

Coordinated Integrated Monitoring Program (CIMP)

For the Peninsula CIMP Group



Prepared for:

The Los Angeles Regional Water Quality Control Board

May 2015

Coordinated Integrated Monitoring Program
Peninsula CIMP Group

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LIST OF ACRONYMS

AED	Allowable Exceedance Days
ASBS	Area of Special Biological Significance
BMP	Best Management Practice
CEDEN	California Environmental Data Exchange Network
CIMP	Coordinated Integrated Monitoring Program
CML	Compliance Monitoring Location
CMP	Coordinated Monitoring Plan
CSMP	Coordinated Shoreline Monitoring Plan
CTR	California Toxic Rules
CWA	Clean Water Act
DDT	Dichloro-diphenyl-trichloroethane
ED	Exceedance Day
EMC	Event Mean Concentration
EWMP	Enhanced Watershed Management Program
FIB	Fecal Indicator Bacteria
GIS	Geographic Information System
GM	Geometric Mean
IC/ID	Illicit Connection/Illicit Discharge
LACDBH	Los Angeles County Department of Beaches and Harbors
LACFCD	Los Angeles County Flood Control District
LID	Low Impact Development
MCM	Minimum Control Measure
MDL	Method Detection Limit
MPN	Most Probable Number
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OWTS	Onsite Wastewater Treatment Systems
PCB	Polychlorinated Biphenyl

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QA/QC	Quality Assurance/Quality Control
RAA	Reasonable Assurance Analysis
RWL	Receiving Water Limitation
SCCWRP	Southern California Coastal Watershed Research Project
SMB	Santa Monica Bay
SMBB	Santa Monica Bay Beaches
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TMDL	Total Maximum Daily Load
TMRP	Trash Monitoring and Reporting Plan
TOC	Total Organic Carbon
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
WBPC	Water Body-Pollutant Combination
WLA	Waste Load Allocation
WMA	Watershed Management Area
WQBEL	Water Quality Based Effluent Limitation

1 INTRODUCTION

The 2012 Municipal Separate Storm Sewer System (MS4) Permit¹ (Permit) was adopted on November 8, 2012, by the Los Angeles Regional Water Quality Control Board (Regional Board) and became effective December 28, 2012. The Permit was created for the purpose of protecting the beneficial uses in the receiving waters in the Los Angeles region by ensuring that MS4s in the County of Los Angeles are not causing or contributing to exceedances of applicable water quality objectives. To accomplish this, the Permit allows the Permittees to coordinate stormwater planning efforts on a watershed basis, providing an opportunity for Permittees to customize their stormwater programs through the development and implementation of an Enhanced Watershed Management Program (EWMP) to achieve compliance with certain Receiving Water Limitations and Water Quality Based Effluent Limits.

Following the adoption of the Permit, the County of Los Angeles (County), Los Angeles County Flood Control District (LACFCD), and the Cities of Palos Verdes Estates, Rancho Palos Verdes, Rolling Hills, and Rolling Hills Estates (collectively the Peninsula Cities) agreed to collaborate on the development of a Coordinated Integrated Monitoring Program (CIMP) for the Palos Verdes Peninsula Group (Peninsula CIMP Group). The CIMP Group submitted a Notice of Intent to the Regional Board on June 27, 2013, stating their intent to collaborate with one another to achieve compliance with the Permit. Following initial review by the Regional Board, an amendment to the NOI was submitted by the CIMP Group on December 16, 2013.

1.1 PERMIT MONITORING AND REPORTING PROGRAM GOALS

Among other requirements established by the Permit, Attachment E of the Permit establishes the required Monitoring and Reporting Program (MRP). The MRP outlines the various monitoring, reporting, and recordkeeping requirements for the Permittees. The primary objectives of the MRP are to:

1. Assess the chemical, physical, and biological impacts of discharges from the MS4 on receiving waters.
2. Assess compliance with Receiving Water Limitations (RWLs) and Water Quality Based Effluent Limitations (WQBELs) established to implement Total Maximum Daily Load (TMDL) wet weather and dry weather waste load allocations (WLAs).

¹ Order No. R4-2012-0175 NPDES Permit No. CAS004001 Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, except those Discharges Originating from the City of Long Beach MS4.

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3. Characterize pollutant loads in MS4 discharges.
4. Identify source of pollutants in MS4 discharges.
5. Measure and improve the effectiveness of pollutant controls implemented under the Permit.

This CIMP has been developed to address the required TMDL and other MS4 monitoring elements set forth in the MRP, including receiving water monitoring, outfall based monitoring, regional monitoring, and special studies. The Peninsula CIMP Group has been coordinating with other agencies and watershed management groups in the development of this CIMP, including the City of Los Angeles, the Beach Cities CIMP Group, and in the Greater Los Angeles Harbor.

This CIMP relies on work products developed previously by the CIMP Group that detail the overall approach for the receiving water and outfall monitoring programs and the process used to select receiving water and outfall monitoring sites.

1.2 DEFINITIONS

The following definitions apply to this CIMP.

Major Outfall – An MS4 outfall pipe with an inside diameter of 36 inches or greater.²

First Significant Rain Event – The first storm event of the storm year with a predicted rainfall of at least 0.25 inch at a seventy percent probability of rainfall at least 24 hours prior to the predicted start of rainfall.³

Storm Year – July 1 through June 30. A storm year, as used in the Permit MRP and this CIMP, is therefore consistent with the reporting period established in the Permit.

² A major outfall is defined by the Permit as a “MS4 outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe that is associated with a drainage area of more than 50 acres); or for MS4s that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).” Given the lack of industrial zoning within the Peninsula Area, the definition of a major outfall is limited here to an outfall of at least 36 inches in diameter (or equivalent size).

³ Because a significant storm event is based on predicted rainfall, it is recognized that this monitoring may be triggered without 0.25 inches of rainfall actually occurring. In this case, the monitoring event will still qualify as meeting this requirement provided that sufficient sample volume is collected to do all required laboratory analysis. Documentation will be provided showing the predicted rainfall amount as well as the measured rainfall.

1.3 OVERVIEW OF PENINSULA CIMP AREA

The Peninsula CIMP Area includes the incorporated Cities of Rancho Palos Verdes, Palos Verdes Estates, Rolling Hills, Rolling Hills Estates, and unincorporated areas of the County of Los Angeles. This area is known as the Peninsula CIMP Area and encompasses 25.5 square miles, including portions of two HUC-12 watersheds – the Santa Monica Bay Watershed and the Dominguez Channel (including the Machado Lake and Los Angeles Harbor sub-watersheds) Watershed. The drainage within the Peninsula CIMP Area is conveyed via natural, soft-bottom canyons and engineered storm drain networks.

The majority of land in the Peninsula CIMP Area is residential (56.8% single family residential and 2.4% multi-family residential), with an additional 32.5% being vacant land. Land use breakdowns by HUC-12 watershed are shown in Table 1-1.

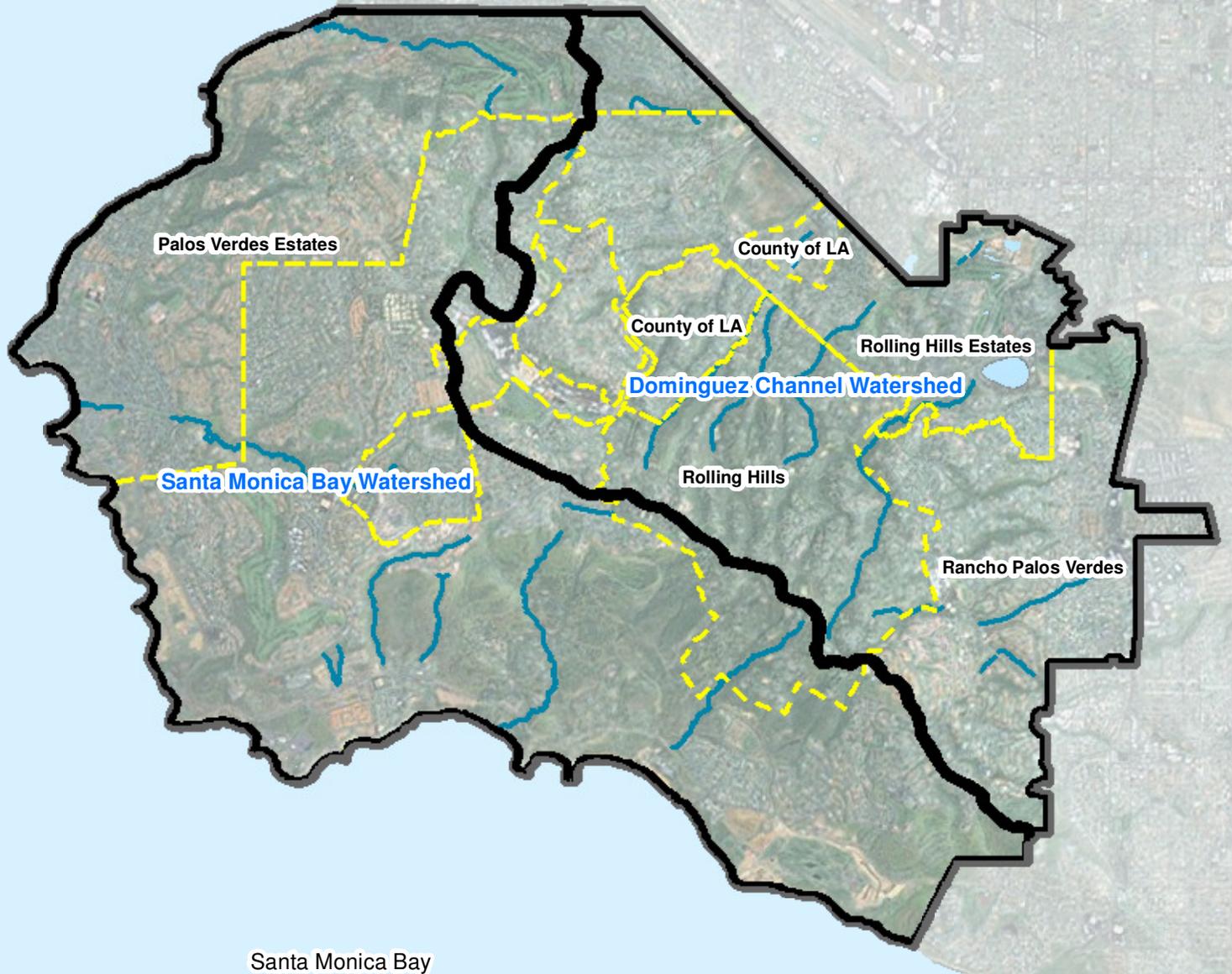
Table 1-1. Land Use Distributions Within the Peninsula CIMP Area

HUC-12 Watershed	Area (ac)	Ag (%)	Comm (%)	Edu (%)	Ind (%)	MFR^b (%)	SFR^b (%)	Transp (%)	Vacant (%)
Dominguez Channel	6,818	2.0%	3.5%	3.4%	4.0%	2.0%	62.8%	0.2%	22.1%
Santa Monica Bay	9,520	0.4%	1.4%	2.0%	0.4% ^a	2.6%	52.5%	0.9%	39.9%
Total	16,338	1.0%	2.2%	2.6%	1.9%	2.4%	56.8%	0.6%	32.5%

^a Minor areas within the Peninsula CIMP Area are zoned for industrial use, although the actual land use is not associated with manufacturing or similar industrial activities.

^b MFR = Multi-Family Residential; SFR = Single Family Residential

The Peninsula CIMP Area is shown in Figure 1. The Peninsula CIMP Area does not include land owned by other jurisdictions, including the State of California and Federal lands.



Legend

- Equivalent HUC 12 Watershed Boundary
- City Boundary
- Water Bodies
- Natural Drainage

Figure 1
Peninsula CIMP Area
Peninsula Cities CIMP

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The Los Angeles Basin Plan (Regional Board, 1995. Updated 2011) sets forth water quality regulations which are applicable to the Peninsula CIMP Agencies. These regulations are based on assigned beneficial uses to receiving water bodies. Beneficial use designations for these water bodies within the Peninsula CIMP Area include the following:

- Municipal and Domestic Supply (MUN)
- Industrial Service Supply (IND)
- Navigation (NAV)
- Commercial and Sport Fishing (COMM)
- Water Contact Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Warm Freshwater Habitat (WARM)
- Marine Habitat (MAR)
- Wildlife Habitat (WILD)
- Preservation of Biological Habitats (BIOL)
- Rare, Threatened, or Endangered Species (RARE)
- Migration of Aquatic Organisms (MIGR)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Shellfish Harvesting (SHELL)
- Wetland Habitat (WET)

The beneficial uses of the Peninsula CIMP Area receiving waters as designated in the Basin Plan are summarized in Table 1-2. Since beneficial uses designated as “potential” are not established, these uses will not be evaluated further in the CIMP.

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**Table 1-2. Peninsula CIMP Area Water Bodies and Beneficial Uses
 Designated in the Basin Plan**

Water Body	MUN	IND	NAV	COMM	GWR	REC1	REC2	WARM	MAR	WILD	BIOL	RARE	MIGR	SPWN	SHELL	WET ^a
Los Angeles Coastal																
Port Vicente			E	E		E	E		E	E				P	E	
Nearshore Zone [^]		E	E	E		E	E		E	E	E	Ee	Ef	Ef	E	
Los Angeles Coastal Streams																
Palos Verdes Coastal	P*				I	I	I	I		E		E				
Palos Verdes Canyon	P*				I	I	I	I		E		Et				
Machado Lake	P*					E	E	E		E		E				E
Greater Los Angeles (LA) and Long Beach (LB) Harbor																
LA Inner Harbor		E	E	E		E	E		E			Ee			P	
Cabrillo Marina		E	E	E		E	E		E			E			P	
Fish Harbor		E	E	E		E	E		E			E			P	
LA Outer Harbor			E	E		E	E		E			E			P	

E = Existing beneficial use

I = Intermittent beneficial use

P = Potential beneficial use

* Asterisked MUN designations are designated under SB 88-63 and RB 89-03. Some designations may be considered for exemption at a later date.

