

**Mission Bay
Watershed Management Area
Water Quality Improvement Plan
2020–2021 Annual Report**

Submitted to the San Diego Regional Water Quality Control Board by:



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With:

DM_{AX}

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Acronyms and Abbreviations

Acronym or Abbreviation	Definition
%	Percent
303(d) list	Clean Water Act Section 303(d) List of Water Quality Limited Segments
ACP	Alternative compliance programs
ASBS	Area(s) of Special Biological Significance
Bacteria TMDL	<i>Project I—Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)</i> , Resolution No. R9-2010-0001
Bight '18	Southern California Bight 2018 Regional Monitoring Program
BMI	Benthic macroinvertebrate
BMP	best management practice
Caltrans	California Department of Transportation
CFU	colony-forming unit
City	City of San Diego
Copermittee	Operator of a municipal separate storm sewer system in San Diego County that is party to the MS4 Permit
<i>E. coli</i>	Escherichia coli
FIB	Fecal Indicator Bacteria
FY	fiscal year
GIS	geographic information system
GM	geometric mean
HPWQC	highest priority water quality condition
ID	identification
IDDE	illicit discharge detection and elimination
ILACSD	I Love a Clean San Diego
IRWM	Integrated Regional Water Management

Acronyms and Abbreviations (continued)

Acronym or Abbreviation	Definition
JRMP	Jurisdictional Runoff Management Program
mL	milliliters
MPN	most probable number
MS4	Municipal Separate Storm Sewer System
MS4 Permit	San Diego Regional Water Quality Control Board Order No. R9-2013-0001 (amended by Order No. R9-2015-0001 and by Order No. R9-2015-0100), National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems Draining the Watersheds Within the San Diego Region
MST	microbial source tracking
N/A	not applicable
NAL	non-storm water action level
NPDES	National Pollutant Discharge Elimination System
PDP	Priority development project
PWQC	priority water quality condition
QMRA	Quantitative Microbial Risk Assessment Study
RAC	Regional Advisory Committee
REC-1	water contact recreation beneficial use
Responsible Agency	Responsible Agencies include parties subject to the Bacteria TMDL and participating in the Water Quality Improvement Plan, specifically the Copermittees in the Mission Bay WMA
RWL	receiving water limitation
RWMG	San Diego Regional Water Management Group
SAL	storm water action level
San Diego Water Board	San Diego Regional Water Quality Control Board

Acronyms and Abbreviations (continued)

Acronym or Abbreviation	Definition
SCCWRP	Southern California Coastal Water Research Project
SMC	Southern California Stormwater Monitoring Coalition
SSM	Single sample maximum
State Board	State Water Resources Control Board
TC-MLS	Tecolote Creek Mass Loading Station
TCNP	Tecolote Creek Temporary Watershed Assessment Station
TMDL	Total Maximum Daily Load
TSS	total suspended solids
WARM	warm freshwater habitat beneficial use
WMA	Watershed Management Area
WQBEL	water quality-base effluent limits
WQIP	Water Quality Improvement Plan
WQO	water quality objective

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1 Introduction

The San Diego Regional Water Quality Control Board (San Diego Water Board) regulates discharges from municipal separate storm sewer systems (MS4s) in the San Diego region with the *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer System Draining the Watersheds Within the San Diego Region* (MS4 Permit) under Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100 (San Diego Water Board, 2015). The MS4 Permit covers portions of San Diego County, southern Orange County, and southwestern Riverside County and regulates Phase I municipalities that own and operate MS4s (i.e., storm drain systems) that discharge storm water (wet weather) runoff and non-storm water (dry weather) runoff to surface waters throughout the San Diego region. This Order and the MS4 Permit expire five years after June 27, 2013, its initial effective date; however, the Order and MS4 Permit are automatically continued pending issuance of a new Permit, and all the terms and conditions were compiled within fiscal year (FY) 2021.



This Annual Report addresses the reporting requirements of the MS4 Permit to communicate progress toward implementing the Water Quality Improvement Plan (WQIP) and corresponding Jurisdiction Runoff Management Program (JRMP). The final WQIP and Annual Reports for the Mission Bay WMA are available for review on the Project Clean Water website¹.

Stormwater Program Online Dashboard Summary

For the FY 2021 Mission Bay Annual Report, the City of San Diego (City) has also created online reporting dashboards with detailed information on the City's monitoring data, JRMP Annual Reports, and strategy implementation. The City's online dashboard can be accessed at <https://www.sandiego.gov/think-blue/data-maps>. The dashboards cover information collected in association with multiple programs within the Stormwater Department and other City departments including the following:

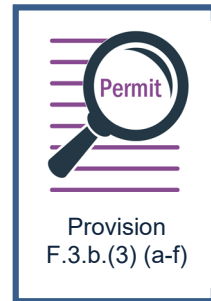
- Street Sweeping
- Monitoring and Assessment Program
- Development Planning Program: Structural Best Management Practices Inspections
- Water Conservation Rebate Program
- Illicit Discharge Detection and Elimination Program
- Partner Community Cleanup & Outreach
- Storm Drain Structure Inspection & Cleaning

¹ www.projectcleanwater.org

- Stormwater Green Infrastructure CIP Projects
- Existing Development Management Program: Commercial and Industrial Business Inspections
- Development Planning Program: Priority Development Projects
- Existing Development Management Municipal Facility and Residential Inspections
- Construction Management

1.1 Program Background

The City is the MS4 Permit Responsible Agency (Copermittee) per the MS4 Permit) with the jurisdictional area within the Mission Bay Watershed Management Area (WMA). The City must comply with the MS4 discharge prohibitions and receiving water limitations in the MS4 Permit through timely implementation of control measures, adherence to the WQIP, and other actions specified in the MS4 Permit (Mission Bay WMA Responsible Agencies, 2015).



The California Department of Transportation (Caltrans) is voluntarily participating in the WQIP process across the San Diego region because it has partial responsibility for the implementation of the *Project I—Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)*, Resolution No. R9-2010-0001 (San Diego Water Board, 2010), referred to as the Bacteria Total Maximum Daily Load (TMDL), or Bacteria TMDL. Caltrans is therefore included as a Responsible Agency, even though it is not listed in the MS4 Permit as a Copermittee. Caltrans is under a separate storm water permit from the State of California (Caltrans Permit; Order No. 2012-0011-DWQ). The WQIP Responsible Agencies for the Mission Bay WMA are the City and Caltrans.

The Annual Report covers two different reporting periods. The first reporting period is from July 1, 2020 through June 30, 2021 for the JRMPs and WQIP strategy implementation. The second reporting period is from October 1, 2020 to September 30, 2021 for monitoring and assessment programs. Progress toward goals may be assessed in either reporting period, depending on the goal metric.

Table 1-1 provides an overview of the MS4 Permit requirements that must be addressed and the sections and appendices in the Annual Report that address them. Appendix A provides additional details regarding the specific MS4 Permit requirements and lists the sections that address them in the Annual Report. The Permit provisions addressed in each section are also called out in the Permit highlight box at the beginning of each section.

**Table 1-1
 MS4 Permit WQIP Annual Reporting Provisions and Corresponding Annual Report Sections**

MS4 Permit Provision ²	WQIP Annual Report Section						WQIP Annual Report Appendix ¹			
	<u>Section 1 – Introduction</u>	<u>Section 2 – WMA Priorities & Goals</u>	<u>Section 3 – Monitoring</u>	<u>Section 4 – Achieving Goals</u>	<u>Section 5 – Adaptive Management</u>	<u>Section 6 – Conclusions</u>	<u>Appendix B – Goals</u>	<u>Appendix C – Monitoring</u>	<u>Appendix D – Jurisdictional Specific Information</u>	<u>Appendix E – Adaptive Management</u>
Provision A – Prohibitions and Limitations										
A.4.a.(2)			X		X			X	X	X
Provision B - Water Quality Improvement Plans										
B.5.a.			X		X			X		X
B.5.b.			X	X	X		X	X	X	X
B.5.c.			X		X			X		X
Provision D – Monitoring and Assessment Program Requirements										
D.1.e.(2)(c)			X					X		
D.2.b.(iv)			X					X		
D.4.b.(1)(a)(ii)			X					X		
D.4.b.(1)(b)			X		X			X		X
D.4.b.(1)(c)			X		X			X		X
D.4.b.(2)(a)			X	X				X	X	
D.4.b.(2)(b)			X					X		
D.4.b.(2)(c)			X					X		
D.4.c.			X		X			X		X
D.4.d.			X		X					X
D.4.d.(1)		X	X	X	X		X	X		X
D.4.d.(2)			X	X	X			X	X	X
D.4.d.(3)			X		X			X		X
Provision E – Jurisdictional Runoff Management Programs										
E.1.b.									X	
E.2.d.(4)			X	X				X	X	
E.8.c.									X	

**Table 1-1 (continued)
 MS4 Permit WQIP Annual Reporting Provisions and Corresponding Annual
 Report Sections**

MS4 Permit Provision ²	WQIP Annual Report Section						WQIP Annual Report Appendix ¹			
	<u>Section 1 – Introduction</u>	<u>Section 2 – WMA Priorities & Goals</u>	<u>Section 3 – Monitoring</u>	<u>Section 4 – Achieving Goals</u>	<u>Section 5 – Adaptive Management</u>	<u>Section 6 – Conclusions</u>	<u>Appendix B – Goals</u>	<u>Appendix C – Monitoring</u>	<u>Appendix D – Jurisdictional Specific Information</u>	<u>Appendix E – Adaptive Management</u>
Provision F – Reporting										
F.1.b.(6)					X					X
F.2.a.(2)					X			X		X
F.2.a.(3)					X			X		X
F.2.b.(1)					X			X		
F.2.b.(2)					X			X		
F.2.c.(1)(c)					X					X
F.3.b.(3)(a-f)	X		X	X	X		X	X		X
F.6						X	X			
Attachment E – Specific Provisions for Total Maximum Daily Loads Applicable to Order No. R9-2013-0001										
Attachment E			X	X			X			

1. Appendix A provides additional details regarding the specific MS4 Permit requirements and lists the sections in the Annual report in which they are addressed.

2. Some MS4 Permit Provisions are addressed in jurisdictional JRMPs.

MS4 = municipal separate storm sewer system; JRMP = Jurisdictional Runoff Management Program; WMA = Watershed Management Area; WQIP = Water Quality Improvement Plan

In August 2019, the San Diego Water Board reviewed and provided comments on the FY 2018 Mission Bay Annual Report (San Diego Water Board, 2019). The City addressed the San Diego Water Board comments in the FY 2019 Mission Bay Annual Report and the Responsible Agencies have addressed additional items from Attachment 1 of the August 2019 Annual Report Review Letter (San Diego Water Board, 2019) in this FY 2021 Annual Report.

In June 2021, the San Diego Water Board reviewed the FY 2020 Mission Bay Annual Report (San Diego Water Board, 2021), which included confirmation of comments addressed by the City resulting from the FY 2019 Mission Bay Annual Report review, and newly identified comments to be addressed in the FY 2021 Annual Report. The June 2021 letter has been addressed in this Annual Report in various sections or provided in Appendix E. A full overview of the City responses is provided in Section 5 and Appendix E.

2 Overview of Mission Bay Watershed Management Area

The Mission Bay WMA drains a highly urbanized, 64-square-mile area of the San Diego Basin located in the center of coastal San Diego County. The Los Peñasquitos WMA and the Mission Bay WMA together make up the Mission Bay Hydrologic Unit. For the WQIP, the Mission Bay WMA was divided into four subwatersheds to focus on receiving waters when selecting priority water quality conditions (PWQCs) and implementing the JRMP. These subwatersheds are Mission Bay, Scripps/Pacific Beach, Rose Canyon, and Tecolote Creek, as shown in [Figure 2-1](#).



The City is the Responsible Agency implementing the WQIP. The City is held responsible under the Permit for discharges originating from non-MS4 lands outside of its regulatory control (i.e., industrial, agricultural, Phase II, state, federal, and Indian reservation lands) if those pollutants are ultimately discharged from the MS4 of a Responsible Agency. Therefore, the City looks to collaborate and improve communication with non-municipal sources and the appropriate regulatory agencies to ensure that these discharges are regulated before entering the MS4.

2.1 Priority and Highest Priority Water Quality Conditions

The priority water quality conditions (PWQCs) and highest priority water quality conditions (HPWQCs) for the Mission Bay WMA are summarized by beneficial use and pollutant category. Details about the PWQC selection process and a full list of the PWQCs are in [Appendix A](#) and [Appendix F](#), respectively, of the Mission Bay WMA WQIP. [Table 2-1](#) lists the conditions/pollutants that are the highest priorities within the Mission Bay WMA. The HPWQCs are highlighted in bold in [Figure 2-2](#).

**Table 2-1
 Highest Priority Water Quality Conditions in the Mission Bay WMA**

Highest Priority Water Quality Condition	Potential Stressor	Temporal Extent		Subwatershed
		Dry	Wet	
Impairment of REC-1 in Tecolote Creek	Indicator Bacteria	✓	✓	Tecolote Creek
Impairment of ASBS 29	Sediment ¹	–	✓	Scripps
Potential Impairment of REC-1 at the Pacific Ocean Shoreline ²	Indicator Bacteria	✓	✓	Scripps

1. Application of the City’s ASBS Site-Specific Dilution and Dispersion Model changes the HPWQC for the ASBS 29 from copper to sediment.

2. Applies to the following Pacific Ocean Shoreline locations only: Casa Beach at Children’s Pool, La Jolla Shores Beach at Avenida de la Playa, La Jolla Shores Beach at Caminito del Oro, La Jolla Shores Beach at El Paseo Grande, Pacific Beach at Grand Avenue, South Casa Beach at Coast Boulevard, Tourmaline Surf Park, Vallecitos Court, Windansea Beach at Bonair Street, Windansea Beach at Palomar Avenue, Windansea Beach at Vista de la Playa, and Whispering Sands Beach at Ravina Street.

ASBS = Area(s) of Special Biological Significance; HPWQC = highest priority water quality condition; REC-1 = water contact recreation beneficial use; WMA = Watershed Management Area

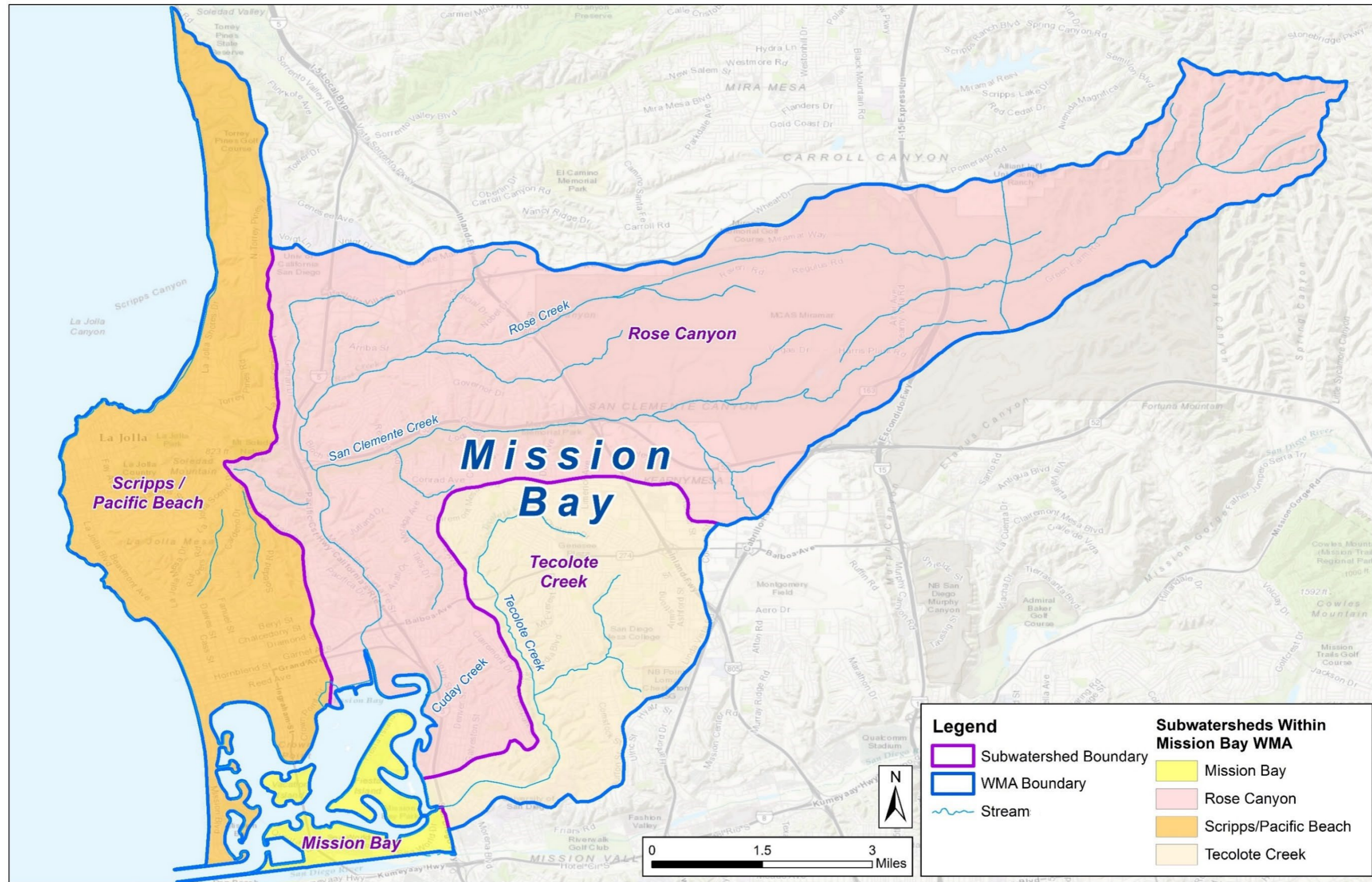


Figure 2-1
Mission Bay WMA Subwatersheds

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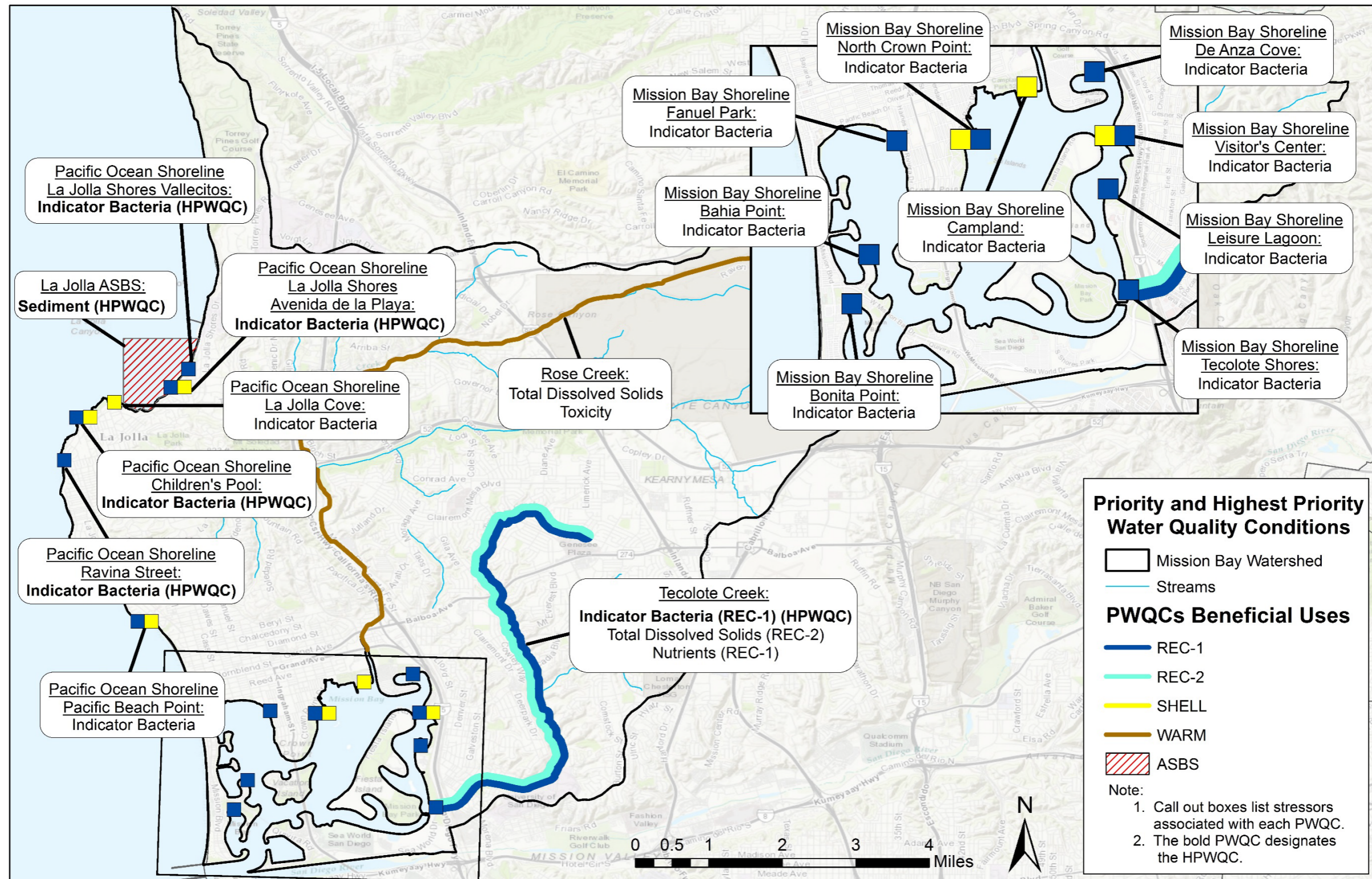


Figure 2-2
Mission Bay WMA Priority and Highest Priority Water Quality Conditions

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2.2 WQIP Numeric Goals

The Responsible Agencies developed specific numeric goals to address the HPWQCs identified within the WMA. These goals are presented in [Section 4](#) and [Appendix B](#). Within the Mission Bay WMA, the Bacteria TMDL dictates the bacteria numeric goals for both wet and dry weather in the Tecolote Creek and Scripps subwatersheds to address and attain water contact recreation (REC-1) beneficial uses.

