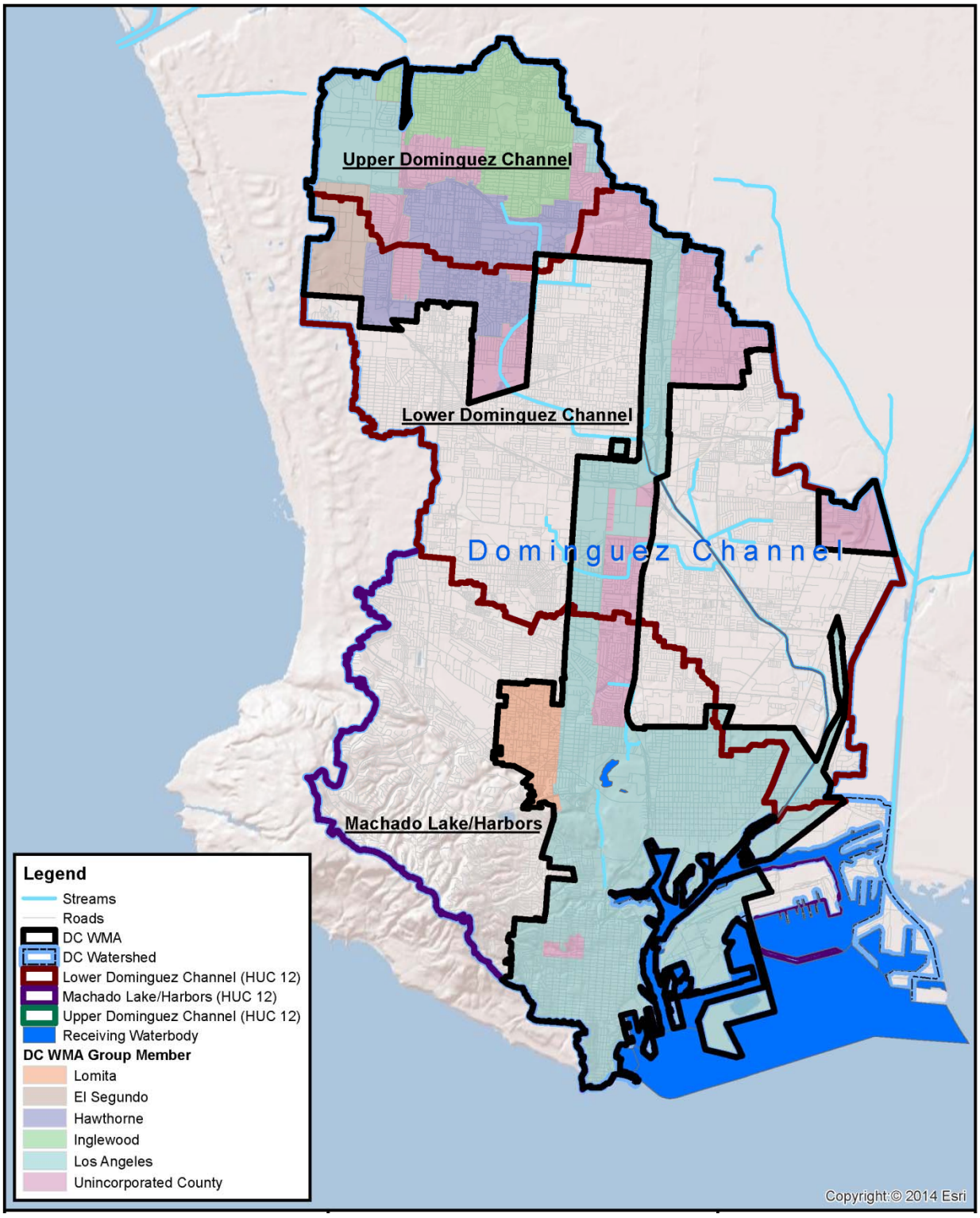

Figure 1-1. DCWMA Group Boundary

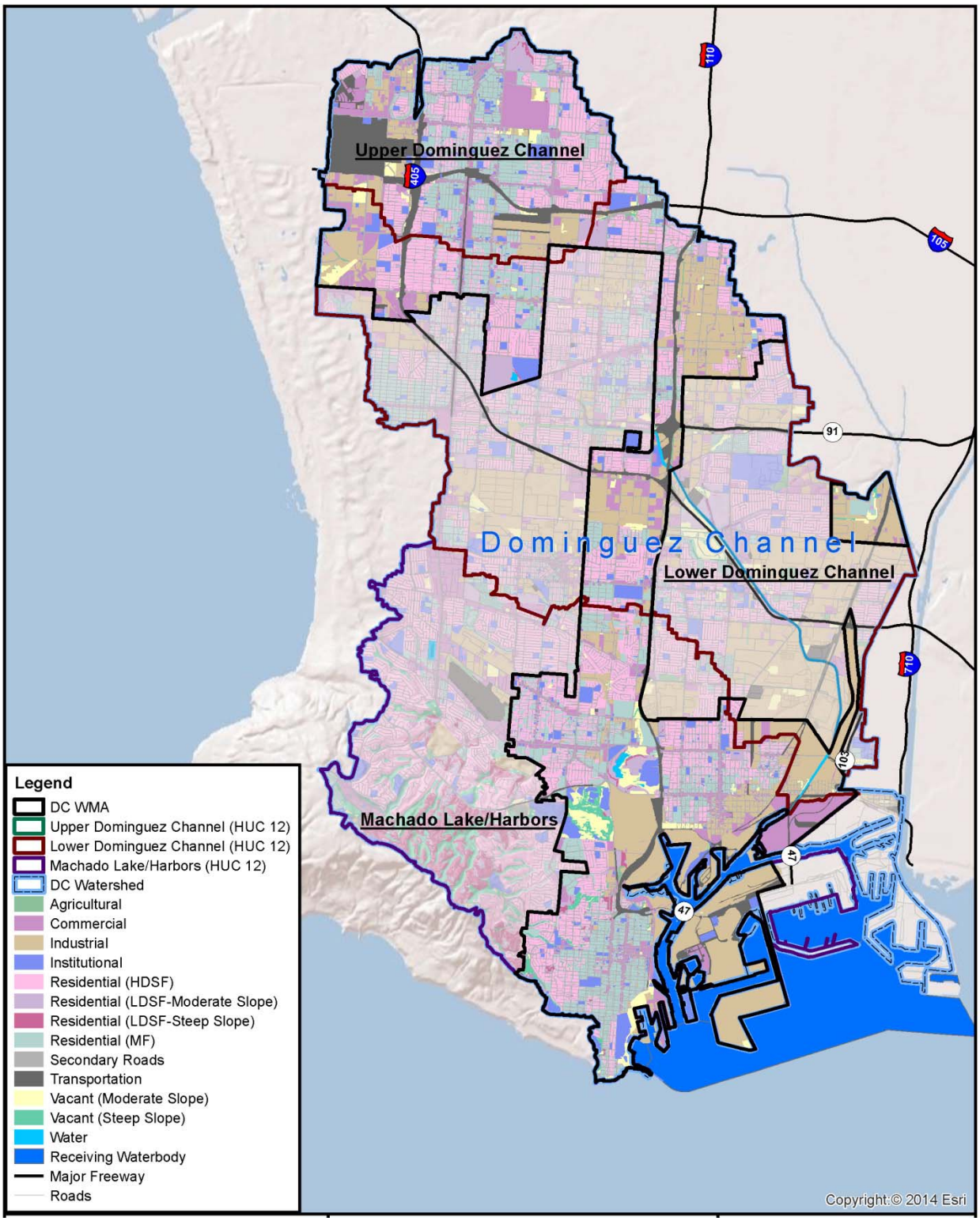

Figure 1-2. Land Use in the Dominguez Channel Watershed

Table 1-2: DCWMA Group Land Use		
Land Use Category	**Area (square miles)**	**Percentage**
Agricultural	0.1	0.2%
Commercial / Institutional	9.5	16.4%
Industrial	12.9	22.1%
Residential	19.6	33.7%
Transportation / Secondary Roads	14.0	24.0%
Vacant	2.0	3.4%
Water	0.2	0.3%
B. Total:	**58.3**	**100%**

1.2 Water Quality Priorities

The water quality priorities for the DCWMA were assessed using available monitoring data, TMDLs, 303(d) listed impairments, and water quality thresholds listed in the Basin Plan for the Coastal Watersheds of the Los Angeles and Ventura Counties (Basin Plan) and the California Toxics Rule (CTR). Water-body pollutant combinations (WBPCs) were then prioritized using an initial source assessment based on land use and pollutant exceedance data for the Dominguez Channel (and tributaries), the Dominguez Channel Estuary (DCE) and Machado Lake. Additional water quality information was evaluated for Cabrillo Beach and the Consolidated Slip portions of the WMA.

WBPCs for which there were monitoring data were placed into one of three categories as outlined in the NPDES Permit (Table 1-3). See Attachment A for additional details on the water quality priorities.

Table 1-3: Categorized Water Body-Pollutant Combinations			
Waterbody	**Category 1 (TMDL)**	**Category 2 (303(d) List)**	**Category 3 (Other)**
Dominguez Channel (lined portion above Vermont Ave)	Copper (diss.), Lead (diss.), Zinc (diss.), Toxicity	Indicator Bacteria, Ammonia, Diazinon	Cadmium (diss.), Chromium (diss.), Mercury (diss.), Thallium (diss.), Bis(2-Ethylhexl) phthalate, pH, Dissolved Oxygen
Torrance Lateral	Copper (diss.), Lead (diss.), Zinc (diss.)	Coliform Bacteria	Cadmium (diss.), Cyanide, pH, Ammonia, PCBs (sed.), DDT (sed.)
Dominguez Estuary (unlined portion below Vermont Ave)	Cadmium (sed.), Copper (diss. and sed.), Lead (diss., sed., & tissue), Zinc (diss. & sed.), DDT (tissue & sed.), PCBs (sed.), Chlordane (tissue & sed.), Dieldrin (tissue & sed.), PAHs (sed.), Benthic Community Effects, Sediment Toxicity	Ammonia, Coliform Bacteria	Arsenic (sed.), Chromium (sed.), Silver (diss. & sed.), Nickel (diss.), Mercury (sed.), Thallium (diss.)
Machado Lake	Trash, Total Phosphorus, Total Nitrogen, Ammonia,	*None*	*E. coli*, pH

Table 1-3: Categorized Water Body-Pollutant Combinations			
Waterbody	**Category 1 (TMDL)**	**Category 2 (303(d) List)**	**Category 3 (Other)**
	Chlorophyll-a, PCBs (sed.), DDT (sed.), Chlordane (sed.), Dieldrin (sed.), Dissolved Oxygen		
Wilmington Drain	*None*	Coliform Bacteria, Copper (diss.), Lead (diss.)	Total Nitrogen, DDT (sed.), PCBs (sed.), Chlordane, Dieldrin (sed.)
LA Harbor[1] - Cabrillo Marina	DDT (tissue & sed.), PCBs (tissue & sed.), PAHs	*None*	*None*
LA Harbor[1] - Consolidated Slip	Cadmium, Chromium, Copper, Lead, Mercury, Zinc, DDT (tissue & sed.), PCBs (tissue & sed.), PAHs (sed.), Chlordane (tissue & sed.), Dieldrin, Toxaphene (tissue), Benthic Community Effects, Sediment Toxicity	*None*	Arsenic, Silver, Nickel
LA Harbor[1] - Fish Harbor	Copper, Lead, Mercury, Zinc, DDT (tissue & sed.), PCBs (tissue & sed.), Chlordane, PAHs, Sediment Toxicity	*None*	*None*
LA/LB Inner Harbor[1]	Copper, Lead, Zinc, DDT (tissue & sed.), PCBs (tissue & sed.), PAHs, Benthic Community Effects, Sediment Toxicity, Indicator Bacteria	*None*	Copper (diss.), Silver (diss.)
LA/LB Outer Harbor[1]	DDT (tissue & sed.), PCBs (tissue & sed.), Sediment Toxicity	*None*	Cadmium, Nickel, Silver (diss.), Copper (diss.), Mercury
LA Harbor[1] - Inner Cabrillo Beach	Indicator Bacteria, DDT (sed. and tissue), PCBs (tissue & sed.)	*None*	*None*

[1] Los Angeles Harbor metals and organic pollutants constituents are for sediment unless otherwise noted.

1.3 CIMP Overview

This section provides an overview of the components included in the DCWMA Group CIMP. The DCWMA Group CIMP is comprised of the following sections and each item is discussed briefly below:

1. Introduction
2. Receiving water monitoring
3. MS4 Infrastructure Database
4. Storm Water outfall based monitoring

5. Non-Storm Water Outfall Based Screening and Monitoring
6. New Development/Re-development Effectiveness Tracking
7. Regional Studies
8. Special Studies
9. Non-Direct Measurements
10. Adaptive Management
11. Reporting
12. Schedule

1.3.1 Receiving Water Monitoring

The MRP states that receiving water monitoring shall be performed at previously designated mass emission (ME) stations, TMDL receiving water compliance points as designated in Regional Water Board Executive Officer approved TMDL Monitoring Plans (see Table E-1 for a list of approved TMDL Monitoring Plans), and additional receiving water locations representative of the impacts from MS4 discharges. The objectives of the receiving water monitoring include the following:

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

The DCWMA Group selected a total of 11 sites to fulfill the needs of the receiving water monitoring program: one new ME station and a total of 11 TMDL monitoring sites. The TMDL sites include four new sites for the Dominguez Channel Toxics TMDL, four existing sites incorporated from the existing plans for the Machado Lake TMDLs, and three existing sites for the LA Harbor Bacteria TMDL. Although not a part of the DCMWA, it should be noted that in addition to the receiving water sites included herein, there are 22 sites being monitoring as part of the Coordinated Compliance, Monitoring, and Reporting Plan (CCMRP) for the Greater Los Angeles and Long Beach Harbors TMDL.

Additional details of the Receiving Water Monitoring Program are available in Section 5.

1.3.2 Storm Water Outfall Monitoring

The MRP requires that storm water discharges from the MS4 be monitored at outfalls or in channels at the jurisdictional boundaries of the DCWMA Group. The DCWMA Group selected a total of five outfall monitoring sites to fulfill the needs of the outfall monitoring and TMDL Monitoring programs. The Storm Water Outfall Monitoring Program has two types of outfalls:

- **NPDES Storm Water Outfall Sites.** Three sites were selected to be used for the storm water outfall monitoring program. One major outfall is representative of discharges into the Upper Dominguez Channel HUC 12 (DOM-OF-001). The other two are representative

of discharges within the Lower Dominguez Channel HUC 12, one at Torrance Lateral (DOM-OF-002) and the other to the Dominguez Channel Estuary (DOM-OF-003).

- **TMDL Outfall Sites.** The DCWMA Group will monitor two additional outfalls identified for outfall monitoring into the Machado Lake Nutrients and Toxics TMDLs at locations P-77 and P-510. In addition, two of the NPDES Storm Water Outfall Sites (DOM-OF-002 and DOM-OF-003) will also serves as monitoring stations for the Dominguez Channel Toxics TMDL.

