DECEMBER 2017

SAN DIEGO REGION

Report of Waste Discharge

Order No. R9-2013-0001, as amended by Order Nos. R9-2015-0001 and R9-2015-0100

NPDES No. CAS0109266

Submitted to:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN DIEGO REGION

Submitted by the Phase I Municipal Permittees in:

SAN DIEGO COUNTY

SOUTH ORANGE COUNTY

RIVERSIDE COUNTY

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Acknowledgements

PHASE I MS4 PERMITTEES

San Diego County Permittees

City of Carlsbad
City of Chula Vista
City of Coronado
City of Del Mar
City of El Cajon
City of Encinitas
City of Escondido
City of Imperial Beach
City of La Mesa
City of Lemon Grove
City of National City
City of Oceanside
City of Poway
City of San Diego
City of San Marcos
City of Santee
City of Solana Beach
City of Vista
County of San Diego
San Diego County Regional Airport Authority
San Diego Unified Port District

Orange County Permittees

City of Aliso Viejo
City of Dana Point
City of Laguna Beach
City of Laguna Hills
City of Laguna Niguel
City of Laguna Woods
City of Lake Forest
City of Mission Viejo
City of Rancho Santa Margarita
City of San Clemente
City of San Juan Capistrano
County of Orange
Orange County Flood Control

Riverside County Permittees

City of Murrieta
County of Riverside
City of Temecula
City of Wildomar
Riverside County Flood Control

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Certification Statements

Certification statements for all Permittees submitting this Report of Waste Discharge are provided in **Appendix A**.

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Acronyms

ACP	Alternative Compliance Project
ADA	Americans with Disabilities Act
BMP	Best Management Practice
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
DQO	Data Quality Objectives
FIB	Fecal Indicator Bacteria
HA	Hydrologic Area
HPWQC	Highest Priority Water Quality Condition
HU	Hydrologic Unit
IDDE	Illicit Discharge, Detection, and Elimination
IP	Integrated Planning
JRMP	Jurisdictional Runoff Management Plan
LIP	Local Implementation Plan
MAP	Monitoring and Assessment Program
MEP	Maximum Extent Practicable
MS4	Municipal Separate Storm Sewer Systems
NPDES	National Pollutant Discharge Elimination System
PDP	Priority Development Project
PPS	Program Planning Subcommittee
PWQC	Priority Water Quality Condition
RMAR	Regional Monitoring and Assessment Report
ROWD	Report of Waste Discharge
SCCWRP	Southern California Coastal Water Research Project
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
USEPA	Unites States Environmental Protection Agency
WDR	Waste Discharge Requirements
WER	Water-Effects Ratio
WMA	Watershed Management Area
WQIP	Water Quality Improvement Plan
WQO	Water Quality Objective

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Executive Summary

In May 2013, the San Diego Regional Water Quality Control Board (Regional Water Board) adopted National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements (WDRs) Order No. R9-2013-0001 (Permit), which initially covered the San Diego County Permittees. The Permit was subsequently amended in February 2015 to extend coverage to the Orange County Permittees (Order No. R9-2015-0001) and in November 2015 to extend coverage to the Riverside County Permittees (Order No. R9-2015-0100). As a result, the Permit regulates 39 municipal, county government, and special district entities in San Diego County, southern Orange County, and southern Riverside County which own and operate municipal separate storm sewer systems (MS4s) that discharge runoff to surface waters that flow to the Pacific Ocean in the San Diego Region.

NPDES permits have a term of five years from their effective date. Permit Provision F.5 requires the Permittees to prepare a Report of Waste Discharge (ROWD) that serves as an application for reissuance of an existing permit. The ROWD is required to include the following items:

- Names and addresses of the Permittees;
- Names and titles of the primary contacts of the Permittees;
- Proposed changes to the Permittees' Water Quality Improvement Plans and supporting justification;
- Proposed changes to the Permittees' Jurisdictional Runoff Management Programs and the supporting justification;
- Any other information necessary for the re-issuance of the Permit;
- Any information to be included as part of the ROWD pursuant to the requirements of the Permit; and
- Any other information required by federal regulations for NPDES permit reissuance.