In addition to the Bacteria TMDL-listed segments of beach in the Scripps subwatershed, a portion of the subwatershed drains into the La Jolla Area of Special Biological Significance (ASBS) 29 and is subject to regulation under the Ocean Plan and the ASBS General Exception and Special Protections². Dischargers must comply with the requirements to eliminate non-storm water discharges to the ASBS and that their wet weather discharges into the ASBS receiving waters maintain natural ocean water quality; discharges from the Mission Bay WMA currently comply with these requirements for ASBS 29 (City of San Diego, 2014). ASBS compliance with wet weather discharges was required by March 20, 2018. The Scripps subwatershed goals were based on the applicable regulatory driver for each segment or drainage area. Five sub-basins discharge to the ASBS. Of those five sub-basins, four also discharge to a Bacteria TMDL-listed shoreline segment. Strategies that target bacteria load reductions are implemented for the four sub-basins regulated by both the Bacteria TMDL and the ASBS Special Protections. Additional wet weather sediment load reduction goals are described in [Section 4](#) and [Appendix B](#).

The Responsible Agencies must also achieve the wet weather Bacteria TMDL targets within 20 years of TMDL adoption (FY 2031) and dry weather targets within 10 years (FY 2021). The numeric goals within the WQIP are categorized into the following:

- ❖ Interim numeric goals based on the interim Bacteria TMDL compliance pathways.
- ❖ Final numeric goals based on final Bacteria TMDL compliance options.

The Scripps subwatershed has 13 beach segments that were named in the Bacteria TMDL. Bacteria TMDL Monitoring is performed individually for each segment. As part of the Scripps Bacteria TMDL Compliance Monitoring Report ([Appendix C, Attachment C](#)), water quality exceedances are evaluated by segments each year. In FY 2021, the results by segments were combined and assessed to evaluate an overall WQIP subwatershed goal different from the Bacteria TMDL methodology of per-segment basis. This is the third year that this evaluation was conducted on a subwatershed basis. [Appendix B](#) describes the subwatershed assessment. Similarly, for the Tecolote subwatershed in dry weather, the exceedance frequencies for the two segments, Tecolote Creek Temporary Watershed Assessment Station (TCNP) and TC-MLS, were averaged to evaluate an overall WQIP subwatershed goal.

The time horizons for the Mission Bay WMA sediment and bacteria numeric goals are illustrated in [Figure 2-3](#). WQIP numeric goals were developed based on regulatory

² *General Exception to the California Ocean Plan for Areas of Special Biological Significance Waste Discharge Prohibition for Storm Water and Nonpoint Source Discharges, with Special Protections* (Resolution 2012-0012).

deadlines set by the Bacteria TMDL and ASBS requirements. Some goals presented in the WQIP serve as benchmarks to track progress towards the regulatory goals. Goals related to Bacteria TMDL or ASBS deadlines are referred to as TMDL or ASBS goals, respectively. WQIP performance-based goals were included to measure short-term jurisdictional progress toward achieving final goals, given that sustained water quality improvement is typically demonstrated over a longer timeframe. These goals have been achieved and therefore progress toward these goals is no longer reported on.

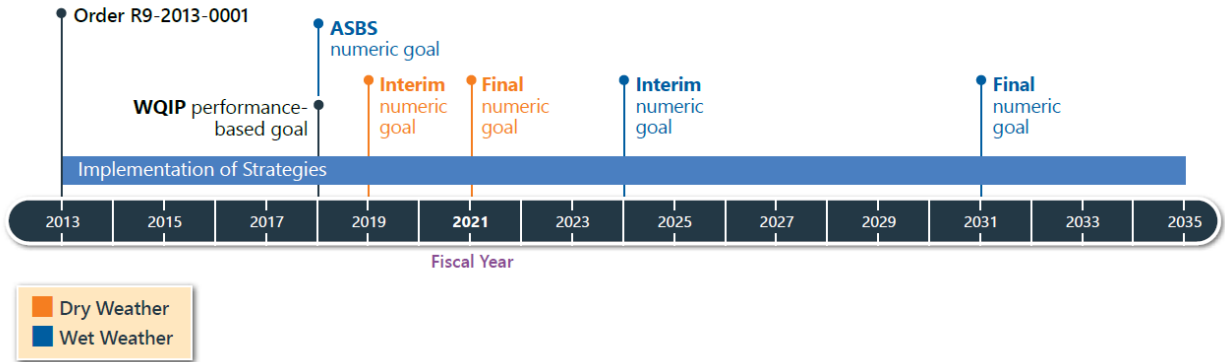


Figure 2-3
Timelines and Relationships for ASBS and Bacteria Goals

Currently, the Responsible Agencies are focusing their efforts on meeting the interim numeric goals for wet weather and final numeric goals for dry to meet the HPWQCs of impairment of REC-1 in Tecolote Creek, impairment of ASBS 29, and potential impairment of REC-1 along the Pacific Ocean Shoreline.

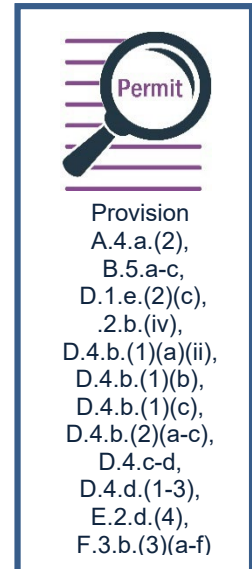
3 Monitoring and Assessment

This section describes monitoring related to the overall biological health of the watershed and interim/final goals. This monitoring included bioassessment monitoring, receiving water monitoring for TMDL compliance, ASBS monitoring, and MS4 outfall monitoring. [Appendix C](#) provides detailed monitoring information.

Stormwater Program Online Dashboard-Monitoring Program

The [City's Online Dashboard](#) includes information on the following components of the City's monitoring program:

- Wet and Dry weather MS4 outfall monitoring locations and results
- MS4 Outfall comparisons to Nonstormwater Action Levels and Stormwater Action Levels.



Updated geographic information system (GIS) shapefiles used in the monitoring and assessment for the 2020–2021 reporting year of the Mission Bay River WMA are provided on the Project Clean Water website³.

3.1 Monitoring Related to Biological Health, Interim and Final Goals, and Special Studies

2020–2021 Monitoring Program Results Summary

[Table 3-1](#) below describes the monitoring results summarized for all the monitoring programs performed in the Mission Bay WMA in FY 2021. [Table 3-2](#) and [Table 3-3](#) include additional details for the Bacteria TMDL monitoring program.

³ <http://www.projectcleanwater.org/archive/?wpdmc=msb-gis-files%20>

**Table 3-1
 Monitoring Results in Mission Bay WMA**

Program	2020–2021 Monitoring Results
Monitoring Related to Biological Health	
SMC Bioassessment Monitoring	During initial 2021 site selection, no trend sites were designated for the Mission Bay WMA for the 2021-2025 cycle. Additionally, no condition sites were allocated to the Mission Bay WMA for the Spring 2021 monitoring term.
Bight 18'	SQO was inconclusive in both initial and follow-up monitoring. A second round of follow-up monitoring was performed in September 2020. Results came back in 2021 and SQO was possibly impacted. The City of San Diego also plans to perform a stressor identification evaluation at a previously monitored Bight 18' site in the Rose Creek Estuary portion of Mission Bay. The Rose Creek Stressor Identification study is described in more detail in Appendix C and is included as a special study below.
Monitoring Related to MS4	
MS4 Outfall Dry Weather Field Screening	City of San Diego: 69 out of 69 major outfalls screened. Field Screening Completeness: 100% complete – 69 outfalls screened for the City of San Diego.
MS4 Outfall Dry Weather Monitoring	NALs: A total of 119 out of 172 (69%) results were below appropriate NALs. Sampling Completeness: 100% complete - 2 monitoring events completed at all five required dry weather monitoring sites. More detailed information on the City's dry weather monitoring data can be found on the City's Online Dashboard .
MS4 Outfall Wet Weather Monitoring	SALs: A total of 35 of the 35 (100%) results were below appropriate SALs. All bacteria indicators exceeded water quality-based effluent limits (WQBELs). Sampling Completeness: 100% complete - 1 monitoring event completed at all five wet weather monitoring sites. More detailed information on the City's wet weather monitoring data can be found on the City's Online Dashboard .
Monitoring Related to Special Studies	
Tecolote Creek Quantitative Microbial Risk Assessment Study	The City performed source investigation and abatement efforts within the Tecolote Creek subwatershed during the 2018–2019 monitoring year (Year 6) through the Human Source Investigation (HSI) process. The HSI process includes multiple departments within the City and leverages inter-agency knowledge and existing programs in the watershed to locate and remove human-associated sources. There is no new information for Tecolote QMRA for this reporting year.
Rose Creek Stressor Identification Study	The Rose Creek Estuary is considered a brackish estuary according to the Bight '18 methodology and was considered a sampling site for Mission Bay as part of Bight 18'. The Summer 2020 monitoring effort resulted in definitive results for the site, with a moderate chemistry influence, no toxicity, and moderate benthic infauna disturbance. This resulted in an overall integrated SQO categorization of "Possibly Impacted". According to the California Water Quality Control Plan for Enclosed Bays and Estuaries (2009) ⁴ , any sites with an SQO categorical condition rating other than "Unimpacted" or "Likely

⁴ 2009. California Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality. State Water Resources Control Board. August 2009.

Table 3-1 (continued)
Monitoring Results in Mission Bay WMA

Program	2020–2021 Monitoring Results
	Unimpacted” requires follow-up evaluations in subsequent monitoring years within the Permit term in the form of a stressor identification. The stressor identification approach generally consists of three stages: 1) Confirmation and Characterization of Pollutant Related Impacts, 2) Pollutant Identification, and 3) Sources Identification. A stressor identification approach will be applied to Rose Creek Estuary site and the City has developed a work plan for this study. The workplan focuses on the first two stages of confirming and characterizing any pollutant-related impacts. The workplan outlines the study design, procedures, and analytical methods for completing this initial step.

% = Percent; Bight '18 = Southern California Bight 2018 Regional Monitoring Survey; BMI = benthic macroinvertebrate; CRAM = California Rapid Assessment Method; CSCI = California Stream Condition Index; IDDE = Illicit Discharge Detection and Elimination; IBI = Southern California Index of Biotic Integrity; MS4 = municipal separate storm sewer system; NAL = non-storm water action level; QMRA = Quantitative Microbial Risk Assessment Study; SAL = storm water action level; SMC = Southern California Stormwater Monitoring Coalition; SQO = sediment quality objective; WMA = Watershed Management Area

The City of San Diego has been involved in a variety of source investigations, abatement activities, and special studies to proactively characterize potential sources of bacteria at beaches associated with the Scripps and Tecolote Bacteria TMDL where exceedances have been noted. Table 3-1 above provides a description of the special studies and investigations that are current for FY 2021. Figure 3-1 below shows a timeline of all the investigations/special studies performed by the City of San Diego since 2016 as well as the outcomes of the investigations/special studies described in the text above the timeline.

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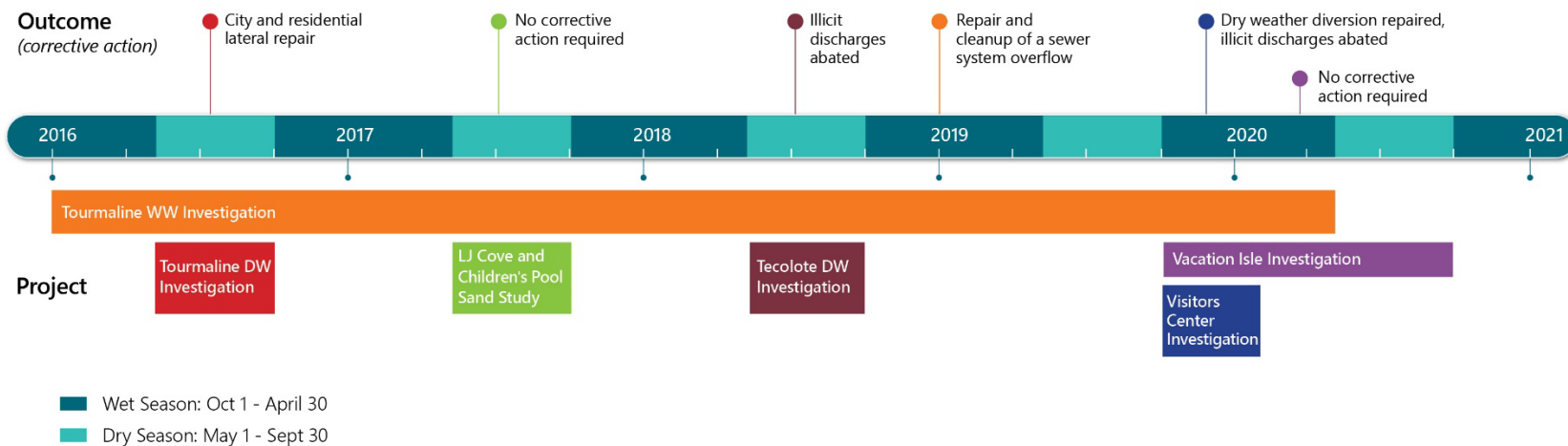


Figure 3-1
Scripps/Tecolote Bacteria TMDL Source Investigations and Abatement Activities

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3.2 Monitoring Related to Interim and Final Goals

This section provides an overview of the monitoring conducted to track progress toward interim and final goals through this reporting period. [Section 4.1](#) discusses the progress to achieve the interim and final goals. The full details of the monitoring results are in [Appendix C](#).

Bacteria Total Maximum Daily Load Compliance Monitoring Program

[Section 2.4](#) of [Appendix C](#) provides more information on the sampling conducted in the 2020–2021 monitoring year for the Bacteria TMDL monitoring program, and [Attachment C](#) of [Appendix C](#) provides the Bacteria TMDL Compliance Monitoring Report. In the Scripps subwatershed, the 13 beach segments are achieving the interim and final wet weather receiving water limitations (RWLs) for the three fecal indicator bacteria (FIB) compliance constituents during wet weather. All segments had a 0% exceedance frequency of the wet weather RWL. All thirteen Scripps beach segments are also achieving the final geometric mean (GM) RWLs during the 2021 dry season with 0% exceedance frequencies. During dry weather, single sample maximum exceedances occurred at 5 of the 13 monitoring locations



Figure 3-2
Children’s Pool (EH-310) Sampling Location

The City has engineered dry weather low flow diversion systems in 11 of the 13 segments to capture and divert dry weather low flows from the outfall to the sanitary sewer instead of discharging to the Pacific Ocean. Therefore, during dry weather the City has chosen to represent compliance with the Bacteria TMDL via pathway 1 listed in the Bacteria TMDL at 2 of the 13 segments. Pathway 1 of the Bacteria TMDL states “the MS4 is not directly or indirectly discharging to the receiving water” (San Diego Water Board, 2015). The remaining 11 sites use the receiving water compliance pathway for the Bacteria TMDL. Table 3-2 presents a summary of the Scripps sites and their selected Bacteria TMDL compliance pathways.

**Table 3-2
 Scripps Dry Weather Compliance Pathway Selection Summary**

Compliance Pathway	Listed/ Delisted	Scripps Sites	In compliance?
Pathway 1 No MS4 Discharges	Listed	EH-310 = Children’s Pool	Yes
	Delisted	CSD-031 = Windansea Beach at Palomar Ave	Yes
Pathway 2 Receiving Water	Listed	EH-320 = La Jolla Shores at Vallecitos	Not in compliance with the dry weather single sample maximum goal, 1 sample had Fecal Coliform and <i>Enterococcus</i> exceedances. Follow up conducted and resample was meeting TMDL 303(d) analysis of dry weather data 2017-2020 result: Do Not List
	Delisted	EH-250 = Pacific Beach at Grand Avenue	Yes
		EH-280 = Windansea Beach at Playa del Norte	Yes
		EH-290 = Windansea Beach at Vista de la Playa	Yes
		EH-300 = Whispering Sands at Ravina Street	Yes
		EH-305 = South Casa Beach at Coast Boulevard	Yes
		EH-330 = La Jolla Shores at Caminito del Oro	Yes
		EH-340 = La Jolla Shores at El Paseo Grande	Yes
		FM-050 = Windansea at Bonair Street	Yes
		FM -030 = La Jolla Shores at Avenida de la Playa	Not in compliance with the dry weather single sample maximum goal, 1 sample with <i>Enterococcus</i> exceedance. Follow up conducted 303(d) analysis of dry weather data 2017-2020 result: Do Not List
FM-080 = La Jolla Shores at Avenida de la Playa	Not in compliance with the dry weather single sample maximum goal, 1 sample with Fecal Coliform exceedance. 2 samples with <i>Enterococcus</i> exceedances. Follow up conducted 303(d) analysis of dry weather data 2017-2020 result: Do Not List		

In the Tecolote Creek subwatershed, the City of San Diego is using the receiving water pathway to compliance for both sites. Results for both Tecolote Creek Mass Loading Station (TC-MLS) and TCNP monitoring locations are above interim and final RWLs for *Enterococcus* and fecal coliform during wet weather. During the dry season, the geometric mean exceedance frequencies for compliance constituents *Enterococcus* and fecal coliform are 0% at TC-MLS and TCNP and have met the final dry season geometric mean RWLs. Both compliance monitoring locations are not achieving final dry weather single-sample maximum RWLs for both compliance constituents.

The City of San Diego has engineered a dry weather flow diversion system in the lower portion of Tecolote Creek within the concrete-lined channel approximately 0.5 mile from the creek mouth. Dry weather flows from Tecolote Creek are diverted to the sanitary sewer system and therefore do not discharge to Mission Bay.

Table 3-3 and Table 3-4 summarize the results from the 2020–2021 monitoring year for the Tecolote Creek subwatershed.