^a Water bodies designated as WET may have wetlands habitat associated with only a portion of the water body. Any regulatory action would require a detailed analysis of the area.

[^] Nearshore is defined as the zone bounded by the shoreline or the 30-foot depth contours, whichever is further from the shoreline. Longshore extent is from Rincon Creek to the San Gabriel River Estuary.

e = One or more rare species utilizes all ocean, bays, estuaries, and coastal wetlands for foraging and/or nesting.

f = Aquatic organisms utilize all bays, estuaries, lagoons, and coastal wetlands, to a certain extent, for spawning and early development. This may include migration into areas which are heavily influenced by freshwater inputs.

t = Rare applies only to Agua Magna Canyon and Sepulveda Canyon areas.

California's 2010 list of impaired water bodies and associated pollutants within the Peninsula CIMP Area (known as the 303(d) List) are summarized in Table 1-3.

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Table 1-3. 2010 303(d)-Listed Water Bodies in the Peninsula CIMP Area

Water Body	Pollutant Class	Pollutant	Notes
Santa Monica Bay Beaches	Pathogens	Coliform Bacteria	Addressed by Bacteria TMDL
	Pesticides	DDT	Addressed by PCB/DDT TMDL
	Other Organics	PCBs	Addressed by PCB/DDT TMDL
Santa Monica Bay Offshore/Nearshore	Trash	Debris	Addressed by Debris TMDL
	Pesticides	DDT (tissue & sediment)	Addressed by PCB/DDT TMDL
	Other Organics	PCBs (tissue & sediment)	Addressed by PCB/DDT TMDL
	Toxicity	Sediment Toxicity	Addressed by PCB/DDT TMDL
	Miscellaneous	Fish Consumption Advisory	Addressed by PCB/DDT TMDL
Machado Lake	Nutrients	Algae	Addressed by Nutrients TMDL
		Ammonia	Addressed by Nutrients TMDL
		Total Nitrogen	Addressed by Nutrients TMDL
		Total Phosphorus	Addressed by Nutrients TMDL
		Chlorophyll a	Addressed by Nutrients TMDL
		Dissolved Oxygen	Addressed by Nutrients TMDL
	Nuisance	Odor	Addressed by Nutrients TMDL
	Pesticides	ChemA (tissue) ^a	Addressed by Pesticides and PCBs TMDL
		Chlordane (tissue)	Addressed by Pesticides and PCBs TMDL
		DDT (tissue)	Addressed by Pesticides and PCBs TMDL
		Dieldrin (tissue)	Addressed by Pesticides and PCBs TMDL
	Other Organics	PCBs	Addressed by Pesticides and PCBs TMDL
	Trash	Trash	Addressed by Trash TMDL
Greater LA and LB Harbor Waters	Pathogens	Beach Closures	Addressed by Greater LA and LB Harbor Bacteria TMDL for which the Peninsula agencies are not responsible
	Other Organics	Benzo(a)pyrene (3,4-Benzopyrene -7-d)	Addressed by Toxic Pollutants TMDL
		Benzo[a]anthracene	Addressed by Toxic Pollutants TMDL
		Chrysene (C1-C4)	Addressed by Toxic Pollutants TMDL
		Dibenz[a,h]anthracene	Addressed by Toxic Pollutants TMDL
		PAHs	Addressed by Toxic Pollutants TMDL
		PCBs	Addressed by Toxic Pollutants TMDL
		Phenanthrene	Addressed by Toxic Pollutants TMDL

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Water Body	Pollutant Class	Pollutant	Notes
	Pesticides	Pyrene	Addressed by Toxic Pollutants TMDL
		Chlordane	Addressed by Toxic Pollutants TMDL
		DDT	Addressed by Toxic Pollutants TMDL
	Metals/Metalloids	Copper	Addressed by Toxic Pollutants TMDL
		Lead	Addressed by Toxic Pollutants TMDL
		Mercury	Addressed by Toxic Pollutants TMDL
		Zinc	Addressed by Toxic Pollutants TMDL
	Toxicity	Sediment Toxicity	Addressed by Toxic Pollutants TMDL
Miscellaneous	Benthic Community Effects	Addressed by Toxic Pollutants TMDL	
Wilmington Drain	Pathogens	Coliform Bacteria	TMDL expected completion date of 2007
	Metals/Metalloids ^b	Copper	TMDL expected completion date of 2019
		Lead	TMDL expected completion date of 2019

^a ChemA (the abbreviation for ‘chemical group A’) is a suite of bio-accumulative pesticides that includes chlordane and dieldrin. The 1998 303(d) listing (and subsequent listings) for ChemA was predominately based on fish tissue concentrations of chlordane and dieldrin; there was only minimal detection of other ChemA pollutants in 1983 and 1984. According to the Machado Lake Toxic Pollutants TMDL Staff Report (Regional Board, 2010), chlordane and dieldrin have been recently detected in fish tissue, while other ChemA pollutants have not been detected in 25 years. Therefore, the Machado Lake Toxic Pollutants TMDL only addresses the ChemA pollutants that are causing impairment (chlordane and dieldrin).

^b A modification to the consent decree found no impairment in Wilmington Drain for copper and lead. The Regional Board has indicated that Wilmington Drain will be delisted for copper and lead as soon as sufficient data is available to support delisting (per the Dominguez Channel and Greater LA and LB Harbor Waters Toxics TMDL).

1.4 SUMMARY OF TMDL AND PERMIT MRP REQUIREMENTS

The Permit MRP includes requirements for receiving water monitoring, stormwater outfall-based monitoring, non-stormwater outfall-based monitoring, regional/special studies and New Development/Redevelopment Effectiveness Tracking. The general Permit requirements for each of these types of monitoring are described below, with specific details including monitoring sites, frequencies, and parameters described in subsequent sections. It is assumed that all monitoring activities will only be performed when safety permits and, as explained in the approved monitoring plan for the Machado Lake Nutrient TMDL, sampling will only be performed during business hours. Existing monitoring programs will continue to be conducted and, beginning summer of 2014, the dry weather screening of major outfalls will commence. Implementation of new monitoring programs and modifications to existing monitoring programs will be implemented beginning July 1, 2015 or 90 days after Regional Board approval of the CIMP, whichever is later.

Because the CIMP’s focus is on the assessment of receiving water quality and MS4 discharge quality and quantity during both dry and wet weather, the new development and redevelopment

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effectiveness tracking program is not described in the CIMP. The Peninsula CIMP Agencies have developed mechanisms for tracking new development/redevelopment projects that have been conditioned for post-construction BMPs pursuant to the Permit, Part VI.D.7. Agencies also have developed mechanisms for tracking the effectiveness of these BMPs pursuant to the Permit, Attachment E, Section X.

1.4.1 RECEIVING WATER MONITORING

Receiving water monitoring is required at mass emission stations, receiving water compliance points in previously approved TMDL monitoring plans, and additional receiving water locations that are representative of the impacts from MS4 discharges from the CIMP Group. Because there are no mass emission stations within or downstream of the Peninsula CIMP Area, mass emission station monitoring is not part of this CIMP.

The objectives of the receiving water monitoring include the following:

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

To accomplish these objectives, TMDL receiving water monitoring as specified in approved TMDL monitoring plans will continue and additional receiving water monitoring will be conducted to meet the Permit monitoring objectives to assess the effects of MS4 discharges on receiving water quality.

1.4.1.1 TMDL Receiving Water Monitoring

Currently, TMDL receiving water compliance monitoring within the Peninsula CIMP Area takes place in accordance with the approved SMB Beaches Bacterial TMDL Coordinated Shoreline Monitoring Plan (CSMP) and the Coordinated Compliance Monitoring and Reporting Plan Incorporating Quality Assurance Project Plan Components for Greater Los Angeles (LA) and Long Beach (LB) Harbor Waters. Monitoring will continue as specified in these respective plans to meet the TMDL receiving water monitoring requirements of the Permit. Receiving water monitoring within Machado Lake is conducted by the City of Los Angeles and is therefore not discussed in this section, as the Peninsula CIMP Group does not play an active role in this monitoring. For the Peninsula CIMP Group's role in outfall monitoring as part of the Machado Lake Nutrient, Pesticides, and PCBs TMDL, see Section 1.4.2.1 below.

The TMDL receiving water monitoring requirements applicable to the CIMP Group are summarized below.

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Santa Monica Bay Beaches Bacteria TMDL

TMDL compliance monitoring within the Peninsula CIMP Area is implemented in accordance with the SMB Beaches Bacteria TMDLs CSMP (City of Los Angeles and County of Los Angeles, 2004). The Permit MRP requires monthly data summary reports to be submitted to the Regional Board by the last day of each month for data collected during the previous month. This monthly reporting is performed by the Sanitation Districts of Los Angeles County which also conducts the shoreline monitoring for the TMDL monitoring locations within the Peninsula CIMP Area.

Currently five CSMP sites are sampled within the Peninsula CIMP Area. Historical monitoring data (2005 – 2014) at these five sampling locations acknowledges that historical average bacteria exceedance rates for each of these subwatersheds are lower than that of the reference beach for each season and there has been no increase in the historical exceedance rate trends, indicating that the high water quality of the Peninsula shoreline waters have been maintained. Non-stormwater screening has also verified that no non-stormwater discharges are reaching the wave wash on a regular occurrence except for the historical perennial stream at Malaga Cove, which is being monitored by SMB 7-1, confirming that the Peninsula MS4 is not causing or contributing to exceedances in the ocean. In addition, Heal the Bay, which comprehensively analyzes coastline water quality in California, assigning A to F grades based on bacteria-related health risks, consistently awards these beaches an “A+” ranking on its Beach Report Card (Heal the Bay, 2015). Therefore, these five CSMP sites as currently monitored are sufficient to analyze the Peninsula CIMP Group’s impact on bacteria exceedances along the shoreline of the Peninsula CIMP Area.

Greater LA and LB Harbor Toxics and Metals TMDL

The Coordinated Compliance Monitoring and Reporting Plan Incorporating Quality Assurance Project Plan Components for Greater LA and LB Harbor Waters was submitted jointly in January 2014 by the California Department of Transportation, Cities of Bellflower, Lakewood, Long Beach, Los Angeles, Paramount, Rancho Palos Verdes, Rolling Hills, Rolling Hills Estates, and Signal Hill, Los Angeles County, Los Angeles County Flood Control District, Ports of Long Beach and Los Angeles. Receiving water monitoring under the Coordinated Compliance Monitoring and Reporting Plan for Greater LA and LB Harbor Waters (Plan) began in the summer of 2013 as part of the Bight Regional Monitoring Program. The Plan can be found in its entirety in Appendix G.

The Coordinated Compliance Monitoring and Reporting Plan includes sampling for both water quality and sediment quality at 22 different monitoring locations, as well as fish tissue sampling at four different locations. The Peninsula CIMP Group is tributary to nine of the 22 sediment/water quality monitoring locations (identified as Station ID’s 2 through 10), and one of

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the fish tissue monitoring locations (identified as Station ID 9). These sample locations are identified in Figure 3.

Water quality sampling occurs three times annually – twice during wet weather and once during dry weather – at all 22 sample sites. Measured parameters include:

- In situ water quality (temperature, dissolved oxygen, pH, salinity);
- TSS;
- Dissolved and total metals;
- Organochlorine pesticides (including DDT and its derivatives, chlordane compounds, dieldrin, and toxaphene); and
- PCB congeners.

Sediment monitoring is also conducted at all 22 sites, but is performed twice every five years. Surface sediment grab samples will be collected and submitted for chemistry, toxicity, and benthic community analyses. Sediment chemistry analyses will include the following parameters:

- Total organic carbon (TOC);
- Grain size;
- Metals;
- PAHs;
- Organochlorine pesticides (including DDT and its derivatives, chlordane compounds, dieldrin, and toxaphene); and
- PCB congeners.

Fish tissue samples are collected once every two years at the four specified sites. Composite samples of three fish species (white croaker [*Genyonemus lineatus*], California halibut [*Paralichthys californicus*], and shiner surfperch [*Cymatogaster aggregate*]) will be collected at all stations, with the exception of the Consolidate Slip location, where only white croaker will be collected. Fish tissue samples will be monitored for:

- Percent lipids;
- Organochlorine pesticides (including DDT and its derivatives, chlordane compounds, dieldrin, and toxaphene); and
- PCB congeners.

As recognized by the footnote in Attachment K-4 of the Permit, the Peninsula CIMP Group has entered into an Amended Consent Decree with the United States and the State of California, including the Regional Board, pursuant to which the Regional Board has released the Peninsula CIMP Group from responsibility for toxic pollutants in the Dominguez Channel and the Greater

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LA and LB Harbors. Accordingly, no inference should be drawn from the submission of this CIMP or from any action or implementation taken pursuant to it that the Peninsula CIMP Group is obligated to implement the Dominguez Channel and Greater LA and LB Harbor Waters Toxics TMDL (Toxics TMDL), including this CIMP or any of the Toxics TMDL's other obligations or plans, or that the Peninsula CIMP Group has waived any rights under the Amended Consent Decree.

1.4.1.2 Receiving Water Monitoring

To further assess MS4 discharge effects on the receiving waters within the Peninsula CIMP Area, receiving water monitoring is required by the Permit in addition to the receiving water monitoring called for in adopted TMDLs. Although some of these receiving water monitoring locations may be located at or near existing TMDL monitoring locations, the suite of parameters sampled at these locations as well as the frequency of sampling will be different from existing TMDL monitoring (see Section 2).

Locations have been proposed considering existing TMDL monitoring locations, tributary land use, and the MS4 drainage area within each HUC-12 watershed, as well as safety and accessibility.