As a part of the watershed-based approach set forth in the Permit, Permittees are required to develop a Water Quality Improvement Plan for each watershed management area (WMA). To date, the Permittees have developed ten Water Quality Improvement Plans.

Some of the Water Quality Improvement Plans have been developed, submitted and accepted by the Regional Water Board; others are in the late stages of development. Based on experience to date, Permittees propose three broad areas of modifications to the Permit to better enable stormwater programs to achieve desired water quality outcomes. The recommendations are for:

1) A streamlined reporting structure that will provide meaningful answers to specific management questions and annual accountability.
2) An option to develop and implement customized, watershed specific monitoring and assessment programs. This approach acknowledges that watersheds are at different levels of implementation, have different data gaps, and different sources that result in different monitoring and assessment needs to inform management actions.

3) An option to develop an Integrated Plan. The United States Environmental Protection Agency (USEPA) supports an approach to prioritization and implementation that considers the requirements of stormwater programs and other Clean Water Act (CWA) programs (e.g., wastewater) together. Permittees request additional flexibility in the Permit to allow local jurisdictions the opportunity to pursue this option.

Each recommendation is briefly described below with details included in **Section 4**.

Of equal importance, but not highlighted in this Executive Summary, are other recommendations related to Permit Provision E.3 (Development Planning) and Attachment E (Total Maximum Daily Loads (TMDLs)), also discussed in **Section 4** and **Section 5.**

REPORTING

Permit reporting requirements should be modified to include long-term and short-term assessments that will support a robust evaluation of program effectiveness and create the basis for adaptive management for the long-term, while providing verification of program implementation on an annual basis. The experience of the San Diego County Permittees under the Permit has been that the requirement to do Water Quality Improvement Plan Annual Reports was cumbersome and resource-intensive, and that the resulting document did not provide useful management information. The recommended combination of three annual "snap shot" reports and two "assessment" reports per permit term will provide meaningful results on more appropriate time scales. The shorter-term assessments, performed on an annual basis, will focus on program changes (e.g., Jurisdictional Runoff Management Program activities) supported by data collection and analysis, while the more robust assessments will focus on elements that require several years or more of data (such as monitoring results/environmental data) to provide more comprehensive modifications to watershed programs (e.g., Water Quality Improvement Plans, monitoring plans). An in-depth discussion is provided in **Section 4.1**. Detailed reporting requirements for each type of annual report and proposed language for the reporting modifications are included in **Appendix F** and **Appendix G**, respectively.

MONITORING AND ASSESSMENT

The Permit should be modified to enable the Permittees to develop and implement a "question-driven" watershed-based monitoring and assessment program. This recommendation is based, in part, on an increased understanding by the Permittees of the ways in which the WMAs vary in water quality priorities, hydrology, geology, land uses, and other factors. In addition, there are different levels of understanding of water quality issues in each watershed, a variety of different data gaps, and multiple implementation actions to be supported, all of which can create unique watershed-specific management challenges. These differences among watersheds require differing approaches to obtaining monitoring information needed to make scientifically supported decisions. The one-size-fits-all monitoring approach used in the current Permit does not efficiently or effectively provide the needed information to support management actions in all watersheds.

The proposed approach will enable the Permittees to more effectively link stormwater implementation actions with improvements in waterbody conditions through development of a custom-tailored monitoring and assessment program, instead of the more standardized current monitoring requirements in Permit Provision D. This modification will allow necessary flexibility

at the watershed scale while ensuring that such customized monitoring programs are designed according to a consistent process to ensure validity and comparability.

The option for customized, watershed-specific monitoring and assessment programs will enable these programs to be designed around targeted, question-driven approaches that support future management actions; improve the measurement of progress toward goals; and support effective evaluation of program strategies. The customized monitoring programs will be designed to meet Federal NPDES monitoring requirements for receiving waters and MS4 outfall monitoring to provide accountability, and will include Permit Attachments A and E monitoring requirements. Furthermore, the customized monitoring and assessment program will be fully vetted through an update to the Water Quality Improvement Plan that will include review by the Consultation Panel and the general public as well as close interaction with the Regional Water Board.