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**Table 3-3
 2020–2021 Bacteria TMDL Exceedance Frequency Results for Tecolote Creek**

Receiving Waters Site ID	Bacteria TMDL Constituent	Wet Weather ¹ Single-Sample Maximum (CFU/100mL)	Dry Season ³ 30-Day Geometric Mean (CFU/100mL)	Dry Weather Single-Sample Maximum (CFU/100mL)
		2020–2021 ⁴ Exceedance Frequency	2021 ⁵ Exceedance Frequency	2021–2021 ⁶ Exceedance Frequency
TC-MLS	<i>Enterococcus</i>	100%	0%	13%
	Fecal Coliform	100%	0%	5%
TCNP	<i>Enterococcus</i>	100%	0%	30%
	Fecal Coliform	100%	0%	15%

1. October 1, 2020–April 30, 2021
2. In accordance with the MS4 Permit, wet and dry weather FIB data were combined to calculate geometric means for the wet season and compared with dry weather RWLs (numeric targets and allowable exceedance frequencies).
3. May 1, 2021–September 30, 2021
4. The exceedance frequency was derived by dividing the total number of wet weather days (days with 0.2 inches of rainfall or greater plus the following 72 hours) that exceeded the single-sample maximum numeric target by the total number of wet weather days during the wet season. To determine exceedances for non-sampled wet weather event days, the geometric mean of the maximum analytical results from three monitored storm events was applied to the remaining observed wet weather events that were not sampled. Maximum analytical results from monitored storm events were assigned to non-monitored days of the same storm event. The results from the total number of wet weather days, with either assigned averages or analyzed result values, were then compared with single-sample maximum numeric targets.
5. The exceedance frequency was derived by dividing the total number of geometric exceedances by the total number of geometric means calculated during the season.
6. The exceedance frequency was derived by dividing the total number of dry weather results in exceedance by the total number of dry weather results for the monitoring year. The City has developed this calculation methodology because Attachment E of the MS4 Permit did not define a calculation methodology for assessing dry weather single-sample maximum exceedances.

CFU = colony-forming unit; ID = identification; mL = milliliters; TMDL = total maximum daily load; FIB = fecal indicator bacteria; TC-MLS = Tecolote Creek Mass Loading Station; TCNP = Tecolote Creek Temporary Watershed Assessment Station

**Table 3-4
 2020–2021 Bacteria TMDL Exceedance Frequencies in Tecolote Creek with Interim and Final Allowable Frequencies**

Receiving Waters Site ID	Bacteria TMDL Constituent	Wet Weather ¹			Dry Season ²		Dry Weather	
		Single-Sample Maximum (CFU/100mL)			30-Day Geometric Mean (CFU/100mL)		Single-Sample Maximum (CFU/100mL)	
		2020–2021 ³ Exceedance Frequency	Interim Allowable Frequency ⁶	Numeric Target and Final Allowable Frequency ⁶	2021 ⁴ Exceedance Frequency	Numeric Target and Final Allowable Frequency ⁷	2021 ⁵ Exceedance Frequency	Numeric Target
TC-MLS	<i>Enterococcus</i>	100%	51%	61 MPN 22%	0%	33 MPN 0%	13%	61 MPN
	Fecal Coliform	100%	49%	400 MPN 22%	0%	200 MPN 0%	5%	400 MPN
TCNP	<i>Enterococcus</i>	100%	51%	61 MPN 22%	0%	33 MPN 0%	30%	61 MPN
	Fecal Coliform	100%	49%	400 MPN 22%	0%	200 MPN 0%	15%	400 MPN

1. October 1, 2020—April 30, 2021

2. May 1, 2021—September 30, 2021

3. The exceedance frequency was derived by dividing the total number of wet weather days (days with 0.2 inch of rainfall or greater plus the following 72 hours) that exceeded the single-sample maximum numeric target by the total number of wet weather days during the wet season. To determine exceedances for non-sampled wet weather event days, the arithmetic mean of the maximum analytical results from three monitored storm events was applied to the remaining observed wet weather events that were not sampled. Maximum analytical results from monitored storm events were assigned to non-monitored days of the same storm event. The results from the total number of wet weather days, with either assigned averages or analyzed result values, were then compared with single-sample maximum numeric targets.

4. The exceedance frequency was derived by dividing the total number of geometric exceedances by the total number of geometric means calculated during the season.

5. The exceedance frequency was derived by dividing the total number of dry weather results in exceedance by the total number of dry weather results for the monitoring year. The City has developed this calculation methodology because Attachment E of the MS4 Permit did not define a calculation methodology for assessing dry weather single-sample maximum exceedances.

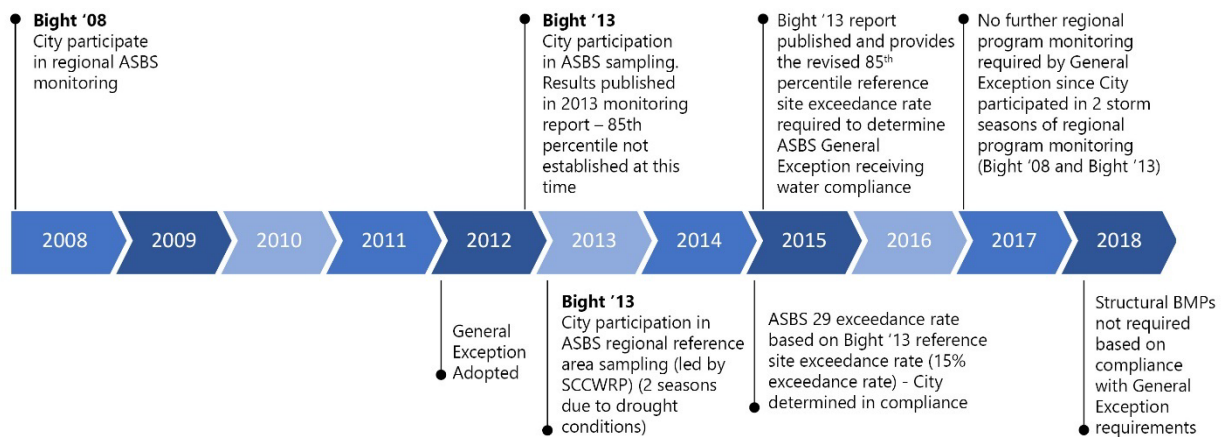
6. The interim Bacteria TMDL compliance requirement for the Mission Bay WMA for wet weather is a 50% reduction in wet weather exceedance frequencies by 2024, full compliance requires a 22% maximum allowable exceedance frequency by 2031.

7. Full dry weather geometric mean compliance requires a 0% exceedance frequency by 2021.

Bolded values = Exceedance rate is greater than the interim and final allowable limits established in the Bacteria Total Maximum Daily Load (TMDL) CFU = colony-forming units; ID = identification; mL = milliliters; MPN = most probable number; TC-MLS = Tecolote Creek Mass Loading Station; TCNP = Tecolote Creek Temporary Watershed Assessment Station, TMDL = total maximum daily load

ASBS Compliance Monitoring Program

As of 2012, dischargers to an ASBS are regulated under the ASBS General Exception. The City’s ASBS monitoring programs fulfilled monitoring requirements under the General Exception during the 2012–2013 monitoring season. The City selected to conduct additional monitoring in subsequent years (2013–2015) to continue expanding the City’s dataset at the primary discharge point in the watershed and within the receiving water. Monitoring was halted after the 2014–2015 wet season because the results were comparable to reference conditions, as determined by the 2013 Southern California Bight Regional Monitoring Program (Bight ’13). A timeline of the ASBS compliance monitoring program is shown in Figure 3-3.



**Figure 3-3
 ASBS Compliance Monitoring Timeline**

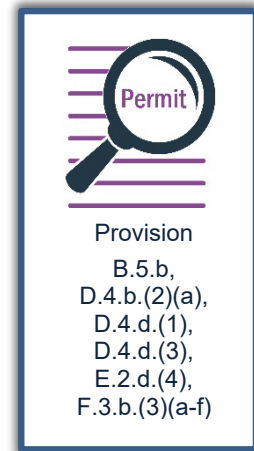
Prior to the Bight '18 Regional Monitoring Program planning process, it was determined by the City that implementation of an ASBS water quality monitoring program was not required based on the City’s achievement of the compliance requirements set forth in the General Exception. However, along with a small group of agencies and universities, the City pursued and planned for a voluntary biological survey of the rocky intertidal habitat as a follow-up to prior Bight surveys that were previously required by the General Exception. The Bight '18 surveys were conducted independently of any compliance assessments related to the ASBS General Exception and were conducted to continue monitoring the biological health of this important habitat for informational purposes as a good-faith effort on the part of the City (and participating group). Surveys were completed in the early months of 2020, and a final report is expected in FY 2022. City staff continues to inspect outfalls in the ASBS drainage area and to clean catch basins to confirm that dry weather flows do not reach the ASBS.

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4 Implementation and Progress Toward Achieving Goals

Each year, the Responsible Agencies assess water quality data and programmatic information to gauge progress toward achieving the numeric goals. These assessments provide information to determine whether intended outcomes are being realized or whether adaptations to programs are necessary. The Responsible Agencies have been and continue to implement strategies outlined in the WQIP. Many of the selected strategies target the WMA HPWQC, and simultaneously address other pollutants, providing a multi-benefit approach to implementation.

Caltrans is expected to eliminate dry weather flows by implementing control measures to ensure effective prohibition. For wet weather flows, these control measures or best management practices (BMPs) can include source control and pre-emptive activities such as street sweeping, cleanup of illegal dumping, and public education on littering. Implementation of these controls is in accordance with the TMDL prioritization table in the Caltrans NPDES Permit. A complete list of goals and strategies is provided in the Caltrans Annual Report (<http://www.dot.ca.gov/env/stormwater/>). The goals, strategies, and schedules are subject to change and are contingent on annual budget approvals and funding availability.



4.1 Progress Toward Achieving Numeric Goals

As discussed in [Section 2](#), interim and final numeric goals were established for the watershed to measure reasonable progress toward addressing the HPWQCs. A detailed description of the goals is in [Appendix B](#). The Responsible Agencies have implemented the Monitoring and Assessment Program outlined in [Section 5](#) of the Mission Bay WMA WQIP to track progress toward meeting long-term WQIP goals. The Responsible Agencies are also tracking progress toward final WQIP numeric goals. Compliance with WQIP goals is achieved with one of the compliance pathways for each HPWQC during each assessment period. Depending on the goal, compliance pathways involve evaluating receiving water conditions, evaluating MS4 discharges, or implementing the WQIP. This section provides a summary of progress towards achieving near-term goals. A summary of progress toward final WQIP goals can be found in the Executive Summary and highlighted in [Section 6](#). Further details regarding progress toward compliance for the Bacteria TMDL interim and final goals are in [Attachment C](#) of [Appendix C](#). The FY 2021 Annual Report marks the first-year review of the new assessment period from FY 2021 to FY 2025, and progress will be compared against the WQIP and TMDL goals set for this assessment period.

Bacteria TMDL Interim and Final Goals

Within the Mission Bay WMA, the Bacteria TMDL is the driver for wet and dry weather bacteria goals. In addition to the Bacteria TMDL-listed segments of beach in the Scripps subwatershed, the City must comply with the requirement that their discharges into the

affected ASBS maintain natural ocean water quality (within the 85th percentile threshold of reference water quality data and pre-storm levels for all analytes [including sediment]). Responsible Agencies must meet the wet weather Bacteria TMDL targets within 20 years of TMDL adoption (FY 2031) and dry weather targets within 10 years (FY 2021). These targets are TMDL goals within the implementation of the WQIP.

In FY 2021, the Responsible Agencies used the receiving water pathway and discharges from the MS4 to the receiving water to track progress toward the numeric goals for bacteria. Progress toward the numeric goals, based on receiving water conditions for the bacteria HPWQC is presented in [Table 4-1](#) and [Table 4-3](#) for wet weather, and based on the receiving water condition and number of direct discharges from the MS4 to the receiving water is presented in [Table 4-2](#) and [Table 4-4](#) for dry weather. All baseline calculation methodology and baseline pollutant load calculation methodology for the receiving water compliance pathway for the bacteria TMDL numeric goal is provided in [Appendix B](#).

The Scripps subwatershed has 13 beach segments that were named in the Bacteria TMDL. Bacteria TMDL Monitoring is performed individually for each segment. As part of the Scripps Bacteria TMDL Compliance Monitoring Report ([Appendix C, Attachment C](#)), water quality exceedances are evaluated by segments each year. In FY 2021, the results by segments were combined and assessed to evaluate an overall WQIP subwatershed goal different from the Bacteria TMDL methodology of per-segment basis. This is the third year that this evaluation was conducted on a subwatershed basis. [Appendix B](#) describes the subwatershed assessment. Similarly, for the Tecolote subwatershed in dry weather, the exceedance frequencies for the two segments, TCNP and TCMLs, were averaged to evaluate an overall WQIP subwatershed goal.

ASBS Compliance

A portion of the subwatershed drains into the La Jolla ASBS 29 and is subject to regulation under the Ocean Plan and the ASBS General Exception and Special Protections. ASBS compliance with wet weather discharges for Bight '13 analytes, including sediment, was required by March 20, 2018. The City met this goal through monitoring conducted in 2012–2013 (Bight '13 Regional Monitoring Program) with results subsequently compared to exceedance frequencies and objectives described in February 2015 when the Bight '13 South Coast ASBS Regional Monitoring Program report (SCCWRP, 2015) was published. This report included the revised 85th percentile and exceedance frequencies.

The compliance pathways and specific compliance pathways used to track progress toward the wet weather sediment numeric goals in Scripps watershed and the ASBS are presented by the City in [Table 4-3](#) and [Table 4-4](#). The final numeric goals for ASBS wet weather sediment have been achieved. The City used the receiving water pathway to track progress toward the 2018 wet weather numeric goal for sediment, and ASBS compliance with wet weather was achieved by March 20, 2018. The 2012–2013 wet season monitoring results were comparable to reference conditions, as determined by the 2013 Southern California Bight Regional Monitoring Program. This suggests that the City's current management measures (i.e., BMPs) are achieving the targeted receiving

water quality conditions. The City continues to implement its ASBS Compliance Plan (City of San Diego, 2014) and WQIP (Mission Bay WMA Responsible Agencies, 2015) strategies to support water quality in ASBS 29.

4.1.1 Bacteria TMDL and ASBS Compliance Progress to Goals Summary

The current wet weather interim goal in Tecolote Creek Subwatershed for bacteria and the compliance pathway chosen to measure progress toward the WQIP FY 2024 interim goal are shown in [Table 4-1](#). The interim and final goals defined in the WQIP for wet weather bacteria are in [Appendix B](#). The interim TMDL goals of 49% for fecal coliform and 51% for *Enterococcus* are due in FY 2024.

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**Table 4-1
 Tecolote Creek Subwatershed Wet Weather Bacteria Interim Numeric Goals for the City**

Permit Section/ Compliance Date	Interim Goal Compliance Pathways		Baseline	Goals by Assessment Periods and Fiscal Year		
				FY21-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
				FY 24 ¹		
Indicator Bacteria						
Based on Attachment E, Provision 6.c.3.f with an interim milestone of 2024	Receiving Water % Days Exceeding WQO	Fecal coliform	75% Days Exceeding WQO (2002 TMDL Model)	49% ³	WQIP interim not met in FY21, 100% Days Exceeding WQO	No, the interim TMDL goals are not due until FY 2024.
		<i>Enterococcus</i>	81% Days Exceeding WQO (2002 TMDL Model)	51% ³	WQIP interim goal not met in FY21, 100% Days Exceeding WQO	
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Days Exceeding WQO	Fecal coliform	97% ⁴	22%	N/A, compliance pathway not used	
		<i>Enterococcus</i>	100% ⁴	22%		
		Total coliform ⁵	100% ⁴	22%		
Or						

Table 4-1 (continued)
Tecolote Creek Subwatershed Wet Weather Bacteria Interim Numeric Goals for the City

Permit Section/ Compliance Date	Interim Goal Compliance Pathways		Baseline	Goals by Assessment Periods and Fiscal Year		
				FY21-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
				FY 24 ¹		
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Load Reduction	Fecal coliform	0% Load Reduction (2002 TMDL Model)	9.0%	N/A, compliance pathway not used	
		<i>Enterococcus</i>		6.0%		
		Total coliform		5.0%		
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges # of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	71 discharges	0	N/A, compliance pathway not used	
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁶	Fecal coliform	Unknown at this time. A detailed source study that differentiates between human and non-human sources would be needed to establish the baseline.	100%	N/A, compliance pathway not used	
		<i>Enterococcus</i>		100%		
Or						

Table 4-1 (continued)
Tecolote Creek Subwatershed Wet Weather Bacteria Interim Numeric Goals for the City

Permit Section/ Compliance Date	Interim Goal Compliance Pathways	Baseline	Goals by Assessment Periods and Fiscal Year		
			FY21-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
			FY 24 ¹		
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges Implement Accepted Water Quality Improvement Plan	Metric for compliance analysis is MS4 discharge % load reduction (above). Interim compliance is implementation of strategies and schedule (presented in WQIP Appendix I) based on analysis results. Final compliance is implementation of BMPs based on analysis results and demonstration of compliance with any of the compliance pathways through monitoring and assessment. See WQIP Section 4.3.2 for compliance analysis results.			

Green highlighted rows indicate the current chosen compliance pathway.

1. Fiscal year goal for FY 21–25 assessment period. The Responsible Agencies are also tracking progress toward final WQIP numeric goals. A summary of progress toward final goals can be found in Section 6 and in the Executive Summary.
2. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL interim and final targets and associated baselines.
3. Denotes existing wet weather frequency as modeled in the Bacteria TMDL. With limited baseline monitoring data available, this goal reflects a reasonable estimate considering the difficulty in demonstrating progress within the receiving water during wet weather in a short amount of time. Furthermore, the development and redevelopment of the urban environment have occurred since the Bacteria TMDL baseline loads were calculated in 2001. As such, this goal demonstrates that the Responsible Agencies have made progress by maintaining the existing wet weather exceedance frequency.
4. Wet weather baseline exceedance rate calculated using targeted and random MS4 wet weather monitoring data from October 1, 2008, through September 30, 2013. Monitoring data were assessed similar to the method outlined in Attachment E.6 of the 2013 MS4 Permit for each monitoring year. The observed wet weather days in exceedance were summed and divided by the total wet weather days in exceedance for the historical 5-year period.
5. Total coliform effluent limitations only apply to MS4 outfalls that discharge to the Tecolote Creek mouth.
6. Demonstration of exceedances of final receiving water limitations due to natural sources includes a demonstration that pollutant loads from MS4s are not causing or contributing to exceedances.

BMP = best management practice; FY = fiscal year; MS4= Municipal storm sewer separate system; TMDL= total maximum daily load; WQIP = Water Quality Improvement Plan; WQO = water quality objective

All numeric goals are cumulative from the baseline assessment for each fiscal year

The current dry weather final goal in Tecolote Creek Subwatershed for bacteria and the compliance pathway chosen to measure progress toward the FY 2021 final goal is shown in [Table 4-2](#). The final goals defined in the WQIP for dry weather bacteria are also in [Appendix B](#). The dry season geometric mean is used for the evaluation of FY 2021 WQIP goal compliance. The dry weather bacteria TMDL involves a dry weather geometric mean evaluation (geomean) and a dry weather single sample maximum evaluation (SSM) as presented in the respective columns below under the TMDL goal. The goals of 0% for both fecal coliform and *Enterococcus* are WQIP and TMDL goals that were due in FY 2021.