1.4.2 STORMWATER OUTFALL MONITORING

Stormwater outfall monitoring is required at TMDL compliance points (as specified in approved TMDL monitoring plans) and additional locations as necessary to characterize the impacts of MS4 discharges from the CIMP Group.

The objectives of the stormwater outfall monitoring include the following:

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

1.4.2.1 TMDL Outfall Monitoring

Currently, TMDL stormwater outfall compliance locations have been established in the Peninsula CIMP Area by the Palos Verdes Peninsula CMP for the Machado Lake Nutrient TMDL and the Machado Lake Multipollutant TMDL MRP for the Unincorporated Areas of Los Angeles County. Additional monitoring is being facilitated or planned in accordance with requirements outlined in the Machado Lake Trash TMDL, SMB Nearshore and Offshore Debris TMDL, and the SMB TMDL for DDTs and PCBs. Monitoring will continue as specified in these

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respective plans to meet the TMDL outfall monitoring requirements of the Permit, as discussed below.

Machado Lake Nutrient, Pesticides and PCBs TMDL Monitoring (County and Peninsula Cities)

On May 1, 2008, the Regional Board adopted the Machado Lake Eutrophic, Algae, Ammonia and Odors (Nutrient) TMDL to protect the beneficial uses of Machado Lake. The Nutrient TMDL provides for either a concentration-based monitoring and compliance approach or a special study to establish a mass-based monitoring and compliance approach. The County elected and received approval to implement a mass-based approach, while the Peninsula Cities developed and received approval for a concentration-based monitoring program. The Peninsula CIMP Group will consolidate these two programs within the Peninsula CIMP Area.

Concentration-based monitoring for nitrogen and phosphorus began in 2011 at four locations at the termini of the Peninsula drainage system in accordance with the Palos Verdes Peninsula Coordinated Monitoring Plan. These samples, along with flow measurements, are analyzed monthly during dry weather and at least twice a year during wet weather events. The results are summarized in the yearly stormwater monitoring report by the Peninsula Cities. Within the annual report, monthly average values of total nitrogen and total phosphorus are compared with the interim waste load allocations to determine attainment. There have been two monitoring reports, encompassing the time period from 2011-2013 thus far.

Mass-based nutrient sampling is conducted by the County at two monitoring sites in the Machado Lake Subwatershed within the Peninsula CIMP Area. Both sites are monitored during wet weather and dry weather (on a quarterly basis). A third site in the Peninsula CIMP Area is monitored for flow. Wet weather monitoring is conducted for three storm events per year, including the first large storm of the season. The County's MRP states that wet weather monitoring will continue until a total of ten storm events have been collected. After four years of monitoring, nutrient sampling will be re-evaluated based on data review.

Due to redundancy in nutrient monitoring sites between the Peninsula Cities and the County, and based on results from monitoring conducted to date at these locations, the following modifications are provided for coordinated nutrient monitoring within the Peninsula CIMP Area:

- Monitoring at County sites "10-ACAD" and "10-EAST" (flow only) will cease, since these sites are immediately upstream of the monitoring at the "RHE City Hall" site. The RHE City Hall monitoring site receives runoff from County unincorporated land and all of the Peninsula Cities with the exception of Palos Verdes Estates. Additionally, tributary land uses to this site include single family residential, vacant, education, and the largest commercial area in the Peninsula Cities. Therefore, a coordinated monitoring effort will occur at this location; i.e., the County will discontinue monitoring at "10-ACAD" and "10-EAST" and collaborate on the "RHE City Hall" site.

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- Monitoring at County site “20-SCGB” in the South Coast Botanical Gardens will cease, since results from initial monitoring have consistently shown that flow is not present at this site during both wet and dry weather conditions.

TMDL monitoring will continue as planned for locations not specified above. Compliance with Machado Lake Nutrient TMDL WQBELs will be evaluated based on the concentration-based monthly average calculations for Total Nitrogen and Total Phosphorus for the Peninsula CIMP group as a whole.

Wet weather sampling and analysis for Pesticides and PCBs will also be conducted at the three consolidated monitoring locations consistent with the Updated Monitoring and Reporting Plan and Quality Assurance Project Plan for Combined Machado Lake Nutrient and Toxics TMDL Sampling for the Palos Verdes Peninsula Coordinated Monitoring and Reporting Plan submitted in September 2012 (“Machado Lake Nutrient and Toxics TMDL Sampling Plan”). Additional revisions to this conditionally approved TMDL monitoring plan are being incorporated in this CIMP to address the challenges associated with collecting sufficient filtered suspended sediment samples.⁴ When insufficient filtered sediment is collected at a monitoring site to conduct the Pesticide and PCB analysis during a specific storm, the sample will be frozen and stored to be composited with samples collected at the same location during subsequent storms until sufficient sample is accumulated to conduct the analysis. Samples will only be collected and composited within a single storm-year, and will be limited to a maximum of three storm events, weather permitting.

The Machado Lake Nutrient and Toxics TMDL Sampling Plan can be found in its entirety in Appendix H.

Machado Lake Trash TMDL

The City of Rolling Hills monitors for trash to comply with the Machado Lake Trash TMDL. The City of Rolling Hills’ Machado Lake Trash MRP utilizes a modified Rapid Trash Assessment Protocol from the San Francisco Bay Regional Water Quality Control Board’s Surface Water Ambient Monitoring Program (SWAMP). Sampling and assessment at seven canyon outlets was conducted on a quarterly basis for the first three years of monitoring. Based

⁴ Machado Lake WLAs for DDT and PCBs are expressed as concentration-based limits on the sediment fraction (i.e., as ug/kg on a dry weight basis). The TMDL specifically requires collection and analysis of the bulk sediment from the water sample. As a result, the analysis of DDT and PCBs within the Machado Lake Subwatershed will be performed on the bulk sediment fraction of the sampled discharge.

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on those results, in 2012 the Regional Board staff authorized a reduction in frequency of monitoring to twice per year and immediately following the first major storm event of the year.

The County of Los Angeles, City of Rancho Palos Verdes, City of Palos Verdes Estates, and City of Rolling Hills Estates each submitted a TMRP to the Regional Board proposing compliance via the progressive installation of full capture devices throughout the Machado Lake Subwatershed. These TMRPs were approved by the Regional Board and are being implemented. Each Peninsula CIMP Agency reports its compliance individually as part of its annual report.

Santa Monica Bay Nearshore and Offshore Debris TMDL

SMB Debris TMDL does not require receiving water monitoring. Rather, Permittees may comply with trash effluent limitations using one of several compliance options broadly classified as: full capture, partial capture, institutional controls or minimum frequency of assessment and collection or any combination thereof. Permittees are to report their compliance strategy through the development of a Trash Monitoring and Reporting Plan (TMRP) and Plastic Pellets Monitoring and Reporting Plan (PMRP) or demonstrate that a PMRP is not required. Once the TMRP and PMRP are approved by the Executive Officer, an annual progress report is to be submitted to demonstrate the reduction in the amount of trash and plastic pellets, if applicable, being discharged into Santa Monica Bay. Each of the jurisdictions within SMB JG7 WMP Group will submit or have submitted a TMRP and PMRP.

The Permit states that if the TMRP is submitted by September 20, 2012, then the TMRP will be implemented 6 months from receipt of letter of approval from Regional Board Executive Officer, or the date a plan is established by the Executive Officer; or if a CIMP is submitted, then monitoring will commence within 30 days after approval of the CIMP plan by the Executive Officer.

The County of Los Angeles, City of Rancho Palos Verdes, City of Palos Verdes Estates and City of Rolling Hills Estates each submitted a TMRP to the Regional Board before the TMDL-specified deadline of September 20, 2012 proposing compliance via the progressive installation of full capture devices throughout the Santa Monica Bay Watershed. The City of Rolling Hills submitted and received Executive Officer approval on September 3, 2013 to utilize an institutional control strategy consistent with the Machado Lake TMRP previously submitted and approved by the Regional Board and the resulting monitoring data to establish compliance with the Santa Monica Bay Nearshore and Offshore Debris TMDL.

The Peninsula Cities each submitted a request to the Regional Board to be exempt from the TMDL requirement to conduct monitoring for plastic pellets under the Santa Monica Bay Debris TMDL because the Peninsula has no industrial facilities or activities related to the manufacturing, handling, or transportation of plastic pellets within its jurisdiction, and has limited commercial and/or industrial transportation corridors related to such activities. Therefore,

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unless the Regional Board opposes this approach, monitoring for plastic pellets within the Peninsula CIMP Area will not be conducted by the Peninsula CIMP Group.

Santa Monica Bay TMDL for DDT and PCBs

The Permit MRP requires the Permittees to develop a Monitoring and Reporting Plan for Regional Board Executive Officer approval that describes the methodologies that will be used to monitor and assess suspended sediment for DDT and PCBs. The monitoring design and assessment framework should be designed to provide credible estimates of the total DDT and PCBs mass loadings to the SMB. Monitoring should be conducted on a coordinated watershed-wide basis using sufficiently sensitive analytical methods for DDT and PCBs.

Monitoring for PCBs and DDT will occur at the two MS4 outfall monitoring locations specified in Section 1.4.2.2 below (SD-1 and SD-2), and will be conducted in a manner consistent with the Machado Lake Nutrient and Toxics TMDL Sampling Plan (i.e., on the bulk sediment fraction). When insufficient filtered sediment is collected at a monitoring site to conduct the Pesticide and PCB analysis during a specific storm, the sample will be frozen and stored to be composited with samples collected at the same location during subsequent storms until sufficient sample is accumulated to conduct the analysis. Samples will only be collected and composited within a single storm-year, and will be limited to a maximum of three storm events, weather permitting.

The most sensitive EPA-approved analytical methods commercially available in the region will be used to analyze PCB congeners and DDTs in receiving water and outfall samples, as necessary (e.g., Method 1668c where feasible; otherwise, Method 8270). Monitoring for PCBs will be reported as the summation of at least 40 congeners and Aroclors, as specified in Attachment E, Table E-2 of the Permit.

1.4.2.2 MS4 Stormwater Outfall Monitoring

Stormwater outfall monitoring will be conducted at a minimum of one major outfall in each equivalent HUC-12 watershed within the Peninsula CIMP Area. A major outfall is defined by the Permit as an “MS4 outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe that is associated with a drainage area of more than 50 acres); or for MS4s that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).” Given the general lack of industrial zoning within the Peninsula CIMP Area and the lack of catchment area delineation information, the definition of a major outfall is limited here to an outfall of at least 36 inches in diameter (or equivalent for a non-circular pipe).

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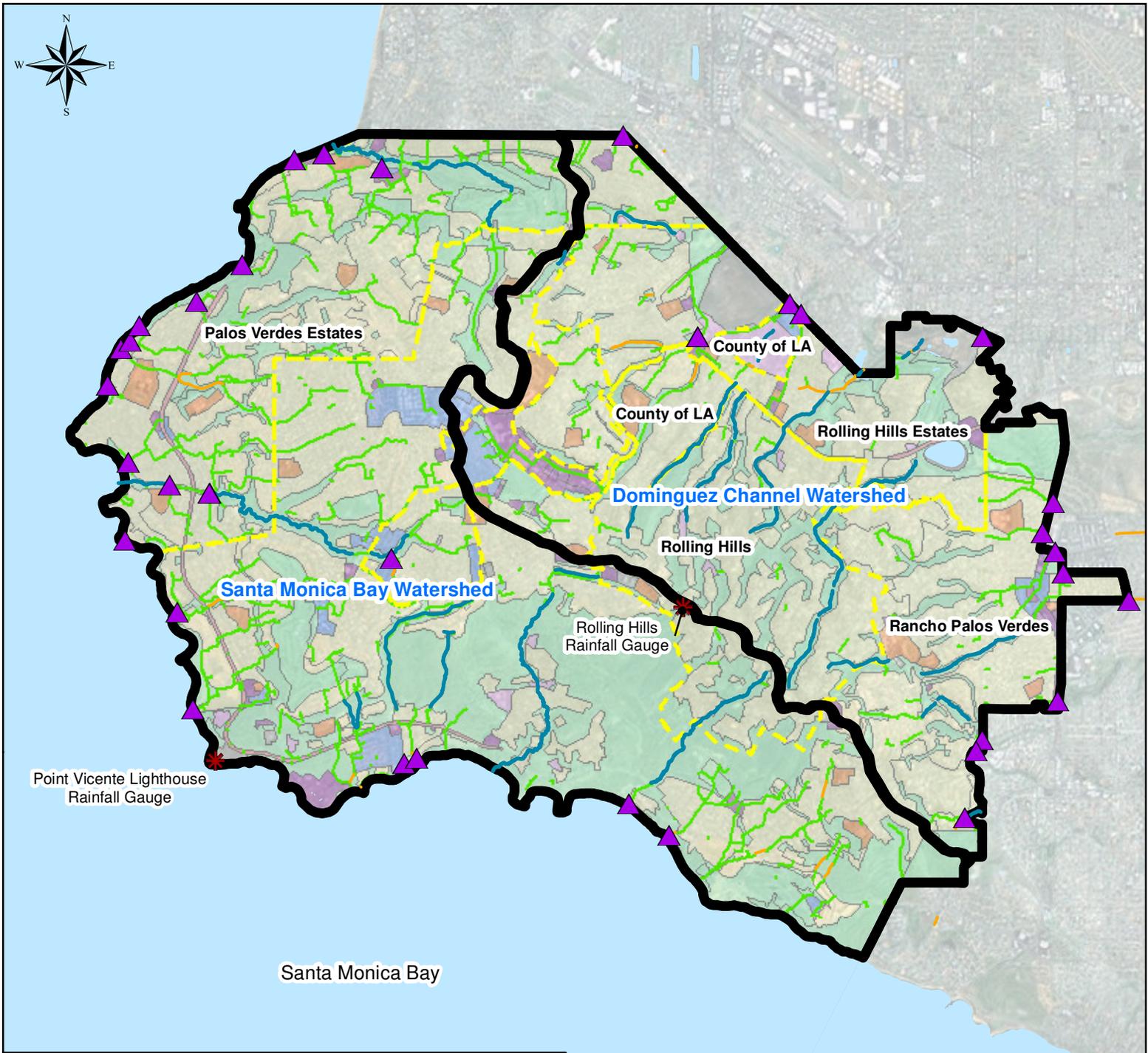
Major outfalls within the Peninsula CIMP Area that are known to exist based on current information are shown in Figure 2. No major outfalls currently exist within the City of Rolling Hills.⁵

MS4 outfall monitoring locations were selected based on the following:

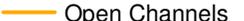
1. A desktop screening was conducted to identify major outfalls that are tributary to receiving water monitoring locations. Major outfalls were identified that discharge directly to the coast, up-current of SMB Beaches Bacteria CSMP monitoring locations, or that discharge to natural canyons that are tributary to CSMP monitoring locations.
2. The desktop screening was used to identify upstream land uses for the outfalls identified in Step #1. The Permit specifies that each selected outfall shall be representative of the land uses within the Permittee's jurisdiction. Due to the limited number of major outfalls in existence, this step was used to eliminate major outfalls from further screening if they reflect land uses that are unrepresentative those typical of the Peninsula CIMP Area.
3. The major outfalls that were not eliminated from Step #1 and #2 were then field screened to select which outfalls will be monitored. This was determined based on: a) accessibility and safety considerations for monitoring personnel; b) linkage with downstream receiving water monitoring locations; c) verification of attributes identified in the desktop screening step (e.g., outfall size, location, and tributary land use); and d) facilitation of accurate flow measurement within the outfall/storm drain. Alternative upstream monitoring locations such as manholes or channels may be proposed to facilitate access and to ensure the safety of the monitoring team.