Additional details for the Storm Water Outfall Monitoring Program are available in Section 4, Attachment B, and Attachment C.

1.3.3 Non-Storm Water Outfall Program

The NSW Outfall Monitoring Program is intended to foster collaboration and enhance the efforts of DCWMA Group's and the LACFCD's efforts to meet the requirements outlined in the Permit for the Illicit Connection and Illicit Discharge (IC/ID) Program to detect, investigate, and eliminate the IC/IDs pursuant to Part VI.D.4.d and Part VI.D.10 of the NPDES Permit. The NSW Monitoring Program proposed under the DCWMA CIMP is comprised of the following components.

1. Identification of Outfalls with Significant NSW Discharge
2. Inventory of MS4 Outfalls with NSW Discharge
3. Prioritized Source Identification
4. Identify Sources of Significant NSW Discharge
5. Monitor NSW Discharge Exceeding Criteria

Additional NSW Program details are provided in Section 5 and Attachment C.

1.3.4 New Development and Re-development Effectiveness Tracking

The objective of New Development/Re-Development Effectiveness Tracking element is to track whether post-construction BMPs are implemented as planned to ensure that the intended volume of storm water is retained or reused onsite, or treated when retention is infeasible, as required by Part VI.D.7.c.i. of the Permit.

To meet the MRP requirements of Permit Attachment E, Part X.A, the DCWMA Group will maintain an informational database record for each new development/re-development project subject to the minimum control measure (MCM) requirements in Part VI.D.7 of the Permit and their adopted Low Impact Development (LID) Ordinance.

In addition to the requirements in Part X.A of the MRP, Part VI.D.7.d.iv of the Permit requires that the DCWMA Group implement a tracking system for new development/re-development projects that have been conditioned for post-construction BMPs.

Participating agencies have developed mechanisms for tracking new development/re-development projects that have been conditioned for post-construction BMPs pursuant to MS4 Permit Part VI.D.7 Agencies also have developed mechanisms for tracking the effectiveness of these BMPs pursuant to MS4 Permit Attachment E.X.A and 12 elements in Part VI.D.7.d.iv. As

such, the CIMP provides general details on the requirements and approaches related to the new and redevelopment tracking requirements. Specifics are available from each DCWMA Group member. More information is located in Section 6.

1.3.5 Regional Studies

The MRP only identifies the Southern California Stormwater Monitoring Coalition (SMC) Watershed Monitoring Program as a required regional study (Section XI, Page E29-30). Sites in the Dominguez Channel Watershed are not specifically called out in the MRP; however, as it is a coastal watershed in the specified study area, it is anticipated that the required coordination may occur in this watershed in the future. The DCWMA Group (LACFCD) will continue to coordinate with Southern California Coastal Water Research Project (SCCWRP) regarding plans to include sites within the Dominguez Channel Watershed regional monitoring.

Other regional studies of note that may affect future monitoring efforts in the DCWMA include:

- There are not currently any watershed wide monitoring programs in the Dominguez Channel Watershed. California's Surface Water Ambient Monitoring Program (SWAMP) conducted a short term assessment of the Dominguez Channel Watershed in the 2003-2003 fiscal year (LARWQCB 2007)).
- The Terminal Island Water Reclamation Plant (TIWRP) discharges treated wastewater in the Outer Los Angeles Harbor within the DCW. The plant has a dry weather design capacity of 30 MGD and as of 2007 averaged a discharge rate of 15.8 MGD of tertiary treated effluent (City of Los Angeles 2008). The TIWRP effluent monitoring program monitors an extensive list of constituents, which is noted in Section 7.
- The City of Los Angeles, Los Angeles County and LACFCD are participating in a Contaminated Sediment Management Plan (CSMP) with non-participating DCWMA Cities designed to meet the requirement of the TMDL schedule for the Dominguez Channel Toxics TMDL.

1.3.6 Special Studies

TMDL special studies may be used to refine source assessments, assign appropriate allocation based on updated information from the results of implementation actions and monitoring program, and help focus implementation efforts (Los Angeles Regional Water Quality Control Board (LARWQCB) and United States Environmental Protection Agency (USEPA) 2010).
Currently, the adopted TMDLs in the DCWMA Area do not have required TMDL special studies. However, the DCWMA Group will develop and execute preliminary studies in order to gather data and information as part of this CIMP. More information regarding these preliminary studies is located in Section 8.

2 Receiving Water Monitoring Program

The objective of this section is to present the Receiving Water Monitoring Program for the DCWMA Group. This Section is intended to satisfy the requirements of Section VI.B (Page E-14) of the MRP. The following presents the receiving water monitoring objectives, sites, monitoring parameters and frequency, as well information to support the approach utilized to meet the objectives of the MRP. The approach builds off the MRP requirements, the TMDL monitoring requirements (detailed in Attachment A), as well as existing monitoring programs in the watershed (detailed in Attachment A).

2.1 Receiving Water Monitoring Objectives

The Monitoring and Reporting Program (Attachment E of the Permit) states that the objectives of the Receiving Water Monitoring Program include the following:

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

2.2 Receiving Water Monitoring Sites

For the DCWMA, the Receiving Water Monitoring Program monitoring sites are classified as follows:

- DCWMA ME Station - Monitoring at the new DCWMA ME Station (DOM-RW-DC01) will be used to determine if receiving water limitations (RWLs) in the DCWMA are achieved, assess trends in pollutant concentrations over time, and determine whether designated uses are supported. All analyses required by the NPDES Permit (including relevant TMDLs) are monitored at this site. The existing ME Station operated by the LACFCD will not be used by the DCWMA Group as this station is affected by non-DCWMA agencies, the new DCWMA ME Station will be utilized to meet the elements of the Receiving Water Monitoring Program. This station will also be utilized to meet the monitoring requirements outlined for the Dominguez Channel in the toxics TMDL.
- TMDL Monitoring Sites - TMDL Monitoring sites will be used to evaluate applicable TMDLs and TMDL compliance points identified in approved TMDLs. Pollutants addressed by the applicable TMDLs to the DCWMA are monitored at these sites. In addition to the DCWMA ME Station, the DCWMA Group selected an additional 10 sites to fulfill the needs of the TMDL monitoring programs. An overview of the receiving water monitoring locations within the watershed as they related the DCWMA Group cities is show in Figure 2-1 below.

Table 2-1 summarizes each of the monitoring locations and a detailed fact sheet of each location is provided in Appendix B.

The specific parameters and frequency that each site will be monitored for is provided in Table 2-2. Detailed information on sampling and analytical methods is provided in Appendix C.

Table 2-1: Receiving Water Monitoring Program Locations

Site ID	Water Body/Location	Coordinates		Monitoring Type	
		Latitude	Longitude	ME	TMDL
DOM-RW-DC01	Dominguez Channel at 135th	33.909458	-118.32579	●	
DOM-RW-DCE01	Upper Dominguez Channel Estuary	33.870514	-118.289802		●
DOM-RW-DCE02	Lower Dominguez Channel Estuary	33.791886	-118.230535		●
DOM-RW-TL01	Torrance Lateral at Hamilton Ave	33.844779	-118.286518		●
ML-1	Machado Lake, Upper	33.787913	-118.292661		●
ML-2	Machado Lake, Lower	33.783196	-118.293571		●
ML-3	Machado Lake, Middle	33.78563	-118.294339		●
WD-1	Wilmington Drain at PCH	33.790864	-118.287574		●
CB01	Inner Cabrillo Beach, North End	33.713432	-118.283779		●
CB02	Inner Cabrillo Beach, South End	33.711213	-118.282911		●
HW07	Main Ship Channel	33.722607	-118.269888		●
Various Harbor Sites	Greater LA/Long Beach Harbor Area	Various	Various		●

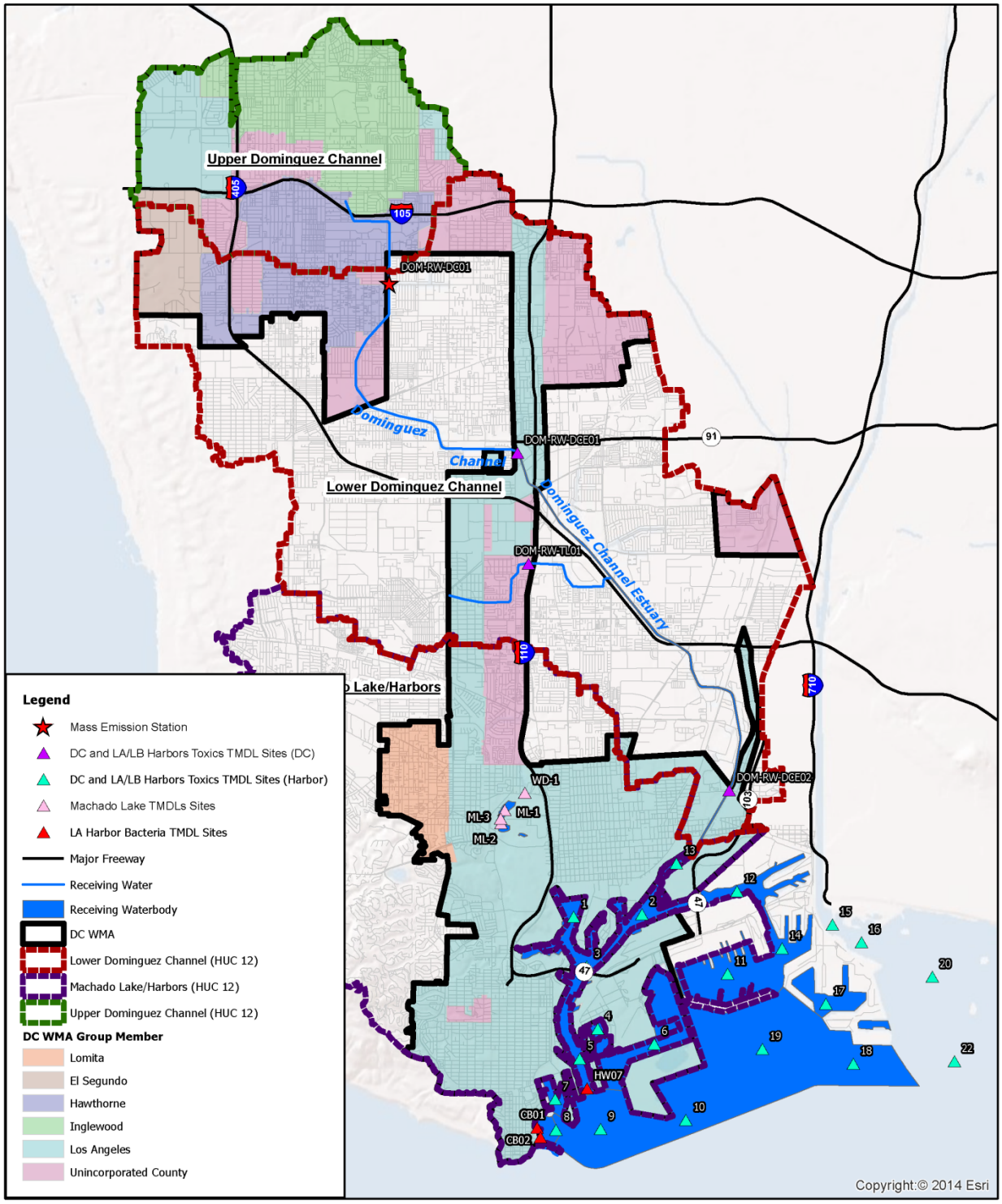

Figure 2-1. Map of Receiving Water Monitoring Program

2.2.1 New DCWMA ME Station, DOM-RW-DC01

The DCWMA Group is establishing a new ME Station along the Dominguez Channel north of 135th Street. This location was selected as this site is representative of the potential effect of MS4 discharges that originate from the cities of Los Angeles, Inglewood, El Segundo, Hawthorne, and the County of LA Unincorporated Areas, and the DCWMA Group accounts for 99.5% of the land area discharging to this site. The location of the site in relation to watershed and the associated catchment area is illustrated in Attachment B. An overview of the site location's catchment area is provided in Table 2-2. A detailed fact sheet of each location is provided in Appendix B.

Table 2-2: Summary of NPDES Receiving Water Monitoring Sites

Site ID	Site	Catchment Area (acres)	DCWMA Group Area* (acres)	Non-DCWMA Group Area (acres)	DCWMA Group Area Ratio	Designation
DOM-RW-DC01	Dominguez Channel @ 135th St	10,249.5	10,191.2	48.3	99.5%	New DCWMA ME Station

*The LACFCD area is included as part of area for the jurisdiction for which it resides.

PAGE INTENTIONALLY LEFT BLANK

Table 2-3: TMDLs Addressed by Each Site

Constituents	DC Watershed Sites											
	Channel	Estuary		Lateral	Machado Lake				Los Angeles Harbor			
Relevant TMDL	DOM-RW-DC01	DOM-RW-DCE01	DOM-RW-DCE02	DOM-RW-TL01	ML-1	ML-2	ML-3	WD-1[4]	CB01	CB02	HW07	1 - 22
	Upper Dominguez Channel	Upper Dominguez Channel Estuary	Lower Dominguez Channel Estuary	Torrance Lateral at Hamilton Ave	Machado Lake, Upper	Machado Lake, Lower	Machado Lake, Middle	Wilmington Drain at PCH	Inner Cabrillo Beach, North End	Inner Cabrillo Beach, South End	Main Ship Channel[1]	Greater Los Angeles and Long Beach Harbors[2]
DC and Harbors Toxics TMDL	●	●	●	●								●
Los Angeles Harbors Bacteria TMDL									●	●	●	
Machado Lake Nutrient TMDL[3]					●	●	●	●				
Machado Lake Toxics TMDL[3]					●	●	●	●				
Machado Lake Trash TMDL[3]												

[1]Monitoring conducted by TIWRP.

[2]Monitoring performed separate from the monitoring as described in this CIMP in accordance with the Coordinated Compliance Monitoring and Report Plan for the Greater Los Angeles and Long Beach Harbor Waters. Data collected by the CCMRP will be utilized by the DCWMA to assess the harbor receiving waters.

[3]Machado Lake Multi-pollutant TMDL Monitoring Plan is for both the Nutrients and Toxics TMDL.

[4]Monitoring data from WD-1 receiving water monitoring site is also used to characterize discharges to Machado Lake.

PAGE INTENTIONALLY LEFT BLANK

2.2.2 DCWMA TMDL Sites

The following TMDLs contain monitoring requirements applicable to the DCWMA:

- DC and Greater Los Angeles and Long Beach Harbors Toxics TMDL
- Los Angeles Harbors Bacteria TMDL
- Machado Lake Nutrient TMDL
- Machado Lake Toxics TMDL
- Machado Lake Trash TMDL

The TMDL sites have been identified, in addition to the new DCWMA ME Station; to meet the requirements of the TMDLs. Table 2-3 summarizes the TMDLs that each of the TMDL monitoring sites addresses. A number of the sites are existing sites that provide a long term record by which to assess trends over time and attainment of TMDL targets. Four new sites have been identified to support further evaluation, which will support the characterization of current conditions, and over time, assess trends. Note that receiving water monitoring sites within the Harbor complex are addressed through a Coordinated Monitoring Program (CMP) prepared by the cities of Los Angeles and Long Beach along with the Port of Los Angeles and Port of Long Beach as detailed in the Coordinated Compliance, Monitoring, and Reporting Plan (CCMRP), dated June 2013. The County of Los Angeles, LACFCD and City of Los Angeles are all members of the Greater Harbors Regional Monitoring Coalition which submitted the CCMRP.