**Table 4-2
 Tecolote Creek Subwatershed Dry Weather Bacteria Final Numeric Goals for the City**

Permit Section/ Compliance Date	Compliance Pathways	Baseline	Assessment Period and Fiscal Year				
			FY 21-25	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)		
			FY 21 ¹		Geomean	SSM	
Dry Weather Bacteria							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	Receiving Water % Days Exceeding WQO	Fecal coliform	100% Days Exceeding WQO (2002 ³)	0%	Yes, 0% ⁴ Days Exceeding WQO in FY21	Yes, 0% exceedance frequency in FY21 for the dry weather geometric mean ⁸	No, TCNP = 15% TC-MLS = 5%
		<i>Enterococcus</i>	100% Days Exceeding WQO (2002 ³)	0%	Yes, 0% ⁴ Days Exceeding WQO in FY21		No, TCNP = 30% TC-MLS = 13%
Or							

Table 4-2 (continued)
Tecolote Creek Subwatershed Dry Weather Bacteria Interim Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year			
				FY 21-25	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)	
				FY 21 ¹		Geomean	SSM
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Days Exceeding WQO	Fecal coliform	84% ⁵	0%	N/A, compliance pathway not used		
		<i>Enterococcus</i>	100% ⁵	0%			
		Total coliform ⁶	100% ⁵	0%			
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Load Reduction	Fecal coliform	0% Load Reduction (2002 TMDL Model)	98.4%	N/A, compliance pathway not used		
		<i>Enterococcus</i>		99.9%			
		Total coliform ⁶		99.6%			
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges Implement Accepted Water Quality Improvement Plan		Metric for compliance analysis is MS4 discharge % load reduction. Interim compliance is implementing strategies and schedules (presented in WQIP Appendix J) based on analysis results. Final compliance is implementation of BMPs based on analysis results and demonstration of compliance with any of the compliance pathways through monitoring and assessment. See WQIP Section 4.3.2 and Appendix L for compliance analysis results.				
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	# of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	71 discharges	0	N/A, compliance pathway not used		
Or							

Table 4-2 (continued)
Tecolote Creek Subwatershed Dry Weather Bacteria Interim Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year			
				FY 21-25	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)	
						Geomean	SSM
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁷	Fecal coliform	Unknown at this time. A detailed source study that differentiates between human and non-human sources would be needed to establish the baseline.	100%	N/A, compliance pathway not used		
		<i>Enterococcus</i>		100%			

Green highlighted rows indicate the current chosen compliance pathway.

1. WQIP fiscal year goal for FY 21–25 assessment period. A summary of progress toward final goals can also be found in the Executive Summary and Section 6.
2. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL interim and final targets and associated baselines.
3. The existing exceedance frequency was calculated on the basis of available monitoring data between 1996 and 2002 per MS4 Permit requirements and presented in more detail in WQIP Appendix I.
4. Percent days exceeding calculated as the average percent exceedance frequency between the two Tecolote sites TCMLS and TCNP
5. Dry weather baseline exceedance rate calculated using targeted and random MS4 dry weather monitoring data from October 1, 2008, through September 30, 2013. Rolling 5-sample-date geometric means were calculated, beginning with the 5th sample date of each monitoring year. Geometric mean WQOs were applied, and the exceedance frequency extrapolated to determine baseline percent of dry weather days in exceedance for the historical 5-year period.
6. Total coliform effluent limitations only apply to MS4 outfalls that discharge to the Tecolote Creek mouth
7. Demonstration of exceedances of final receiving water limitations due to natural sources includes a demonstration that pollutant loads from MS4s are not causing or contributing to exceedances.
8. Denotes dry weather geometric mean final TMDL target. Does not include dry weather single sample maximum Bacteria TMDL goal in which there were single sample maximum exceedances. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL results.

BMP = best management practice; FY = fiscal year; MS4= Municipal storm sewer separate system; SSM = Single Sample Maximum; N/A = not applicable; TMDL= total maximum daily load; WQIP = Water Quality Improvement Plan; WQO = water quality objective

All numeric goals are cumulative from the baseline assessment for each fiscal year.

The current wet weather interim goal in Scripps Subwatershed for bacteria and the compliance pathway chosen to measure progress toward the FY 2024 interim goal is shown in Table 4-3. The interim and final goals defined in the WQIP for wet weather bacteria are in Appendix B. The goals of 37% for fecal coliform, *Enterococcus*, and total coliform are due in FY 2024.

**Table 4-3
 Scripps Subwatershed Wet Weather Bacteria Interim Numeric Goals for the City**

Permit Section/ Compliance Date	Compliance Pathways	Baseline	Assessment Period and Fiscal Year			
			FY 20-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)	
			FY 24 ¹			
Wet Weather Bacteria						
Based on Attachment E, Provision 6.c.3.f with an interim milestone of 2024	Receiving Water % Days Exceeding WQO	Fecal coliform	52% Days Exceeding WQO (2002 TMDL Model)	37% ³	Yes, 0% Days Exceeding WQO in FY21 ⁴	Yes, the interim goal was met in FY21. The interim TMDL goal is not due until FY 24
		<i>Enterococcus</i>		37% ³	Yes, 0% Days Exceeding WQO in FY 21 ⁴	
		Total coliform		37% ³	Yes, 0% Days Exceeding WQO in FY21 ⁴	
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Days Exceeding WQO	Fecal coliform	97% ⁵	22%	N/A, compliance pathway not used	
		<i>Enterococcus</i>	100% ⁵	22%		
		Total coliform	100% ⁵	22%		
Or						

Table 4-3 (continued)
Scripps Subwatershed Wet Weather Interim Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year		
				FY 20-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
				FY 24 ¹		
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Load Reduction	Fecal coliform	0% Load Reduction (2002 TMDL Model)	5.0%	N/A, compliance pathway not used	
		<i>Enterococcus</i>		3.0%		
		Total coliform		2.5%		
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges Implement Accepted Water Quality Improvement Plan		Metric for compliance analysis is MS4 discharge % load reduction (above). Interim compliance is implementing strategies and schedules (presented in WQIP Appendix J) based on analysis results. Final compliance is implementation of BMPs based on analysis results and demonstration of compliance with any of the compliance pathways through monitoring and assessment. See WQIP Section 4.3.2 and Appendix L for compliance analysis results.			
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges # of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	71 discharges	0	N/A, compliance pathway not used	
Or						

Table 4-3 (continued)
Scripps Subwatershed Wet Weather Interim Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year		
				FY 20-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
				FY 24 ¹		
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	% Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁶	Fecal coliform	Unknown at this time. A detailed source study that differentiates between human and non-human sources would be needed to establish the baseline.	100%	N/A, compliance pathway not used	
		<i>Enterococcus</i>		100%		
		Total coliform		100%		
ASBS—Wet Weather Sediment				FY18⁷	FY18 Goal Met (Yes/No)	
Goal identified based on Attachment A Provision 2.B.2	Receiving Water % Reference Threshold Exceedance Rate	All Monitored Parameters and Biological Metrics (including sediment [TSS])	Bight '13 Monitoring Results	<15% Exceedance Rate of Reference Threshold ⁸	Yes, achieved through monitoring in 2012–2013 and comparison of results to 2015 Bight '13 report (SCCWRP, 2015)	
Or						

Table 4-3 (continued)
Scripps Subwatershed Wet Weather Interim Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year		
				FY 20-25	WQIP FY24 Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)
				FY 24 ¹		
Goal identified based on Attachment A Provision 2.B.2	MS4 Discharges % Load Reduction	Sediment	0% Load Reduction (2002 TMDL Model)	0.6%	N/A, compliance pathway not used	

Green highlighted rows indicate the current chosen compliance pathway.

1. Fiscal year goal for FY 21–25 assessment period. The Responsible Agencies are also tracking progress toward final WQIP numeric goals. A summary of progress toward final goals can be found in the Executive Summary and Section 6.
2. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL interim and final targets and associated baselines.
3. Denotes existing wet weather frequency as modeled in the Bacteria TMDL. With limited baseline monitoring data available, this goal reflects a reasonable estimate considering the difficulty in demonstrating progress within the receiving water during wet weather in a short amount of time. Furthermore, the development and redevelopment of the urban environment have occurred since the Bacteria TMDL baseline loads were calculated in 2001. As such, this goal demonstrates that the City has made progress by maintaining the existing wet weather exceedance frequency.
4. The Scripps subwatershed has 13 beach segments that were named in the Bacteria TMDL. Bacteria TMDL Monitoring is performed individually for each segment. As part of the Scripps Bacteria TMDL Compliance Monitoring Report ([Appendix C](#), Attachment C), water quality exceedances are evaluated by segments each year. In FY 2021, segments were combined and assessed to evaluate an overall WQIP subwatershed goal, which is different from the Bacteria TMDL methodology of per-segment basis. This is the third year that this evaluation was conducted on a subwatershed basis.
5. Wet weather baseline exceedance rate calculated using targeted and random MS4 wet weather monitoring data from October 1, 2008, through September 30, 2013. Monitoring data were assessed similar to the method outlined in Attachment E.6 of the 2013 MS4 Permit for each monitoring year. The observed wet weather days in exceedance were summed and divided by the total wet weather days in exceedance for the historical 5-year period.
6. Demonstration of exceedances of final receiving water limitations due to natural sources includes a demonstration that pollutant loads from MS4s are not causing or contributing to exceedances.
7. The City must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality (within the 85th percentile threshold of reference water quality data and pre-storm levels). ASBS compliance with wet weather discharges is required by March 20, 2018.
8. The Reference Threshold is the surrogate for “natural water quality.” Maintaining natural water quality will be assessed through water chemistry, toxicological, bioaccumulation, and biological community data collected as required elements of the ASBS program. The 85th percentile value calculation refers collectively to all analytes during all storm events at Reference Area locations monitored during Bight '08 and Bight '13. Use of the 85th percentile of Reference Area results means that, by definition, Reference Area results would exceed the 85th percentile values at a rate of 15%. Therefore, an exceedance rate below 15% indicates that the receiving water quality is comparable to Reference Area water quality, which is used to define natural water quality.

ASBS = Areas of Special Biological Significance; BMP = best management practice; FY = fiscal year; MS4= Municipal storm sewer separate system; N/A = not applicable; TMDL= total maximum daily load; TSS= Total suspended solids; WQIP = Water Quality Improvement Plan; WQO = water quality objective

All numeric goals are cumulative from the baseline assessment for each fiscal year.

The current dry weather final goal in Scripps Subwatershed for bacteria and the compliance pathway chosen to measure progress toward the FY 2021 final goal is shown in [Table 4-4](#). Section 3.2 summarizes the Bacteria TMDL compliance pathway selection for each of the 13 segments in the Scripps Subwatershed. The interim and final goals defined in the WQIP for dry weather bacteria are in [Appendix B](#). The dry season geometric mean is used for the evaluation of FY 2021 WQIP goal compliance. The dry weather bacteria TMDL involves a dry weather geometric mean evaluation (geomean) and a dry weather single sample maximum evaluation (SSM) as presented in the respective columns below under the TMDL goal. The goals of 0% for fecal coliform, *Enterococcus*, and total coliform are WQIP and TMDL goals due in FY 2021. In the Scripps subwatershed all sites are using the receiving water compliance pathway except sites EH-310 and CSD-031. For these two sites, no dry weather flow was observed at the outfall. Full details on the compliance pathways used by site can be found in [Table 3-2](#).

Table 4-4
Scripps Subwatershed Dry Weather Final Numeric Goals for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	Assessment Period and Fiscal Year				
			FY 21-24	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)		
			FY 21		Geomean	SSM	
Dry Weather Bacteria							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	Receiving Water % Days Exceeding WQO ³	Fecal coliform	15% Days Exceeding WQO (2002 ⁴)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁵	Yes, all sites in compliance with the dry weather geomean	No, EH-320 = 3% FM-080 = 3%
		<i>Enterococcus</i>	13% Days Exceeding WQO (2002 ⁴)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁵		No, EH-320 = 3% FM-080 = 5% FM-030 = 3%
		Total coliform	6% Days Exceeding WQO (2002 ⁴)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁵		Yes, all sites in compliance
Or							

Table 4-4 (continued)
Scripps Subwatershed Dry Weather Final Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year			
				FY 21-24	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)	
						Geomean	SSM
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Days Exceeding WQO	Fecal coliform	84% ⁶	0%	N/A, compliance pathway not used		
		<i>Enterococcus</i>	100% ⁶	0%			
		Total coliform	100% ⁶	0%			
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Load Reduction	Fecal coliform	0% Load Reduction (2002 TMDL Model)	99.0%	N/A, compliance pathway not used		
		<i>Enterococcus</i>		99.9%			
		Total coliform		99.8%			
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges Implement Accepted Water Quality Improvement Plan		Metric for compliance analysis is MS4 discharge % load reduction (above). Interim compliance is implementing strategies and schedules (presented in WQIP Appendix J) based on analysis results. Final compliance is implementation of BMPs based on analysis results and demonstration of compliance with any of the compliance pathways through monitoring and assessment. See WQIP Section 4.3.2 and Appendix L for compliance analysis results.				
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	# of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	71	0	Yes, Scripps sites EH-310 and CSD-031 are using this pathway toward compliance with the dry weather final numeric goals. In FY 2022, there were no direct or indirect discharges from the MS4 to the receiving water from these sites.		
Or							

Table 4-4 (continued)
Scripps Subwatershed Dry Weather Final Numeric Goals for the City of San Diego

Permit Section/ Compliance Date	Compliance Pathways		Baseline	Assessment Period and Fiscal Year			
				FY 21-24	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Final Goal Met ² (Yes/No)	
						Geomean	SSM
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁷	Fecal coliform	Unknown at this time. A detailed source study that differentiates between human and non-human sources would be needed to establish the baseline.	100%	N/A, compliance pathway not used		
		<i>Enterococcus</i>		100%			
		Total coliform		100%			
ASBS—Dry Weather							
Goal identified based on Attachment A Provision 2.B.2	# of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	0 (As of March 20, 2012, non-authorized discharges to ASBS 29 were effectively prohibited)	0	Yes, initially met by March 20, 2012 deadline, City staff continue to inspect outfalls in the ASBS drainage area and to clean catch basins to confirm that dry weather flows do not reach the ASBS.		

Green highlighted rows indicate the current chosen compliance pathway.

1. WQIP fiscal year goal for FY 21–25 assessment period. A summary of progress toward final goals can also be found in the Executive Summary and Section 6.
2. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL interim and final targets and associated baselines.
3. The percent days exceeding for the receiving water goal are based on the Bacteria TMDL exceedance assessments defined in Attachment E.6 of the MS4 Permit.
4. The existing exceedance frequency was calculated based on available monitoring data between 1996 and 2002 per MS4 Permit requirements and presented in more detail in WQIP Appendix I.
5. The Scripps subwatershed has 13 beach segments that were named in the Bacteria TMDL. Bacteria TMDL Monitoring is performed individually for each segment. As part of the Scripps Bacteria TMDL Compliance Monitoring Report ([Appendix C](#), Attachment C), water quality exceedances are evaluated by segments each year. In FY2021, the results by segments were combined and assessed to evaluate an overall WQIP subwatershed goal different from the Bacteria TMDL methodology of per-segment basis. This is the third year that this evaluation was conducted on a subwatershed basis. The dry season geometric mean is used for the evaluation of FY 2021 goal compliance.
6. Dry weather baseline exceedance rate calculated using targeted and random MS4 dry weather monitoring data from October 1, 2008, through September 30, 2013. Rolling 5-sample-date geometric means were calculated, beginning with the 5th sample date of each monitoring year. Geometric mean WQOs were applied, and the exceedance frequency extrapolated to determine baseline percent of dry weather days in exceedance for the historical 5-year period.

Table 4-4 (continued)
Scripps Subwatershed Dry Weather Final Numeric Goals for the City of San Diego

7. Demonstration of exceedances of final receiving water limitations due to natural sources includes a demonstration that pollutant loads from MS4s are not causing or contributing to exceedances.
8. Denotes dry weather geometric mean final TMDL target. Does not include dry weather single sample maximum Bacteria TMDL goal in which there were single sample maximum exceedances. Refer to the Bacteria TMDL Report [Appendix C](#), [Attachment C](#) for details on the Bacteria TMDL results.

ASBS = Areas of Special Biological Significance; BMP = best management practice; FY = fiscal year; MS4= Municipal storm sewer separate system; N/A = not applicable; RWLs = receiving water limitations; TMDL= total maximum daily load; WMA = Watershed Management Area; WQIP = Water Quality Improvement Plan; WQO = water quality objective
All numeric goals are cumulative from the baseline assessment for each fiscal year.

4.1.2 Compliance Pathway Summary for Mission Bay Watershed Numeric Goals

The compliance pathways for the Mission Bay Watershed for the City of San Diego are summarized in [Table 4-5](#). [Table 4-5](#) presents progress toward interim and final goals.

**Table 4-5
 Compliance Pathway Summary for Mission Bay Watershed for the City**

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25	WQIP FY24 Interim Goal Met ¹ (Yes/No)	TMDL FY24 Interim Goal Met ² (Yes/No)	
			FY 24 ¹			
Tecolote Creek Subwatershed Indicator Bacteria (Wet Weather)						
Based on Attachment E, Provision 6.c.3.f with an interim milestone of 2024	Receiving Water % Days Exceeding WQO	Fecal coliform	75% Days Exceeding WQO (2002 TMDL Model)	49% ³	No, 100% Days Exceeding WQO in FY21. The City is developing additional strategies to work towards the FY 2024 TMDL goal.	No, the interim TMDL goals of 49% for fecal coliform and 51% for <i>Enterococcus</i> are not due until FY 2024.
		<i>Enterococcus</i>	81% Days Exceeding WQO (2002 TMDL Model)	51% ³	No, 100% Days Exceeding WQO in FY21. The City is developing additional strategies to work towards the FY 2024 TMDL goal.	
Or						
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Days Exceeding WQO	N/A, compliance pathway not used				
Or						

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25	WQIP FY24 Interim Goal Met ¹ (Yes/No)	TMDL FY24 Interim Goal Met ² (Yes/No)
			FY24 ¹		
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Load Reduction		N/A, compliance pathway not used		
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges # of Direct or Indirect MS4 Discharges to Receiving Water		N/A, compliance pathway not used		
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁴		N/A, compliance pathway not used		
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges Implement Accepted Water Quality Improvement Plan		N/A, compliance pathway not used		

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways		Baseline	FY21-25 FY 21	WQIP FY21 Goal Met ¹ (Yes/No)	TMDL FY21 Goal Met ² (Yes/No)	
						Geomean	SSM
Tecolote Creek Subwatershed Indicator Bacteria (Dry Weather)							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	Receiving Water % Days Exceeding WQO	Fecal coliform	100% Days Exceeding WQO (2002 ⁵)	0%	Yes, 0% ⁶ Days Exceeding WQO in FY21	Yes, all sites in compliance with the dry weather geomean	No, TCNP = 15% TC-MLS = 5%
		<i>Enterococcus</i>	100% Days Exceeding WQO (2002 ⁵)	0%	Yes, 0% ⁶ Days Exceeding WQO in FY21		No, TCNP = 30% TC-MLS = 13%
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Days Exceeding WQO		N/A, compliance pathway not used				
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Load Reduction		N/A, compliance pathway not used				
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges Implement Accepted Water Quality Improvement Plan		N/A, compliance pathway not used				
Or							

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25 FY 21	WQIP FY21 Interim Goal Met ¹ (Yes/No)	TMDL FY21 Goal Met ² (Yes/No)	
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	# of Direct or Indirect MS4 Discharges to Receiving Water		N/A, compliance pathway not used			
Or						
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁴		N/A, compliance pathway not used			
Scripps Subwatershed Indicator Bacteria (Wet Weather)						
Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY 21-25 FY 24	WQIP FY24 Interim Goal Met ¹ (Yes/No)	TMDL FY24 Goal Met ² (Yes/No)	
Based on Attachment E, Provision 6.c.3.f with an interim milestone of 2024	Receiving Water % Days Exceeding WQO	52% Days Exceeding WQO (2002 TMDL Model)	Fecal coliform	37% ³	Yes, 0% Days Exceeding WQO in FY21 ⁷	Yes, the interim goal was met in FY21. The interim TMDL goal of 37% for fecal coliform, <i>Enterococcus</i> , and total coliform are not due until FY 2024.
	<i>Enterococcus</i>		37% ³	Yes, 0% Days Exceeding WQO in FY21 ⁷		
	Total coliform		37% ³	Yes, 0% Days Exceeding WQO in FY21 ⁷		
Or						