The desktop and field screening and selection process has previously been conducted for the Machado Lake Subwatershed during development of the Machado Lake Nutrient Monitoring Plan. As a result of the previous screening effort, it is proposed that the RHE City Hall monitoring location (shown in Figure 3) serve as the representative outfall for monitoring within the Dominguez Channel Watershed. Although the RHE City Hall location is not located at the Peninsula CIMP boundary, it was previously identified as the nearest safely accessible location upstream of this boundary. This monitoring site receives runoff from County unincorporated land and all of the Peninsula Cities, with the exception of Palos Verdes Estates. Tributary land uses to this site include single family residential, vacant, education, and the largest commercial area in the Peninsula Cities.

⁵ The City of Rolling Hills received approval from the Regional Board to participate jointly in the Peninsula CIMP as a result of their lack of an MS4 network, as documented in the December 5, 2013 letter from the Regional Board to the City of Rolling Hills.



Legend

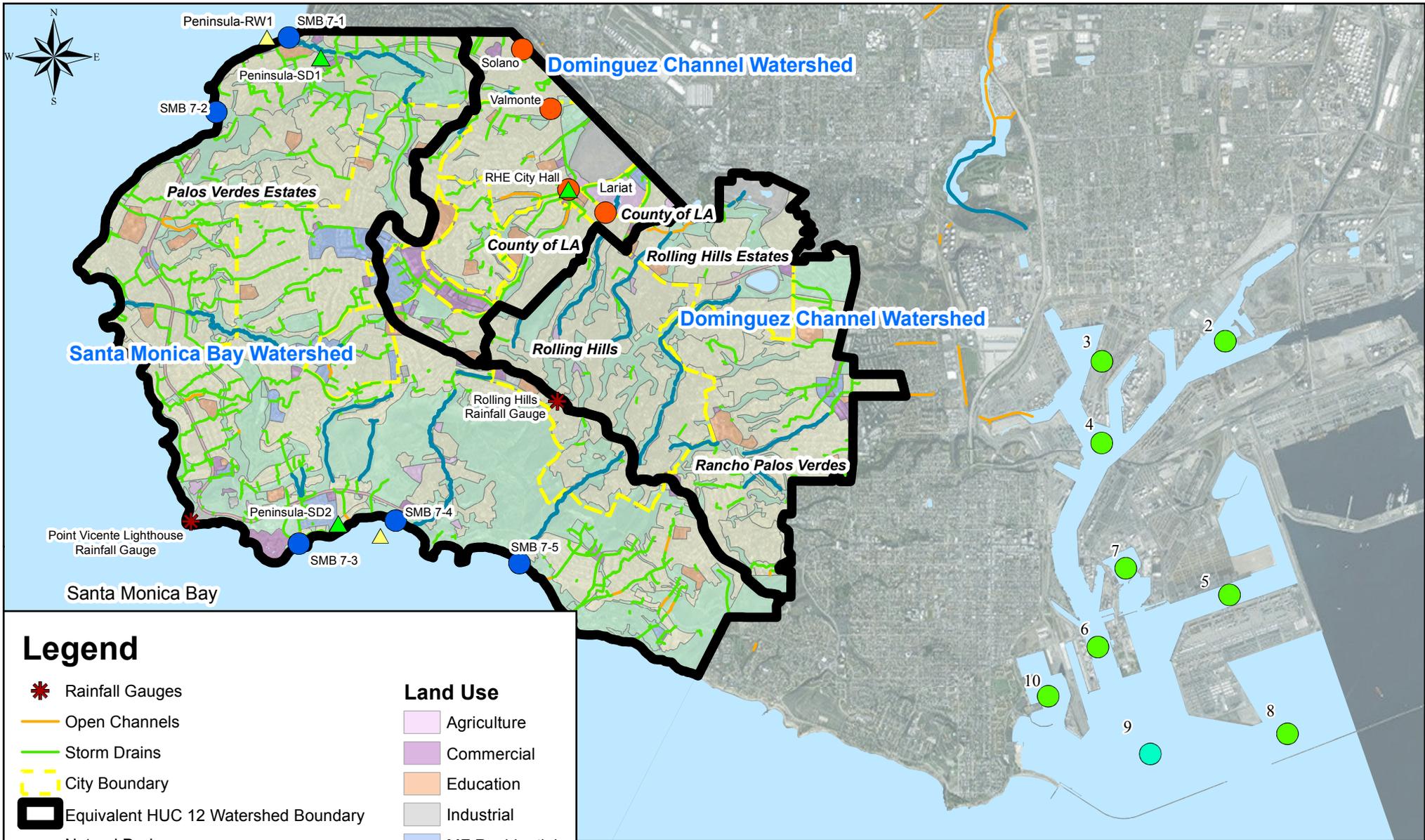
- | | | |
|--|--------------------------------------|--|
|  | Rainfall Gauges | Land Use |
|  | Natural Drainage |  Agriculture |
|  | Open Channels |  Commercial |
|  | Storm Drains |  Education |
|  | City Boundary |  Industrial |
|  | Equivalent HUC 12 Watershed Boundary |  MF Residential |
|  | Major MS4 Outfalls* |  SF Residential |
| | |  Transportation |
| | |  Vacant |

*In some cases, major outfalls identified on this figure are not typical outfalls, but represent locations where storm drains greater than 36 inches in effective diameter cross the Peninsula CIMP area boundary.

Figure 2
Peninsula Major MS4 Outfalls
Peninsula Cities CIMP

May 2015





Legend

- Rainfall Gauges
- Open Channels
- Storm Drains
- City Boundary
- Equivalent HUC 12 Watershed Boundary
- Natural Drainage

Monitoring Locations

- Receiving Water Monitoring
- MS4 Outfall Monitoring
- SMBBB TMDL CSMP Monitoring
- Harbor Water and Sediment Monitoring
- Harbor Water, Sediment, and Fish Monitoring
- Machado Lake Nutrient TMDL Monitoring

Land Use

- Agriculture
- Commercial
- Education
- Industrial
- MF Residential
- SF Residential
- Transportation
- Open Space

Figure 3
TMDL and MS4 Monitoring Locations
Peninsula Cities CIMP

May 2015



1.4.3 NON-STORMWATER OUTFALL MONITORING

Non-stormwater outfall monitoring is required at TMDL compliance points (as specified in approved TMDL monitoring plans) and major outfalls with significant non-stormwater discharges that remain unaddressed after source identification. The TMDL compliance points established in the Machado Lake Nutrient TMDL will continue to be monitored for TMDL pollutants in accordance with the approved Palos Verdes Peninsula Coordinated Monitoring Plan, with the exception of the modifications noted previously to avoid redundancy.

The objectives of the non-stormwater outfall monitoring include the following:

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

Each identified major outfall owned by the Peninsula CIMP Group within the Peninsula CIMP Area will be screened to determine if "significant" non-stormwater discharges exist at the major outfall. Details of the approach to this screening, including follow-up actions triggered after significant non-stormwater discharges have been identified, can be found in Section 4. An initial screening has been conducted and, if necessary, a source identification investigation will be conducted. If significant non-stormwater discharges remain unaddressed after the completion of the source identification investigation, non-stormwater monitoring will be conducted at the applicable outfalls four times per year, and will be linked with downstream receiving water monitoring, where feasible.

1.4.4 REGIONAL STUDIES

The LACFCD will continue to participate in the Regional Watershed Monitoring Program (Biosassessment Program) being managed by the Southern California Stormwater Monitoring Coalition (SMC). The LACFCD will contribute necessary resources to implement the bioassessment monitoring requirement of the Permit on behalf of all Permittees in Los Angeles County during the current Permit cycle. Initiated in 2008, the SMC's Regional Bioassessment Program is designed to run over a five-year cycle. Monitoring under the first cycle concluded in 2013, with reporting of findings and additional special studies planned to occur in 2014. SMC, including LACFCD, is currently working on designing the bioassessment monitoring program for the next five-year cycle, which is scheduled to run from 2015 to 2019.

2 RECEIVING WATER MONITORING

Receiving water monitoring will be conducted under the CIMP in order to assess the effects of MS4 discharges on the receiving water.

The Permit MRP requirements include receiving water monitoring at previously designated mass emission stations, TMDL receiving water compliance points, and additional receiving water locations representative of the impacts from MS4 discharges, as necessary. None of the seven mass emission stations monitored by LACFCD throughout the County of Los Angeles are within or downstream of the Peninsula CIMP Area. As a result, this CIMP will not include monitoring of mass emission stations.

2.1 RECEIVING WATER MONITORING SITES

The Permit does not explicitly state how receiving water monitoring sites should be selected or the number of required receiving water monitoring sites per CIMP group or Permittee, but states that, at a minimum, mass emission station sampling and TMDL compliance sampling must continue. It does specify that receiving water monitoring must be conducted at locations that provide representative measurement of the effects of MS4 discharges on the receiving water and that the CIMP affords Permittees opportunities to increase cost efficiency and effectiveness of the monitoring program.

2.1.1 TMDL COMPLIANCE MONITORING

Currently, TMDL receiving water compliance monitoring within the Peninsula CIMP Area takes place in accordance with the SMB Beaches Bacteria TMDL CSMP. Although the Permit MRP allows for modifications to be proposed in the CIMP for TMDL monitoring programs, at this time no such changes to TMDL receiving water monitoring locations are proposed.

Table 2-1 summarizes the SMBB Bacteria TMDL-related receiving water monitoring sites within the Peninsula CIMP Area which are proposed to continue to be sampled as part of the CIMP.

Table 2-1. TMDL Compliance Monitoring Locations within the Peninsula CIMP Area

Station ID	Type ^a	Description (including historical site ID, if any)
SMB Beaches Bacterial TMDLs CSMP		
SMB 7-1	Open Beach	Malaga Cove: 300 Paseo Del Mar, Palos Verdes Estates (LACSDM)
SMB 7-2	Open Beach	Bluff Cove: 600 Paseo del Mar, Palos Verdes Estates (LACSDB)
SMB 7-3	Open Beach	Long Point: 7200 Palos Verdes Drive South, Rancho Palos Verdes (LACSD1)
SMB 7-4	Open Beach	Abalone Cove: 6000 Palos Verdes Drive South, Rancho Palos Verdes (LACSD2)
SMB 7-5	Open Beach	Portuguese Bend Cove: 4100 Palos Verdes Drive South, Rancho Palos Verdes (LACSD3)

^a Open Beach sites are not associated with freshwater outlets (storm drains or coastal creeks).

Monitoring at all TMDL-specific monitoring locations will continue for TMDL compliance purposes as specified in the SMB Beaches Bacteria TMDLs CSMP. TMDL compliance monitoring includes weekly sampling for fecal indicator bacteria (FIB) at the five SMB Beaches Bacteria TMDL receiving water locations within the Peninsula CIMP Area.

2.1.2 RECEIVING WATER MONITORING SITES

To assess MS4 discharge effects on the receiving waters within the Peninsula CIMP Area, receiving water monitoring is required by the Permit in addition to the receiving water monitoring called for in adopted TMDLs. This monitoring will be conducted in SMB at selected offshore locations.

Receiving water monitoring will be performed from a boat in Santa Monica Bay. Per Los Angeles County ordinance, no hard bottom boats can be operated within 300 yards (900 feet) of the beach due to safety concerns. Therefore, the sampling will be conducted 1,000 feet away from the shoreline (approximately the 30 foot bathometric contour), and will be conducted using manual grab sampling methods.

Proposed receiving water monitoring locations are summarized in Table 2-2.

Table 2-2. Receiving Water Monitoring Locations within Peninsula CIMP Area

Station ID	Longitude/ Latitude	Justification of Selection
Peninsula-RW1	33.80339 N 118.39919 W	1,000 ft offshore (due west) of SMB 7-1. A paired MS4 outfall is tributary to this site via Malaga Creek, and other major outfalls discharge in this vicinity. Tributary land uses are reflective of Palos Verdes Estates land uses as well as Peninsula land uses as a whole, primarily consisting of single family residential and open space, but also including multi-family residential, commercial, and education land uses.
Peninsula-RW2	33.73965 N 118.38152 W	1,000 ft offshore (due southwest) of SMB 7-4. A paired MS4 outfall is located approximately 1,000 yards west of this location, within Abalone Cove. Tributary land uses are reflective of Rancho Palos Verdes land uses as well as Peninsula land uses as a whole, primarily consisting of open space and single family residential, but also including multi-family residential, commercial, and transportation.