Details of the option for watershed-specific monitoring and assessment programs are included in **Section 4.2**.

INTEGRATED PLANNING

The overarching goal of the USEPA Integrated Planning (IP) Framework is to maintain existing regulatory standards protective of human health and water quality while addressing the most pressing public health and environmental protection issues. IPs recognize and utilize available flexibilities in the CWA and in USEPA policies to allow for the development of appropriate implementation schedules, as well as to determine the level of control that can be reached without imposing an undue economic burden on the community.

The Permit should be modified to allow agencies that develop an IP, in accordance with USEPA guidance, the flexibility to modify compliance schedules in accordance with the outcomes of the IP. Results of an IP for stormwater programs could be implemented primarily through modifications to the Permit and provide significant benefits to the Regional Water Board, Permittees, and the communities within the San Diego Region. The Permittees interested in this option will work with the Regional Water Board to define what an IP will include, to articulate and define the benefits of an IP, and to develop an approach for the inclusion of IPs in the next Permit to improve implementation efforts over the long-term.

The IP Framework may provide Permittees with additional flexibility in meeting their multiple compliance requirements. The process would include a comprehensive review of the costs and water quality benefits of various regulatory requirements, recommend priorities and schedules for those requirements to achieve the greatest environmental and human health benefits first, and identify relief needed to provide agencies the flexibility to implement the plan within its available resources.

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1 Introduction

In May 2013, the San Diego Regional Water Quality Control Board (Regional Water Board) adopted National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements (WDRs) Order No. R9-2013-0001 (Permit), which initially covered the San Diego County Permittees. The Permit was subsequently amended in February 2015 to extend coverage to the Orange County Permittees[1] (Order No. R9-2015-0001) and in November 2015 to extend coverage to the Riverside County Permittees (Order No. R9-2015-0100)[2]. As a result, the Permit regulates 39 municipal, county government, and special district entities throughout San Diego County and portions of Orange County and Riverside County who own and operate municipal separate storm sewer systems (MS4s) that discharge to waters of the United States[3]. The Permittees regulated by the Permit include the following:

San Diego County Permittees (21 Permittees)

City of Carlsbad	City of Imperial Beach	City of San Marcos
City of Chula Vista	City of La Mesa	City of Santee
City of Coronado	City of Lemon Grove	City of Solana Beach
City of Del Mar	City of National City	City of Vista
City of El Cajon	City of Oceanside	County of San Diego
City of Encinitas	City of Poway	San Diego County Regional Airport Authority
City of Escondido	City of San Diego	San Diego Unified Port District

Orange County Permittees[4] (13 Permittees)

City of Aliso Viejo	City of Rancho Santa Margarita
City of Dana Point	City of San Clemente
City of Laguna Beach	City of San Juan Capistrano
City of Laguna Hills	City of Laguna Woods
City of Laguna Niguel	County of Orange
City of Lake Forest	Orange County Flood Control District
City of Mission Viejo	

[1] The terms *Copermittee* and *Permittee* are synonymous. For the purposes of the ROWD, the municipalities will individually and collectively be referred to as Permittees.

[2] The County of Orange and the Orange County Flood Control District ("the County"), through petitions timely filed before the State Water Resources Control Board (State Water Board), have challenged, among other issues, the Regional Water Board's authority to issue a region-wide permit covering the Orange County Permittees (Petitions A-2254, A-2367, A-2456). The State Water Board has taken up review of the County's petition with respect to Order R9-2015-0100 on its own motion, and its decision may affect issues raised with respect to prior Orders R9-2015-0001 and R9-2013-0001. In light of the arguments pending before the State Water Board, the County respectfully submits this ROWD to comply with Permit Provision F.5, under protest. The submittal of this ROWD and any participation in permit proceedings shall not be construed as a waiver of any issues raised in the County's petitions, nor be construed as an admission regarding the Regional Board's authority to issue a region-wide permit covering the Orange County Permittees. *See, infra*, footnote 9.