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25 FY 24	WQIP FY24 Interim Goal Met ¹ (Yes/No)	TMDL FY24 Interim Goal Met ² (Yes/No)
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Days Exceeding WQO				N/A, compliance pathway not used
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges % Load Reduction				N/A, compliance pathway not used
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges Implement Accepted Water Quality Improvement Plan				N/A, compliance pathway not used
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	MS4 Discharges # of Direct or Indirect MS4 Discharges to Receiving Water				N/A, compliance pathway not used
Or					
Based on Attachment E, Provision 6.c.3. with an interim milestone of 2024	% Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁴				N/A, compliance pathway not used

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways		Baseline	FY18 ⁸	WQIP FY18 Goal Met (Yes/No)
ASBS—Wet Weather Sediment					
Goal identified based on Attachment A Provision 2.B.2	Receiving Water % Reference Threshold Exceedance Rate	All Monitored Parameters and Biological Metrics (including sediment [TSS])	Bight '13 Monitoring Results	<15% Exceedance Rate of Reference Threshold ⁹	Yes, achieved through monitoring in 2012–2013 and comparison of results to 2015 Bight '13 report (SCCWRP, 2015)
Or					
Goal identified based on Attachment A Provision 2.B.2	MS4 Discharges % Load Reduction	N/A, compliance pathway not used			

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25 FY 21	WQIP FY21 Final Goal Met ¹ (Yes/No)	TMDL FY21 Goal Met ² (Yes/No)		
					Geomean	SSM	
Scripps Indicator Bacteria (Dry Weather)							
Based on Attachment E, Provision 6.c.3.f with an interim milestone of 2019	Receiving Water % Days Exceeding WQO	Fecal coliform	15% Days Exceeding WQO (2002 ⁵)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁷	Yes, all sites in compliance with the dry season geomean	No EH-320 = 3% FM-080 = 3%
		<i>Enterococcus</i>	13% Days Exceeding WQO (2002 ⁵)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁷		No EH-320 = 3% FM-080 = 5% FM-030 = 3%
		Total coliform	6% Days Exceeding WQO (2002 ⁵)	0%	Yes, 0% Days Exceeding WQO in FY21 ⁷		Yes, all sites in compliance
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Days Exceeding WQO	N/A, compliance pathway not used					
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges % Load Reduction	N/A, compliance pathway not used					
Or							
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	MS4 Discharges Implement Accepted Water Quality Improvement Plan	N/A, compliance pathway not used					
Or							

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21-25 FY 21	WQIP FY21 Interim Goal Met ¹ (Yes/No)	TMDL FY21 Goal Met ² (Yes/No)
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	# of Direct or Indirect MS4 Discharges to Receiving Water	71	0	Yes, Scripps sites EH-310 and CSD-031 are using this pathway toward compliance with the dry weather final numeric goals. In FY 2021, there were no direct or indirect discharges from the MS4 to the receiving water from these sites.	
Or					
Based on Attachment E, Provision 6.c.3.f with a final milestone of 2021	% of Exceedances of Final Receiving Water WQOs Due to Natural Sources ⁵	N/A, compliance pathway not used			
Permit Section/ Compliance Date	Compliance Pathways	Baseline	FY21–25	WQIP FY21 Goal Met (Yes/No) ²	
ASBS—Dry Weather					
Goal identified based on Attachment A Provision 2.B.2	# of Direct or Indirect MS4 Discharges to Receiving Water	Discharges	0 (As of March 20, 2012, non- authorized discharges to ASBS 29 were effectively prohibited)	0	Yes, City staff continue to inspect outfalls in the ASBS drainage area and to clean catch basins to confirm that dry weather flows do not reach the ASBS.

Green highlighted rows indicate the current chosen compliance pathway.

1. WQIP fiscal year goal for FY 21–25 assessment period.
2. Refer to the Bacteria TMDL Report [Appendix C](#), Attachment C for details on the Bacteria TMDL interim and final targets and associated baselines.
3. Denotes existing wet weather frequency as modeled in the Bacteria TMDL. With limited baseline monitoring data available, this goal reflects a reasonable estimate considering the difficulty in demonstrating progress within the receiving water during wet weather in a short amount of time. Furthermore, development and redevelopment of the urban environment has occurred since the Bacteria TMDL baseline loads were calculated in 2001. As such, this goal demonstrates that the Responsible Agencies have made progress by maintaining the existing wet weather exceedance frequency.

Table 4-5 (continued)
Compliance Pathway Summary for Mission Bay Watershed for the City

4. Demonstration of exceedances of final receiving water limitations due to natural sources includes demonstration that pollutant loads from MS4s are not causing or contributing to exceedances.
5. The existing exceedance frequency was calculated on the basis of available monitoring data between 1996 and 2002 per MS4 Permit requirements and presented in more detail in Appendix I of the WQIP.
6. Percent days exceeding calculated as the average percent exceedance frequency between the two Tecolote sites TCMLS and TCNP
7. The Scripps subwatershed has 13 beach segments that were named in the Bacteria TMDL. Bacteria TMDL Monitoring is performed individually for each segment. As part of the Scripps Bacteria TMDL Compliance Monitoring Report ([Appendix C, Attachment C](#)), water quality exceedances are evaluated by segments each year. In FY2021, the results by segments were combined and assessed to evaluate an overall WQIP subwatershed goal different from the Bacteria TMDL methodology of per-segment basis. This is the third year that this evaluation was conducted on a subwatershed basis. The dry season geometric mean is used for the evaluation of FY 2021 goal compliance. Does not include dry weather single sample maximum Bacteria TMDL goal in which there were single sample maximum exceedances. Refer to the Bacteria TMDL Report Appendix C Attachment C for details on the Bacteria TMDL results.
8. Dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality (within the 85th percentile threshold of reference water quality data and pre-storm levels). ASBS compliance with wet weather discharges are required by March 20, 2018.
9. The Reference Threshold is the surrogate for “natural water quality.” Maintaining natural water quality will be assessed through water chemistry, toxicological, bioaccumulation, and biological community data collected as required elements of the ASBS program. The 85th percentile value calculation refers collectively to all analytes during all storm events at Reference Area locations monitored during Bight '08 and Bight '13. Use of the 85th percentile of Reference Area results means that, by definition, Reference Area results would exceed the 85th percentile values at a rate of 15%. Therefore, an exceedance rate below 15% indicates that the receiving water quality is comparable to Reference Area water quality, which is used to define natural water quality.

ASBS = Areas of Special Biological Significance; BMP = best management practice; FY = fiscal year; MS4= Municipal storm sewer separate system; N/A = not applicable; TMDL= total maximum daily load; TSS = total suspended solids; WMA = Watershed Management Area; WQIP = Water Quality Improvement Plan; WQO = water quality objective

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4.1.3 Tecolote Creek and Scripps Subwatersheds Compliance Trends

Bacteria TMDL monitoring in Tecolote Creek and Scripps subwatersheds began in 2013. To preliminarily assess compliance trends, geometric means (for both wet and dry season) and wet weather single sample maximum exceedance frequencies were visualized in [Figures 4-1](#) through [4-5](#) in the context of both water quality objectives and interim and final compliance milestones for *Enterococcus* in Tecolote Creek⁵ and Scripps⁶. Representative trends for each subwatershed are provided for Tecolote Creek and Scripps for wet weather and dry weather. The Tecolote Creek and Scripps Bacteria TMDL Reports include trend figures for all listed sites. These figures show results of past monitoring efforts and are not intended as predictions regarding future water quality or compliance.

⁵ Fecal coliform is a current compliance constituent but the State-Wide Bacteria Objectives, adopted in August 2018 (but pending approval by the EPA Office of Administrative Law), preclude the use of *Escherichia coli* (*E. coli*), therefore fecal coliform (as the surrogate) as the compliance constituent. As such, the new Objectives would dictate *Enterococcus* as the only compliance constituent in Tecolote Creek but would need to be incorporated into the TMDL via a reopener. For this reason, fecal coliform was omitted from preliminary trends assessments.

⁶ *Enterococcus* is a current compliance constituent for Scripps compliance monitoring locations. Fecal coliform and total coliform are also current compliance constituents; however, the Statewide Bacteria Objectives adopted in February 2018 identify *Enterococcus* and fecal coliform as the only compliance constituents for beaches. For this reason, total coliform was omitted from preliminary trends assessments and *Enterococcus* was used for a snapshot comparison.

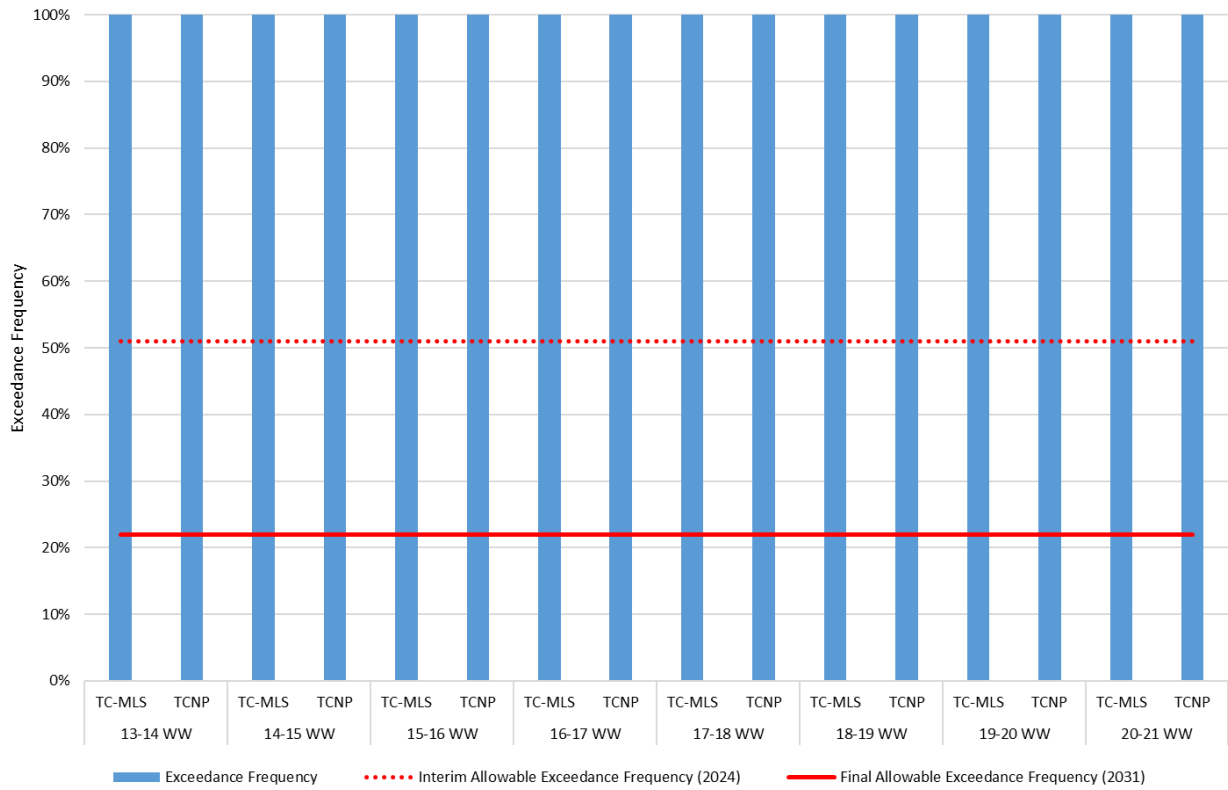


Figure 4-1
Tecolote Creek Subwatershed Wet Weather Trends, *Enterococcus*

Dry weather *Enterococcus* data for Tecolote Creek show that the geometric means are frequently meeting the interim milestones but are not consistently meeting the final milestones (Figure 4-2). Dry weather flows at TC-MLS in FY 2020 were more frequent than in the previous six monitoring years due to a breach in the upstream dry weather diversion. Dry weather flows had been seeping underneath the berm until the berm was repaired in November 2020. Historically, when the berm is at full capacity, there are minimal to no dry weather flows at the TC-MLS station. In FY 2021, with the berm fully functioning, the dry weather geometric mean exceedance frequency was 0% for *Enterococcus* and fecal coliform.

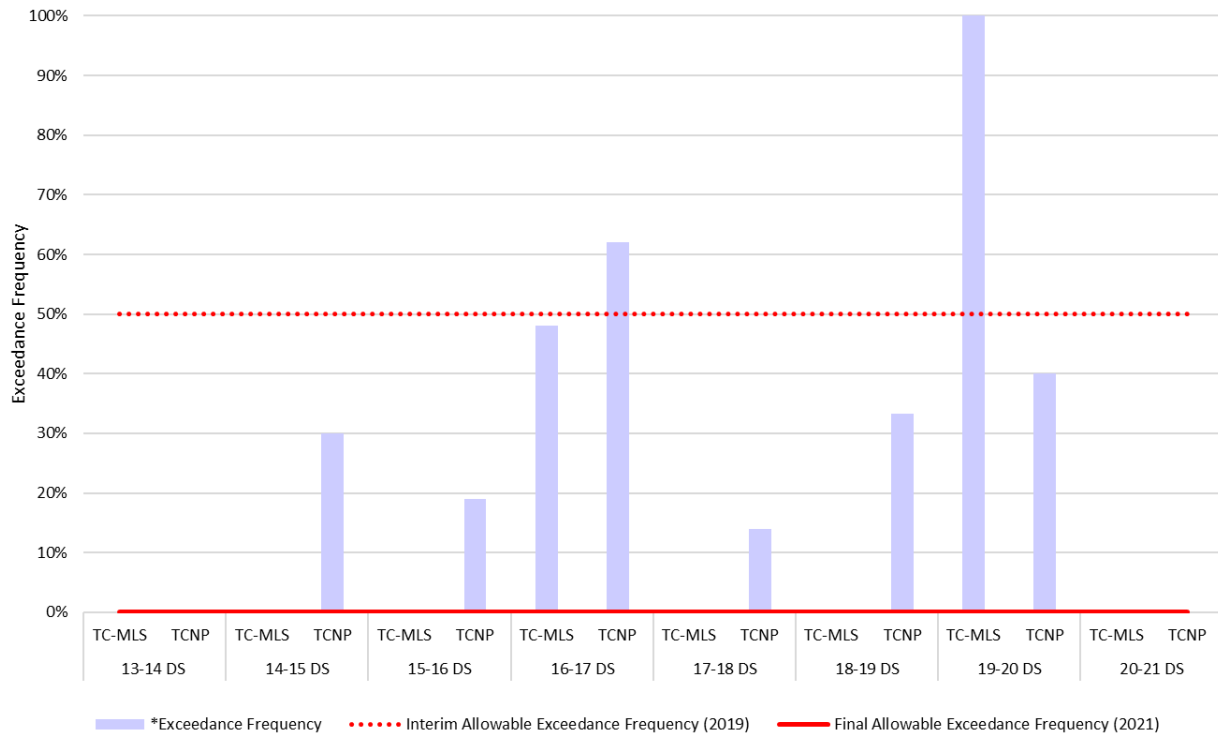
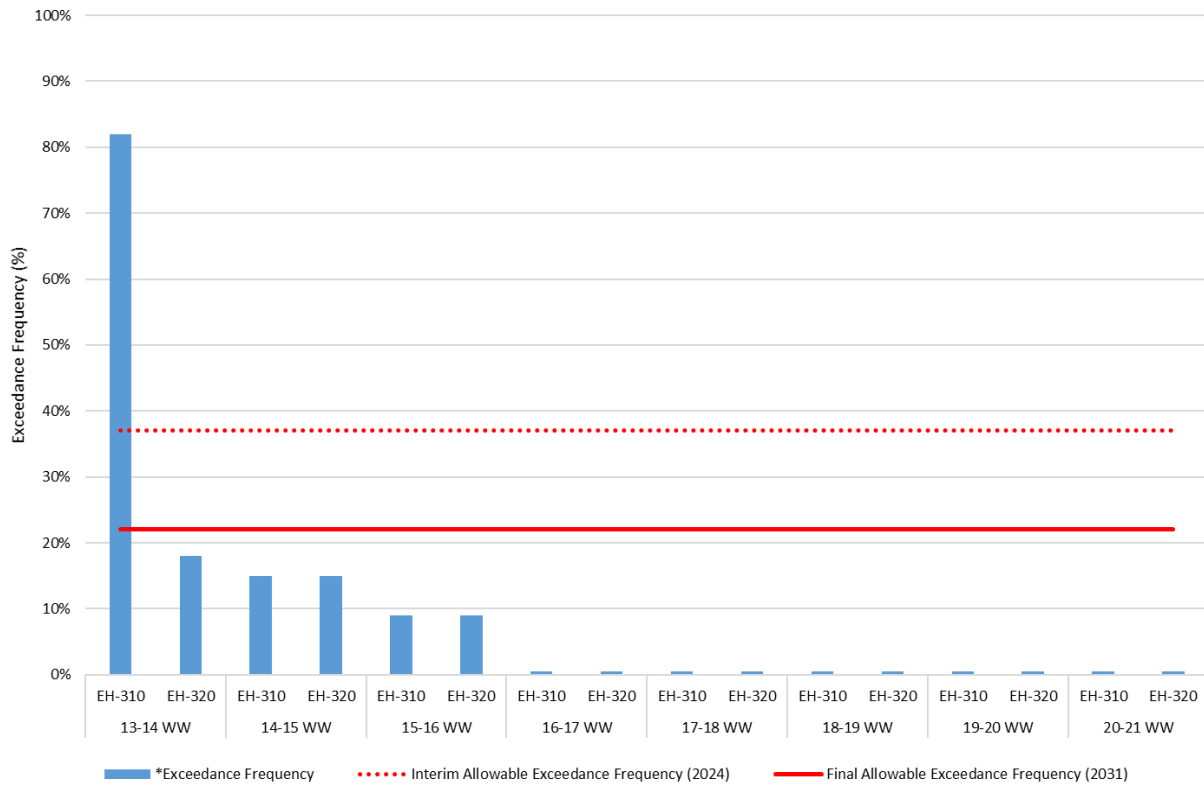


Figure 4-2
Tecolote Creek Subwatershed Dry Weather Trends for Geometric Mean Exceedances, *Enterococcus*

Scripps Subwatershed Trend Assessment

As shown in [Figure 4-3](#), wet weather *Enterococcus* data from 2013 through 2021 for the currently listed sites in the Scripps subwatershed show improved water quality. Over the past eight years, wet weather water quality at the Children’s Pool site, in particular, has improved. Both listed sites are currently meeting both interim and final milestones.



Notes:

*Some values are 0% as follows: Exceedance Frequencies for both segments in years (16-17, 17-18, 18-19, 19-20, 20-21).
 WW = wet weather

**Figure 4-3
 Scripps Subwatershed Wet Weather Trends, *Enterococcus***

Similar to wet weather trends, dry weather *Enterococcus* data for Scripps show that dry season geometric means are consistently below the interim WQOs for most years for Children’s Pool (EH-310) and all years for La Jolla Shores Beach at Vallecitos (EH-320). In FY 2021 final dry weather allowable exceedance frequencies were met for *Enterococcus* and fecal coliform for Children’s Pool (EH-310) (Figure 4-4). La Jolla Shores Beach at Vallecitos (EH-320) has consistently achieved interim and final dry weather allowable frequencies for both constituents (Figure 4-5). Typically, the Scripps subwatershed is meeting both interim and final milestones for the dry weather geometric mean WQOs.