Although accessibility was considered when selecting these monitoring sites, it is the responsibility of the water quality monitoring personnel to take all appropriate measures with respect to health and safety considerations and private property access conditions.

2.1.3 RECEIVING WATER MONITORING FREQUENCY

Both wet and dry weather monitoring at receiving water monitoring sites will be conducted. Mobilization for wet weather monitoring will be triggered when forecasts predict a 24-hour rainfall depth of at least 0.25 inches at a 70% probability the day before the start of the storm event⁶. Using a forecast of 0.25 inches as the field mobilization criteria for monitoring will increase the likelihood that sufficient wet weather runoff will occur such that the impact of MS4 discharges on the receiving water can be assessed. Since mobilization to monitor is often required prior to the initiation of rainfall, wet weather monitoring will be based on forecasted rainfall. Storm event predictions will be taken from the National Oceanic and Atmospheric Administration (NOAA) at the location of each County rain gauge located in the Peninsula CIMP Area. Rain forecasts for each location can be found at the following links:

⁶ Because a significant storm event is based on predicted rainfall, it is recognized that this monitoring may be triggered without 0.25 inches of rainfall actually occurring. In this case, the monitoring event will still qualify as meeting this requirement. Documentation will be provided showing the predicted rainfall depth.

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- Point Vicente Lighthouse (LA321) –
(<http://www.wrh.noaa.gov/forecast/wxtables/index.php?lat=33.741304&lon=-118.41121240000001&clrindex=0&table=custom&duration=7&interval=6>)
- Rolling Hills FS 56 (LA376) –
(<http://www.wrh.noaa.gov/forecast/wxtables/index.php?lat=33.7566748&lon=-118.35499800000002&clrindex=0&table=custom&duration=7&interval=6>)

The forecast at one of these two locations must meet this specified criterion to initiate monitoring. If wet weather monitoring is initiated and samples are collected, these samples will be considered wet weather samples regardless of the total depth of rainfall that is recorded for the storm. If mobilization occurs but no MS4 outfall samples are collected due to a lack of flow, this event will not be considered a wet weather monitoring event.

Wet weather monitoring will occur three times per year for the parameters specified herein, with the exception of aquatic toxicity, which will be monitored twice per year. Wet weather monitoring, including toxicity, will also include the first significant rain event of the storm⁷.

If precipitation patterns during a given storm year dictate that these triggers cannot be met, documentation will be provided by the Peninsula CIMP Group in its annual report.

Wet weather sampling events will be separated by at least three days of dry conditions (less than 0.1 inches of rainfall each day). Receiving water monitoring will begin as soon as possible after stormwater outfall monitoring in order to be reflective of potential MS4 impacts.

Dry weather monitoring will be conducted as required in Attachment E, Part VI.D of the Permit. Dry weather monitoring will occur twice per year at receiving water monitoring sites for all specified parameters except toxicity. One of the two dry weather monitoring events will occur during the month of June, which is historically the driest month in the Peninsula CIMP Area according to rain gauge records. Dry weather toxicity monitoring will occur once per year, during the month of June.

A summary of the receiving water monitoring requirements is provided in Table 2-3.

⁷ The term “storm year” is defined as the period spanning from July 1 to June 30.

Table 2-3. Receiving Water Monitoring Requirements

Wet Weather		Dry Weather		Monitoring Parameters
Frequency	Requirements	Frequency	Requirements	
Three times per year (all parameters except aquatic toxicity) Two times per year (aquatic toxicity)	Sample storm events when forecasts predict a 24-hour rainfall depth of at least 0.25 inches at a 70% probability the day before the start of the storm event. Sampling events must be separated by a minimum of three dry days (less than 0.1 inch precipitation) Must sample the first significant storm event (greater than 0.25 inch precipitation, based on forecasts)	Two times per year (all parameters except aquatic toxicity) One time per year, during the month of June (aquatic toxicity)	Precipitation less than 0.1 inch and not less than 3 days after a day with 0.1 inch precipitation. Determination will be made based on measurements from 50% or more of the rain gauges in the Peninsula Area. One of the sampling events must be during the month of June, which is historically the driest month in the Peninsula Area	Pollutants with TMDLs: <ul style="list-style-type: none"> ○ Fecal coliform, total coliform, and enterococcus ○ PCBs/DDT Additional constituents per Permit MRP Table E-2. ^a Aquatic marine water chronic toxicity (see Appendix C, SOP for details)

^a Parameters in Permit MRP Table E-2 are to be monitored during the first significant storm of the year and during the first year of the monitoring program in June (critical dry month for dry weather receiving water sampling). If any parameter is not detected above the method detection limit (MDL) or the result is below the lowest applicable water quality objective, and is not otherwise required due to a TMDL or being on the 303(d) list, the parameter need not be further analyzed for the remainder of the Permit term.

2.2 RECEIVING WATER MONITORING PARAMETERS

At SMB TMDL monitoring sites, monitoring is limited to FIB per the SMB Beaches TMDLs CSMP. Parameters to be monitored at receiving water monitoring sites are summarized in Appendix C and will include:

- Pollutants for which a receiving water limit exists derived from TMDL WLAs.
- Chronic aquatic toxicity. A toxicity test sample is also immediately subject to toxicity identification evaluation (TIE) procedures if either the survival or sublethal endpoint

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demonstrates a Percent Effect⁸ value equal to or greater than 50% of the instream waste concentration (IWC). See Appendix C for further specifications on conducting a TIE.

- Additional screening parameters listed in the Permit MRP (Table E-2), as required per Section 2.2.

Parameters required to be sampled at each receiving water monitoring site are summarized in Table 2-4.

Table 2-4. Receiving Water Monitoring Parameters

Parameter	Peninsula-RW1	Peninsula-RW2
Indicator Bacteria	X	X
PCBs/DDT	X	X
Table E-2 Screening Parameters ^a	X	X
Aquatic Toxicity ^b	X	X

^a Screening parameters can be found in Permit MRP Table E-2, and are also found in Appendix B.

^b Toxicity is required to be monitored in the receiving water twice per year during wet weather and once per year during dry weather in the month of June. Screening for toxicity test parameters will occur once during the first three years of the Permit term. Rescreening will occur in the fourth year of the Permit term.

A detailed summary of the parameters that will be sampled at the receiving water monitoring locations is provided in Appendix B. Appendix B includes acceptable analytical methods for laboratory analyses, Permit-specified minimum detection levels, laboratory QA/QC requirements, holding time requirements and applicable water quality objectives for each parameter.

2.3 RECEIVING WATER MONITORING PROTOCOL

TMDL receiving water monitoring will continue to be conducted in accordance with the SMB Beaches Bacteria TMDL CSMP.

Receiving water sampling will be conducted from a boat in accordance with City of Los Angeles Environmental Monitoring Division (EMD) standard operating procedures. All monitoring protocols, including sample collection procedures, field measurement procedures, and required

⁸ Percent Effect is defined as the effect value—denoted as the difference between the mean control response and the mean IWC response, divided by the mean control response—multiplied by 100.

quality assurance/quality control procedures are detailed in the Standard Operating Procedures (SOP) provided as Appendix C. Details for toxicity monitoring are also provided in Appendix C.

3 STORMWATER OUTFALL MONITORING

Stormwater outfall monitoring will be conducted under the CIMP in order to characterize the impacts of MS4 discharges from the CIMP Group.

Stormwater discharges from the MS4 are required to be monitored at outfalls with drainage areas that are representative of the land uses within the Peninsula CIMP Area. The objectives of the stormwater outfall based monitoring program set forth in Part II.E.2 of the Permit MRP include the following:

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

3.1 STORMWATER OUTFALL MONITORING SITES

The Permit does not explicitly state how stormwater outfall monitoring sites should be selected or the number of required stormwater outfall monitoring sites per EWMP group or Permittee. It does specify that stormwater outfall monitoring must be conducted at locations that provide representative measurement of the effects of MS4 discharges on the receiving water.

Major outfalls within the Peninsula CIMP Area identified based on current information are shown on Figure 2. No major outfalls currently exist within the City of Rolling Hills.⁹

MS4 stormwater outfall monitoring locations were selected based on the following:

1. A desktop screening was conducted to identify major outfalls that are tributary to receiving water monitoring locations. Major outfalls were identified that discharge

⁹ The City of Rolling Hills received approval from the Regional Board to participate jointly in the Peninsula CIMP as a result of their lack of an MS4 network, as documented in the December 5, 2013 letter from the Regional Board to the City of Rolling Hills.

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directly to the coast, up-current of SMB Bacteria TMDL CSMP monitoring locations, or that discharge to natural canyons that are tributary to CSMP monitoring locations.

2. The desktop screening was used to identify upstream land uses for the outfalls identified in Step #1. The Permit specifies that each selected outfall shall be representative of the land uses within the Permittee's jurisdiction. Due to the limited number of major outfalls in existence, this step was used to eliminate major outfalls from further screening if they drained land uses that were determined to have land use distribution unrepresentative of the Peninsula CIMP Area.
3. The major outfalls that were not eliminated from Step #1 and #2 were then field screened to select outfalls that will be monitored. This was determined based on: a) accessibility and safety considerations for monitoring personnel; b) linkage with downstream receiving water monitoring locations; c) verification of attributes identified in the desktop screening step (e.g., outfall size, location, and tributary land use); and d) facilitation of accurate flow measurement within the outfall/storm drain. Alternative upstream monitoring locations such as manholes or channels were considered to facilitate access and to ensure the safety of the monitoring team.

The desktop and field screening and selection process has previously been conducted for the Machado Lake Subwatershed during development of the Machado Lake Nutrient Monitoring Plan. As a result of the previous screening effort, it is proposed that the RHE City Hall monitoring location serve as the representative "outfall" for monitoring within the Dominguez Channel Watershed.¹⁰ Although the RHE City Hall location is not located at the Peninsula CIMP boundary, it was previously identified as the nearest safely accessible location upstream of this boundary.

3.1.1 TMDL STORMWATER OUTFALL MONITORING LOCATIONS

Currently, TMDL monitoring within the Peninsula CIMP Area is conducted by the Peninsula Cities and the County of Los Angeles in accordance with their respective Machado Lake Nutrient TMDL monitoring plans. Modifications to these TMDL monitoring locations are proposed based on monitoring results to-date and noted redundancies in monitoring locations among the two monitoring plans. Table 3-1 summarizes the Machado Lake TMDL-related monitoring sites within the Peninsula CIMP Area which are proposed to continue to be sampled as part of the CIMP.

¹⁰ Although the RHE City Hall monitoring location is technically not an outfall in a strict sense, it is the nearest accessible upstream location from the Peninsula CIMP Area boundary, and will therefore serve as the representative monitoring location for the CIMP. The term "outfall" is used for this location for simplicity.

Table 3-1. TMDL Stormwater Outfall Monitoring Locations within Peninsula CIMP Area

Station ID	Type	Description (including historical site ID, if any)
Machado Lake Nutrient TMDL CMP		
Rolling Hills Estates (RHE) City Hall	Manhole	RDD275, a major storm drain which drains the central commercial area as well as significant residential areas, merges with storm drains collecting wet weather flow from Ranchview and Chadwick Canyons.
Valmonte	Open Channel	Valmonte and Ferncreek subdrainage
Lariat	Grate Opening	Agua Magna, Sepulveda, and Blackwater Canyon subdrainages
Solano	Manhole	PVP subdrainage to Walteria Lake

3.1.2 MS4 STORMWATER OUTFALL MONITORING LOCATIONS

To assess MS4 discharge effects on the receiving waters within the Peninsula CIMP Area, MS4 stormwater outfall monitoring is required by the Permit in conjunction with receiving water monitoring. Stormwater outfall monitoring requirements as specified in the Permit MRP (e.g., monitoring at specified intervals during wet and dry weather, screening for additional parameters, etc.) will be conducted at selected outfall locations. Locations were confirmed with a field investigation to assess each site for accessibility, monitoring feasibility, and additional physical characteristics.

Selected stormwater outfall monitoring sites are summarized in Table 3-2 below. Each monitoring site is shown in Figure 3.

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Table 3-2. Locations for MS4 Outfall Monitoring within Peninsula CIMP Area

Station ID	Tributary Area (Acres)	Land Use Breakdown (Acres)	Site Description and Justification of Selection
Santa Monica Bay HUC-12			
Peninsula-SD1	47	SFR = 16.4 (34.7%) MFR = 0.8 (1.7%) Comm = 5.0 (10.6%) Vac = 25.0 (53.0%)	Located in the parkway adjacent to the intersection of Via Corta and Via del Puente, this monitoring location is accessed via a manhole upstream of Malaga Creek. Tributary land uses are reflective of Peninsula land uses as a whole, primarily consisting of single family residential and open space, but also including multi-family residential and commercial land uses. Access at this location appears safe and easy and does not require traffic control.
Peninsula-SD2	496	SFR = 251.4 (50.7%) MFR = 22.0 (4.4%) Comm = 3.4 (0.7%) Ind = 7.5 (1.5%) Edu = 14.3 (2.9%) Transp = 3.4 (0.7%) Vac = 194.2 (39.1%)	Located in the parkway adjacent to 32861 Seagate Drive, this monitoring location is accessed via a manhole upstream of the outfall at the SMB shoreline. Tributary land uses are reflective of Peninsula land uses as a whole, primarily consisting of open space and single family residential, but also including multi-family residential, commercial, and transportation. A small Southern California Edison electrical substation is tributary to this location. Access at this location appears safe and relatively easy and does not require traffic control.
Dominguez Channel HUC-12			
RHE City Hall	1,096	SFR = 603.9 (55.1%) MFR = 81.7 (7.4%) Comm = 136.6 (12.5%) Ind = 4.9 (0.4%) Edu = 75.4 (6.9%) Vac = 193.8 (17.7%)	Located in the parking lot behind Rolling Hills Estates City Hall (4045 Palos Verdes Drive N.), this monitoring location is accessed via a manhole upstream of the Rolling Hills Estates city boundary. This monitoring location receives runoff from County unincorporated land and all of the Peninsula Cities with the exception of Palos Verdes Estates. It is representative of Peninsula land uses as a whole since tributary land uses to this site include single family residential, vacant, education, and the largest commercial area in the Peninsula Cities.