[3] http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/index.shtml

[4] Upon adoption of the renewed Orange County municipal stormwater permit in the Santa Ana Region, the City of Lake Forest will be regulated by the Santa Ana Regional Water Board pursuant to Water Code section 13228 designation. The requirements of the San Diego Regional Permit that apply to the City of Lake Forest are described in Permit Finding 29 and Footnote 2 to Table B-1.

Riverside County Permittees[5] (5 Permittees)

City of Murrieta	County of Riverside
City of Temecula	Riverside County Flood Control and Water Conservation District
City of Wildomar	

The Permittee contact information is provided in **Appendix B**.

The Permit requires two types of planning efforts and their subsequent implementation:

- Jurisdictional Runoff Management Plans (JRMPs)

  JRMPs[6], which are required of individual Permittees, provide a way for the Permittees to demonstrate that they are implementing programs to effectively prohibit non-stormwater discharges to the MS4 and reduce pollutants in stormwater discharges from the MS4 to the Maximum Extent Practicable (MEP). The JRMPs must also identify how the Water Quality Improvement Plan strategies will be implemented within each jurisdiction.

- Water Quality Improvement Plans

  Water Quality Improvement Plans, which Permittees are required to develop on a watershed basis, must identify the highest priority water quality conditions in a watershed and identify goals, strategies, and schedules to improve discharge and receiving water quality.

  Water Quality Improvement Plans are implemented within designated Watershed Management Areas (WMAs) by the Permittees. There are ten WMAs within the San Diego region, many with multiple Permittees, and Permittees whose jurisdictional boundaries fall within two or more watersheds (**Table 1-1**).

[5] The City of Menifee is regulated by the Santa Ana Regional Water Board pursuant to Water Code section 13228 designation. The requirements of the Permit that apply to the City of Menifee are described in Permit Finding 29.

[6] JRMP-based strategies for the respective Permittees in the Orange County – South Orange County WMA are described in equivalent plans referred to as Local Implementation Plans (LIPs).

Table 1-1. WMAs and Responsible Permittees

Watershed Management Area	Area (Square Miles)	Responsible Permittees (Lead in Bold)		
San Juan	496	• City of Aliso Viejo • City of Dana Point • City of Laguna Beach • City of Laguna Hills • City of Laguna Niguel	• City of Laguna Woods • City of Lake Forest • City of Mission Viejo • City of Rancho Santa Margarita	• City of San Clemente • City of San Juan Capistrano • **County of Orange** • Orange County Flood Control District
Santa Margarita	750	• City of Menifee • City of Murrieta • City of Temecula	• City of Wildomar • County of San Diego	• County of Riverside • **Riverside County Flood Control and Water Conservation District**
San Luis Rey	562	• City of Oceanside	• City of Vista	• **County of San Diego**
Carlsbad	211	• **City of Carlsbad** • City of Encinitas • City of Escondido	• City of Oceanside • City of San Marcos • City of Solana Beach	• City of Vista • County of San Diego
San Dieguito	346	• City of Escondido • City of Del Mar	• City of Poway • **City of San Diego**	• City of Solana Beach • County of San Diego
Los Peñasquitos	94	• City of Poway • City of Del Mar	• **City of San Diego**	• County of San Diego
Mission Bay	68	• **City of San Diego**		
San Diego	434	• City of El Cajon • City of La Mesa	• City of San Diego • City of Santee	• **County of San Diego**
San Diego Bay	444	• City of Chula Vista • City of Coronado • **City of Imperial Beach**	• City of La Mesa • City of Lemon Grove • City of National City • City of San Diego	• County of San Diego • San Diego County Regional Airport Authority • San Diego Unified Port District
Tijuana	1,750 total; 467 in the U.S.	• County of San Diego	• **City of Imperial Beach**	City of San Diego

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1.1 REPORT OF WASTE DISCHARGE

The Report of Waste Discharge (ROWD) serves as a legally required application[7] for re-issuance of the NPDES Permit to replace the current Permit. Finding 28 and Provision F.5 of the current Permit require the Permittees to file the ROWD no later than 180 days prior to the Permit's expiration date of June 27, 2018. The Permit requires that regardless of the Permit's adoption date for the Permittees (May 8, 2013 for the San Diego County Permittees, February 11, 2015 for the Orange County Permittees and, November 18, 2015 for the Riverside County Permittees), all Permittees must submit a ROWD by December 29, 2017. As such, this ROWD is being submitted on behalf of the San Diego County, Orange County, and Riverside County Permittees.