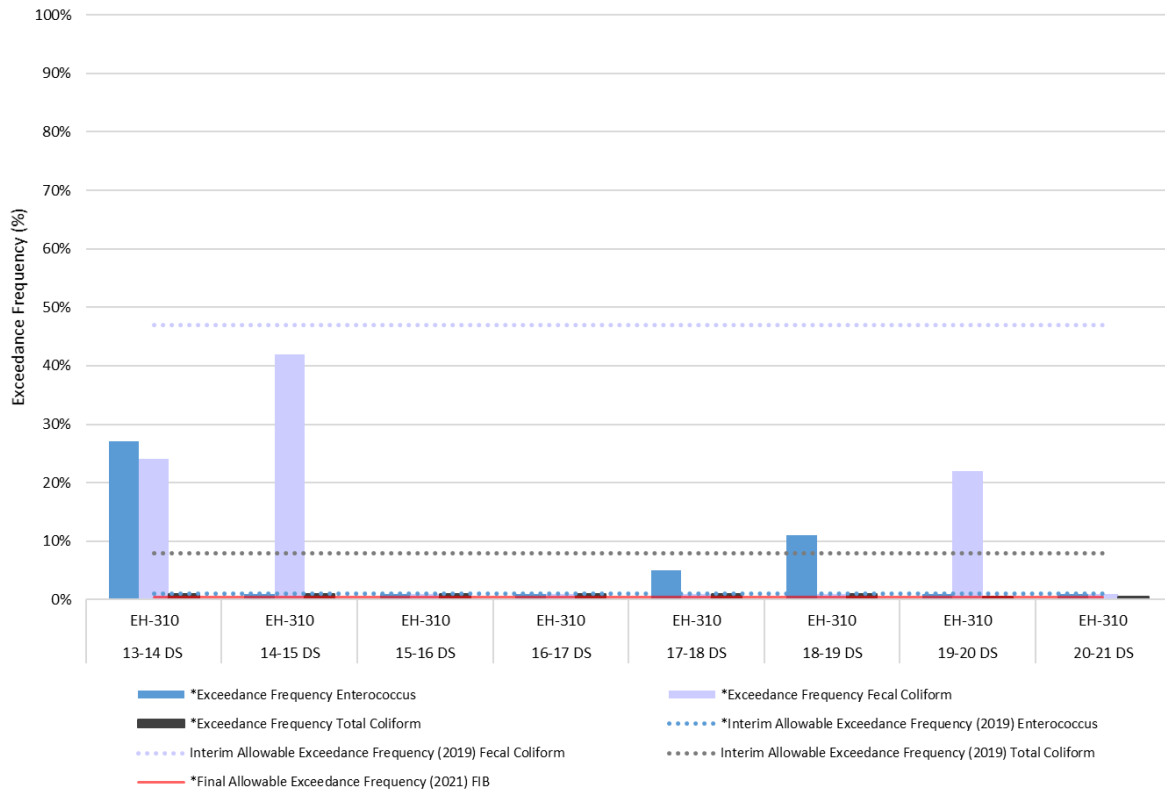


Figure 4-4
Scripps Subwatershed Dry Weather Trends for Geometric Mean Exceedances, FIB: EH-310

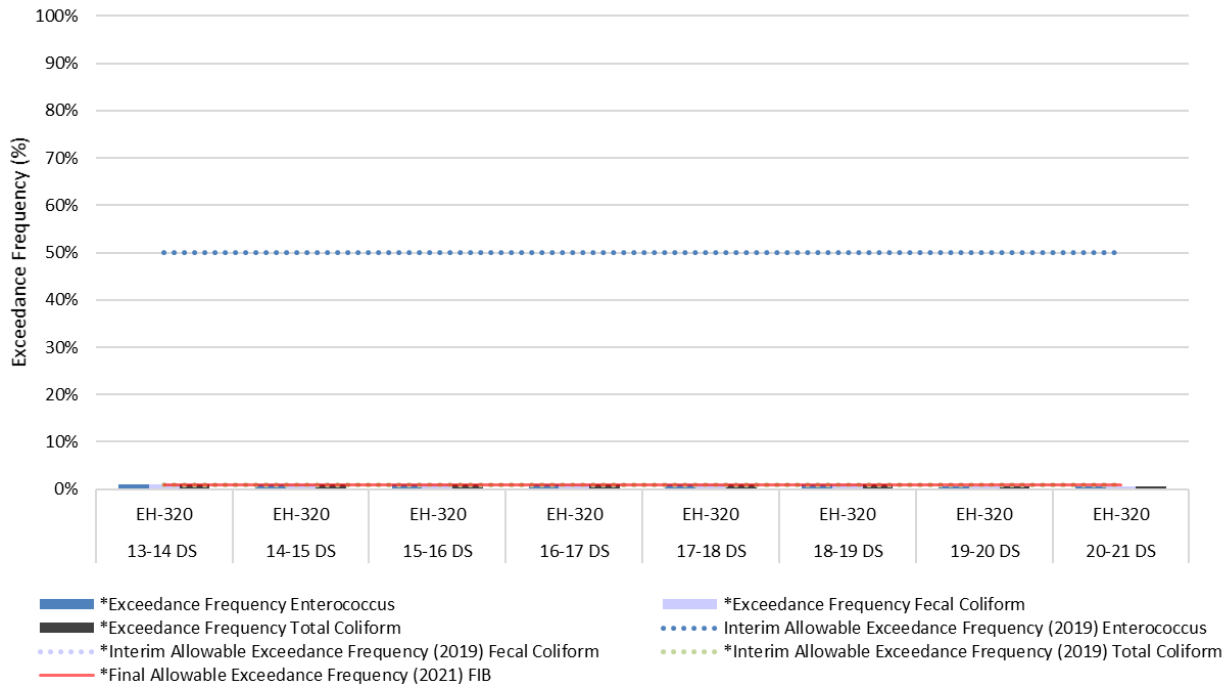


Figure 4-5
Scripps Subwatershed Dry Weather Trends for Geometric Mean Exceedances,
FIB: EH-320

4.2 Strategies and Schedules

As introduced in [Section 2.1](#), the Mission Bay WMA's HPWQCs are related to *bacteria* and *sediment* in the Tecolote Creek and Scripps sub-watersheds.

During the development of the Mission Bay WMA WQIP, it was determined that reducing *bacteria* and *sediment* sources in the WMA has the greatest potential to address the HPWQCs in the near term. As a result, the City identified structural and non-structural strategies (i.e., constructing physical structures and performing activities, respectively) that target bacteria and sediment sources, in addition to providing other benefits. The City implements these strategies to help them achieve their interim and final numeric goals.

Tables [D-1](#) through [D-4](#) in [Appendix D](#) contain comprehensive lists of the City's strategies. The information in these tables is updated annually by the City to provide current strategy definitions and implementation information. Additionally, the strategy tables indicate which category strategies fit into. Some strategies are required by the JRMP (JRMP strategies); others are in addition to the JRMP (Optional strategies) or may be implemented as needed (Optional-triggered strategies), and some strategies are implemented collaboratively by several Responsible Agencies (WMA strategies). These strategies address the Mission Bay WMA's HPWQCs of *bacteria* and *sediment*, in addition to providing other benefits. The complete list of strategies implemented by the City in FY 2021, is included as [Table D-2](#) of [Appendix D](#). Strategy highlights can also be found on the City's online Dashboard.

Stormwater Program Online Dashboard-WQIP Strategy highlights

Strategy highlights can also be found on the [City's Online Dashboard](#) related to the following City programs:

- ❖ Stormwater Operations including street sweeping as well as storm drain inspection and cleaning
- ❖ Industrial inspections
- ❖ Structural Best Management Practices inspections
- ❖ Municipal Facilities inspections
- ❖ Illicit Discharge Detection and Elimination

Outcomes of Strategy Implementation

- The City installed 63 rain barrels in the Mission Bay WMA in FY 2021, which harvested an estimated 3,786 gallons of water.
- The City replaced 28,423 square feet of turf in the Mission Bay WMA in FY 2021 with landscaping that requires little to no irrigation.
- The City participated in community cleanup events in the Mission Bay WMA that diverted 5,277 pounds of debris from entering the waterway and storm water conveyances.

- ❖ Waterwise Rebates
- ❖ Education and Outreach
- ❖ Green Infrastructure
- ❖ Construction Management
- ❖ Priority Developments

The City has focused on refining and adapting their strategies to address *bacteria* sources in the WMA. As presented in [Section 3.4](#), the City has also initiated special studies or investigations, such as the Visitor’s Center of Mission Bay Dry Weather Source Investigations Study, to help identify *bacteria* sources. As results from these studies become available, the City may further adapt their programs to address the identified sources.

[Section 4.2.1](#) highlights some of the outcomes of the San Diego Region Responsible Agencies *combined* strategy implementation efforts. Highlighted strategies implemented by the City and Caltrans are presented in [Section 4.2.2](#) and [Section 4.2.3](#), respectively.

4.2.1 Regional Copermittee Efforts

The San Diego Region Storm Water Copermittees (Copermittees) worked together on several projects during FY 2021 and these efforts are highlighted below. The collaboration extended to Orange and Riverside Counties where appropriate.

4.2.1.1 Integrated Regional Water Management Program

Integrated Regional Water Management (IRWM) is a planning initiative developed by the State of California to encourage water resource management that improves local water supply reliability and protects water quality and natural resources. IRWM brings together water supply agencies, wastewater and storm water agencies, Tribes, and other environmental stakeholders to establish regional water management goals and to resolve potential conflicts that may arise through implementation of multiple water-related programs. To qualify for state grant funding, regions must develop and maintain current IRWM plans that conform to state requirements.

The San Diego IRWM Program is administered by the San Diego Regional Water Management Group (RWMG), consisting of the San Diego County Water Authority, the City of San Diego, and the County of San Diego. The group meets twice monthly to manage the daily operations of the program and develop and initiate IRWM Plan implementation activities. The San Diego RWMG also provides presentations to various stakeholder groups, including water supply agencies, environmental organizations, and other agencies regarding the IRWM Program locally and throughout the state.

The San Diego RWMG is supported by a 40-member Regional Advisory Committee (RAC) that provides diverse representation from various functional areas related to water management, including water retail agencies, water quality managers, natural resources, nongovernment organizations focused on water representation for disadvantaged

communities and environmental justice issues, local Tribes, and additional seats for other entities, such as the building industry, interested in water management. Included in the RAC are eight seats for nonvoting members that include the San Diego Water Board, the State Coastal Conservancy, the United States Bureau of Reclamation, United States Forest Service, United States Indian Health Services, and the military, and two seats for Tri-County Funding Area Coordinating Committee members (representatives from the Upper Santa Margarita and South Orange County RWMGs). The RAC plays a critical role in advising the RWMG to shape and develop the IRWM Plan goals and objectives, the IRWM governance structure, and project prioritization. The RAC currently meets on a bimonthly basis to provide guidance on upcoming IRWM planning and funding application activities.

4.2.1.2 2021–2025 Memorandum of Understanding

During the reporting period, the County of San Diego worked with RWMG partners (San Diego County Water Authority and City of San Diego) to enact a renewed Memorandum of Understanding (MOU) to guide continued program coordination, implementation, and cost sharing by the three RWMG agencies in support of the San Diego IRWM Grant Program from January 1, 2021, to December 31, 2025. The MOU addresses collaborative activities, including preparation of grant applications under Proposition 1, selection of project proposals to be included in the regional IRWM Plan grant package submitted to the State of California; management of grants awarded under IRWM funding programs; joint selection and funding of a consultant to provide technical and administrative support to the RWMG, conduct public outreach, and update and maintain an IRWM program website; and outreach and Proposition 1 grant application technical assistance to under-represented communities [URCs].

4.2.1.3 Regional Clearinghouse and Regional Collaborations

4.2.1.3.1 Project Clean Water (Regional Clearinghouse) Updates

The Project Clean Water⁷ website is a web-based portal that provides a centralized point to access water quality information and resources. The website serves as the County of San Diego Copermittees' Regional Clearinghouse and provides the public and regulators with access to documents and data, organized by watershed. The site is continuously maintained and refreshed while retaining an archive for previous iterations of watershed plans and documents. In FY 2021, the Project Clean Water website was redesigned to elevate educational resources for the public and Copermittees while maintaining all of its prior functionality. The Project Clean Water website is central to the Storm Water Behavior Change Marketing Campaign, and now all educational resources are either on the landing page or are accessible from the top navigation menu on all pages of the website. Notable expansions of the website include a Resources Toolkit that contains educational fact sheets, videos, prepared social media posts, and resources for children. A new interactive "Find Your Watershed" map was added to the main Watersheds page so the public can search the watersheds in which they live, work, and participate in

⁷ <https://www.projectcleanwater.org/>

recreational activities and visit the associated WMA page to learn about current efforts being implemented in those areas. Additional website expansions are planned for FY 2022, including the addition of a Youth Engagement component and Regional Clearinghouse crosswalk.

4.2.1.3.2 Southern California Coastal Water Research Project and SCCWRP Commission's Technical Advisory Group

The Southern California Coastal Water Research Project (SCCWRP) is an aquatic sciences research institute that works to improve management of aquatic systems in southern California and beyond. Since its founding as an intergovernmental public agency in 1969, SCCWRP has been developing strategies, tools, and technologies that the region's water-quality management community relies on to more effectively protect and enhance the ecological health of southern California's coastal ocean and the watersheds that drain to it. The County of San Diego is one of the 14 member agencies of SCCWRP. Some current examples of County projects in which SCCWRP is directly involved include Los Coches Wet Weather Microbial Source Tracking (MST) Follow-up, San Diego River Bacteria Human Source Investigative Order, Sanitary Sewer Exfiltration Pilot Study, and Southern California Regional Bight studies.

4.2.1.3.3 Southern California Stormwater Monitoring Coalition

The Southern California Stormwater Monitoring Coalition (SMC) is a partnership of 16 storm water regulated, regulatory, and other agencies working to develop solutions to regional challenges in storm water management. Founded in 2001, SMC has been pooling its members' resources and expertise to collaboratively conceptualize, develop, and fund storm water research and monitoring projects, and through this work, has influenced the development of NPDES permits, Clean Water Act Section 303(d) list of water quality limited segments (303(d)) listings and TMDLs, watershed plans, and storm water monitoring designs. The County of San Diego has served on the SMC Steering Committee since its inception, and since 2019, a County of San Diego representative serves as Co-Vice Chair on the SMC Executive Team. During FY 2021, SMC focused its efforts on four new and two ongoing projects. The ongoing projects include implementing a 5-year regionally consistent and integrated freshwater stream bioassessment monitoring program and continuing to develop a communication plan for SMC. The four new projects include (1) linking indicators of fecal contamination to human health risk, (2) developing a Regional Best Management Practice (BMP) Monitoring Program to, among other goals, improve BMP selection guidance and support reasonable assurance analysis and alternative compliance, (3) implementing a laboratory intercalibration study, and (4) streamlining annual reporting. The County of San Diego has provided funding for each of these projects and is participating in the technical workgroups for projects 1 and 2 and a focus group for project 4.

4.2.1.4 Regional Management Committee and Subcommittees of the San Diego Region Copermittees

The 21 County of San Diego Copermittees participate in and cost-share regional working groups that generally coordinate on the development and implementation of the MS4 Permit, as well as policies and provisions implemented from the State Water Resources Control Board (State Board). Working groups include the Regional Management Committee, which meets at least once annually to formally adopt a work plan and budget for the next fiscal year, the Program Planning Subcommittee, and a working subcommittee that meets monthly to provide a forum for general regional discussion and guidance on MS4 Permit compliance, including conducting analyses for technical and policy issues related to implementing the MS4 Permit and developing response letters to local and state regulators, as needed. Other working groups that are subcommittee to the Program Planning Subcommittee include the Land Development Workgroup, which meets bimonthly, and the Project Clean Water Workgroup, which meets regularly to collaborate on regional outreach and messaging; see below for a summary of achievements for the past fiscal year. Additionally, Orange and Riverside County Copermittees have been participating in Program Planning Subcommittee and Ad Hoc Subcommittee meetings for collaboration and coordination within Region 9.

4.2.1.5 Education and Outreach

4.2.1.5.1 Regional Education and Outreach Events

Stormwater Program Online Dashboard- Education and Outreach highlights

Education and outreach highlights can also be found on the [City's Online Dashboard](#)

The Copermittees and County of San Diego continued to sponsor and participate in community outreach events with region-wide appeal through the Project Clean Water Workgroup (formerly titled Education and Outreach Workgroup).

- ❖ **2020 Coastal Cleanup Day:** Copermittees sponsored I Love A Clean San Diego's (ILACSD) 36th Annual Coastal Cleanup Day, which is the official cleanup for the San Diego region. The event is a major part of International Coastal Cleanup, which is facilitated by The Ocean Conservancy and includes many states of the United States and territories, and more than 70 countries. Within California, Coastal Cleanup Day is a partnership among the California Coastal Commission, nonprofit groups, cities, and counties throughout the state. Because of continuing COVID-19 social distancing requirements, this event was held virtually and coordinated volunteers to pick up trash in their own neighborhoods. Volunteers removed 1,606 pounds of trash and 1,071 pounds of recyclables from communities throughout the County of Diego.
- ❖ **2021 Creek to Bay Cleanup:** The Copermittees sponsored I Love A Clean San Diego's 19th Annual Creek to Bay Cleanup. Because of COVID-19 social distancing requirements, this event was held virtually and coordinated volunteers

to pick up trash in their own neighborhoods. Volunteers removed 1,064 pounds of trash and 320 pounds of recyclables from communities throughout the County of Diego.

- ❖ **FY 2021 Watershed Warrior Community Cleanups:** The County of San Diego sponsored I Love A Clean San Diego's Watershed Warrior program, which coordinates volunteer-based community cleanups year-round in neighborhoods throughout the region. Volunteers from cleanups held in FY 2021 removed 4,507 pounds of trash and 1,326 pounds of recyclables across all watersheds.
- ❖ **Project Clean Water Media Outreach Campaign:** Because of COVID-19 social distancing rules, many outreach events historically sponsored by the Copermittees were cancelled or postponed. To continue public education and engagement, the Copermittees implemented the following media campaigns during FY 2021:
 - ❖ **Summer 2020:** Copermittees implemented a 6-week radio ad campaign highlighting Project Clean Water and the Report Pollution tool. Messaging included suggested pollution-reducing behavior modifications for behaviors that contribute to storm water pollution, including over-irrigation and littering. Ads were broadcast in English and Spanish across 17 channels at a rate of 90 per week, for a total of 540 radio ads. The Project Clean Water website saw a 69 percent increase in total users and an 81 percent increase in new users during the ad period compared with the period prior to the campaign, and a 44 percent increase in total users and a 51 percent increase in new users during the post-ad period compared with the period prior to the campaign.
 - ❖ **Wet Season 2020–2021:** Copermittees implemented a 9-week Rainy Season digital ad and media campaign to highlight seasonally appropriate storm water pollution preventing behaviors and new educational resource "Rainy Season Checklist" posted to the Project Clean Water website. Static and video advertisements were featured on Fox5News and Facebook, and a Project Clean Water representative was interviewed live on air by Fox5News, where the Report Pollution Tool and Project Clean Water were highlighted in addition to rainy season messaging.
 - ❖ **Summer 2021:** Copermittees ran an 11-week movie theater media campaign in which storm water pollution prevention advertisements featuring spoken word artist Gill Sotu were shown during movie previews and in the lobbies of 16 regional Regal and AMC theaters. This campaign was projected to generate 2.15 million impressions. The campaign spans into FY 2022, and results will be reported in the annual reports for that reporting period.
 - ❖ **Summer Movies in the Park.** Copermittees sponsored the 2021 Summer Movies in the Park events and had a Project Clean Water booth presence at the June 19, 2021 showing. Copermittees interacted with the public to educate them on storm water pollution prevention and encourage participation in the 52 Ways to Love Your Water pledge run through the Storm Water Behavior Change

Marketing Campaign. Project Clean Water debuted a “Love Your Water” video created in collaboration with local spoken word artist Gill Sotu to highlight the importance of water in our lives, storm water pollution issues, and pollution prevention messaging. Surveys on public awareness of storm water knowledge were taken before and after the event to measure the impact of Project Clean Water engagement and inform future Marketing Campaign implementation.

4.2.1.5.2 Storm Water Behavior Change Marketing Campaign

Project Clean Water’s Storm Water Behavior Change Marketing Campaign is a 5-year county-wide public education and outreach initiative dedicated to protecting water quality in San Diego County. The campaign was created in response to regional surveys reflecting a decline in public awareness that storm water entering the storm drain system is not treated before reaching rivers, lagoons, and the ocean. The initiative fosters greater awareness of everyday actions people can take to reduce runoff and storm water pollution. The campaign engages with local partners via a coalition of regional groups, nonprofits, businesses, and individuals. In addition to dispersed outreach, the Project Clean Water website offers a centralized point-of-access for water quality information, resources, and water management plans. The goal is to support the region’s water quality on behalf of healthy communities and thriving ecosystems.