SFR = Single Family Residential
 MFR = Multi Family Residential
 Comm = Commercial
 Ind = Industrial
 Edu = Educational
 Transp = Transportation
 Vac = Vacant/open space

Photos, figures, and site descriptions for each stormwater outfall monitoring site are provided in Appendix A. Although accessibility was considered when selecting these monitoring sites, it is the responsibility of the water quality monitoring personnel to take all appropriate measures with respect to health and safety considerations and private property access conditions.

3.2 STORMWATER OUTFALL MONITORING FREQUENCY

Stormwater discharges at selected outfalls will be monitored three times a year during wet weather. Monitoring will be initiated based on forecasted wet weather events. As is the case with receiving water monitoring during wet weather, stormwater outfall based monitoring will target the first significant rain event of the storm year.

Stormwater outfall sampling events will be separated by at least three days of dry conditions (less than 0.1 inches of rainfall each day). Stormwater outfall monitoring will be coordinated with receiving water monitoring to the maximum extent practicable, such that downstream receiving water monitoring begins as soon as possible after stormwater outfall monitoring. In cases where this is not feasible, appropriate notification will be made for inclusion in the annual report. A summary of stormwater outfall monitoring requirements is provided in Table 3-3.

Table 3-3. Stormwater Outfall Monitoring Requirements

Wet Weather		
Frequency	Requirements	Monitoring Parameters
3 times per year	<p>Sample storm events when forecasts predict a 24-hour rainfall depth of at least 0.25 inches at a 70% probability the day before the start of the storm event</p> <p>Sampling events must be separated by a minimum of 3 dry days (less than 0.1 inch precipitation)</p> <p>Must sample the first significant storm event (greater than 0.25 inch precipitation)</p>	<p>Flow</p> <p>Pollutants with TMDLs:</p> <ul style="list-style-type: none"> ○ Coliform Bacteria (Peninsula-SD1 and Peninsula-SD2) ○ PCB Congeners/DDT ○ Benzo(a)pyrene, chlordane, PAHs, copper, dieldrin, lead, mercury, and zinc (RHE City Hall) <p>Other Pollutants:</p> <ul style="list-style-type: none"> ○ TSS ○ Coliform Bacteria (RHE City Hall) <p>Additional constituents per Permit MRP Table E-2.^a</p> <p>Field measurements: pH, dissolved oxygen, temperature, specific conductivity, hardness.^b</p> <p>Aquatic marine water/freshwater chronic toxicity (see Appendix C, SOP for details).^c</p>

^a Additional screening parameters identified in Permit MRP Table E-2 (see Appendix B) are required to be analyzed if and when monitoring at the nearest downstream receiving water monitoring station triggers such sampling. This occurs if a parameter in the receiving water is found to exceed the lowest applicable water quality objective.

^b Hardness will be analyzed in the lab, as there is currently no EPA-approved field testing method, and it is not economically or technically feasible to do testing in the field for hardness.

^c Aquatic toxicity monitoring is only required when triggered by downstream receiving water toxicity monitoring from the previous sampling event where a toxicity identification evaluation (TIE) is carried out and inconclusive. If a TIE is conducted at the downstream receiving water and results in the identification of pollutants, then those pollutants must also be monitored at the upstream outfall during the next monitoring event.

3.3 STORMWATER OUTFALL MONITORING PARAMETERS

Parameters monitored at selected outfalls during stormwater monitoring will include:

- Flow. Outfall flow will be monitored based on the appropriate field methodology that corresponds to site conditions. If not practical to monitor with an appropriate field methodology (e.g., automated flow meter or manual measuring device), the flow will be estimated for each outfall based on drainage area, impervious cover, and precipitation data from the nearest LA County rain gauge (refer to the SOP in Appendix C).
- Pollutants assigned a WQBEL derived from TMDL WLAs. These include FIB for SMB outfalls, PCBs/DDT at all outfalls, plus benzo(a)pyrene, chlordane, PAHs, copper, dieldrin, lead, mercury, and zinc at RHE City Hall only.
- Pollutants identified on the 303(d) list for the receiving water or downstream receiving water. This includes coliform bacteria, copper, and lead at RHE City Hall only, but copper and lead will be monitored per downstream TMDL requirements already.
- Field measurements, including: pH, dissolved oxygen, temperature, and specific conductivity. Hardness will be analyzed by the selected analytical lab, as there is currently no EPA-approved field testing method and it is not economically or technically feasible to do testing in the field for hardness.
- Aquatic toxicity monitoring is only required when triggered by downstream wet weather receiving water toxicity monitoring from the previous sampling event where a TIE is carried out and inconclusive. If a TIE is conducted at the downstream receiving water and results in the identification of pollutants, then those pollutants must also be monitored at the upstream outfall during the next monitoring event. If the pollutant is present in the discharge at levels above the applicable receiving water limits, a Toxicity Reduction Evaluation (TRE) will be performed for that pollutant.
- Additional screening parameters (see Appendix B) will be analyzed if and when an exceedance of a parameter's lowest applicable water quality objective is found at the paired downstream receiving water monitoring site. Monitoring for these identified parameters will occur at the next wet weather monitoring event at both the receiving water monitoring site and stormwater outfall monitoring site. Monitoring for these parameters will continue until the linked receiving water monitoring result is below the applicable criteria or when the monitoring data analysis is sufficient to show that the outfall discharge is not contributing to the receiving water exceedance.

Parameters required to be sampled at each stormwater outfall monitoring site are summarized in Table 3-4.

Table 3-4. Stormwater Outfall Monitoring Parameters

Parameter	Peninsula-SD1	Peninsula-SD2	RHE City Hall
Indicator Bacteria	X	X	X
PCBs/DDT	X	X	X
Nutrients (NO3+NO2, TN, and TP)			X
Metals (copper, lead, mercury, zinc)			X
Pesticides (dieldrin, chlordane)			X
PAHs, benzo(a)pyrene			X
TSS	X	X	X
Field Measurements ^a	X	X	X
Table E-2 Screening Parameters ^b	As Necessary	As Necessary	As Necessary
Aquatic Toxicity ^c	As Necessary	As Necessary	As Necessary
Flow	X	X	X

^a Field measurements include pH, dissolved oxygen, temperature, and specific conductivity. Hardness will be measured in the lab as part of the screening parameter suite, as there is currently no EPA-approved field testing method for hardness.

^b Screening parameters can be found in Permit MRP Table E-2, and are also found in Appendix B. Screening parameters are required to be monitored based on downstream receiving water monitoring results.

^c Toxicity is required to be monitored based on downstream receiving water monitoring results.

The parameters to be sampled at the various stormwater outfall monitoring locations are summarized in Appendix B. Appendix B includes acceptable analytical methods for laboratory analyses, Permit-specified minimum detection levels, laboratory QA/QC requirements, holding time requirements, and applicable water quality objectives for each parameter.

3.4 STORMWATER OUTFALL MONITORING PROTOCOL

Monitoring protocols including sample collection procedures, field measurement procedures, and flow monitoring and estimation methods, are detailed in the SOP provided as Appendix C. Sample procedures entail the collection of manual composite samples via direct manual sampling or using a swing sampler device (or similar apparatus) with an intermediate container.

4 NON-STORMWATER OUTFALL MONITORING

The Non-Stormwater (NSW) Outfall Screening Program is a multi-step process to identify and address non-stormwater discharges to the receiving waters. The outfall screening and monitoring process is intended to meet the following objectives (Part IX.A of the MRP):

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1. Develop criteria or other means to ensure that all outfalls with significant non-stormwater discharges are identified and assessed during the term of the Permit.
2. For outfalls determined to have significant non-stormwater flow, determine whether flows are the result of IC/IDs, authorized or conditionally exempt non-stormwater flows, natural flows, or from unknown sources.
3. Refer information related to identified IC/IDs to the IC/ID Elimination Program (Part VI.D.10 of the Permit) for appropriate action.
4. Based on existing screening or monitoring data or other institutional knowledge, assess the impact of non-stormwater discharges (other than identified IC/IDs) on the receiving water.
5. Prioritize monitoring of outfalls considering the potential threat to the receiving water and applicable TMDL compliance schedules.
6. Conduct monitoring or assess existing monitoring data to determine the impact of non-stormwater discharges on the receiving water.
7. Conduct monitoring or other investigations to identify the source of pollutants in non-stormwater discharges.
8. Use results of the screening process to evaluate the conditionally exempt non-stormwater discharges identified in Parts III.A.2 and III.A.3 of the Permit and take appropriate actions pursuant to Part III.A.4.d of the Permit for those discharges that have been found to be a source of pollutants. Any future reclassification shall occur per the conditions in Parts III.A.2 or III.A.6 of the Permit.
9. Maximize the use of resources by integrating the screening and monitoring process into existing or planned IMP and/or CIMP efforts.

The non-stormwater screening process consists of the steps outlined in Table 4-1.

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Table 4-1. Non-Stormwater Outfall Screening and Monitoring Program Summary

Element	Description	Implementation Dates
Develop MS4 outfall database	Develop a database of all major outfalls with descriptive information, linked to GIS.	Ongoing
Outfall Screening	A screening process will be implemented to collect data for determining which outfalls exhibit significant NSW discharges.	The screening process will begin summer 2014
Inventory and Identification of outfalls with NSW discharge	Based on data collected during the Outfall Screening process, identify NSW discharges.	
Inventory of outfalls with NSW discharge	Develop an inventory of major MS4 outfalls with known significant NSW discharges and those requiring no further assessment.	
Prioritized source investigation	Use the data collected during the screening process to determine significant discharges and prioritize outfalls for source investigations.	
Identify sources of significant NSW discharges	Perform source investigations per the prioritization schedule. If not exempt or unknown, determine abatement process.	Source investigations will be conducted for at least 25% of the significant NSW discharges by the end of December 28, 2015, and 100% by December 28, 2017.
Monitoring NSW discharges exceeding criteria	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 to begin within 90 days of completing the source investigation or after the CIMP has been approved by the EO, whichever is later.

Each of these steps is discussed in more detail in the following subsections and a flow chart of the process is shown in Figure 4.

The City of Rolling Hills, due to the lack of MS4 outfalls within the city, has developed a separate Non-Stormwater Screening and Monitoring Program and submitted this program to the Regional Board for approval. A copy of this plan can be found in Appendix E.

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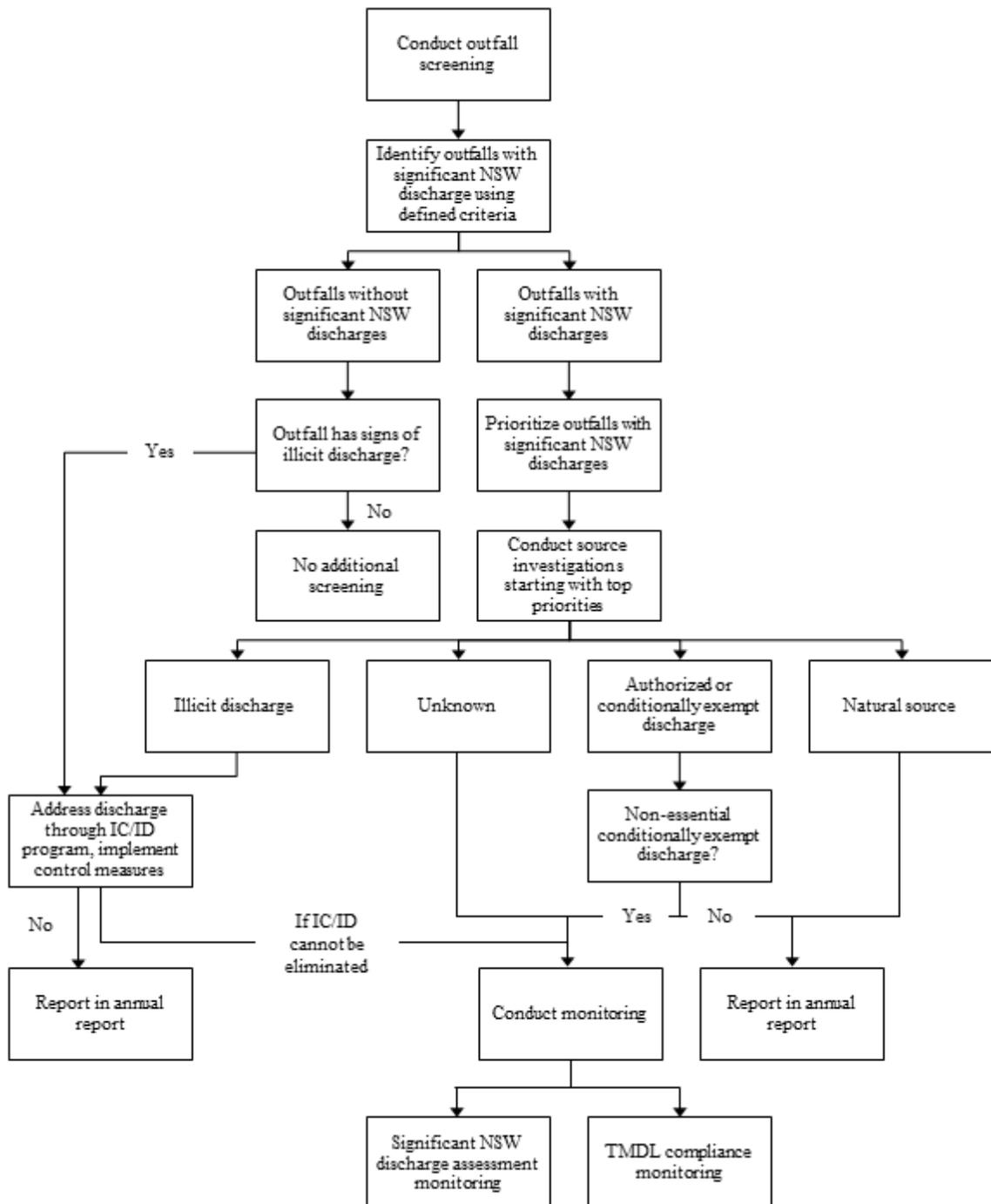


Figure 4. Non-Stormwater Outfall Screening Program

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4.1 OUTFALL DATABASE

The non stormwater outfall screening program requires the development of an MS4 outfall database by the time that the CIMP is submitted. The objective of the MS4 database is to geographically link the characteristics of the outfalls within the Peninsula CIMP Area with watershed characteristics including: subwatershed, waterbody, land use, and effective impervious area. The database must contain the elements described in Table 4-2. The information will be compiled into geographic information systems (GIS) layers.