The legal basis for the ROWD submittal are specified in the following:

- 40 Code of Federal Regulations (CFR), Section 122.21(d)(2)
- California Code of Regulations (CCR), Title 23, Division 3, Chapter 9, Article 3, Section 2235.1
- California Water Code Section 13376
- California Water Code Section 13260 (Form 200)[8]
- United States Environmental Protection Agency (USEPA) Interpretive Policy Memorandum (May 1996)
- Permit Provision F.5 and other requirements listed throughout the Permit (**Appendix C**).

The specific content and suggestions put forth in this ROWD are intended solely to advance ongoing dialogue with Regional Water Board staff, and to identify potential options to be explored in a reissued permit. As noted, the Permittees are legally required to submit this ROWD and to address the program changes as set forth in Permit Provision F.5 of the Permit; thus, the content and suggestions in this ROWD are legally mandated and should not be construed as being voluntary. By submitting this ROWD, the Permittees do not waive any rights they may have under existing law or regulation or concede any legal arguments, including, but not limited to, those made in Petitions for Review challenging certain aspects of the Permit.

1.2 DEVELOPMENT OF THE REPORT OF WASTE DISCHARGE

The ROWD was developed by the Permittees in a collaborative setting. San Diego County Permittees worked through the San Diego Permittees Program Planning Subcommittee (PPS) (which included participation by Orange and Riverside Counties). As-needed support was

[7] Section F.5 of the Permit requires that the Permittees submit this application. The Permittees, therefore, are legally mandated to submit this document and to make the recommended modifications set forth herein. Because the Permittees are legally compelled to submit this application, nothing in this ROWD should be construed as agreement by the Permittees to be regulated in any particular way, or as an offer to voluntarily engage in the actions described or contemplated herein. Further, the Permittees do not necessarily concur with all of the legal and factual findings made by the Regional Water Board in developing the Permit. The Permittees note that certain provisions of the Permit have been challenged in Petitions for Review filed by various Permittees, which are now pending before the State Water Resources Control Board. Nothing contained in this ROWD should be seen as a waiver of any positions, including but not limited to those of the Permittees expressed in the Petitions or otherwise articulated by Permittees.

[8] The information required by Form 200 is provided within this ROWD.

provided by other groups, such as the San Diego Regional Monitoring and Land Development Workgroups.

The Permittees identified four guiding principles for ROWD development:

1. The Permittees within the three counties would join in a collaborative effort.
2. The ROWD should continue to support the long-term goals of effective and efficient stormwater programs with meaningful outcomes.
3. The ROWD should identify recommended improvements to the Water Quality Improvement Plans, JRMPs, and/or Permit based on the analyses conducted and lessons learned.
4. The Permittees would identify the minimum number of modifications to the Permit necessary to implement the recommended improvements.

The Permittees used the Program Planning Subcommittee to oversee the initial development of the ROWD. This subcommittee meets monthly and, starting in October 2016, the ROWD was a reoccurring agenda item. To ensure input from all Permittees, four workshops were held from the fall of 2016 through the spring of 2017 to allow discussion among Permittees regarding Permit reissuance topics and potential content of improvements to the Permit. The purpose of these workshops was to brief Permittees on ongoing content development, to seek their input, and to validate and refine potential recommendations developed for the ROWD.

In addition to internal Permittee meetings, representatives of the Permittees met with Regional Water Board staff on three occasions to discuss ROWD issues.

- On February 23, 2017 representatives of the Land Development Workgroup discussed issues related to the definitions of a Project, Priority Development Projects, and Alternative Compliance Program.
- On April 6, 2017 the Permittees discussed the timeline and process for the development of the ROWD; key components, structure, and themes of the ROWD; and the three key requests for modification at that time (reporting, monitoring and assessments, and programmatic changes).
- On August 8, 2017 the Permittees provided additional details of the streamlined reporting proposal; provided examples of how a question-driven approach to designing monitoring programs would improve managers' implementation decisions; and provided additional perspectives on the IP Framework.