The multi-year educational campaign starts with increasing awareness that storm water entering our storm drains is not treated before it reaches our waterways. It focuses on three areas to reduce the impacts of polluted storm water:

- ❖ Reduce storm water runoff and use of garden chemicals.
- ❖ Engage in proper trash and pet waste disposal.
- ❖ Capture and reuse storm water.

In FY 2021, Project Clean Water officially launched the public-facing portion of the through a media event featuring speeches on the importance of storm water pollution prevention by San Diego County Supervisor Terra Lawson-Remer (District 3), Encinitas Mayor Catherine Blakespear, and representatives from three Copermittee agencies. Copermittees also launched the “52 Ways to Love Your Water” Pledge, which focuses on building foundational awareness of storm water and pollution issues. The Pledge provides weekly small actions that everyone can participate in to help protect our waterways. Each week a new action is revealed through Project Clean Water’s social media and newsletter while providing additional context on the Project Clean Water website. These actions are aligned with wet and dry weather messaging, with the goal of solidifying basic storm water understanding in the community from which to build upon over the next three implementation years of the campaign.

A Youth Program is also in development to engage K-12 students and their families in the pledge and provide educators with resource toolkits for incorporating storm water education into lesson plans.

4.2.1.6 Land Development

Efforts to provide support the San Diego Region Model BMP Design Manual continued during this reporting period; Copermittees maintained a Model BMP Design Manual Help Desk to provide a platform for submission of technical questions. The Copermittees formed an Ad Hoc Committee on BMP Vegetative Cover and Maintenance with the goals of learning from each other and from industry. In addition, the Copermittees also formed an Ad Hoc Committee on Rainfall Data Update, with the goal of reviewing expanding the current datasets of rainfall gauge information to include additional years, data which is used for continuous simulation modeling on priority development projects (PDPs).

The 2013 MS4 Permit includes an option for PDPs to satisfy onsite structural BMP performance requirements through participation in an Offsite Alternative Compliance Program (ACP). Development and implementation of this program are optional and are entirely at the discretion of each jurisdiction. To serve as a foundation for jurisdictions interested in pursuing such a program, the San Diego Water Board accepted the Water Quality Equivalency Guidance Document for Region 9 in December 2015, and an update culminated in a June 2018 submittal of the revised document for approval by the San Diego Water Board. On March 15, 2019, the San Diego Water Board accepted the updated version.

This guidance document establishes a mechanism to correlate quantifiable ACP water quality benefits with PDP water quality impacts and ultimately demonstrate that the ACP benefits outweigh the PDP impacts. Per the requirements in Provision E.3.c.(3)(a) of the MS4 Permit, the methods presented in this guidance must be incorporated as part of any optional Offsite ACP developed by a Copermittee.

The Land Development Workgroup is a venue to hold presentations and share information on topics related to storm water and development, including Copermittees as presenters or other experts outside of Region 9.

4.2.1.7 California Statewide Bacteria Water Quality Objectives for Recreational Waters

On August 8, 2018, the State Board adopted new state-wide bacteria water quality objectives and implementation options to protect REC-1 users from the effects of pathogens in California water bodies. The objectives and implementation options are included as Part 3 of the Water Quality Control Plan for the Inland Surface Waters, Enclosed Bays, and Estuaries of California, and as an amendment to the Water Quality Control Plan for Oceans Waters of California⁸. California established updated bacteria water quality objectives for the protection of the REC-1 beneficial use based on a risk protection level of 32 illnesses per 1,000 recreators.

The Office of Administrative Law approved State Board Resolution No. 2018-0038 (the Bacteria Provisions) on February 4, 2019. The United States Environmental Protection Agency approved the amendments to update the bacteria objectives on March 22, 2019:

⁸<https://www.waterboards.ca.gov/bacterialobjectives/>

- ❖ For ocean water contact recreation standards, fecal coliform and *Enterococcus* were selected.
- ❖ For fecal coliform, the objective is a 30-day geometric mean (GM) density not to exceed 200 per 100 milliliters (mL), calculated on the basis of the five most recent samples from each site, and a single-sample maximum (SSM) not to exceed 400 colony-forming units (CFU) per 100 mL.
- ❖ For *Enterococcus*, the objective is a six-week rolling GM not to exceed 30 CFU/100 mL, calculated weekly, and a statistical threshold value (STV) of 110 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.
- ❖ For inland surface water contact recreation standards, *Escherichia coli* (*E. coli*) (where salinity is equal to or less than 1 part per thousand for at least 95 percent of the time) and *Enterococcus* (where the salinity is greater than 1 part per thousand at least 5 percent of the time) were selected. For *E. coli*, the objective is a 6-week rolling GM not to exceed 100 CFU/100 mL, calculated weekly, and an STV of 320 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

The Responsible Agencies are aware of these newly adopted standards and plan to discuss how they may impact WQIP programs during the next WQIP update process.

4.2.2 City of San Diego

Highlights of strategies implemented by the City of San Diego to address bacteria and sediment in FY 2021 in the Mission Bay WMA are listed in [Table 4-6](#). To see the full list of strategies implemented by the City in FY 2021, reference [Table D-2](#) of [Appendix D](#).

**Table 4-6
 Summary of Strategies for the Mission Bay WMA**

Highlight Category	Highlight	Strategy Number	Highest Priority
Illicit discharge detection and elimination (IDDE) Strategies	The City investigates discharge reports received via the “Get it Done” application, and via the City’s stormwater hotline. In FY 2021 in the Mission Bay WMA, 585 non-stormwater discharges were investigated, 582 illicit discharges or illicit connections were eliminated, 365 enforcement actions were issued, and 271 escalated enforcement actions were issued.	CSD-JRMP-22, CSD-JRMP-41, CSD-JRMP-55, CSD-NS-06 to 10	<i>Bacteria</i>
Irrigation Runoff Reduction	As education is an important component of changing behavior, the City partnered with the California Native Plant Society to distribute Think Blue educational materials for reducing irrigation runoff, communicated run-off reduction messaging at sponsored events, and updated the City website to explicitly include irrigation run-off as an illicit discharge.	CSD-JRMP-22, CSD-JRMP-41, CSD-JRMP-55, CSD-NS-06 to 10	<i>Bacteria</i>
Water Conservation Rebates	Landscape-based rebates are a “gateway” for adoption of other beneficial practices, such as over-irrigation minimization. In FY 2021, 63 rain barrels with a combined total capacity of 3,786 gallons were installed in the Mission Bay WMA. Additionally, rebates supported the replacement of 28,423.75 square feet of grass with water-wise landscapes in FY 2021.	CSD-JRMP-22, CSD-JRMP-41, CSD-JRMP-55, CSD-NS-06 to 10	<i>Bacteria</i>
Community Trash Cleanup Events	In FY 2021, the Storm Water Division utilized the help of 733 volunteers at 4 cleanup events sponsored by I Love a Clean San Diego and the San Diego River Park Foundation in the Mission Bay WMA. These events diverted a total of 5,277 pounds of debris from entering the waterway and stormwater conveyances.	CSD-NS-11	<i>Bacteria</i>
Storm Drain Structure Cleaning	In the Mission Bay WMA, 5,057 storm drain structure inspections were conducted, resulting in the cleaning of 811 structures. These cleanings removed 2,523 cubic feet of debris.	CSD-JRMP-23	<i>Bacteria</i>

Table 4-6 (continued)
Summary of Strategies for the Mission Bay WMA

Highlight Category	Highlight	Strategy Number	Highest Priority
Street Sweeping	Street sweeping is an ongoing effort conducted by the City to remove trash, sediment, and other pollutants that accumulate on and along roadways. Approximately 21,292.5 curb miles of roads, streets, highways, medians, parking lots, and operations yards were swept in the WMA.	CSD-JRMP-32, CSD-JRMP-35	<i>Bacteria</i>
Commercial and Industrial Business Inspections	A total of 634 commercial and industrial business inspections were completed, 0 follow-up inspections were completed, 97 violations were issued, 90 enforcement actions were issued, and 40 escalated enforcement actions were issued in the WMA. In addition, the City conducted property-based inspections that focus on common areas/activities shared among multiple businesses or tenants that generate pollution.	CSD-JRMP-17, CSD-JRMP-20	<i>Bacteria</i>
Transient Encampment Abatement	City efforts to reduce bacteria associated with human sources have identified transient encampments as a potential source of bacteria in the Mission Bay WMA. As such, the City responds to transient encampment trash complaints and cleans up trash from encampments. Abatement requires coordination between the City's Transportation & Stormwater Department and the Environmental Services Department, in conjunction with the Homeless Outreach Team.	CSD-NS-17	<i>Bacteria</i>
ASBS High-Frequency Inspections	The City implements a higher frequency of inspections for construction sites, and industrial and commercial facilities. The City conducted the ASBS Major Outfall Inspections on the 11 outlets along the La Jolla coast. Only negligible amounts of debris (< one (1) pound) were found at a couple of locations. The litter was removed during the inspections.	CSD-JRMP-41	<i>Bacteria and sediment</i>

4.2.3 Caltrans

Caltrans has its own permit issued by the State Board (Caltrans Permit) and is not regulated by the MS4 Permit. Caltrans has voluntarily contributed to the WQIP effort to provide a consistent and watershed-wide approach to meeting applicable TMDL requirements. The baseline strategies described in the WQIP are mirrored in the Caltrans annual report and are continuously implemented and augmented as resources become available.

Attachment IV of the Caltrans Permit provides a methodology to prioritize stream segments in TMDLs to which Caltrans is subject. The Caltrans Permit establishes BMP implementation requirements, evaluated in terms of compliance units. Caltrans is expected to achieve 1,650 compliance units per year through the implementation of retrofit BMPs, cooperative implementation, and post-construction treatment.

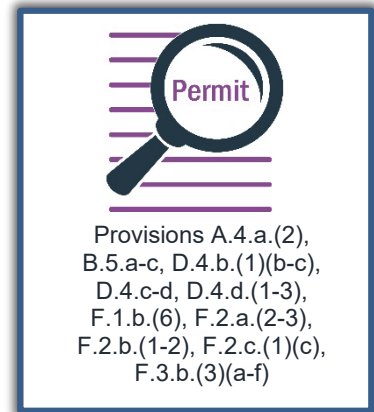
Impaired reaches throughout the state were prioritized based on several factors, including, but not limited to, percent reduction needed, Caltrans drainage area contributing to the reach, and proximity to receiving waters. Caltrans continued its efforts to reduce pollutant discharges to receiving waters through ongoing compliance activities and implementation of a consistent statewide approach to address Attachment IV requirements for the named pollutants.

Caltrans' jurisdiction includes roadways, land adjacent to roadways, and facilities. Caltrans jurisdictional strategies specifically focus on BMP implementation to reduce known pollutants within these areas. Caltrans strategies vary from those of other Responsible Agencies (in both type and name) to best address freeway characterization discharges from its right-of-way. Strategies include programs developed by Caltrans Headquarters for statewide execution and District 11 implementation. Caltrans' implementation of strategies in the WMA is dependent on legislative approval. A complete list of strategies, including optional strategies and their anticipated implementation schedule, is provided in the Caltrans Annual Report⁹. The strategies and schedules are subject to change and are contingent upon annual budget approvals and funding availability.

⁹ <http://www.dot.ca.gov/hq/env/stormwater/index.htm>

5 Adaptive Management

The WQIP adaptive management approach used by the City involves an iterative method to re-evaluate major components of the WQIP based on the requirements of the MS4 Permit. The Responsible Agencies continually evaluate and assess the implementation of the WQIP and make modifications as necessary to streamline and optimize execution. This section summarizes triggers for potential adaptation of the WQIP and the results of the adaptive management process for the Mission Bay WMA during the fourth year of implementation.



5.1 Potential Triggers for Adaptation

The adaptive management process may be triggered when new information becomes available. These triggers are typically implemented either annually or at the end of the MS4 Permit term. New information to be considered includes results of routine monitoring and special studies, new regulatory drivers, results of program effectiveness assessments, progress toward numeric goals, and recommendations from the public and/or San Diego Water Board. The Responsible Agencies are currently tracking actions/efforts related to the California Statewide Bacteria Water Quality Objectives for Recreational Waters and the REC-1 2014 Triennial Review Project. The California Statewide Bacteria Water Quality Objectives are statewide bacteria water quality objectives and implementation options to protect recreational users from the effects of pathogens in California water bodies. The REC-1 2014 Triennial Review Project resulted from the San Diego Basin Plan review and involves a variety to goals/projects to help better protect REC-1 beneficial use in the most efficient manner practicable¹⁰. Any necessary modifications to monitoring will be considered for inclusion in the next update of the WQIP with the renewal of the MS4 Permit.

¹⁰https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/docs/issue3/SDWB_REC1_Recommendations_Staff%20Report.pdf

5.1.1 Adaptive Management in Response to San Diego Water Board Annual Report Review

In June 2021, the San Diego Water Board reviewed the FY 2020 Mission Bay Annual Report (San Diego Water Board, 2021). This review included confirmation of comments addressed by the City resulting from the September 2020 Mission Bay Annual Report review letter and newly identified comments to be addressed in the FY 2021 Annual Report.

Adaptive Management Outcomes

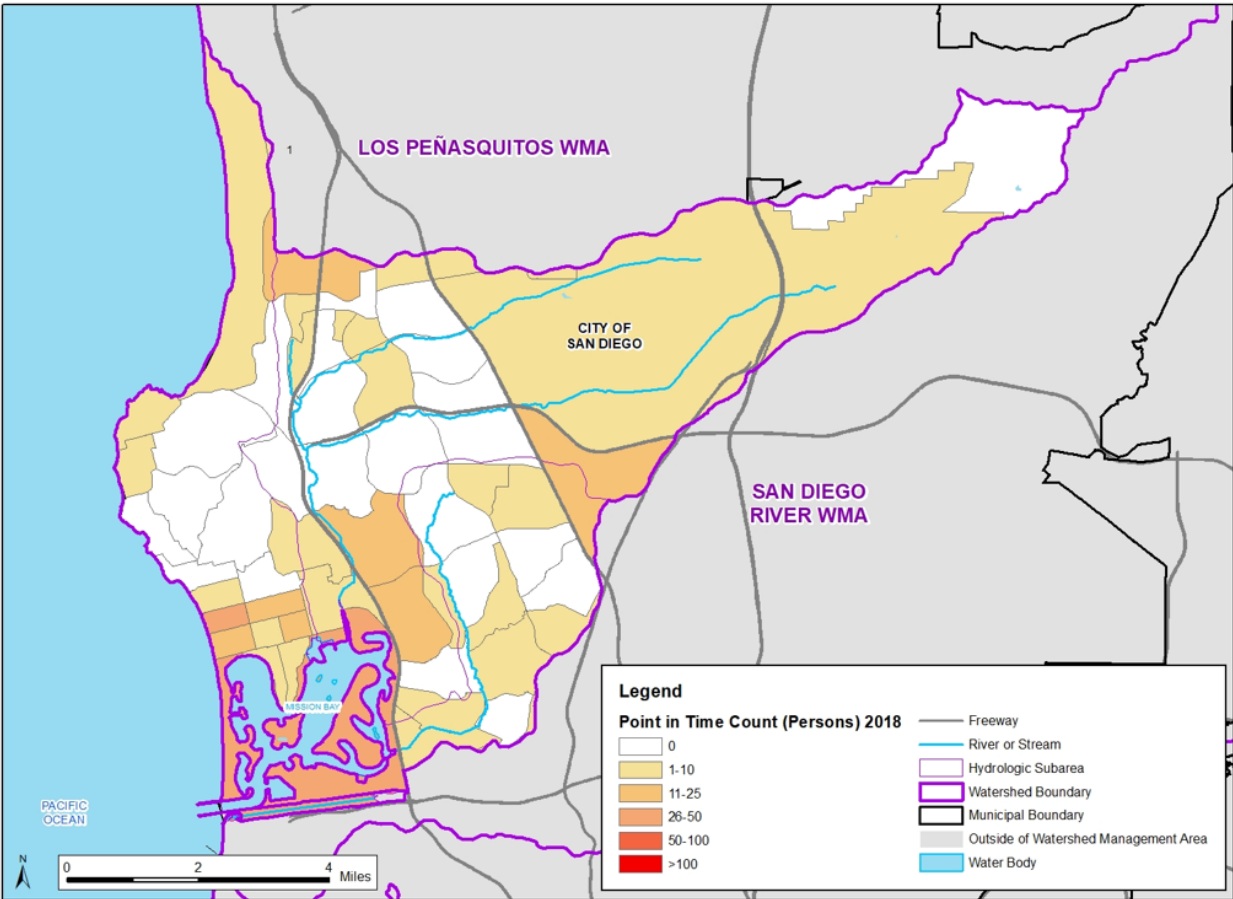
- The City of San Diego received a letter summarizing the San Diego Water Board’s review of the FY 2020 Mission Bay WQIP Annual Report in June 2021. The City has addressed items from that letter in Table 5-1 of this Annual Report.
- Attachment 1 Adaptive Management Items listed in the Regional Boards August 2019 Review have been addressed in Table 5-2 of this Annual Report.
- A monitoring completeness check was performed to verify overall program completeness for monitoring programs presented in this Annual Report. Monitoring data are complete and compatible with the Surface Water Ambient Monitoring Program (SWAMP).

As part of the adaptive management process, the City addressed items from the June 2021 Annual Report review letter (San Diego Water Board, 2021) in this FY 2021 Annual Report. Documentation of these changes is highlighted in the appendices as applicable. A summary of the updates is provided in Table 5-1.

**Table 5-1
 Adaptive Management in Response to San Diego Water Board June 2021 Annual Report Review Letter**

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Page 3 Item 3.b.	The City must include AB411 monitoring data and TMDL monitoring data in the next WQIP Annual Report due January 31, 2022.	1/31/2022	<u>Appendix C,</u> <u>Attachment E</u>	AB411 data was received and included as an attachment to the bacteria TMDL report.

Per the August 2019 Annual Report review letter, the San Diego Water Board identified discharges of pollutants from transient encampments as a controllable source under the land use authority of the WQIP Responsible Agencies, and required Responsible Agencies to map geographical areas that have been prioritized as pollutant sources in the WMA. The number of transient encampments by jurisdiction is difficult to assess because of the challenges in obtaining an accurate count of encampments, which, by definition, are temporary. A point-in-time count is prepared annually by the Regional Task Force on the Homeless and can be found on their website (<http://www.rtfhsd.org/>). Using this information, the Responsible Agencies have mapped the homeless population from the latest 2018 point-in-time count data from the San Diego Regional Task Force on Homelessness in Figure 5-1. Additional point in time data past 2018 is not yet available.



Notes: Homeless Population data from 2018 Point in Time Count data from San Diego Regional Task Force on Homelessness. Some Census Tracts extend beyond the watershed boundary and may be in other watersheds. Adjacent watersheds are labeled for context.

Figure 5-1
Mission Bay WMA Population of Persons Experiencing Homelessness by Census Tract (2018)

The Responsible Agencies have also addressed the additional items from Attachment 1, Adaptive Management of the August 2019 Annual Report Review Letter (San Diego Water Board, 2019) due January 31, 2022 in this FY 2021 Annual Report. Attachment 1, Item 6 included a request from the San Diego Water Board to update the 303(d) list summaries to the most current Office of Administrative Law approved 303(d) list as of January 31, 2021. A response to this item was due January 31, 2020. The 2014/2016 303(d) list was reviewed as part of the RMAR and a response to this item was included in the FY 2020 Mission Bay Annual Report. A summary of the updates from the August 2019 Annual Report Review Letter for items due in January 2022 is included in Table 5-2. Appendix E contains a full response to these comments.