2.3 Monitored Parameters, Frequency, and Duration of Monitoring

The constituents and frequencies of sample collection to meet the receiving water monitoring requirements of the Permit for the DCWMA Group are presented in Table 2-4. Analytical methods, detection limits, sampling methods and handling procedures are detailed in Attachment C. In addition, details regarding the collection of QA/QC samples are outlined in Attachment C.

For the purpose of predicting and determining a wet weather event for the purposes of monitoring the National Weather Service (NWS) rain gauge at the Hawthorne Airport will serve as the reference weather station for the DCWMA Group. Additional information to support evaluating weather conditions and targeting wet weather sampling events is provided in Attachment C.

2.4 Monitoring Coordination

The DCWMA Group receiving water monitoring program will be coordinated with the other agencies, CIMPs, and IMPs in order to enhance the efficiency and effectiveness of the monitoring programs within the Dominguez Channel Watershed Management Area to the extent possible. Additionally, receiving water data collected from industrial waste Permittees or by the TIWRP will be reviewed and evaluated as part of the Adaptive Management (Section 10) to determine if there is a need to modify the monitoring within the DCWMA.

2.5 Receiving Water Monitoring Summary

The DCWMA Group selected a total of 11 sites to fulfill the needs of the receiving water monitoring and TMDL monitoring programs (Table 2-4). An overview of the receiving water monitoring locations within the watershed as they related the DCWMA Group Cities is show in Figure 2-1, presented above.

Table 2-4 summarizes each of the monitoring locations and the specific parameters that each site will be monitored for. The implementation schedule for the various monitoring programs listed in Table 2-4 are discussed in Section 12. A detailed fact sheet on each location is provided in Appendix B. Detailed information on sampling and analytical methods is provided in Appendix C.

Table 2-4: Constituents and Parameters Measured[1]											
Constituents	**Channel**	**Estuary**		**Lateral**	**Machado Lake**				**Los Angeles Harbor**		
Site ID and Location	**DOM-RW-DC01**	**DOM-RW-DCE01**	**DOM-RW-DCE02**	**DOM-RW-TL01**	**ML-1**	**ML-2**	**ML-3**	**WD-1**	**CB01**	**CB02**	**HW07**
	Dominguez Channel at 135th	Upper Dominguez Channel Estuary	Lower Dominguez Channel Estuary	Torrance Lateral at Hamilton Ave	Machado Lake, Upper	Machado Lake, Lower	Machado Lake, Middle	Wilmington Drain at PCH	Inner Cabrillo Beach, North End	Inner Cabrillo Beach, South End	Main Ship Channel
Water Column											
Flow and field parameters[(2)]	3/2	2/1	2/1	2/1	0/26	0/26	0/3	Phase 1: 3/0 Phase 2: 1 x 2yr/0	0/260	0/260	0/52
Pollutants identified in Table E-2 of the MRP[(3)] and not otherwise addressed below	1/1 (First year only)										
Aquatic Toxicity and Toxicity Identification Evaluation (TIE)	2/1										
E. Coli	3/2										
Enterococcus, Total Coliform, Fecal Coliform									0/260	0/260	0/52
Hardness	3/2			2/1							
TSS	3/2			2/1							
Copper (total + diss.)	3/2			2/1							
Lead (total + diss.)	3/2			2/1							
Zinc (total + diss.)	3/2										
Mercury (total + diss.)	3/2										
Chlordane [(4)], DDT[(5)], PCBs[(6)], and PAHs[(7)]	3/2						0/1				

Table 2-4: Constituents and Parameters Measured[1]											
Constituents	**Channel**	**Estuary**		**Lateral**	**Machado Lake**				**Los Angeles Harbor**		
Site ID and Location	**DOM-RW-DC01**	**DOM-RW-DCE01**	**DOM-RW-DCE02**	**DOM-RW-TL01**	**ML-1**	**ML-2**	**ML-3**	**WD-1**	**CB01**	**CB02**	**HW07**
	Dominguez Channel at 135th	Upper Dominguez Channel Estuary	Lower Dominguez Channel Estuary	Torrance Lateral at Hamilton Ave	Machado Lake, Upper	Machado Lake, Lower	Machado Lake, Middle	Wilmington Drain at PCH	Inner Cabrillo Beach, North End	Inner Cabrillo Beach, South End	Main Ship Channel
Ammonia as N, Nitrate as N, Nitrite as N, Nitrate+Nitrite, Nitrogen (NO3-N+NO2-N)	3/2				0/26	0/26		3/2			
Bis(2-ethylhexyl)Phthalate	3/2										
2,3,7,8-TCDD (Dioxin)	3/2										
Diazinon	3/2										
Chloride	3/2										
Sulfate	3/2										
TDS	3/2				0/1	0/1	0/1	Phase 1: 3/0 Phase 2: 1 x 2yr/0			
Cyanide	3/2										
Suspended Sediment[(8)]: Copper, Lead, Silver, Zinc, Chlordane [(4)], DDT[(5)], PCBs[(6)], and PAHs[(7)]	2/0			2/0				Phase 1: 3/0 Phase 2: 1 x 2yr/0			
Bed Sediments											
Flow and field parameters[(2)]		0/(1x 5yr)	0/(1x 5yr)		0/(1x 3yr)	0/(1x 3yr)	0/(1x 3yr)	0/1			
Copper		0/(1x 5yr)	0/(1x 5yr)								

Table 2-4: Constituents and Parameters Measured[1]

Constituents	Channel	Estuary		Lateral	Machado Lake				Los Angeles Harbor		
Site ID and Location	**DOM-RW-DC01**	**DOM-RW-DCE01**	**DOM-RW-DCE02**	**DOM-RW-TL01**	**ML-1**	**ML-2**	**ML-3**	**WD-1**	**CB01**	**CB02**	**HW07**
	Dominguez Channel at 135th	Upper Dominguez Channel Estuary	Lower Dominguez Channel Estuary	Torrance Lateral at Hamilton Ave	Machado Lake, Upper	Machado Lake, Lower	Machado Lake, Middle	Wilmington Drain at PCH	Inner Cabrillo Beach, North End	Inner Cabrillo Beach, South End	Main Ship Channel
Lead		0/(1x 5yr)	0/(1x 5yr)								
Zinc		0/(1x 5yr)	0/(1x 5yr)								
Chlordane [4], DDT[5], PCBs[6], and PAHs[7]		0/(1x 5yr)	0/(1x 5yr)								
Chlordane [4], DDT[5], and PCBs[6]					0/(1x 3yr)	0/(1x 3yr)	0/(1x 3yr)	0/1			
Dieldrin					0/(1x 3yr)	0/(1x 3yr)	0/(1x 3yr)	0/1			
TOC		0/(1x 5yr)	0/(1x 5yr)		0/(1x 3yr)	0/(1x 3yr)	0/(1x 3yr)	0/1			
Sediment Toxicity		0/(1x 5yr)	0/(1x 5yr)		0/(1x 3yr)	0/(1x 3yr)	0/(1x 3yr)	0/1			
Benthic Community		0/(1x 5yr)	0/(1x 5yr)								
Bioaccumulation[9]											
Chlordane [4], DDT[5], PCBs[6], and PAHs[7]		0/(1x 2yr)	0/(1x 2yr)				0/(1x 3yr)				

Notes:

1. Annual frequency listed as number of wet-weather/dry-weather events per year, respectively (e.g., 3/2 signifies three wet weather and two dry weather events per year). Not all sampling occurs on an annual basis, these events are signified by including the yearly frequency (e.g. 1 x 3yr signifies one event every three years).
2. Field parameters are defined as DO, pH, temperature, and specific conductivity. For the Harbor and Estuary sites, tidal and water depth information will be collected in lieu of flow data. For the Machado Lake sites, water depth information will be collected in lieu of flow data.
3. Monitoring frequency only applies during the first year of monitoring. For pollutants identified in Table E-2 of the MRP that are not detected at the Method Detection Limit (MDL) or the result is below the lowest applicable water quality objective, additional monitoring will not be conducted (i.e., the monitoring frequency will become 0/0). For pollutants detected above the lowest applicable water quality objective, future monitoring will be conducted at the frequency specified in the MRP (i.e., the monitoring frequency will become 3/2).
4. Chlordane is defined as cis-Chlordane (alpha-Chlordane), trans-Chlordane (gamma-Chlordane), oxychlordane, cis-nonachlor, and trans-nonachlor.
5. DDT is defined as the sum of 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

6. Total PCBs are defined as the sum of Congeners when analyzed, refer to Attachment C.
7. PAHs include: acenaphthene, anthracene, biphenyl, naphthalene, 2,6-dimethylnaphthalene, fuorene, 1-methylnaphthalene, 2-methylnaphthalene, 1-methylphenanthrene, phenanthrene, benzo(a)anthracene, benzo(a)pyrene, benzo(e)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, perylene, and pyrene.
8. At the conclusion of the preliminary study (Section 8), anticipated to be analyzed annually utilizing a composite sample consisting of the bulk sediment acquired from the collection of a sufficient volume of settleable and suspended solids from at least two storm events or via an approved alternative method
9. The only monitoring currently required for bioaccumulation is fish tissue.

3 MS4 Infrastructure Database

The objective of this section is to identify the components that address the CIMP requirements of the Outfall Based Monitoring requirement to provide the storm drains, channels, and outfall maps and/or database. The map and/or associated database will be updated annually to incorporate information for outfalls with significant NSW discharge.

3.1 Storm Drains, Channels and Outfalls Map and/or Database Requirements

Section VII.A of the MRP (Page E-20) requires that the CIMP include a map and/or database of the DCWMA Group MS4 to include the following information.

1. Surface water bodies within the Permittee(s) jurisdiction
2. Sub-watershed (HUC 12 equivalent) boundaries
3. Land use overlay
4. Effective Impervious Area (EIA) overlay (if available)
5. Jurisdictional boundaries
6. The location and length of all open channel and underground pipes 18 inches in diameter or greater (with the exception of catch basin connector pipes)
7. The location of all dry weather diversions
8. The location of all major MS4 outfalls within the Permittee's jurisdictional boundary. Each major outfall shall be assigned an alphanumeric identifier, which must be noted on the map
9. Notation of outfalls with significant non-storm water discharges (to be updated annually)
10. Storm drain outfall catchment areas for each major outfall within the Permittee(s) jurisdiction
11. Each mapped MS4 outfall shall be linked to a database containing descriptive and monitoring data associated with the outfall. The data shall include:
    a. Ownership
    b. Coordinates
    c. Physical description
    d. Photographs of the outfall, where possible, to provide baseline information to track operation and maintenance needs over time
    e. Determination of whether the outfall conveys significant non-storm water discharges
    f. Storm water and non-storm water monitoring data

3.2 DC Watershed Management Area Group's Map and Database Information

The DCWMA Group has compiled the Geographic Information System (GIS) data for submittal with the CIMP.

Figure 3-1 is a map of the DCWMA Area that provides the following information.

1. Surface water bodies within the Permittee(s) jurisdiction
2. Sub-watershed (HUC 12) boundaries
3. Land use overlay
4. Effective Impervious Area (EIA) overlay
5. Jurisdictional boundaries

3.3 Requirements Table and Schedule for Implementation

The DCWMA Group has conducted the mapping and database development for the storm drains, channels and outfalls. The information in the database will continually be updated as part of the implementation of the Storm Water and NSW Monitoring Programs of the CIMP.

Table 3-1 below provides an overview of the required components and how each component was addressed.

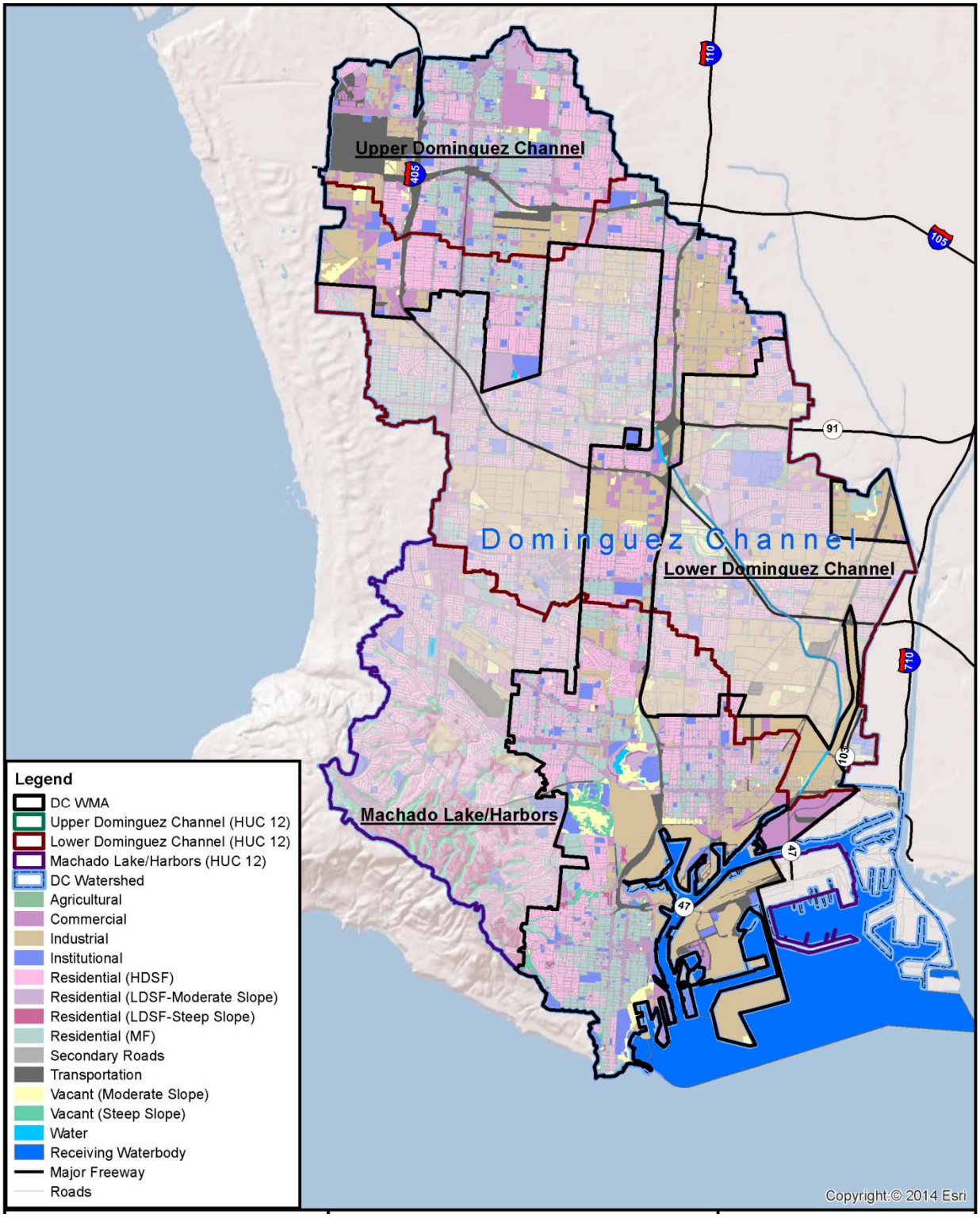

Figure 3-1. Dominguez Channel Watershed Management Area with Land Use and HUC 12 drainage areas