Sources GIS data used to date include:

- Los Angeles County Department of Public Works, Spatial Information Library and the Los Angeles County GIS Data Portal (jurisdictional boundaries, land use, MS4 systems, surface water bodies, existing monitoring locations).
- United States Geological Survey (USGS) National Hydrograph Dataset (HUC-12 watershed boundaries).
- Data provided directly by Peninsula Agencies (MS4 systems)
- Data created as part of the CIMP, based on gathered information (monitoring locations, non-stormwater screening results, etc.)

GIS data will be provided to the Regional Board in electronic format, concurrent with this CIMP.

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Table 4-2. MS4 Database Elements

Database Element	Submitted	To Be Developed
Surface water bodies within the Peninsula CIMP Area.	X	
Watershed (HUC-12) boundaries.	X	
Land use overlay.	X	
Effective Impervious Area (EIA) overlay (if available).		X
Jurisdictional boundaries.	X	
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).	X	
The location of all dry weather diversions.	X	
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.	X ^a	.
Notation of outfalls with significant non-stormwater discharges (to be updated annually).	X ^b	
Storm drain outfall catchment areas for each major outfall within the Permittee(s) jurisdiction.		X ^c
Each mapped MS4 outfall shall be linked to a database containing descriptive and monitoring data associated with the outfall. The data shall include:		
Ownership	X	
Coordinates	X	
Physical description	X	
Photographs of the outfall, where possible, to provide baseline information to track operation and maintenance needs over time		X ^d
Determination of whether the outfall conveys significant non-stormwater discharges.	X ^b	
Stormwater and non-stormwater monitoring data		X ^d

^a All outfalls greater than 36 inches have been defined, based on known available data. The database will be updated as information is developed, and alphanumeric identifiers will be assigned following the field screening.

^b These are included in the non-stormwater screening results, provided as Attachment I.

^c The storm drain system is available in GIS, and identification of the catchment areas for the outfalls is being done as needed. The catchment area will be defined for all outfalls identified as significant and any outfalls selected as stormwater or NSW outfall monitoring locations.

^d This data will be gathered as part of the screening and monitoring program and will be added to the database as it is gathered.

As shown in the table, not all information was available at this time for submittal as part of the CIMP. Most items currently not available will be collected through implementation of the Non-Stormwater Outfall Screening Program as noted in the table footnotes. As the data becomes available, it will be entered into the database. Each year, the storm drains, channels, outfalls, and

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associated database will be updated to incorporate the most recent characterization data for outfalls with significant non-stormwater discharge. The updates will be included as part of the annual reporting to the Regional Board.

4.2 INITIAL NSW OUTFALL SCREENING PROCESS

The NSW outfall screening program began with a field check of all major outfalls as defined in the Permit in the database to gather the necessary field information to populate the database. During the initial field screening, which occurred in September 2014, outfalls were observed during dry weather, defined as days when precipitation is less than 0.1 inch of rain not less than 3 days (72 hours) after a rain event of 0.1 inch or greater. During the initial field screening, the following information was gathered using the field inspection form in Attachment C.3 of Appendix C, or equivalent.

- a. Date, Time, Weather
- b. Photos of outfall and receiving water using a GPS-enabled camera
- c. Coordinates of outfall
- d. Physical descriptions of outfall, site condition, and accessibility (see Section 4.4)
- e. Discharge characteristics, such as odor and color
- f. Presence of flow greater than trickle or no flow
- g. Receiving water characteristics (see Section 4.4)

After the initial event, outfalls where flow greater than a trickle was observed during the initial screening event were revisited for two more screening events. During the second and third screening events, all of the information listed above was gathered again. In addition, visual field estimates of flow were gathered, where applicable. These additional screening events occurred between October and December 2014, in order to ensure the source investigation schedule (which requires 25% of source investigations to be completed by December 2015). Results from these screenings are provided in Appendix I.

The non-stormwater outfall screening and monitoring plan will be reassessed by the end of the 4th year of the Permit term, based on screening results and other gathered information (e.g., data from an agencies illicit connection/illicit discharge program), to determine if changes or updates are needed. Any changes that are made will be described in the Peninsula CIMP Group's Annual Report.

4.3 IDENTIFICATION OF OUTFALLS WITH SIGNIFICANT NON-STORMWATER DISCHARGES

The three initial outfall screening events will be used to define the outfalls that require no further assessment and outfalls with significant non-stormwater discharges. Outfalls will be noted as requiring "No Further Assessment" in the outfall database if:

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- a. No flow is observed from the outfall.
- b. The source is confirmed to be from NPDES permitted, categorically exempt essential flow or natural flow, or
- c. Flow is categorized as not significant.

The MRP (Part IX.C.1) states that one or more of the following characteristics may determine significant non-stormwater discharges:

- Discharges from major outfalls subject to dry weather TMDLs.
- Discharges for which monitoring data exceeds non-stormwater action levels (NALs).
- Discharges that have caused or may cause overtopping of downstream diversions.
- Discharges exceeding a proposed threshold discharge rate as determined by the Group Members.
- Other characteristics as determined by the CIMP Group and incorporated within the screening program.

The data collected during the outfall screening process, along with other information about the outfall catchment area, will be utilized to determine which outfalls observed to be flowing during the screening process will be categorized as having “significant discharge.” Many factors will be taken into consideration when determining significant outfall discharges and may include the following criteria:

- Proximity of the outfall to the nearest downstream receiving water body where TMDLs apply.
- The discharges have caused or have the potential to cause overtopping of downstream diversions.
- Field measurements and any other available water quality data for the outfall.
- Outfall has persistent flows, meaning flow was observed on two or more of the three screenings.
- Characteristics of the catchment area, including but not limited to, presence of permitted discharges in the area, land use characteristics, and previous IC/ID results.

Outfalls with significant non-stormwater discharge will also be designated in an inventory to be included in the MS4 outfall database.

4.4 INVENTORY OF MS4 OUTFALLS WITH SIGNIFICANT NON-STORMWATER DISCHARGES

An inventory of MS4 outfalls must be developed identifying those outfalls with known significant non-stormwater discharges and those requiring no further assessment (Part IX.D of the MRP). If the MS4 outfall requires no further assessment, the inventory must include the rationale for the determination of no further action required. The inventory will be included in

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the outfall database. Each year, the inventory will be updated to incorporate the most recent characterization data for outfalls with significant non-stormwater discharges.

The following physical attributes of outfalls with significant non-stormwater discharges will be included in the inventory. These characteristics will be collected as part of the screening process described in Section 4.3:

- a. Date and time of last visual observation or inspection
- b. Outfall alpha-numeric identifier
- c. Description of outfall structure including size (e.g., diameter and shape)
- d. Description of receiving water at the point of discharge (e.g., natural, soft-bottom with armored sides, trapezoidal, concrete channel)
- e. Latitude/longitude coordinates
- f. Nearest street address
- g. Parking, access, and safety considerations
- h. Photographs of outfall condition
- i. Photographs of significant NSW discharge or indicators of discharge unless safety considerations preclude obtaining photographs
- j. Estimation of discharge rate
- k. All diversions either upstream or downstream of the outfall
- l. Observations regarding discharge characteristics such as odor, color, presence of debris, floatables, or characteristics that could aid in pollutant source identification.

4.5 PRIORITIZED SOURCE IDENTIFICATION

Once the major outfalls exhibiting significant non-stormwater discharges have been identified through the screening process and incorporated in the inventory, Part IX.E of the MRP requires that the Peninsula CIMP Group prioritize the outfalls for further source investigations. The MRP identifies the following prioritization criteria for outfalls with significant non-stormwater discharges:

- Outfalls discharging directly to receiving waters with WQBELs or receiving water limitations in the TMDL provisions for which final compliance deadlines have passed.
- All major outfalls and other outfalls that discharge to a receiving water subject to a TMDL shall be prioritized according to TMDL compliance schedules.
- 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.
- All other major outfalls identified to have significant non-stormwater discharges.

In addition to the Permit requirements, the following criteria will be considered when developing the prioritization schedule:

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- Rate of discharge based on visual flow observations
- Size of outfall
- Odor, color and clarity of discharge
- Results of the field measurements of pH, temperature, DO, and EC
- Presence of flow in the receiving water

Once the prioritization is complete, a source identification schedule will be developed. The scheduling will focus on the outfalls with the highest priorities first. Unless the results of the field screening justify a modification to the schedule in the MRP, the schedule will ensure that source investigations are completed on no less than 25% of the outfalls with significant non-stormwater discharges by December 28, 2015 and 100% by December 28, 2017.

4.6 SIGNIFICANT NON-STORMWATER DISCHARGE SOURCE IDENTIFICATION

The screening and source identification component of the program is used to identify the source(s) and point(s) of origin of the non-stormwater discharge. Based on the prioritized list of major outfalls with significant non-stormwater discharges, investigations will be conducted to identify the source(s) or potential source(s) of non-stormwater flows.

Part IX.A.2 of the MRP requires Permittees to classify the source investigation results into one of four endpoints outlined as follows and summarized in Table 4-3:

- A. Illicit connections or illicit discharges (IC/IDs): If the source is determined to be an illicit discharge, the Permittee must implement procedures to eliminate the discharge consistent with IC/ID requirements (Permit Part VI.D.10) and document actions.
- B. Authorized or conditionally exempt NSW discharges: If the source is determined to be an NPDES permitted discharge, a discharge subject to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), or a conditionally exempt essential discharge, the appropriate agency must document the source and report to the Regional Water Board in the next annual report. For non-essential conditionally exempt discharges, the appropriate agency must conduct monitoring consistent with Part IX.G of the MRP to determine whether the discharge should remain conditionally exempt or be prohibited.
- C. Natural flows: If the source is determined to be natural flows, the Permittee must document the source.
- D. Unknown sources: If the source is unknown, the Permittee must conduct monitoring consistent with Part IX.G of the MRP.

Table 4-3. Summary of Endpoints for Source Identification

Endpoint	Follow-up	Action Required by Permit
A. Illicit Discharge or Connection	Refer to IC/ID program	Implement control measures and report in annual report. Monitor if cannot be eliminated.
B. Authorized or Conditionally Exempt Discharges ^{a,b}	Document and identify if essential or non-essential	Monitor non-essential discharges ^c
C. Natural Flows	End investigation	Document and report in annual report
D. Unknown	Refer to IC/ID program	Monitor

^a Discharges authorized by a separate NPDES permit, a discharge subject to a Record of Decision approved by USEPA pursuant to section 121 of CERCLA, or is a conditionally exempt NSW discharge addressed by other requirements. Conditionally exempt NSW discharges addressed by other requirements are described in detail in Part III.A. Prohibitions – Non-Stormwater Discharges of the Permit.

^b Per Section III.A.4 of the Permit, if the Permittee determines that an authorized or conditionally exempt essential non-stormwater discharge is a source of pollutants that causes or contributes to an exceedance of applicable RWL and/or water quality-based effluent limitations, the Regional Board will be notified within 30 days.

^c If monitoring data demonstrates that conditionally exempt non-stormwater discharges are a source of pollutants that causes or contributes to an exceedance of applicable RWL and/or water quality-based effluent limitations, the findings will be reported to the Regional Board in the annual report. Additionally, per Section III.A.4 of the Permit, the Permittee will either effectively prohibit the NSW discharge; impose conditions in addition to those in Table 8 of the Permit, subject to approval by the EO, such that the NSW discharge will not be a source of pollutants; require diversion of the NSW discharge to the sanitary sewer; or require treatment of the NSW discharge prior to discharge to the receiving water.

Source investigations will be conducted using site-specific procedures based on the characteristics of the NSW discharge. Investigations could include:

- Identifying permitted discharges within the catchment area.
- Identifying if the flow is from a channelized stream or creek.
- Following dry weather flows from the location where they are first observed in an upstream direction along the conveyance system.
- Compiling and reviewing available resources including past monitoring and investigation data, land use/MS4 maps, aerial photography, and property ownership information.
- Gathering field measurements to characterize the discharge.

Based on the results of the source assessment, outfalls may be reclassified as requiring no further assessment and the inventory will be updated to reflect the information and justification for the reclassification.

Where investigations determine the non-stormwater source to be authorized, natural, or essential conditionally exempt flows, the CIMP Group will conclude the investigation, categorize the outfall as requiring no further assessment in the inventory, and move to the next highest priority

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outfall for investigation. Where investigations determine that the source of the discharge is non-essential conditionally exempt, an illicit discharge, or is unknown – further investigation may be conducted to eliminate the discharge or demonstrate that it is not causing or contributing to receiving water problems. In some cases, source investigations may ultimately lead to prioritized programmatic or structural BMPs. Where Permittees determine that they will address the non-stormwater discharge through modifications to programs or by structural BMP implementation, the CIMP Group will incorporate the approach into the implementation schedule developed for the CIMP Group and the outfall can be lowered in priority for investigation, such that the next highest priority outfall can be addressed.