**Table 5-2
 Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter**

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Encampments Att. 1 – #1	Include a description of coordination with other agencies and programs. Include summaries of efforts conducted since the Regional MS4 Permit went into effect June 2013. Identify potential geographical areas of focus where Copermittees have implemented or coordinated with local and regional programs or strategies to address discharges from encampments. Include a map of geographical areas that have been prioritized as pollutant sources by the Copermittees in the WMA.	1/31/2022	Addressed in Appendix E	The number of encampments is not currently assessed by jurisdiction because of the challenges in obtaining an accurate count of encampments, which, by definition, are temporary. A point-in-time count is prepared annually by the Regional Task Force on the Homeless and can be found on their website (http://www.rtfhsd.org/). A map of the point in time data is presented in <u>Section 5.1.1</u> The City of San Diego implements strategies to address pollutants from encampments and has developed programs and/or teams to reduce the impact of encampments as noted in Appendix E.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Identification of Controllable and Uncontrollable Sources Att. 1 – #2	Water Quality Improvement Plans with nutrient PWQCs or HPWQCs shall make clear substantiation in the Water Quality Improvement Plans how the Copermittees will implement their land use authority to address the PWQCs and HPWQCs for controllable sources (i.e., agricultural lands and encampments per the San Diego Water Board) through minimum BMPs, enhanced constructed BMPs, commercial industrial inspection programs, or coordination with the adopted Agricultural Orders.	1/31/2022	Addressed in Appendix E	A discussion of potential sources and source controllability is included Appendix E. The City has notated how controllable sources such as encampments are addressed in Appendix E.
	For any other source(s) identified as “uncontrollable,” include the basis and detailed technical rationale that explains how the source(s) is not able to be controlled by the Copermittee with its ordinances, polices, or programs.	1/31/2022	Addressed in Appendix E	The City has provided detailed information on source controllability in the Mission Bay WMA. A discussion of potential sources and source controllability is included in Appendix E, which defines controllable and non-controllable sources as identified in the Bacteria TMDL.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Agricultural Orders Update and Assessment Att. 1 – #3	Include the GeoTracker information of facilities enrolled under Agricultural Orders. Provide an assessment on the scale, type, and location of facilities required to enroll in the Agricultural Orders.	1/31/2022	Addressed in Appendix E	As of 2021 there are no facilities enrolled in the Agricultural Orders in the Mission Bay WMA based on GeoTracker information.
Agricultural Orders Update and Assessment Att. 1 – #3	Include a discussion regarding how inspections have been, or plan to be implemented for agricultural facilities in the WMA required to enroll in the Agricultural Orders.	1/31/2022	Addressed in Appendix E	As of 2021 there are no facilities enrolled in the Agricultural Orders in the Mission Bay WMA based on GeoTracker information. The City of San Diego inspects their agricultural facilities as part of their existing development inspection programs. New agricultural leases will be required to enroll in the program as applicable.
Coordination of WQIP HPWQCs, PWQCs, and Strategies with WMA Ecological	Identify Ecological Reserves in the WMA, a summary of environmental goals or restoration project technical goals (if available).	1/31/2022	Addressed in Appendix E	Ecological Reserves have been identified and are summarized in Appendix E.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Reserve Goals and Projects Att. 1 – #4	Provide an assessment that the jurisdictional and WMA strategies in the Water Quality Improvement Plan are compatible and supportive with the Ecological Reserve projects and goals.	1/31/2022	Addressed in Appendix E	Ecological reserves and project technical goals have been evaluated to ensure they are compatible and supportive of City planned projects and goals. Agency projects and goals have been reviewed in conjunction with City’s strategies and will be added to Collaborative WMA Strategies section of the Mission Bay WQIP upon the reissuance of the permit and next update to the Mission Bay WQIP.
Storm Drain Biofilms Source of Bacteria Att. 1 – #5	Results of studies regarding biofilm regrowth in storm drain facilities must be included in the Water Quality Improvement Plan and whether the bacteria source has been identified as human.	1/31/2022	Appendix E	A summary and results of the biofilms study has been included in Appendix E
Over-irrigation Audit Findings Att. 1 – #7	The deficiencies brought forth in the audits must be addressed. Evaluate any assumed pollutant load reduction for nonstructural BMPs used to meet TMDLs or numeric goals and schedules, which may require an update of model-based load reductions or a reduction in percentages of pollutant loads attributed to non-structural BMPs.	1/31/2022	Addressed in Appendix E	All deficiencies in the irrigation audits were addressed by the City of San Diego. Deficiencies noted were minor procedural updates and did not require an update to the pollutant load reduction model.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Persistent Flow in MS4 Outfalls – Groundwater/interflow or Water Agency Maintenance Source Identification Att. 1 – #8	Include an assessment for the WMA on the scope and nature of groundwater/interflow and State Board WQO 2014-0194-SWQ authorized discharges' contribution to MS4 persistent flowing outfalls based on studies, inspections, or observations. Identify where in the WMA this issue is likely to be occurring.	1/31/2022	Addressed in Appendix E	Groundwater is discussed as a non-point source for freshwater discharges and strategies to address groundwater discharge is included in Appendix E.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Monitoring Inconsistencies: Use of C Value Att. 1 – #9.a.	Requiring that Water Quality Improvement Plan Copermittees review the calculation methodology and land use values used and either provide a corrected pollutant load calculation or propose a method or process to correct the calculations. Based on the revised calculations, the Water Quality Improvement Plan Copermittees are required to revise the WMA or JRMP strategies as applicable to address the Water Quality Improvement Plan numeric goals and schedules. If applicable, the Water Quality Improvement Plan Copermittees are required to provide an assessment based on the revised results whether proposed projects or actions are reprioritized.	1/31/2022	Addressed in Appendix E	The review of the calculation methodology and land use values used will be conducted upon issuance of new MS4 Permit. The San Diego Water Board permitted the extension per correspondence on August 19, 2020.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Monitoring Inconsistencies: Fecal Indicator Bacteria Att. 1 – #9.c.	Adaptation of monitoring in preparation for inclusion of the revised FIB standards is strongly encouraged. A discussion of these new standards in the monitoring programs in the WMA is required. The discussion shall identify whether the Copermittees will add the new FIB standard and to which monitoring stations.	1/31/2022	Addressed in Appendix E	Inclusion of revised FIB standards will be implemented upon issuance of new MS4 Permit.
Monitoring Inconsistencies: Appropriate Use of Surfer Health Study Results Att. 1 – #9.d.	Update the evaluations that cite the Surfer Health Study results to ensure the study design differences are accurately accounted for in the Water Quality Improvement Plan Annual Reports.	1/31/2022	Addressed in Appendix E	SHS results were not compared with the United States Environmental Protection Agency 2012 criteria for illness-rate thresholds for REC-1 for studies or evaluations within the Mission Bay WMA.

Table 5-2 (continued)
Adaptive Management in Response to San Diego Water Board August 2019 Annual Report Review Letter

Letter ID	Item from San Diego Water Board Letter	Due Date	Section Where Addressed	Response
Coordination with Water and Sewer Agency Planning and Projects Att. 1 – #10	Identify water and sewer projects in the WMA that affect receiving waters or propose capture and reuse of storm water or dry weather flows. Include a summary of water or sewer agency project technical goals (if available) and provide an assessment that the jurisdictional and WMA strategies in the Water Quality Improvement Plan are compatible and supportive with the planned projects.	1/31/2022	Addressed in Appendix E	Water and sewer agencies and project technical goals have been evaluated to ensure they are compatible and supportive of City planned projects and goals. The City coordinates with water and sewer agencies through a number of strategies listed in Appendix E.

BMP = best management practice; FIB = fecal indicator bacteria; ID = identification; GIS = geographic information system; HPWQC = highest priority water quality condition; JRMP = Jurisdictional Runoff Management Plan; MS4 = municipal separate storm sewer system; PWQC = priority water quality condition; REC-1 = water contact recreation beneficial use; TMDL = total maximum daily load; WMA = Watershed Management Area; WQIP = Water Quality Improvement Plan

5.2 WQIP Elements for Adaptation

In FY 2021, the City made minor alterations including the addition of the dry weather single-sample maximum exceedance frequencies in the Bacteria TMDL report. Changes are summarized in Table 5-3, and additional information is provided in [Appendix D](#) and [Appendix E](#).

**Table 5-3
 2020–2021 WQIP Annual Report Adaptations**

Elements for Adaptation	2020–2021 Annual Report Adaptation
Priority Water Quality Conditions	There are no adaptations to the priority water quality conditions at this time; however, the City will consider the new 2014–2016 303(d) listed pollutants as potential additional PWQCs in the update of the WQIP.
Goals and Schedules	The City is on track to meet their WQIP goals and have not made any adaptations to their goals or the related schedules in FY 2021.
Strategies and Schedules	The City of San Diego updated its BMP Design Manual, the Stormwater Standards Manual, in FY 2021. The City also updated its JRMP in January 2021 and the changes were noted in the FY 2020 Annual Report.
Monitoring and Assessment	An assessment of the dry weather compliance for both geometric mean and single-sample maximum exceedance frequencies for dry weather samples collected on or after the final April 4, 2021, compliance date was performed. In the Scripps subwatershed, two sites, EH-310 and CSD-031 are now using Pathway 1, No MS4 discharges to the receiving water as their pathway to compliance with the bacteria TMDL goals.

BMP = best management practice; JRMP = Jurisdictional Runoff Management Program; WMA = Watershed Management Area; WQIP = Water Quality Improvement Plan

5.3 Summary of Previous Adaptation and Implementation

Since the approval of the WQIP in 2016, the City has proposed a few administrative changes, including clarifications to the City’s jurisdictional strategies listed in Appendix I of the Mission Bay WMA WQIP. There have only been minor changes to elements of the WQIP since it was approved in February 2016. These changes are summarized in [Table 5-4](#).

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**Table 5-4
 Historical WQIP Annual Report Adaptations**

Responsible Agency	FY 2016 Report Adaptation	FY 2017 Report Adaptation	FY 2018 Report Adaptation	FY 2019 Report Adaptation	FY 2020 Report Adaptation
City	<ul style="list-style-type: none"> JRMP updates to include operational adaptive management efforts and minor administrative changes to strategies. Provision A.4 to be considered once per MS4 Permit term during the Regional Monitoring and Assessment Report development. 	<ul style="list-style-type: none"> JRMP updates include operational adaptive management efforts and minor administrative changes to strategies. The frequency of monitoring at Bacteria TMDL sites may be changed per the MS4 Permit Attachment E and as described in the Monitoring Plan if a site is listed or delisted from the current 303(d) List. Under the Regional Monitoring and Assessment Report finalized in 2017, one new PWQC and one additional analyte were determined and will be considered for inclusion in the next update to the WQIP: <ul style="list-style-type: none"> Impairment of WARM due to copper in Tecolote Creek during dry weather will be added. Bifenthrin will be added to the constituent list for the wet weather MS4 monitoring program because bifenthrin concentrations were found to exceed WQOs in the receiving water monitoring data persistently. 	<ul style="list-style-type: none"> The MS4 Outfall Monitoring Plan was updated to include new 2014–2016 303(d) listed pollutants not currently included in outfall monitoring where there are outfall monitoring locations above the 303(d) listed segment. 	<ul style="list-style-type: none"> A monitoring completeness check was performed to verify overall program completeness for monitoring programs presented in this Annual Report. Monitoring data are complete and SWAMP compatible and will be continuously performed for subsequent years. 	<ul style="list-style-type: none"> The City of San Diego made updates to their JRMP. The Mission Bay WQIP Monitoring and Assessment Program has been modified to reflect that currently no ASBS monitoring required is required by the ASBS General Exceptions since the receiving water meetings the reference site exceedance frequency. Dry weather single-sample maximum exceedance frequencies were calculated and included in the Bacteria TMDL report based on the methodology developed by the City, this methodology may be updated with future guidance from the San Diego Water Board.
Caltrans	None	None	None	None	None

Caltrans = California Department of Transportation; JRMP = Jurisdictional Runoff Management Plan; MS4 = municipal separate storm sewer system; PWQC = priority water quality condition; TMDL = total maximum daily load; WARM = warm freshwater habitat beneficial use; WQIP = Water Quality Improvement Plan; WQO = water quality objective

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6 Conclusions and Recommendations

The City and Caltrans have successfully implemented the 2020–2021 program outlined in the WQIP. Wet and dry weather water quality monitoring provided a data set for assessing and adapting goals and strategies. The conclusions described below highlight the accomplishments of the Responsible Agencies related to the implementation of the WQIP.

Monitoring and Assessment: The monitoring program and results for 2020–2021 are described in [Section 3](#) and [Appendix C](#). Monitoring and assessment highlights include:

- ❖ SMC Bioassessment Monitoring: During the spring 2020 reconnaissance efforts, no sites were allocated to the Mission Bay WMA.
- ❖ Bight '18: SQO was inconclusive in both initial and follow-up monitoring. A second round of follow-up monitoring was performed in September 2020. Results came back in 2021 and SQO was possibly impacted. As a result, the City has developed a Rose Creek Stressor Evaluation Study to 1) Confirm and characterize Pollutant Related Impacts, 2) identify any possible pollutants, and 3) identify sources of those pollutants. The City drafted a work plan for this study in FY 2021 and will begin implementation of this study in FY 2022.
- ❖ Monitoring for the HPWQCs – Impairment of ASBS 29
 - The City's ASBS monitoring programs fulfilled monitoring requirements under the General Exception during the 2012–2013 Bight '13 monitoring season because the results were comparable to reference conditions determined during the 2013 Southern California Bight Regional Monitoring program.
- ❖ Monitoring for the HPWQCs – Impairment of REC-1 in Tecolote Creek
 - Tecolote Creek Subwatershed: During wet weather, Bacteria TMDL results for both TC-MLS and TCNP monitoring locations are above interim RWLs with a 100% exceedance frequency. During the dry season, the geometric mean exceedance frequencies for compliance constituents Enterococcus and fecal coliform are 0% at TC-MLS and TCNP. Results for TC-MLS and TCNP are achieving the dry season geometric mean RWLs. During dry weather, neither site is achieving final dry weather single sample maximum RWLs.
- ❖ Monitoring for the HPWQCs – Potential Impairment of REC-1 at the Pacific Ocean Shoreline
 - Scripps subwatershed: During wet weather, Bacteria TMDL results for the 13 beach segments achieved the interim wet weather RWLs. All segments had a 0% exceedance frequency. During the dry season, all 13 compliance monitoring locations had a 0% exceedance frequency therefore meeting the final dry season geometric mean RWL. During dry weather, single sample maximum exceedances occurred at 5 of the 13 monitoring locations. The City has engineered dry weather low flow diversion systems in 11 of the 13

segments to capture and divert dry weather low flows from the outfall to the sanitary sewer prior to discharging to the Pacific Ocean.

- ❖ MS4 Outfall Monitoring: Dry weather: 119 of the 172 (69%) results were below their respective NALs. Wet weather: A total of 35 of the 35 (100%) results were below appropriate SALs. All bacteria indicators exceeded WQBELs. MS4 outfall monitoring data can be found on the [City's Online Dashboard](#).
- ❖ Monitoring related to Special Studies:
 - The Tecolote Creek Quantitative Microbial Risk Assessment: The City continued source investigation and abatement efforts within Tecolote Creek subwatershed during the 2018–2019 monitoring year (Year 6) through the HSI process. If the Tecolote Creek QMRA is completed, an assessment of the special study will be presented in a WQIP Annual Report. There is no new information for Tecolote QMRA for this reporting year.
 - Rose Creek Stressor Identification study: According to the California Water Quality Control Plan for Enclosed Bays and Estuaries (2009)¹¹, any sites with an SQO categorical condition rating other than “Unimpacted” or “Likely Unimpacted” requires follow-up evaluations in subsequent monitoring years within the Permit term in the form of a stressor identification. The stressor identification approach generally consists of three stages: 1) Confirmation and Characterization of Pollutant Related Impacts, 2) Pollutant Identification, and 3) Sources Identification. A stressor identification approach will be applied to Rose Creek Estuary site as sampling in the summer of 2020 resulted in an SQO of “possibly impacted”. In FY 2021 the City developed a work plan for this study, which focuses on the first two stages of confirming and characterizing any pollutant-related impacts. The workplan outlines the study design, procedures, and analytical methods for completing this initial step and implementation of this study will begin in FY 2022.

Progress Toward Goals: The City has demonstrated progress toward achieving the interim and final numeric goals. Progress toward interim and final numeric goals includes the following:

- ❖ Scripps Subwatershed: Interim and final bacteria WQIP numeric goals through the receiving water pathway as percentage of days exceeding water quality objectives (WQOs), and number of direct discharges from the MS4 to the receiving water pathway were met for wet and dry weather for the dry weather geometric mean.
- ❖ The Scripps Subwatershed final bacteria TMDL dry weather geometric mean goals were met at all 13 compliance locations with a 0% exceedance frequency. In the Scripps subwatershed, the 13 beach segments are achieving the interim and final wet weather Bacteria TMDL RWLs.

¹¹ 2009. California Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality. State Water Resources Control Board. August 2009.

- ❖ During dry weather for the Scripps Subwatershed, 8 of 13 compliance monitoring locations achieved 0% exceedance frequencies for all three compliance constituents for the single sample maximum. Five of 13 compliance monitoring locations had exceedances for one or more compliance constituents.
- ❖ Tecolote Subwatershed: Interim bacteria WQIP numeric goals through the receiving water pathway as percentage of days exceeding water quality objectives (WQOs) were not met for wet weather. For dry weather, the interim bacteria WQIP numeric goal for dry weather, taken as an average between the two sites (TCMLS and TCNP) based on the dry season geometric mean RWLs, was met for both compliance constituents.

For the Bacteria TMDL, results for both TC-MLS and TCNP monitoring locations are above interim and final RWLs during wet weather. During dry weather, the dry season geometric mean results for TC-MLS and TCNP are 0% and are meeting the final RWLs. Both compliance monitoring locations are not achieving final dry weather single-sample maximum RWLs.

- ❖ Final numeric goal for ASBS dry and wet weather sediment have been achieved in the Scripps subwatershed.

Strategy Implementation: Strategies have been implemented as planned in the WQIP during 2020–2021. Strategies for the HPWQCs are described in [Section 4](#) and [Appendix D](#).

The following examples highlight efforts by the Responsible Agencies to improve water quality:

- ❖ City of San Diego:
 - ❖ A total of 634 commercial and industrial business inspections were completed, zero follow-up inspections were completed, 97 violations were issued, 90 enforcement actions were issued, and 40 escalated enforcement actions were issued in the WMA. In addition, the City conducted property-based inspections that focus on common areas/activities shared among multiple businesses or tenants that generate pollution. In the Mission Bay WMA, 5,057 storm drain structure inspections were conducted, resulting in the cleaning of 811 structures. These cleanings removed 2,523 cubic feet of debris. In FY 2021, 63 rain barrels with a combined total capacity of 3,786 gallons were installed in the Mission Bay WMA. Additionally, rebates supported the replacement of 28,423.75 square feet of grass with water-wise landscapes in FY 2021. In FY 2021 in the Mission Bay WMA, 585 non-stormwater discharges were investigated, 582 illicit discharges or illicit connections were eliminated, 365 enforcement actions were issued, and 271 escalated enforcement actions were issued.
- ❖ Caltrans:

- ❖ Caltrans continued its efforts to reduce pollutant discharges to receiving waters through ongoing compliance activities and implementation of a consistent statewide approach to address Attachment IV requirements for the named pollutants.

7 References

- City of San Diego. 2014. Compliance Plan La Jolla Area of Special Biological Significance. Final. Prepared by Wood Environment & Infrastructure Solutions, Inc. (formerly Amec Foster Wheeler). September.
- City of San Diego. 2013. La Jolla Area of Special Biological Significance Compliance Monitoring 2012–2013 Final Monitoring Report. Prepared by Amec Environment and Infrastructure, Inc. Prepared for the City of San Diego Transportation and Storm Water Department. August 2013.
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Appendix A: Crosswalk of MS4 Permit Requirements and Annual Report References

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Appendix B: Water Quality Improvement Plan Numeric Goals

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Appendix C: Monitoring Results and Assessments

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Appendix D: Jurisdictional Runoff Management Program Annual (JRMP) Report Forms, Fiscal Analysis, Certifications, Updates to JRMPs, WQIP, and BMP Design Manuals (if applicable), and Regional and Jurisdictional Strategies

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Appendix E: Adaptive Management

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