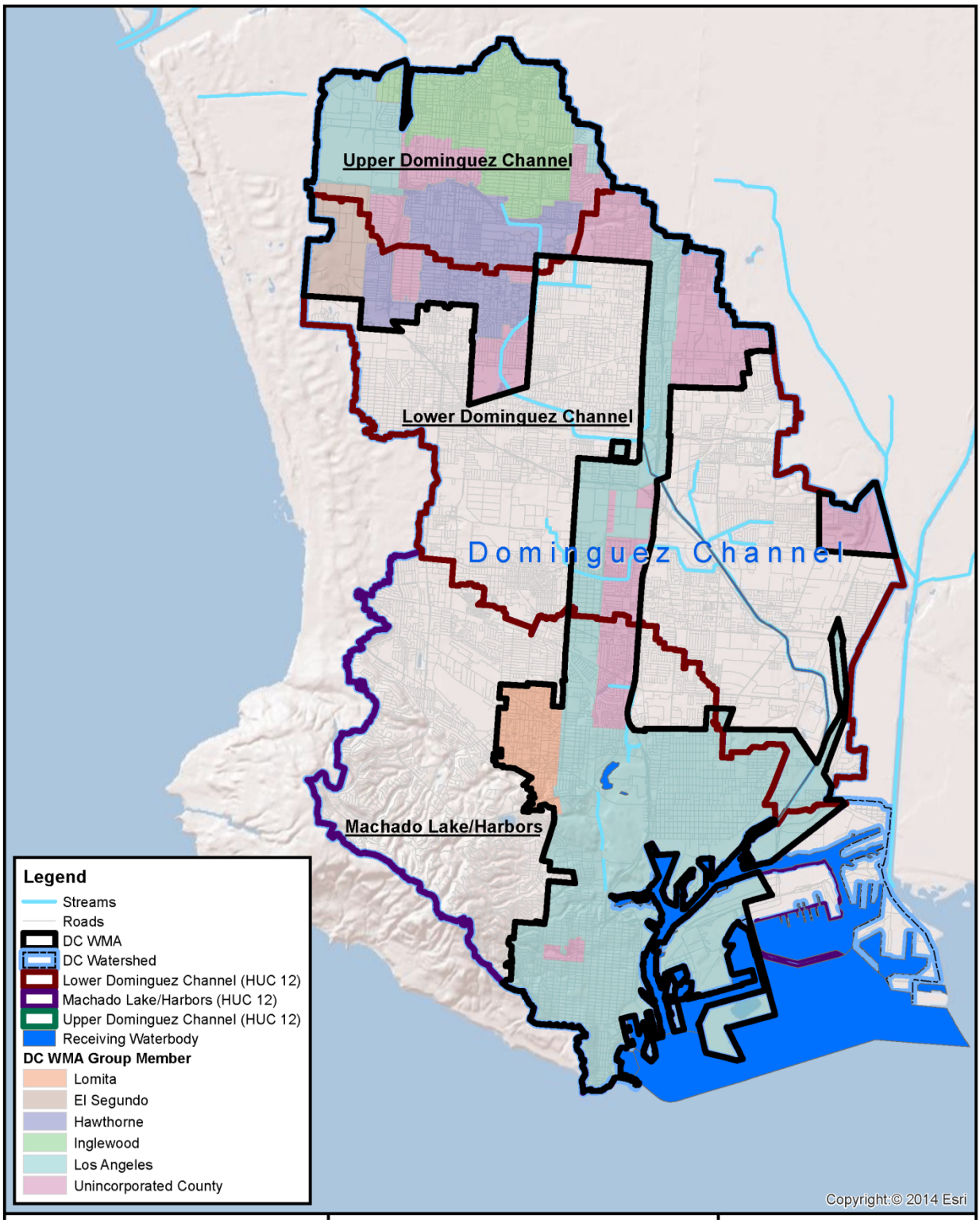

Figure 3-2. Dominguez Channel Watershed Management Area with DCWMA Group and Jurisdictional Agencies

Table 3-1: Map and Database Status and Schedule				
#	**Requirement**	**Status**	**Comment**	**Schedule**
1	Surface water bodies within the Permittee(s) jurisdiction	Complete	None	No updates anticipated
2	Sub-watershed (HUC 12) boundaries	Complete	None	No updates anticipated
3	Land use overlay	Complete	Updated/revised land use data is periodically released	Update as needed
4	EIA overlay	Complete	Updated/revised land use data is periodically released	Update as needed
5	Jurisdictional boundaries	Complete	None	No updates anticipated
6	The location and length of all open channel and underground pipes 18 inches in diameter or greater (with the exception of catch basin connector pipes)	The current mapping includes all of the storm drain layers available	As part of the implementation, NSW Monitoring Program, any additional drains that are not mapped will be added and updated as part of the CIMP implementation	Update information obtained from the NSW Monitoring Program
7	The location of all dry weather diversions	Within the Dominguez Channel Watershed Management Area there are currently no dry weather diversions within the jurisdictional boundaries of the DCWMA Group	Any future dry weather diversions will be incorporated into the database	Update as needed
8	The location of all major MS4 outfalls within the Permittee's jurisdictional boundary. Each major outfall shall be assigned an alphanumeric identifier which must be noted on the map	Completed with known information	The locations of the major MS4 outfalls have been identified; however, additional field verification will be conducted as part of the implementation of the NSW Outfall Monitoring Program	Initial update by end of 2015 and as needed thereafter

Table 3-1: Map and Database Status and Schedule				
#	**Requirement**	**Status**	**Comment**	**Schedule**
9	Notation of outfalls with significant non-storm water discharges (to be updated annually)	To be completed as part of CIMP implementation	Outfalls with significant NSW discharges will identified as part of the implementation of the NSW Outfall Monitoring Program of the CIMP (See Section 5)	Initial determination by end of 2015 and annually thereafter
10	Storm drain outfall catchment areas for each major outfall within the Permittee(s) jurisdiction	Outfalls were linked in the database to the modeling subwatersheds to provide information on the contributing areas	Detailed analysis of storm drain outfall catchment areas will be conducted for any new outfall monitoring locations, outfalls identified as having significant NSW discharges, and outfalls addressed by structural BMPs	Update as needed
11	Each mapped MS4 outfall shall be linked to a database containing descriptive and monitoring data associated with the outfall. The data shall include:			
11.a	Ownership	Complete	Ownership of outfalls, not previously included, identified during the NSW program (Section 5) will be incorporated into the database	Update as needed
11.b	Coordinates	Complete	Updates and any potential new data identified during the NSW program discussed in Section 5 will be incorporated into the database	Update as needed
11.c	Physical description	Complete	Updates and any potential new data identified during the NSW program discussed in Section 5 will be incorporated into the database	Update as needed

Table 3-1: Map and Database Status and Schedule				
#	**Requirement**	**Status**	**Comment**	**Schedule**
11.d	Photographs of the outfalls to the MS4, where possible, to provide baseline information to track operation and maintenance needs over time	Field review of the outfalls were conducted and site photographs were taken within the DCWMA	Updates and any potential new photos identified during the NSW program discussed in Section 5 will be incorporated into the database	Update as needed
11.e	Determination of whether the outfall conveys significant NSW discharges	To be completed as part of CIMP implementation	Outfalls with significant NSW discharges will identified as part of the implementation of the NSW Outfall Monitoring Program of the CIMP (See Section 5)	Initial determination by end of 2015 and annually thereafter
11.f	Storm water and NSW monitoring data	To be completed as part of CIMP implementation	Storm water and NSW outfall monitoring data will be collected as part of the implementation of the SW/NSW Outfall Monitoring Program	Ongoing updates during CIMP Implementation

PAGE INTENTIONALLY LEFT BLANK

4 Storm Water Outfall Monitoring Program

The objective of this section is to present the Storm Water Outfall Monitoring Program for the DCWMA Group. This Section is intended to satisfy the requirements of Section VIII (Page E-21) of the MRP.

The intent of the Storm Water Program is to meet the requirements of the Storm Water Outfall Program (Section II.E.3, Page E-4) outlined in the Monitoring and Reporting Program (Attachment E of the Permit) by achieving the following objectives:

a. Evaluate the quality of a Permittee's discharge relative to municipal action levels, as described in Attachment G of the Permit

b. Evaluate whether a Permittee's discharge is in compliance with applicable TMDL WLAs

4.1 Storm Water Outfall Monitoring Sites

Section VIII.A of the MRP requires that storm water discharges from the MS4 shall be monitored at outfalls or in channels at the jurisdictional boundaries of the DCWMA Group. In lieu of monitoring at the individual jurisdictional boundaries, the DCWMA Group selected a total of five outfall monitoring sites that allow for the monitoring of discharges from the DCWMA Group to the receiving waters identified in Section 2. These sites have been selected by the coalition in order to meet the requirements of the respective outfall and TMDL Monitoring programs in the watershed management area. The Storm Water Outfall Monitoring Program will utilize two types of outfall sites:

1. Representative NPDES Storm Water Outfall Sites: Storm Water Outfall Sites were selected to meet all of the monitoring requirements identified in Section VIII.A of the MRP. . The NPDES Storm Water Outfall Sites represent the land uses throughout the DCWMA and their data will be generally representative of discharge conditions within the greater DCWMA.

2. TMDL Outfall Sites: TMDL Outfall Sites were selected to meet monitoring requirements specific to individual TMDLs.

An overview of the monitoring locations within the watershed as they relate to the DCWMA Group cities is provided in Figure 4-1.

4.1.1 NPDES Storm Water Outfall Sites

Storm water outfall sites were selected based on the following criteria and consistent with the requirements of Section VIII.A.2 of the MRP.

1. The catchment of the selected outfall is primarily collecting discharges from members of the DCWMA Group;

2. The land use in the catchment of the selected outfall is generally representative of the members of the DCWMA Group within the referenced HUC 12;

3. The outfall location was upstream of a receiving water monitoring station, which is either a ME station or TMDL monitoring site (See Section 2, Receiving Water Monitoring Program);

4. The site location provided channel geometry that is conducive to obtaining reliable flow measurements; and

5. The site location has sufficient working space to install sampling equipment and safe access for monitoring staff to operate and maintain sampling equipment.

Based on the criteria established above, the DCWMA Group identified the following three sites to be utilized as part of the NPDES Storm Water Outfall Monitoring Program:

- Outfall 1 (DOM-OF-001) – DDI 8 Outfall at Dominguez Channel upstream of DCWMA ME Station (Crenshaw and 132nd Street)
- Outfall 2 (DOM-OF-002) – PD 183 to Torrance Lateral (Vermont Ave south of Torrance Boulevard)
- Outfall 3 (DOM-OF-003) – Project 5246 and 74 to Dominguez Estuary (Vermont Ave. & 169th Street)

Attachment B presents fact sheets containing additional details on each of the sites.

4.1.2 TMDL Outfall Sites

The DCWMA Group will monitor two TMDL Storm Water Outfall locations that discharge into the Machado Lake as TMDL Outfall Sites. These monitoring stations are consistent with the City of Los Angeles' *Machado Lake Nutrients and Toxics TMDL Lake Water Quality Management Plan* (LWQMP) dated September 6, 2013. In addition, Outfall 2 and Outfall 3 will be used as monitoring locations for the Dominguez Channel Toxics TMDL

- Outfall 2 (DOM-OF-002) – PD 183 to Torrance Lateral (Vermont Ave south of Torrance Boulevard)
- Outfall 3 (DOM-OF-003) – Project 5246 and 74 to Dominguez Estuary (Vermont Ave. & 169th Street)
- P-77 – Project 77 Drain at Machado Lake
- P-510 – Project 510 Drain at Machado Lake

Attachment B presents fact sheets containing additional details on each of the sites.

4.2 Monitored Parameters, Frequency, and Duration

The constituents and monitoring frequencies to meet the storm water outfall monitoring requirements of the MRP (Section VIII.B) and the TMDL outfall monitoring requirements are presented in Table 4-2. This list was generated from the current list of constituents monitored during wet weather in the receiving waters and will be updated as the constituents monitored during wet weather in the waterbody to which they discharge, as well as downstream waterbodies, are updated and/or based upon the data collected at the individual outfall site. Analytical methods, detection limits, sampling methods and handling procedures are detailed in Attachment C. In addition, details regarding the collection of QA/QC samples are outlined in Attachment C.

Monitoring of storm water discharges shall occur during wet weather conditions resulting from the first rain event of the year and at least two additional wet weather events within the same wet weather season. The DCWMA Group will target the first storm event of the storm year (with peak rainy season typically occurring October through April) with a predicted rainfall of at least 0.25 inch at a 70-percent probability of rainfall at least 24 hours prior to the event start time. Sampling events

shall be separated by a minimum of three days of dry conditions (less than 0.1 inch of rain for each day).

For the determination of a wet weather event for the purposes of monitoring the National Weather Service (NWS) forecasts and rain gauge at the Hawthorne Airport will serve as the reference weather station for the DCWMA Group.

4.3 Storm Water Outfall Monitoring Summary

The DCWMA Group selected a total of five outfall monitoring sites to fulfill the needs of the NPDES and TMDL outfall monitoring and TMDL Monitoring programs. A summary of how the storm water outfall monitoring program meets the intended objectives of the storm water outfall monitoring program outlined in Part VIII.A of the MRP is presented in Table 4-1. The schedule for implementing storm water outfall monitoring is presented in Section 12.

Table 4-1: Summary of Storm Water Outfall Monitoring Program Objectives

Objective	CIMP Component Meeting Objective
Determine the quality of a Permittee's discharge relative to municipal action levels, as described in Attachment G of MS4 Permit.	• Storm water outfall monitoring sites chosen using a representative land use approach. • Storm water outfall monitoring sites chosen to be representative of the land uses of the HUC 12s in the EWMP area. • Extensive list of constituents being collectively monitored at storm water outfall monitoring sites.
Determine whether a Permittee's discharge is in compliance with applicable WQBELs derived from TMDL WLAs.	• Storm water outfall monitoring sites located in waterbodies with applicable WQBELs. • Storm water outfall monitoring sites chosen using a representative land use approach. • List of constituents based on the water quality priorities which includes constituents with WQBELs derived from TMDL WLAs.
Determine whether a Permittee's discharge causes or contributes to an exceedance of RWLs.	• One storm water outfall monitoring site located in each waterbody. • Monitoring frequency equal to receiving water monitoring frequency to enable determination of whether the Permittee's discharge is causing or contributing to any observed exceedances of water quality objectives in the receiving water. • Storm water outfall monitoring sites chosen using a representative land use approach. • List of constituents based on the monitoring requirements of the waterbody to which they discharge, as well as downstream waterbodies.