The information presented in this ROWD generally represents agreement amongst the Permittees. However, individual Permittees reserve the right to dissent from, or to address issues not reflected in this ROWD during the remainder of the Permit reissuance process.

1.3 ORGANIZATION OF THE REPORT OF WASTE DISCHARGE

The organization and content of the ROWD are as follows:

- Section 1 - Introduction

  This section includes a general description of the Permit coverage area and regulated entities, relevant application information, and background regarding the development of the ROWD. The Permittee contact information is provided in **Appendix B**.

- Section 2 - Water Quality Improvement Plan Implementation Status, Evaluations, and Proposed Changes[9]

  This section briefly summarizes each of the Water Quality Improvement Plans and discusses proposed modifications to those Plans (as applicable). The Regional Monitoring and Assessment Reports for each of the WMAs is provided in **Appendices D** and **E**.

- Section 3 – Jurisdictional Runoff Management Program Evaluations and Proposed Changes

  This section briefly summarizes the JRMPs and discusses proposed modifications to better support implementation of the Water Quality Improvement Plans (as applicable).

- Section 4 – Recommended Permit Modifications

  Based on the lessons learned and assessments that have been conducted to date (S**ections 2 and 3**), this section includes a brief description of the key modifications that are being recommended for the next term Permit. The proposed permit modifications and supporting information is provided in **Appendices F, G,** and **H**.

- Section 5 – Total Maximum Daily Loads (TMDLs)

  Based on the experience gained from the implementation of TMDLs, this section includes recommended modifications to the TMDLs in Permit Attachment E. These modifications are intended to align the TMDLs with the latest available studies and clarify implementation strategies. The proposed permit modifications are provided in **Appendix G**.

[9] This ROWD uses terms such as "recommended modifications", "proposed changes", "requests" etc. because the requirements of Provision F.5 mandate that the ROWD include input on program improvements. The use of these and similar terms in the ROWD must be interpreted in accordance with **Footnote 7**.

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2 Water Quality Improvement Plan Implementation Status, Evaluations, and Proposed Changes

2.1 INTRODUCTION

The Permit requires preparation of Water Quality Improvement Plans, which include:

- Descriptions of the priority water quality conditions (PWQCs), focused PWQCs (where applicable), and identification of the highest priority water quality condition(s) (HPWQCs) for the WMA;
- Goals and strategies each jurisdiction will employ to address the HPWQCs and their sources;
- Time schedules associated with the goals and strategies; and
- A monitoring and assessment program (MAP) to assess the progress toward achieving the goals and schedules, the progress toward addressing the HPWQCs, and each Permittee's efforts to implement the Water Quality Improvement Plans and JRMPs.

Permit Section B.5.a-d requires the watershed Permittees to re-evaluate the Water Quality Improvement Plan components as part of the ROWD. This section of the ROWD summarizes the findings from the reevaluation of each of the approved Water Quality Improvement Plans and includes a discussion of any proposed Plan modifications along with supporting rationale.

As per Regional Water Board guidance, significant recommended changes (e.g., changes to priorities, goals/schedules, strategies/schedules, the MAP, and proposed changes to the Permit) are included in the ROWD. Other program changes, such as minor adjustments to implementation strategies, will be identified in Water Quality Improvement Plan Annual Reports.

Water Quality Improvement Plans will be modified, as needed, after the Permit is renewed following the requirements of Permit Section F.2.c. As noted, Permit modifications may be required to improve Water Quality Improvement Plan implementation. Recommended Permit modifications are presented in ROWD **Section 4** and **Section 5**.

It should be noted that the Water Quality Improvement Plans for eight of the 10 WMAs (in the San Diego Region) were accepted by the Regional Water Board between February and November 2016. Given that implementation and monitoring under these plans are in the early stages, there is a limited data set available for this evaluation; therefore, significant modifications to the current Water Quality Improvement Plans are not proposed. Moreover, the Water Quality Improvement Plans for the South Orange County and Santa Margarita WMAs have not, to date, been accepted by the Regional Water Board.