4.7 NON-STORMWATER DISCHARGE MONITORING

As outlined in the Permit MRP, outfalls with significant NSW discharges that remain unaddressed after source investigation will be monitored for water quality to meet the following objectives:

- a. Determine whether a discharge is in compliance with applicable NSW WQBELs derived from TMDL WLAs;
- b. Determine if the quality of a discharge exceeds applicable NALs, as described in Attachment G of the Permit; and
- c. Determine whether a discharge causes or contributes to an exceedance of applicable RWLs.

As identified in Table 4-3, outfalls that have been determined to convey significant non-stormwater discharges where the source investigations concluded that the source is attributable to a continued illicit discharge (Endpoint A), non-essential conditionally exempt (Endpoint B), or unknown (Endpoint D) must be monitored. Monitoring will begin within 90 days of completing a source investigation or after the EO approves the CIMP, whichever is later in time.

4.7.1 NON-STORMWATER OUTFALL-BASED MONITORING SITES

The NSW outfall monitoring sites will be determined after source investigation of significant NSW discharges is concluded.

4.7.2 MONITORED PARAMETERS, FREQUENCY, AND DURATION OF MONITORING

The requirements for constituents to be monitored are outlined in the Part VIII.G.1.a-e of the MRP. Outfalls will be monitored for all required constituents except toxicity. Toxicity monitoring is only required when triggered by recent receiving water toxicity monitoring where a TIE on the observed receiving water toxicity test was inconclusive. An overview of the constituents required to be monitored in the MRP at each NSW outfall monitoring site is listed in Table 4-4.

Table 4-4. Summary of Non-Stormwater Outfall Monitoring Parameters

Classification Identified in Permit	Preliminary List of Parameter(s)
General	Flow, hardness, pH, DO, temperature, and TSS
Pollutants assigned TMDL WLAs	Dependent on receiving water TMDLs (FIB for SMB outfalls; nitrogen and phosphorus at Machado Lake outfalls; copper, lead, mercury, and zinc at LA Harbor outfalls).
Pollutants identified for 303(d)-Listed receiving waters	Dependent on receiving water 303(d) listing (FIB, copper, and lead at Wilmington Drain outfalls)
Toxicity	To be determined
Parameters in Table E-2 of the MRP if they are identified as exceeding applicable water quality objectives in the receiving water during dry weather	To be determined

The Peninsula CIMP Group will conduct required NSW outfall monitoring four times per year. To the extent feasible, the NSW outfall monitoring events will be coordinated with the dry weather receiving water monitoring events to allow for an evaluation of whether the NSW discharges are causing or contributing to an observed exceedance of water quality objectives in the receiving water.

4.7.3 ADAPTIVE MONITORING

Monitoring for non-stormwater discharges will be more dynamic than either the receiving water or stormwater outfall monitoring. As non-stormwater discharges are addressed, monitoring at the outfall will cease. Additionally, if after one year of monitoring, results demonstrate that discharges do not exceed any WQBELs, non-stormwater action levels, or water quality standards for pollutants identified on the 303(d) list, monitoring will cease at a given outfall pending written approval from the Executive Officer of the Regional Board. Thus, the number and location of outfalls monitored has the potential to change on an annual basis.

5 TMDL SPECIAL STUDIES

The Permit MRP states that Permittees are responsible for conducting special studies required in an effective TMDL or an approved TMDL monitoring plan within their watershed area. Presently, no special studies are required by the Peninsula-applicable TMDLs or their monitoring plans. The CIMP Group will consider what, if any, special studies may be designed and implemented as more data become available about the receiving waters, land use runoff characterizations, and MS4 potential impacts. Per the Machado Lake Nutrients TMDL, the County has completed a Special Study to characterize the ambient water quality conditions of the unincorporated County islands in the Peninsula.

6 REGIONAL MONITORING

The LACFCD will continue to participate in the Regional Watershed Monitoring Program (Biosassessment Program) being managed by the Southern California Stormwater Monitoring Coalition (SMC). The LACFCD will contribute necessary resources to implement the bioassessment monitoring requirement of the Permit on behalf of all Permittees in Los Angeles County during the current Permit cycle. More details are provided in Section 1.4.4.

7 DATA MANAGEMENT AND REPORTING REQUIREMENTS

7.1 MONITORING RECORDS

In accordance with the Permit requirements, the CIMP Group will retain records of monitoring information, including calibration and maintenance records, copies of reports required by the Permit for a period of at least three (3) years from the date of the sample, measurement, or report. Records of monitoring information will include:

1. The date, time of sampling or measurements, exact place, weather conditions, and rain fall amount.
2. The individual(s) who performed the sampling or measurements.
3. The date(s) analyses were performed.
4. The individual(s) who performed the analyses.
5. The analytical techniques or methods used.
6. The results of such analyses.
7. The data sheets showing toxicity test results.

Refer to the SOP in Appendix C for more information about how these data should be documented.

7.2 ELECTRONIC DATA MANAGEMENT AND SUBMITTAL REQUIREMENTS

The Permit requires that all stormwater quality monitoring data be reported semi-annually to the Regional Board's Stormwater website in an electronic format. An example of such an electronic format is the most recent Standardized Data Transfer Format as prescribed by the Southern California Municipal SMC, which uses the California Environmental Data Exchange Network

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(CEDEN).¹¹ CEDEN is the data system managed by the State Water Board and is a repository for water quality-related data collected in California by the Regional Boards, municipalities, and research and volunteer organizations, which are made accessible to environmental managers and the public. CEDEN was originally created to support the Surface Water Ambient Monitoring Program.

If the CIMP Group elects to use the CEDEN format, monitoring data will be submitted using the appropriate template(s) to a CEDEN Regional Data Center where the data will be reviewed for compliance and entered into the centralized CEDEN database. There are four Regional Data Centers and the CIMP Group will submit data to the Southern California Regional Data Center located in Costa Mesa, which is managed by the Southern California Coastal Water Research Project (SCCWRP).

Before monitoring data can be uploaded to CEDEN through the Regional Data Center, the CIMP Group must convert or create its data in the proper CEDEN template (in Microsoft Excel format). To facilitate uploading the data to CEDEN, analytical chemistry and toxicity data collected by the CIMP Group will be requested from the laboratories in the CEDEN electronic data deliverable (EDD) format. For field measurement data (i.e., pH, temperature, dissolved oxygen, and conductivity), the CIMP Group will need to input the field data into the CEDEN field data template. Examples of the chemistry, toxicity, and field data CEDEN templates are included in Appendix D. If used, the CIMP Group will submit the data spreadsheets to the Regional Data Center and make any necessary revisions. Once approved by the Regional Data Center, the monitoring data will be uploaded into the centralized CEDEN online database where that data will be publically available for download.

7.3 STORMWATER CONTROL MEASURES

The CIMP Group will make all reasonable efforts to determine, compile, analyze, and summarize the following information in the Annual Report:

1. Estimated cumulative change in percent effective impervious area (EIA) since December 28, 2012 and, if possible, the estimated change in the stormwater runoff volume during the 85th percentile storm event.
2. Summary of new development/redevelopment projects constructed within each Peninsula Agency's jurisdictional area during the reporting year.

¹¹ CEDEN is the State Water Board's data system for surface water bodies in California (http://www.ceden.org/site_map.shtml).

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3. Summary of retrofit projects that reduced or disconnected impervious area from the MS4 during the reporting year.
4. Summary of other projects designed to intercept stormwater runoff prior to discharge to the MS4 during the reporting year.
5. For the projects summarized above in #2 through #4, estimate the total runoff volume retained onsite by the implemented projects.
6. Summary of actions taken in compliance with TMDL implementation plans or approved Watershed Management Programs to implement TMDL provisions applicable to the Peninsula CIMP Group.
7. Summary of riparian buffer/wetland restoration projects completed during the reporting year. For riparian buffers include width, length and vegetation type; for wetland include acres restored, enhanced, or created.
8. Summary of other Minimum Control Measures implemented during the reporting year, as the appropriate Agency deems relevant.
9. Status of all multi-year efforts that were not completed in the current year and will therefore continue into the subsequent year(s). Additionally, if any of the requested information cannot be obtained, the appropriate Agency will provide a discussion of the factor(s) limiting its acquisition and steps that will be taken to improve future data collection efforts.

Based on this information and other available data, an effectiveness assessment of stormwater control measures will also be included in the Annual Report, and will include, where feasible, the information presented in Section XVIII.A.2 of the Permit MRP.

7.4 NON-STORMWATER CONTROL MEASURES

The CIMP Group will report on the non-stormwater outfall monitoring program in the Annual Report. In accordance with the Permit, the CIMP Group will:

1. List the number of identified major outfalls within the Permittee's jurisdiction in the subwatershed.
2. Provide the number of outfalls that were screened for significant non-stormwater discharges during the reporting year.
3. Provide the cumulative number of outfalls that have been screened for significant non-stormwater discharges since the date the Permit was adopted through the reporting year.
4. Provide the number of outfalls with confirmed significant non-stormwater discharge.

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5. Provide the number of outfalls where significant non-stormwater discharge was attributed to other NPDES permitted discharges; other authorized non-stormwater discharges; or conditionally exempt discharges.
6. Provide the number of outfalls where significant non-stormwater discharges were abated as a result of the CIMP Group's actions.
7. Provide the number of outfalls where non-stormwater discharges was monitored.
8. If any of the above information cannot be obtained, the CIMP Group will provide a discussion of the factor(s) limiting its acquisition and steps that will be taken to improve future data collection efforts.

7.5 INTEGRATED MONITORING COMPLIANCE REPORT

The CIMP Group will submit an Annual Report to the Regional Board Executive Officer in electronic format by December 15th of each year following Executive Officer approval of the CIMP. Each Annual Report will include the monitoring period of July 1 through June 30. When monitoring cannot be performed to comply with the Permit requirements due to circumstances beyond the CIMP Group's control, the following will be submitted to the Regional Board Executive Officer within two working days, when feasible:

1. Statement of situation.
2. Explanation of circumstance(s) with documentation.
3. Statement of corrective action for the future.

As part of the Annual Report, the CIMP Group will submit an Integrated Monitoring Compliance Report. The Integrated Monitoring Compliance Report will be submitted using templates developed by the Regional Board.

Monitoring results from monitoring conducted under this CIMP will be sent electronically on a semi-annual frequency to the Regional Board in the selected (e.g., CEDEN) format.¹² These results will include the exceedances of applicable WQBELs, RWLS, action levels, and/or aquatic toxicity thresholds for all test results, with corresponding sampling dates for each monitored station. The mid-year data report will cover monitoring from July 1 – December 31, and submitted by June 15. The year-end data report will cover monitoring periods January 1 – June 30, and be submitted by December 15.

¹² Currently, as specified in the Permit MRP, MS4stormwaterRB4@waterboards.ca.gov is the preferred email address to which monitoring data will be sent.

8 ADAPTIVE MANAGEMENT

The adaptive management process will be utilized on an annual basis to evaluate the CIMP and update the monitoring requirements as necessary. Several monitoring elements are dynamic and may require modifications to the monitoring sites, schedule, frequency or parameters. In particular, the non-stormwater screening program and the toxicity monitoring will likely generate changes that need to be incorporated. The CIMP will be evaluated on an annual basis and updated accordingly based on the monitoring data analysis or other monitoring developments. These may include:

- Receiving water or outfall monitoring locations could be revised due to logistical/access/safety issues and/or inability to obtain representative samples.
- Non-stormwater outfall sampling and analysis will be added to the monitoring program if through the screening process major outfalls with significant non-stormwater discharges are identified and the discharge source is unknown, determined to be conditionally exempt but non-essential, or determined to result from continuing illicit discharges. Additional outfalls may be subsequently identified for sampling based on the reassessment of major outfalls which will occur once during the Permit term.
- Toxicity Identification Evaluations (TIEs) result in the identification of additional constituents that need to be monitored.
- Modifications to sampling and/or analysis protocols could occur resulting from knowledge gained through coordination with other watershed monitoring programs. An example is a change in sampling and analysis procedures to obtain sufficient “storm-borne sediment” for analysis of PCBs and DDTs.
- Monitoring procedures could be modified in the future to include use of automated flow measurement and sampling equipment in lieu of the current manual composite sampling and flow measurement methods for receiving waters, and flow estimation methods for outfalls.
- Analytical methods could be revised for consistency with EPA method requirements or to achieve lower detection and practical quantitation limits.
- One of the primary objectives of the CIMP is to identify water quality priorities in the Peninsula CIMP Area which would then be the focus of BMP implementation, as discussed in the applicable EWMP Work Plan. If the CIMP monitoring data identify additional constituents as being associated with MS4 discharges and demonstrate that

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additional water body-pollutant combination (WBPCs) should be identified as Category 2 (High Priority) or Category 3 (Medium Priority), the Reasonable Assurance Analysis (RAA)¹³ outlined in the EWMP Work Plan will be updated accordingly to include these WBPCs. Conversely, if the monitoring data indicate that certain current Category 2 or 3 designations are not linked to MS4 discharges, these designations will be removed and further action for the particular WBPC under the EWMP will cease.

Major modifications to the CIMP (such as adding, deleting or moving a monitoring site location) will be proposed in the Annual Report and in a separate letter to the Regional Board requesting Executive Officer approval of the change.

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¹³ The Permit-required Reasonable Assurance Analysis (RAA) requires the identification and evaluation of potential BMP implementation scenarios within the Peninsula CIMP area. Specifically, the Permit requires that this RAA be conducted for the prioritized WBPCs identified in the EWMP. The RAA must demonstrate achievement of appropriate standards as developed through applicable TMDLs and other Permit limitations for each WBPC addressed in the EWMP.

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