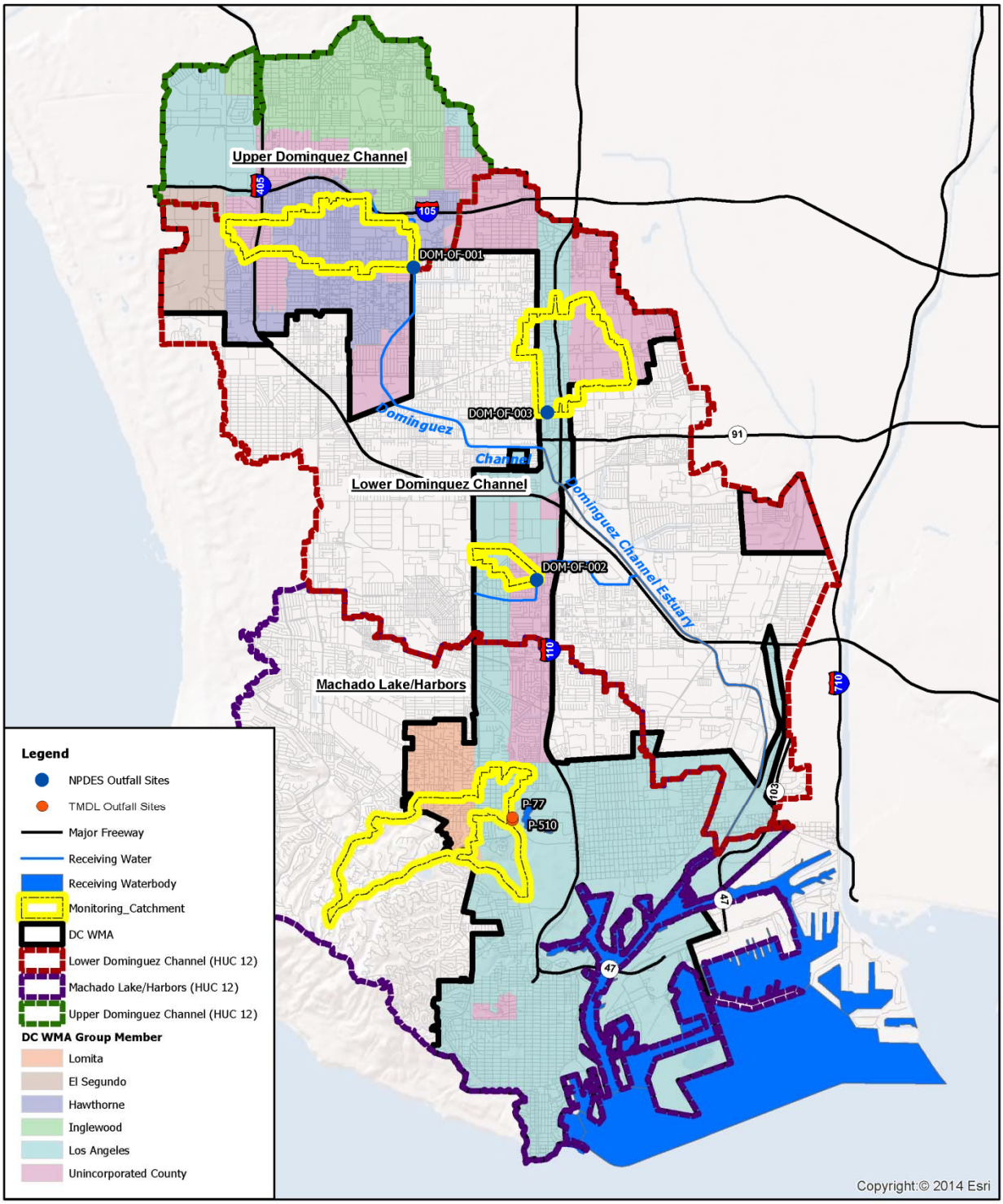

Figure 4-1. DCWMA Group Storm Water Outfall Monitoring Sites

Table 4-2: List of Constituents for NPDES and TMDL Storm Water Outfall Monitoring					
Constituent	**HUC 12 Drainage Area**				
	Upper HUC 12	**Lower HUC 12**		**Machado Lake /Harbors HUC 12**	
	DOM-OF-001	**DOM-OF-002**	**DOM-OF-003**	**P-77**	**P-510**
Site ID	DDI 8 Outfall at Dominguez Channel (Crenshaw and 132nd St)	PD 183 to Torrance Lateral (Vermont Ave S/o Torrance Blvd)	Project 5246/74 to Dominguez Estuary (Vermont Ave. & 169th Street)	Project 77	Project 510
Frequency	3x/year			Phase 1 – 2x/year (2 years) Phase 2 – 1x/year	
Flow, hardness, pH, dissolved oxygen, temperature, specific conductivity, TSS and SSC	●	●	●	●	●
Table E-2 pollutants detected above relevant objectives and not otherwise addressed below	●	●	●		
Copper	●	●	●		
Lead	●	●	●		
Zinc	●	●	●		
Chlordane [(1)], DDT[(2)], PCBs[(3)], and PAHs[(4)]	●	●	●	●	●
Ammonia as N, Nitrate as N, Nitrite as N, Nitrate+Nitrite, Nitrogen (NO3-N+NO2-N)				●	●
Suspended Sediment[(5)]: Copper, Lead, Silver, Zinc, Chlordane [(1)], DDT[(2)], PCBs[(3)], and PAHs[(4)]	❍	❍	❍	❍	❍

1. Chlordane is defined as cis-Chlordane (alpha-Chlordane), trans-Chlordane (gamma-Chlordane), oxychlordane, cis-nonachlor, and trans-nonachlor.
2. DDT is defined as the sum of 2,4'-DDD, 2,4'-DDE, 2,4'-DDT, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT.

3. PCBs are defined as the sum of Congeners when analyzed in water, refer to Attachment C.
4. PAHs include: acenaphthene, anthracene, biphenyl, naphthalene, 2,6-dimethylnaphthalene, fuorene, 1-methylnaphthalene, 2-methylnaphthalene, 1-methylphenanthrene, phenanthrene, benzo(a)anthracene, benzo(a)pyrene, benzo(e)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, perylene, and pyrene.
5. At the conclusion of the preliminary study (Section 8), anticipated to be analyzed annually utilizing a composite sample consisting of the bulk sediment acquired from the collection of a sufficient volume of settleable and suspended solids from at least two storm events or via an approved alternative method. Storm-borne sediment samples will only be collected at the storm water outfall sites if determined to be necessary from the data collected at the reference receiving water station or as deemed necessary by the DCWMA.

5 Non-Storm Water Outfall Program

The objective of this section is to present the method for the NSW outfall screening and monitoring component of the CIMP for the DCWMA Group. The NSW Outfall Monitoring Program is a major component of the MRP and is intended to be a collaborative effort between all of the agencies in the DCWMA Group. The NSW outfall monitoring program component is intended to enhance the existing permit required programs that include LACFCD's efforts under the IC/ID Program to detect, investigate, and eliminate the IC/IDs to the MS4, pursuant to Part VI.D.4.d and the responsibilities of the County of Los Angeles and the Cities of El Segundo, Hawthorne, Inglewood, and Los Angeles under Part VI.D.10 of the Permit.

The NSW Monitoring Program is comprised of the following elements.

1. Identification of Outfalls with Significant NSW Discharge
2. Inventory of MS4 Outfalls with NSW Discharge
3. Prioritized Source Identification
4. Identification of Sources of Significant NSW Discharge
5. Monitoring of Significant NSW Discharges Exceeding Criteria

5.1 Objectives of the NSW Program

The intent of the NSW Program is to meet the requirements of the NSW Outfall Program (Section II.E.3, Page E-4) outlined in the MRP of the Permit by achieving the following objectives:

a. Evaluate whether a Permittee's discharge is in compliance with applicable non-storm water TMDL WLAs.

b. Evaluate whether a Permittee's discharge exceeds non-storm water action levels, as described in Attachment G of the Permit.

c. Assist the Permittee in identifying illicit discharges as described in Sections VI.D.4.d and VI.D.10 of the Permit.

5.2 Approach Overview

The approach to addressing NSW discharges is to implement a programmatic approach to identifying non-storm water discharges and determining if the discharge is a persistent and significant non-permitted discharge that affects the quality of the downstream receiving water and as such, is a significant NSW discharge. Figure 5-1 illustrates the process by which these discharges are evaluated and incorporated into the NSW Program. Table 5-1 provides the required program components of the NSW Program and the relative timing required.

In order to address significant NSW discharges in the watershed, a progressive approach consisting of visual inspections, investigations, and evaluations combined with the existing IC/ID enforcement framework that exists for industrial waste dischargers will be used. This process will be a multi-step procedure to categorize outfall sites for their potential for persistent and significant discharge that may affect the water quality of the downstream receiving water body during dry weather. The initial identification of outfalls with significant non-storm water discharges will be utilize screening based on visual observations (at least three visual surveys) and recorded observational data. The location of

these outfalls will be compared against the known permitted discharges in order to eliminate those outfalls from further screening. If necessary, the DCWMA Group may follow up with the permitted dischargers through the existing Industrial Waste permit framework to confirm that the discharge is meeting permit requirements. For other discharges, the agencies would utilize the existing IC/ID investigation framework to track down the source of the non-permitted discharge. The information from the investigation would be used to address illicit discharges. Once the source is determined, or determined to be unknown, and cannot be eliminated the next step will consist of monitoring, and an assessment of impacts to downstream receiving waters based on the monitoring results. This stage would use a combination of flow monitoring and analytical chemistry to assess the pollutant loading contributed by the site. If the site is found to be contributing to an exceedance, the DCWMA Group or the jurisdiction will address the non-storm water discharge through the EWMP.

All of the information collected will be recorded and updated in the MS4 database (See Section 3 - MS4 Database).

Table 5-1: NSW Outfall Program Summary Table

NSW Program Component	Description	Timing of Completion
1. Outfall Screening	In order to implement the NSW Outfall Program, the DCWMA Group will implement a screening process to identify outfalls that exhibit significant NSW discharges and those that do not.	Prior to initiating source investigations
2. Develop Inventory of NSW Outfalls with discharge	An inventory will be developed of major MS4 outfalls with known significant NSW discharges and those requiring no further assessment.	
3. Develop Prioritization Criteria	Based on data collected during the Outfall Screening process, the DCWMA Group will identify MS4 outfalls with significant NSW discharges and those requiring no further action.	
4. Prioritized source investigation	The data collected as part of the Outfall Screening process will be used to prioritize outfalls for source investigations.	
5. Identify sources of significant NSW discharges	For outfalls exhibiting significant NSW discharges, source investigations per the established prioritization.	Source investigations will be conducted for 25% of the outfalls with significant NSW discharges by December 28, 2015 and 100% by December 28, 2017.
6. Monitor NSW discharges exceeding criteria	The DCWMA Group will monitor outfalls that have been determined to convey significant NSW discharges comprised of either unknown or non-essential conditionally exempt NSW discharges, or continuing discharges attributed to illicit discharges.	Monitoring will commence after completion of source investigations.

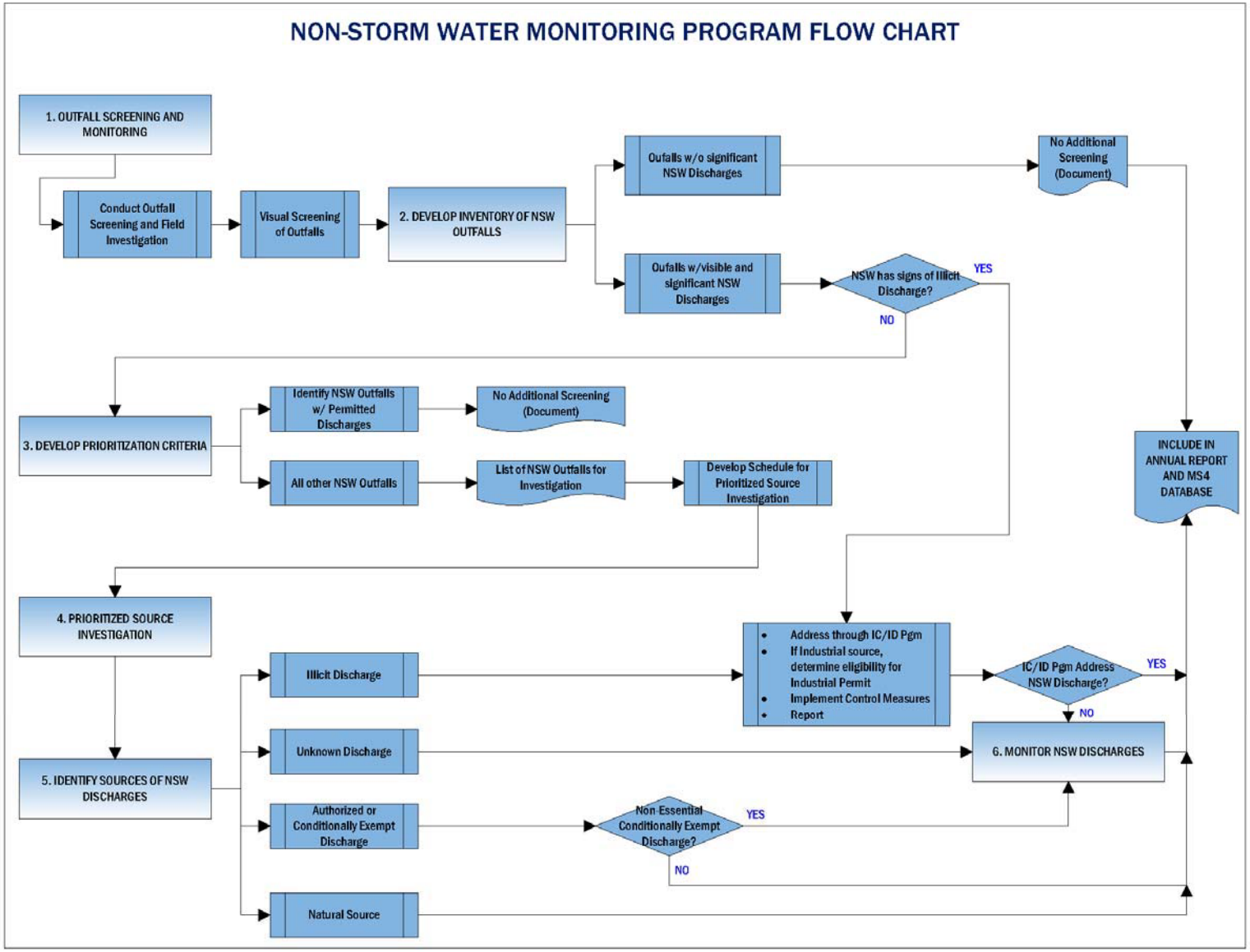

Figure 5-1. NSW Monitoring Program Process Chart

PAGE INTENTIONALLY LEFT BLANK

5.3 NSW Outfall Screening and Monitoring Program

In order to determine significant non-storm water discharges, an initial screening process must be conducted. The screening process will consist of both a GIS map screening and a field screening. To date, the following GIS and preliminary field screening of outfalls within the jurisdictional boundaries has been conducted during CIMP development to support implementation of the initial screening process:

GIS Database (Section 3 - MS4 Database)

Section VII.A of the MRP requires that the DCWMA Group CIMP include a map or database of the MS4 system. The DCWMA Group developed a GIS database and map which included jurisdictional boundaries, HUC 12 drainage areas, watershed boundaries, storm drains, channels, water bodies, and roads. The locations of the outfalls were identified based on the point of intersection to any open channel or surface water body. These files were compiled into a single geodatabase to create a central location of information.

Preliminary Field Screening of Outfalls

A preliminary field screening of outfalls was conducted by the DCWMA Group during CIMP development to collect information and take site photographs at each location visited. After field work was completed, collected data and photos were uploaded to the geodatabase.

5.4 Identification of Outfalls with Significant NSW Discharge

From the MRP (Part IX.C.1), the following characteristics are applicable to the DCWMA and may be used to determine significant NSW discharges:

1. Discharges exceeding a proposed threshold discharge rate as determined by the Permittee(s).

2. Other characteristics as determined by the Permittee(s) and incorporated within the screening program.

As part of the implementation of this CIMP, the DCWMA Group will conduct additional field screening of outfalls, collect field information, and visually verify the presence and persistence of non-storm water discharge from the outfalls that stem from the DCWMA Group. In-situ field measurements (using either probes and/or field kits) will also be collected during the screening process. Based on the data collected, the DCWMA Group will evaluate the data and establish criteria to determine what classifies as a significant NSW discharge.

5.5 Inventory of MS4 Outfalls with NSW Discharge

An inventory of MS4 outfalls will be completed identifying those outfalls with known significant NSW discharges and those requiring no further assessment (Part IX.D of the MRP). If the MS4 outfall requires no further assessment, the inventory will incorporate the rationale for the determination of no further action required. Potential rationale for a determination of no future action could include the following criteria:

1. The outfall does not have flow;

2. The outfall does not have a known significant NSW discharge; or

3. Discharges observed were determined to be exempted

The inventory will be recorded in the database required in Part VII.A of the MRP (See Section 3, MS4 Database). Each year, the inventory will be updated to incorporate the most recent characterization data for outfalls with significant NSW discharges.

5.6 Prioritized Source Identification

Once the major outfalls exhibiting significant NSW discharges have been identified through the screening process and incorporated into the inventory, the outfalls will be prioritized by the DCWMA Group for further source investigations. The Permit identifies the following prioritization criteria that apply to the DCWMA for outfalls with significant NSW discharges in Part IX.E.1 of the MRP:

a. All major outfalls and other outfalls that discharge to a receiving water subject to a TMDL shall be prioritized according to TMDL compliance schedules.

b. Outfalls for which monitoring data exist and indicate recurring exceedances of one or more of the Action Levels identified in Attachment G of the Permit.

c. All other major outfalls identified to have significant NSW discharges.

Once the prioritization is completed, a prioritized source identification listing and schedule will be developed and submitted to the LARWQCB for approval during the first year of the DCWMA CIMP implementation. Since the number of priority outfalls with significant NSW discharges is not known, the DCWMA Group will conduct the Prioritized Source Investigation as provided in Table 5-2 below.

Table 5-2: NSW Outfall Program Schedule Overview

YEAR 1 ACTIVITIES (following approval of the CIMP)
1. Outfall Screening 2. Develop Inventory of NSW Outfalls 3. Develop Prioritization Criteria and Schedule for Prioritized Source Investigation
YEAR 2-3 ACTIVITIES
4. Conduct Prioritized Source Investigation 5. Identify Sources of NSW Discharges 6. Monitor NSW Discharges
Source Investigation Schedule
• **Year 2** - Source Investigation of 50% of the NSW outfalls • **Year 3** – Source Investigation of 100% of the NSW outfalls

Based on the visual observations conducted during field screening, the follow up GIS analysis, or other pertinent information, both the source identification prioritization criteria and scheduling may be revised and updated by the DCWMA Group upon completion of the first year of implementation of the NSW Screening and Outfall Program.

5.7 Identify Sources of Significant NSW Discharge

Based on the results of the Prioritized Source Investigation, if the source is determined to be an illicit discharge, each member of the DCWMA Group that has jurisdiction of the catchment area will implement procedures to eliminate the discharge consistent with IC/ID requirements and document the actions in the next Annual Report.

If the source is determined to be an NPDES permitted discharge, a discharge subject to a Record of Decision approved by USEPA pursuant to section 121 of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), a conditionally exempt essential non-storm water discharge, or entirely comprised of natural flows as defined at Part III.A.d of the Permit, the DCWMA Group will document the source and report to the LARWQCB in the next Annual Report. In addition, if during the review of the data on these discharges, if it is determined that they are found to cause or contribute to receiving water impairment the DCWMA Group (or the Group's representative) will report the findings to the LARWQCB within 30 days.

If the source is determined to originate from upstream of the DCWMA Group's jurisdictional boundaries, the DCWMA Group will notify the LARWQCB and that jurisdiction within 30 days of determination.

5.8 Monitor NSW Discharge Exceeding Criteria

Within 90 days after completing the source identification, the DCWMA Group will monitor those outfalls that have been determined to convey significant NSW discharges comprised of unknown discharges, or continuing discharges attributed to illicit discharges. The following parameters will be monitored:

a. Flow

b. General Water Chemistry (pH, Dissolved Oxygen, Turbidity, Conductivity, and Temperature)

c. Other Pollutants on the TMDL and/or 303(d) List for the applicable receiving water body will be monitored if general chemistry above exceeds the Action Levels for the Dominguez Channel Watershed (Attachment G of the Permit, Table G9-G12). A list of additional pollutants that will be monitored is provided in Table 5-3. This list was generated from the current list of constituents monitored during dry weather in the receiving waters and will be updated as the constituents monitored during dry weather in the waterbody to which they discharge, as well as downstream waterbodies, are updated and/or based upon the data collected at the individual outfall site.

Analytical methods, detection limits, sampling methods and handling procedures are detailed in Attachment C. In addition, details regarding the collection of QA/QC samples are outlined in Attachment C.

For the purposes of this program, NSW discharges shall be monitored duringdry weather on days when precipitation is < 0.1 inch, and not within the following three days after a rain event. Monitoring data will be collected from the discharge from at least two separate events, upon evaluation of the monitoring results additional sampling may be required to make a full assessment. The monitoring data collected will be evaluated to determine if discharges are causing or contributing to downstream receiving water impacts. Based on the outcome of this evaluation, subsequent actions will be assigned and assessed.

Table 5-3: List of Constituents for Non-Storm Water Outfall Monitoring		
Water Body	**Category 1**	**Category 2**
Dominguez Channel (lined portion above Vermont Ave)	Copper (diss.), Lead (diss.), Zinc (diss.)	Indicator Bacteria, Ammonia, Diazinon
Torrance Lateral	Copper (diss.), Lead (diss.), Zinc (diss.)	Coliform Bacteria
Dominguez Estuary (unlined portion below Vermont)	Copper (diss.), Lead (diss.), Zinc (diss.)	Ammonia, Coliform Bacteria
Machado Lake	Total Phosphorus, Total Nitrogen, Ammonia, Chlorophyll-a, Dissolved Oxygen	*None*
Wilmington Drain	*None*	Coliform Bacteria, Copper (diss.), Lead (diss.)
LA Harbor – Cabrillo Marina	Copper, Lead, Zinc, PAHs	*None*
LA Harbor – Inner Cabrillo Beach	Indicator Bacteria, Copper, Lead, Zinc, PAHs	*None*

5.9 Non-Storm Water Outfall Monitoring Program Summary

The NSW Outfall Monitoring Program is intended to enhance the efforts of DCWMA Group's efforts to meet the requirements of the IC/ID Program to detect, investigate, and eliminate the IC/IDs to the MS4, pursuant to Part VI.D.4.d and Part VI.D.10 of the Permit.

The NSW Monitoring Program proposed under the DCWMA CIMP is comprised of the following components.

3. Identification of Outfalls with Significant NSW Discharge
4. Inventory of MS4 Outfalls with NSW Discharge
5. Prioritized Source Identification
6. Identify Sources of Significant NSW Discharge
7. Monitor NSW Discharge Exceeding Criteria

Historically, in the DCWMA, there has been limited outfall screening and monitoring efforts to identify, evaluate and assess NSW discharges from which to build the more comprehensive program from. In order to develop the most effective approach, a comprehensive effort will be conducted to screen the outfalls within the DCWMA, develop the most appropriate method for determining which outfalls have significant NSW discharge and prioritization, conduct source investigation, and monitor significant NSW discharges. As a result, a phased approach towards achieving these goals will be implemented. This approach will progress towards identifying and reducing NSW discharges in the DCWMA.

As stated in Section 10 Adaptive Management, as the NSW Monitoring program is implemented, the DCWMA Group will update the LARWQCB with the inventory of prioritized NSW outfalls, source investigation efforts, and discharge monitoring efforts. Analytical methods, detection limits, sampling methods and handling procedures are detailed in Attachment C. In addition, details regarding the collection of QA/QC samples are outlined in Attachment C.

6 New Development/Re-Development Effectiveness Tracking

The objective of this section is to present an overview of the requirements for the New Development/Redevelopment Effectiveness Tracking Component of the CIMP for the DCWMA Group. Due to the complexity of land development processes across jurisdictions, data management and tracking procedures will vary by jurisdiction. The DCWMA Group members will each individually develop a complete tracking system that works for their individual needs and internal processes and meets the requirements of the Permit.

6.1 Program Objectives

The objectives of the New Development/Redevelopment effectiveness tracking, as stated in the MRP, is to track whether the conditions in the building permit issued by the Permittee(s) are implemented to ensure the volume of storm water associated with the design storm is retained on-site as required by Part VI.D.7.c.i. of the Permit (Section II.E.4, Page E-5) .

To meet the MRP requirements of Permit Attachment E, Part X.A, each member of the DCWMA Group will need to maintain an informational database record for each new development/re-development project subject to the minimum control measure (MCM) requirements in Part VI.D.7 of the Permit and their adopted LID Ordinance.

6.2 Existing New Development/Re-Development Tracking Procedures

The DCWMA Group will collect essential information as such as the project name, developer name, project location, date of certificate of occupancy, and project conditions of approval or the information previously collected under the 2001 MS4 Permit for Standard Urban Stormwater Mitigation Plan (SUSMP) requirements.

6.3 Special Considerations for Data Management and Reporting

6.3.1 Data Management

The DCWMA Group will coordinate the Data Management and Reporting efforts to minimize interagency variability and promote the collection of consistent high quality data for reporting and assessment in the group new development/re-development tracking program report.

6.3.2 Additional Data

Development review processes generally consist of the following similar steps:

- Planning - Project proponents submit an application to agency planning department to determine whether or not the project meets jurisdictional requirements. The project may require a public hearing for conditions and entitlements. Project conditions may include water quality, flow control/volume reduction or hydromodification management related requirements.

- Building - Projects may be subject to engineering, community services, or building department review and approval of plans or technical reports. During review, required water quality BMP designs are reviewed and accepted. When a building and/or grading

permit is issued, project construction usually proceeds without further discretionary approvals.

- Construction - During construction, approved BMPs are implemented then verified by the jurisdiction's inspector prior to issuance of a Certificate of Occupancy.
- Post-Construction Inspections - Once constructed, inspection and verification of maintenance is transferred to the jurisdiction's water quality program manager.

Relevant project data is collected during each phase of the development review process described above. Table 6.1 illustrates data collection that will occur throughout the planning, building, construction and post-construction inspection processes.

Table 6-1: Development Review Process and Data Collection

Stage	Process	Data Collection
Planning	Planning review, conditions and entitlements	Project name
		Developer name
		Location/Map
		Documentation of issuance of requirements
Building	Engineering review and approval of plans and technical reports	85th and 95th percentile storm event criteria
		Other hydromodification management requirements
		Project design storm intensity and volume
		Percent of design storm volume retained onsite
		Design volume for treatment BMPs
		One-year/one-hour storm intensity
		Percent of design storm infiltrated offsite
		Percent of design storm retained/treated with biofiltration offsite
		Location/Maps of offsite mitigation
Construction	Approval of BMP construction and issuance of Certificate of Occupancy	Issuance date of Certificate of Occupancy
Post-Construction Inspections	Inspection and tracking of post-construction BMPs	Inspection and maintenance dates

6.3.3 Reporting

The DCWMA Group data collection template for New Development and Redevelopment will provide information to assist with the annual reporting. The DCWMA Group will develop standard collection templates that include the information to be tracked for each project and is presented in Tables 6.2 and 6.3.

Table 6-2: Required Data to Track for New Development and Re-Development Projects Per Attachment E.X.A	
Subject to Part VI.D.7, as per Attachment E.X.A.	
Name of the Project	Project design storm volume (gallons or MGD)
Name of the Developer	Percent of design storm volume to be retained onsite
Project location and map[1]	Design volume for water quality mitigation treatment BMPs (if any)
Date of Certificate of Occupancy	One year, one hour storm intensity[2] (if flow through treatment BMPs are approved)
85th percentile storm event for the project design (inches per 24 hours)	Percent of design storm volume to be infiltrated at an offsite mitigation or groundwater replenishment site
95th percentile storm event for projects draining to natural water bodies (inches per 24 hours)	Percent of design storm volume to be retained or treated with biofiltration at an offsite retrofit project
Other design criteria required to meet hydromodification requirements for drainages to natural water bodies	Location and maps of offsite mitigation, groundwater replenishment, or retrofit sites1
Project design storm (inches per 24 hours)	Documentation of issuance of requirements to the developer

[1] Preferably linked to the GIS storm drain map.

[2] As depicted on the most recently issued isohyetal map published by the Los Angeles County hydrologist.

Table 6-3: Required Data to Track for New Development and Re-Development Projects Per Part VI.D.7.d.iv	
Conditioned with Post Construction BMPs, as per Part VI.D.7.d.iv.(1)(a)	
Municipal Project ID	Maintenance Records
State WDID Number	Inspection Date(s)
Project Acreage	Inspection Summary(ies)
BMP Type and Description	Corrective Action(s)
BMP Location (coordinates)	Date Certificate of Occupancy Issued
Date of Acceptance	Replacement or Repair Date
Date of Maintenance Agreement	

Annual Assessment and Reporting requirements to be included in an annual report are outlined in Part XVIII.A.1 through A.7 of the MRP.

6.4 Summary of New Development/Re-Development Effectiveness Tracking

The DCWMA Group members will each individually develop a complete tracking system that works for their individual needs and internal processes and meets the requirements of the Permit.

7 Regional Studies

The objective of this section is to present the Regional Studies that apply to the Dominguez Channel Watershed and the DCWMA Group as well as identify other studies occurring in the area that may be considered regional in nature to the DCWMA.

As stated in the MRP, Section II.E.5, Regional Studies are required to further characterize the impact of the MS4 discharges on the beneficial uses of the receiving waters. Regional studies shall include the Southern California Stormwater Monitoring Coalition (SMC) Regional Watershed Monitoring Program (bioassessment) and special studies as specified in approved TMDLs.

7.1 Regional Study Participation

The MRP only identifies one regional study: the SMC Watershed Monitoring Program as a required regional study (Section XI, Page E29-30). The MRP states that each Permittee is responsible for supporting the monitoring described at the sites within the watershed management area(s) that overlap with the Permittee's jurisdictional area. Currently, it does not appear that the SMC is implementing monitoring within the DCWMA. As such, it does not appear that the DCWMA Group is required to provide support. However, the DCWMA Group is conducting bioassessment, toxicity, and water and sediment chemistry monitoring in the Dominguez Channel Estuary. In this manner, the DCWMA Group is in turn supporting the goals of the SMC. However, it should be noted that the LACFCD and City of Los Angeles will continue to participate in the Regional Watershed Monitoring Program (Bioassessment Program) being managed by the Southern California Stormwater Monitoring Coalition (SMC).

7.2 Other Potentially Relevant Regional Studies

Additional studies are being conducted within receiving waters associated with the DCMWA. These studies may provide information relevant to the DCWMA Group and are identified below. The discussion of the other relevant studies is for informational purposes as these studies are not a component of the DCWMA Group CIMP.

7.2.1 Contaminated Sediment Management Plan

The City of Los Angeles, Los Angeles County and Los Angeles County Flood Control District are participating in a CSMP designed to meet the requirement of the TMDL schedule for the Dominguez Channel Toxics TMDL. The TMDL requires that responsible parties in the Dominguez Channel Watershed develop a CSMP to address contaminated sediments in the DCE. The CSMP was submitted to the LARWQCB on March 20, 2014.

The objective of the CSMP is to establish specific steps to identify, prioritize, and implement sediment management actions. Section 3.1 of the CSMP outlines the monitoring program to be used to identify areas to be managed. According to this section, the initial step of the CSMP is to analyze available data, identify data gaps, collaborate with regional monitoring programs, conduct special studies, as needed, and identify sources and nature and extent of impacted sediments. Sediment and water quality will be evaluated within areas pursuant to the cooperating parties' jurisdictions as part of the required Dominguez Channel Toxics TMDL monitoring program, MS4 and NPDES permits' required monitoring programs, regional monitoring programs, and related special studies. The special and preliminary studies are described in Section 8 of the CIMP.

7.2.2 Southern California Bight (SCB)

To improve the efficacy of existing monitoring programs and improve capacity for regional assessments, SCCWRP initiated a series of monitoring efforts throughout the SCB in 1994, 1998, 2003, 2008, and 2013. The DCWMA Group will follow the Bight Regional Monitoring project and will coordinate the efforts under the Dominguez Channel Toxics TMDL.

8 Special and Preliminary Studies

The objective of this section is to address the MRP special study requirements and identify preliminary studies that will be undertaken by the DCWMA Group in order to address the MRP requirements.

8.1 Special Studies Requirements

The Monitoring and Reporting Program (Attachment E of the Permit) states that the following requirements for Special Studies (Section XIII, Page E-36) are as follows.

> *"Each Permittee shall be responsible for conducting special studies required in an effective TMDL or an approved TMDL Monitoring Plan applicable to a watershed that transects its political boundary."*

Currently, the adopted TMDLs in the DCWMA do not contain required Special Studies.

8.2 DCWMA Group Preliminary Studies

The DCWMA Group is proposing to develop and execute some preliminary studies for implementation in order gather data and information to fill the identified gaps to fully develop these aspects of the CIMP. Following the approval of the CIMP, the DCWMA Group will define the scope of the preliminary studies, including the methodologies and objectives. The scope and results will be shared with the LARWQCB once the preliminary studies are completed. A brief overview of the proposed preliminary studies is discussed below. The preliminary studies may be conducted concurrently with other monitoring activities at the discretion of the DCWMA Group. The work plan, findings and recommendations for the studies will be standalone documents; however, status updates on the studies will be incorporated into the annual reporting.

8.2.1 DCE Fish Species Identification

The Dominguez Channel Harbor Toxics TMDL requirement for Fish Tissue Monitoring states that fish tissue samples shall be collected every two years from DCE. The target species in the DCE shall be selected based on the residency, local abundance and fish size at the time of field collection. In order to determine the most appropriate fish species and the availability of those species along the DCE, a preliminary study will be considered that will consist of an assessment of the fish species within the proposed sampling locations: 1) DC Estuary at Vermont Avenue and 2) DC Estuary at Pacific Coast Highway.

At the conclusion of the study the findings and recommendations will be incorporated into the CIMP.

8.2.2 Storm-borne Sediment Samples

The Dominguez Channel Harbor Toxics TMDL requires that water and TSS samples be collected at the outlet of the storm drains discharging to the channel and the estuary. Water samples and TSS samples are to be analyzed for a suite of compounds. In addition, the Machado Lake Toxics TMDL requires the collection of TSS samples for the storm drains (Wilmington Drain, Project 77 and Project 510) that discharge into Machado Lake. Sampling design for TSS samples must collect sufficient volumes of suspended solids to allow for analysis of the pollutants in the bulk sediment. The goal of these requirements is to assess loadings of pollutants of interest associated with storm-borne sediments.

In order to develop the most appropriate method for evaluating pollutant loadings associated with storm-borne sediment, the DCWMA Group will conduct a preliminary study to develop and implement the most feasible method for collecting and analyzing representative samples from the Torrance Lateral, Dominguez Channel, DC Estuary, and the storm drains that discharge into Machado Lake. Following completion of this study, a methodology to effectively evaluate pollutant loadings associated with storm-borne sediment will be incorporated into the DC WMA Group CIMP.

9 Non-Direct Measurements

Environmental data (water, sediment, and tissue data) collected by others through different monitoring programs in the watershed will be incorporated to the extent practicable. The extent practicable will be determined by the DCWMA Group if needed to better characterize the MS4 discharges from their jurisdictional areas. It is not the intent or purpose of this CIMP to compile and analyze all available data.

Criteria

If deemed necessary by the DCWMA Group, the environmental data reported by other entities will be evaluated for suitability for inclusion in the CIMP database and will be accepted if it meets the following requirements:

- Conducted and documented in accordance with the sampling procedures outlined in the 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.

If the data are deemed to be suitable they will be included in the database described in Section 3.

9.1 Non-Direct Measurements for the DCWMA Group CIMP

The following Non-direct measurements may be obtained by the DCWMA Group to address the MRP requirements of the CIMP and support CIMP implementation.

- Tidal Measurements – Tidal measurements will be obtained from the National Oceanic and Atmospheric Administration as described in Attachment C.
- Flow Data – Additional flow data will be obtained for the LACFCD stream gages as described in Attachment C.
- Rainfall Data – Rainfall information will be obtained from the LACFCD rain gages as described in Attachment C.

10 Adaptive Management

The adaptive management process will be utilized to evaluate the DCWMA CIMP annually as part of the annual reporting and, if deemed necessary by the DCWMA Group, update components of the DCWMA CIMP. The objective of this section is to present the method for adapting the DCWMA CIMP:

10.1 Integrated Monitoring and Assessment Program

As the DCWMA CIMP is implemented, additional information will be gathered that may require modifications to the procedures identified in the CIMP. Annually, an evaluation of the CIMP will be conducted as part of the annual reporting to identify potential modifications that may enhance the monitoring program for evaluation and approval by the DCWMA Group to incorporate into the CIMP as deemed necessary.

10.1.1 Outfall Based Monitoring, Storm Drains, Channels, and Outfall Map(s) and/or Database

The MS4 database will be updated annually per Section VII, A.9 of the MRP (Page E-21).

10.1.2 Storm Water Outfall Monitoring Program

The implementation of the EWMP may introduce projects across the watershed that may not `be located in the representative catchment used for the storm water outfall monitoring discussed above. In addition, there may be a need to gather additional data to assist in siting projects or gathering data for adapting the EWMP. In light of this, the adaptive management approach would provide a set of criteria that would allow for the DCWMA Group to relocate an outfall monitoring station to meet the needs of the EWMP as it is implemented. Criteria the group could consider for relocation of an outfall monitoring site include, but are not limited to:

- Implementation of water quality improvement projects
- Changes to land use in the watershed
- Establishment of water quality data in another representative catchment
- No detected exceedances of water quality targets

The DCWMA Group Storm Water Outfall Monitoring Program may be adapted during the term of the Permit. The following criteria may be considered for relocation of an outfall monitoring site:

- The BMPs implemented in the catchments leading to the outfall are achieving the desired goals.
- Other outfalls may be considered, if BMPs in the monitored catchments are achieving their desired goals.
- Receiving water data may suggest that while the monitored outfall is achieving its desired goals, other outfalls may not be achieving the desired goals.
- Other criteria as determined appropriate by the DCWMA Group.

10.1.3 Non Storm Water (NSW) Outfall Monitoring

The NSW Program is an adaptive program and monitoring for NSW discharges will require plan updates as part of the program implementation. As NSW discharges are addressed, monitoring at the prioritized outfalls will cease (Section IX.G, Page E-28). Additionally, if monitoring demonstrates that discharges do not exceed any NALs or water quality standards for pollutants identified on the 303(d) list, monitoring will cease at an outfall after the first year. Also, given the phased approach to the screening process, the inventory of outfalls determined to be significant NSW discharges will be updated after the completion of the screening process.

The MRP requires the following components of the NSW Program to be reviewed and updated annually by the DCWMA Group:

- Outfall Screening and Monitoring Plan
- Monitoring and MS4 inventory of significant NSW discharges

10.1.3.1 Outfall Screening and Monitoring Plan

The NSW Outfall Monitoring Program will be assessed annually as part of the annual reporting and updated as necessary to meet the following requirements (Section IX.B, Page E-24):

- The procedures for the NSW outfall-based screening and monitoring program plan must be updated as needed to reflect the DCWMA CIMP.
- The DCWMA Group must conduct at least one re-assessment of its NSW outfall-based screening and monitoring program during the term of the Permit to determine whether changes or updates are needed. Where changes are needed, the DCWMA Group will make the changes in its written program documents, implement these changes in practice, and describe the changes within the next Annual Report.

10.1.3.2 Inventory of MS4 Outfalls with NSW Discharges

The MS4 Outfalls with significant NSW discharges will be reviewed and updated as required by the MRP (Section IX.D.4, Page E-26). The Storm Drains, Channels and Outfalls map and associated outfall database required in Part VII.A of the MRP will be updated to incorporate the most recent characterization data for outfalls with significant NSW discharge beginning on the first year following approval of the CIMP by the LARWQCB.

10.2 CIMP Revision Process

The DCWMA Group will submit an Annual Report to the LARRWQCB Executive Officer by December 15th of each year. The Annual Report will include an assessment of the CIMP program elements and any applicable program updates. The Annual Report will cover a reporting period from July 1st to June 30th.

The CIMP identifies a number of procedures that will require updates to the MS4 database and the NSW Outfall Monitoring Program. Since these items are discussed in the MRP CIMP provisions, it should not be necessary to obtain approval from the LARWQCB.

The following changes will be considered annually and may be incorporated in the Annual Report. The DCWMA Group would determine if any necessary modifications will be incorporated into the

DCWMA CIMP for subsequent implementation. These modifications, including implementation schedules, will be proposed to the DWMA Group Members and accepted prior to submission.

1. Adding constituents, increasing monitoring frequency, or adding sites as a result of any requirements in the Permit (e.g., TIE results), procedures outlined in the CIMP or to further support meeting the monitoring objectives.

2. Discontinuing monitoring for Table E-2 constituents that are not identified as a water quality priority and are not detected at levels above relevant water quality objectives in the first year of monitoring.

3. Discontinuing monitoring of any non-TMDL constituent at a specified site if there are two years with no exceedances observed for the same condition (i.e., wet or dry weather).

4. Modifying methods for consistency with EPA method requirements or to achieve lower detection limits.

5. Changing analytical laboratories.

6. Removing outfall monitoring location determined to be not representative of MS4 discharges in the DCWMA Group (for reasons other than the observed water quality).

7. Modifications to sampling protocols resulting from coordination with other watershed monitoring programs.

Should additional modifications be identified that are not specified in this section that would result in a major changes to the DCWMA CIMP (e.g., relocation of a storm water outfall site or a receiving water monitoring site), the modifications will be discussed in the Annual Report and a separate letter will be submitted to the LARWQCB requesting for approval from the Executive Officer. Upon receipt of written approval from the Executive Officer, the DCWMA CIMP will be updated and a revised CIMP will be provided to the LARWQCB and the DCWMA Group.

11 Data Management and Reporting

Attachment D details the procedures for managing and reporting data to meet the goals and objectives of the CIMP and in turn the Permit. The details contained in Attachment D serve as a guide for ensuring that consistent protocols and procedures are in place for successful data management and reporting. Data management procedures include data review, verification and validation.

Semi-annual analytical data reports and annual monitoring reports will be submitted as outlined in the MRP. Semi-annual analytical data reports are required to be submitted on a semi-annual basis. Reporting for the period between July 1st through December 31st the analytical data report will be submitted by June 15th. Reporting for the period between January 1st through June 30, the semi-annual report will be submitted by December 15th.

The Semi-annual analytical data reports will include the following:

- Exceedances applicable to WQBELs, RWLs, action levels or aquatic toxicity thresholds
- Corresponding sample dates and monitoring locations

Annual monitoring reports are required to be submitted by December 15 of every year. The annual monitoring reports will cover the monitoring period of July 1 through June 30. The annual monitoring reports will include the following:

- Watershed Summary Information
    - Watershed Management Area
    - Subwatershed (HUC-12) Descriptions
    - Description of Permittee(s) Drainage Area within the Subwatershed
    - Annual Assessment and Reporting
    - Storm water Control Measures
    - Effectiveness Assessment of Storm water Control Measures
    - NSW Control Measures
    - Effectiveness Assessment of NSW Control Measures
    - Integrated Monitoring Compliance Report
    - Adaptive Management Strategies
    - Supporting Data and Information

Details on the reporting requirements from the MRP that will be submitted with the semi-annual analytical data reports and annual monitoring reports are presented in Attachment D. In addition to the requirements from the MRP, a discussion of how the reported data are to be used is included in Attachment D.

12 Schedule for DCWMA CIMP Implementation

12.1 CIMP Implementation Requirements

Section IV.C.6. of the MRP states that monitoring shall commence within 90 days after approval of the CIMP by the Executive Officer of the Regional Water Board. The DCWMA Group will implement the CIMP within 90 days of approval as provided in the schedule shown on Figure 12-1.

However, the schedule for the new and redevelopment effectiveness tracking will begin no later than the submittal of the Draft EWMP (June 28, 2015).

12.2 Schedule Constraints

The status of implementation of the various CIMP Program Elements will vary based on the current status of implementation of existing monitoring programs, seasonal conditions, and the feasibility of collecting a water quality sample at the time of approval of the CIMP. The two primary factors affecting the CIMP implementation schedule relate to 1) automatic water sampler installation; and 2) monitoring that is dependent upon prerequisite information (e.g., monitoring of significant NSW discharges).

12.3 Monitoring Sites with Autosamplers

Monitoring sites require the use of automatic water samplers in order to characterize the water quality during a storm event. Non-tidally influenced receiving water wet weather samples and storm water outfall samples will generally be collected with as composite samples. As such, the installation of an automatic water sampler is necessary before monitoring can commence. Other factors that may affect the installation of an autosampler may include access permits, regulatory permits, and availability of equipment, security, and electrical power.

12.4 Receiving Water Monitoring Phased Schedule

The DCWMA Group will initiate the dry-weather monitoring, within 90 days following approval of the CIMP, the following activities.

- DC Toxics TMDL Dry-Weather TMDL monitoring at Upper and Lower Dominguez Channel Estuary.
- Continue with the bacteria TMDL monitoring at Cabrillo Beach.

The Receiving Water Monitoring Program also requires the installation of an automatic water sampler and equipment.

The non-tidally influenced receiving water stations are not part of any existing monitoring program and would require the design, permitting, and installation of a new monitoring station in addition to the procurement of the monitoring equipment. Stations that fall in this category include DOM-RW-DC01 (Mass Emission Station), DOM-RW-TL01 (Torrance Lateral), and WD-1 (Wilmington Drain).

For the tidally influenced or lake receiving water monitoring sites DOM-RW-DCE01 (Upper Dominguez Estuary), DOM-RW-DCE02 (Lower Dominguez Estuary), ML-1 to ML-3 (Machado Lake), and 1 to 22 (Los Angeles Harbor) are not dependent on the installation of monitoring stations. The schedule of monitoring at Machado Lake is impacted by the Machado Lake Rehabilitation and as such, the

monitoring of the lake sites will not commence until the lake rehabilitation is completed. The monitoring of the Dominguez Estuary stations can begin within the established program schedule.

The time required for autosampler installation is accounted for in the phased approach to implementation of the sampling for the receiving water and storm water outfall elements of the CIMP (Figure 12-1). Phasing in the receiving water and storm water outfall elements of the CIMP will allow evaluation of the sites to determine if any need to be changed due to significant contributions from non-MS4 sources or other reasons that sampling is not feasible at a site and one of the alternate or new sites must be utilized.

Table 12-1 below, provides a table describing the installation of the receiving water sampling stations.

Table 12-1: Receiving Water Monitoring Locations with Sampling Stations

Location (Site ID)	Installation[1]	Sampling Start	Comments
Dominguez Channel at 135th (DOM-RW-DC01)	Year 1	Year 2 (Mid-Year)	Design, Permitting, and Installation would start following approval of CIMP
Torrance Lateral at Hamilton Ave (DOM-RW-TL01)	Year 1	Year 2 (Mid-Year)	Design, Permitting, and Installation would start following approval of CIMP
Wilmington Drain at PCH (WD-1)	Year 2	Year 3	Design could start following approval of CIMP, however permitting and installation would be pending based on the completion of Machado Lake Remediation

[1] Year 1 is assumed to start within 90 days of CIMP Approval

12.5 Storm Water Outfall Monitoring Phase Schedule

The Storm Water Outfall Monitoring Program also requires the installation of Sampling Stations at the 5 Outfall monitoring sites. Similarly, the sampling station will consist of automatic water samplers, equipment, enclosures, foundation, and establishing data and electrical service.

Given the continued use of previously monitored receiving water sites in Dominguez Chanel at sites DOM-OF-001(DDI 8) and DOM-OF-003 (Project 5246/74), the infrastructure for sampling is currently available and would only require the procurement of new autosampling equipment, minor repairs and upgrades to the stations, and the installation and testing of the equipment at the site. As such, it is anticipated that wet weather outfall monitoring at these sites can reasonably conducted within six to eight months after CIMP approval.

The non-tidally influenced storm water outfall stations are not part of any existing monitoring program and would require the design, permitting, and installation of a new monitoring station in addition to the procurement of the monitoring equipment. Stations that fall in this category include DOM-OF-002 (PD 183), P-77 (Project 77), P-510 (Project 510).

Table 12-2 provides a table describing the phasing for the installation of the Storm Water Outfall sampling stations.

Table 12-2: Storm Water Outfall Sampling Station Schedule

Location(Site ID)	Installation[1]	Sampling Start	Comments
Outfall 1 – DDI 8 at Dominguez Channel (DOM-OF-001)	Year 1	Year 2	Existing station installation will be assessed. If necessary upgrades and/or repairs will be Designed and Implemented at the MS4 Outfall Station
Outfall 2 - PD 183 to Torrance Lateral (DOM-OF-002)	Year 1	Year 2 (Mid-Year)	Design and Installation of new MS4 Outfall Station
Outfall 3 – Project 5246 and 74 (DOM-OF-003)	Year 1	Year 2	Existing station installation will be assessed. If necessary upgrades and/or repairs will be Designed and Implemented at the MS4 Outfall Station
Project 77 at Machado Lake (P-77)	Year 2	Year 3	Design of new TMDL Outfall Station. Installation pending completion of Machado Lake Rehabilitation Project
Project 510 at Machado Lake (P-510)	Year 2	Year 3	Design of new TMDL Outfall Station. Installation pending completion of Machado Lake Rehabilitation Project

[1] Year 1 is assumed to start within 90 days of CIMP Approval

12.6 Non-Storm Water Monitoring Program Schedule Requirements

The Non-Storm Water Monitoring Program will require a phased approach in order to account for the time required to complete all six steps of the NSW Outfall Program, a phased approach to sampling will be conducted for the NSW outfall elements of the CIMP. Table 12-3 presents the overview of the NSW Outfall Program schedule.

Table 12-3: NSW Outfall Program Schedule Overview

YEAR 1 ACTIVITIES (following approval of the CIMP)
1. Outfall Screening 2. Develop Inventory of NSW Outfalls 3. Develop Prioritization Criteria and Schedule for Prioritized Source Investigation
YEAR 2-3 ACTIVITIES
4. Conduct Prioritized Source Investigation 5. Identify Sources of NSW Discharges 6. Monitor NSW Discharges

Table 12-3: NSW Outfall Program Schedule Overview
Source Investigation Schedule
• **Year 2** - Source Investigation of 50% of the NSW outfalls • **Year 3** – Source Investigation of 100% of the NSW outfalls

12.7 NSW Outfall Monitoring Program

As described in Section 5, the NSW Outfall Program consists of a process which consists of six elements which occur sequentially:

1. Outfall Screening
2. Identification of outfalls with significant NSW discharge
3. Inventory of outfalls with significant NSW discharge
4. Prioritized source investigation
5. Identify sources of significant NSW discharge
6. Monitoring significant NSW discharges exceeding criteria

To account for the time required to complete all six steps of the NSW Outfall Program, a phased approach to as outlined in the MRP will be conducted for the NSW outfall elements of the CIMP. Phasing in the NSW outfall elements of the CIMP will provide the time necessary to complete each element of the NSW Outfall Program. Phase I will commence within 90 days after approval of the CIMP. Phase I will consist of completion of elements one through three of the NSW Outfall Program and the completion of 25 percent of the source investigations included in element four of the NSW Outfall Program. Phases II and III NSW monitoring will consist of completion of the remaining 75 percent of the source investigations included in element four of the NSW Outfall Program. Phase IV will consist of elements five and six of the NSW Outfall Program and will commence 42 months from the approval of the CIMP to allow sufficient time for all source investigations to be completed. .

PAGE INTENTIONALLY LEFT BLANK

	Program Year 1	Program Year 2	Program Year 3	Program Year 4	Program Year 5
Receiving Water Monitoring					
Mass Emission Station	Install Mass Emission Station & Equipment	Dry Weather Monitoing - 2 times per year Wet Weather Monitoring - 3 times per year Storm Borne Sediments - Preliminary Study	Dry Weather Monitoing - 2 times per year Wet Weather Monitoring - 3 times per year Stomr Borne Sediments - Preliminary Study	Dry Weather Monitoing - 2 times per year Wet Weather Monitoring - 3 times per year Storm Borne Sediments - 2 times per year	Dry Weather Monitoing - 2 times per year Wet Weather Monitoring - 3 times per year Storm Borne Sediments - 2 times per year
TMDL Monitoring					
Machado Lake	Machado Lake Remediation (Anticipated)	Install Wilmington Drain Station & Equipment Machado Lake Remediation (Anticipated)	Lake Water Column Nutrients - Bi-Weekly Lake Water Column Toxics - 1 time per year Lake Bed Sediments - 1 time per year Lake Bioaccumulation - 1 time per year Wilmington Drain Suspended Sediments - 3 times per year Trash - Annual Reporting	Lake Water Column Nutrients - Bi-Weekly Trash - Annual Reporting	Lake Water Column Nutrients - Bi-Weekly Wilmington Drain Suspended Sediments - 1 time per year Trash - Annual Reporting
Harbor Toxics					
Harbor & Dominguez Estuary	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year Bed Sediments - 1 time per year Bioaccumulation - Preliminary Study	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year Bed Sediments - 1 time per year Bioaccumulation - 1 time per year	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year
Torrance Lateral	Install Receiving Water Station & Equipment	Dry Weather Monitoing - 1 time per year Wet Weather Monitoring - 2 times per year Storm Borne Sediments - Preliminary Study	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year Storm Borne Sediments - Preliminary Study	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year Storm Borne Sediments - 2 times per year	Dry Weather Monitoing - 1 times per year Wet Weather Monitoring - 2 times per year Storm Borne Sediments - 2 times per year
Harbor Bacteria	Cabrillo Beach - 5 times per week Main Ship Channel - Weekly	Cabrillo Beach - 5 times per week Main Ship Channel - Weekly	Cabrillo Beach - 5 times per week Main Ship Channel - Weekly	Cabrillo Beach - 5 times per week Main Ship Channel - Weekly	Cabrillo Beach - 5 times per week Main Ship Channel - Weekly
Outfall Monitoring Program					
Outfall Database	Updated on an Annual Basis	Updated on an Annual Basis	Updated on an Annual Basis	Updated on an Annual Basis	Updated on an Annual Basis
Storm Water Outfall Monitoring					
MS4 Outfalls	Install Equipment at Existing Outfall Stations Install Equipment at New Outfall Stations	Wet Weather Monitoring - 3 times per year Storm Borne Sediments - As-Needed, Determined by Applicable Receiving Water Results.	Wet Weather Monitoring - 3 times per year Storm Borne Sediments - As-Needed, Determined by Applicable Receiving Water Results.	Wet Weather Monitoring - 3 times per year Storm Borne Sediments - As-Needed, Determined by Applicable Receiving Water Results.	Wet Weather Monitoring - 3 times per year Storm Borne Sediments - As-Needed, Determined by Applicable Receiving Water Results.
TMDL Outfalls	Machado Lake Remediation (Anticipated)	Install Equipment at New Outfall Stations Machado Lake Remediation (Anticipated)	Wet Weather Monitoring - 2 times per year Storm Borne Sediments - 2 times per year	Wet Weather Monitoring - 2 times per year Storm Borne Sediments - 2 times per year	Wet Weather Monitoring - 2 times per year Storm Borne Sediments - 2 times per year
Non-Storm Water Outfall Monitoring	Outfall Screening and Field Investigation	Source Investigation and Monitoring	Source Investigation and Monitoring	Source Investigation and Monitoring	Source Investigation and Monitoring

Figure 12-1. Implementation Schedule for Major CIMP Elements

PAGE INTENTIONALLY LEFT BLANK

13 References

Anchor QEA, LP, "Draft Coordinated Compliance, Monitoring, and Reporting Plan Incorporating Quality Assurance Project Plan Components for Greater Los Angeles and Long Beach Harbor Waters, June 2013". Updated September 23, 2013. http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_66_R11-008_td.shtml (November 2013)

California Department of Transportation, City of Long Beach, City of Los Angeles, City of Torrance, Los Angeles County and Los Angeles County Flood Control District, "Contaminated Sediment Management Plan: Dominguez Channel Estuary". March 2014.

City of Los Angeles, "Marine Monitoring in Los Angeles Harbor, Biennial Assessment Report, January 2006 through December 2007". August 1, 2008.

City of Los Angeles, "Machado Lake Nutrients TMDL Lake Water Quality Management Plan". August 2010.

County of Los Angeles, "Machado Lake Multi-pollutant TMDL Monitoring and Reporting Program (MRP) Quality Assurance and Project Plan (QAPP) for the Unincorporated Areas of Los Angeles County Within the Machado Lake Watershed". September 12, 2011.

County of Los Angeles, "Machado Lake Nutrient and Toxic TMDL Monitoring and Reporting Plan for the Los Angeles County Flood Control District". September 2012.

Los Angeles County Flood Control District. "1994-2005 Integrated Receiving Water Impacts Report". August 15, 2005. http://dpw.lacounty.gov/wmd/NPDES/1994-05_report/contents.html (November 2013)

Los Angeles Regional Water Quality Control Board, "Final Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (posted December 5, 2012)". Final Order R4-2012-0175. http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/index.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Water Quality in the Dominguez Channel and Los Angeles/Long Beach Harbor Watershed Management Area, Under the Surface Water Ambient Monitoring Program, Fiscal Year 2002-2003". Prepared by J Michael Lyons and Shirley Birosik, September 2007.

Los Angeles Regional Water Quality Control Board, "Total Maximum Daily Load for Toxic Pollutants in Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters". Resolution No. R11-008, Effective Date: March 23, 2012, http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_66_R11-008_td.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Machado Lake Toxics TMDL", Resolution No. R10-008. http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/tmdl_list.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Machado Lake Nutrients TMDL", Resolution No. 2008-006. http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/tmdl_list.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Machado Lake Trash TMDL", Resolution No. 2007-006. http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/tmdl_list.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Los Angeles Harbor Bacteria TMDL", Resolution No. 2004-011. http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/tmdl_list.shtml (November 2013)

Los Angeles Regional Water Quality Control Board, "Final Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4 (posted December 5, 2012)". Final Order R4-2012-0175.
http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/index.shtml (November 2013)

Los Angeles County Flood Control District. "1994-2005 Integrated Receiving Water Impacts Report". August 15, 2005. http://dpw.lacounty.gov/wmd/NPDES/1994-05_report/contents.html (November 2013)

Southern California Coastal Water Research Project (SCCWRP). 2009. Sediment Quality Assessment Draft Technical Support Manual. Technical Report 582.

State of California Water Resources Control Board. "2010 Integrated Report (Clean Water Act Section 303(d) List" April 2010.
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml. (January 2014)