2.2 SUMMARY OF PROPOSED MODIFICATIONS TO WATER QUALITY IMPROVEMENT PLANS

2.2.1 South Orange County Watershed Management Area

The South Orange County WMA Water Quality Improvement Plan was submitted to the Regional Water Board on April 1, 2017 and has not yet received a notice of acceptance. Given that

implementation and monitoring for this Water Quality Improvement Plan are not anticipated to begin until 2018, modifications to the Plan are not proposed. The Regional Monitoring and Assessment Report (RMAR), which is based on the analyses conducted for the development of the Orange County Water Quality Improvement Plan and includes data through September 2016, is provided in **Appendix D**, Section 11 of the ROWD.[10]

2.2.2 Santa Margarita River Watershed Management Area

The Santa Margarita River WMA Water Quality Improvement Plan is currently under development. The complete Water Quality Improvement Plan will be submitted to the Regional Water Board on January 5, 2018. The RMAR for the WMA is provided in **Appendix D**, Section 2 of the ROWD.

2.2.3 San Luis Rey River Watershed Management Area

The San Luis Rey River WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 12, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the San Luis Rey River WMA's RMAR, included herein as **Appendix D**, Section 3 of the ROWD.

2.2.3.1 San Luis Rey River WMA Description

The San Luis Rey River Watershed is located in northern San Diego County and is bordered to the north by the Santa Margarita River Watershed and to the south by the Carlsbad and San Dieguito River Watersheds. The WMA encompasses 360,000 acres or 562 square miles, and is the largest WMA located entirely within San Diego County. Major surface water bodies located in the San Luis Rey River WMA include the San Luis Rey River, the San Luis Rey Estuary, and the Pacific Ocean. Watershed Permittees in the San Luis Rey River WMA are listed below.

- City of Oceanside
- City of Vista
- County of San Diego

Although not included as a watershed Permittee in the Permit, the California Department of Transportation (Caltrans) and Marine Corps Base Camp Pendleton are working cooperatively with Permittees to implement the Water Quality Improvement Plan.

2.2.3.2 Re-evaluation of Priority Water Quality Conditions

The methodology used for the Water Quality Improvement Plan PWQC and HPWQC selection process was revised for the re-evaluation. Detailed information about this adjusted procedure and the results of the re-evaluation of priorities are included in **Appendix D**, Section 3.5.1. In addition, new data and information were used in the re-evaluation. Findings and recommendations include the following:

1. No new HPWQCs or PWQCs were identified.
2. The re-evaluation did not identify toxicity as a PWQC for dry and wet weather, although it was identified as such in the initial Water Quality Improvement Plan prioritization

[10] Approach agreed upon through personal communication with Laurie Walsh, Regional Water Board, June 12, 2017.

process. The initial PWQC determination was based on toxicity tests that used freshwater test organisms on samples above 1 ppt salinity, whereas the long-term monitoring requirements of the 2013 Permit require marine organisms for testing when salinity is above this threshold (**Appendix D**, Section 3.2.2.1). Moving forward, toxicity tests will use the salinity-appropriate species identified in the 2013 Permit so that future re-evaluations will be based on current toxicity testing methods. Accordingly, toxicity may be removed from the list of PWQCs after long-term monitoring data are reviewed from the 2016-2017 monitoring year.

3. Total nitrogen in the Upper San Luis Rey River (Monserate hydrologic area (HA)) was not confirmed as a PWQC during dry weather, although it was identified as such in the initial Water Quality Improvement Plan prioritization process. The initial determination appears to have been based on data from SLR-TWAS-1, which is actually located on the lower portion of the San Luis Rey River. Total nitrogen in the Upper San Luis Rey River (Monserate HA) is therefore recommended for removal from the list of PWQCs.
4. Bacteria in the Lower San Luis Rey River for dry and wet weather was not elevated from a PWQC to a HPWQC based on the re-evaluation. This differs from the results of the initial Water Quality Improvement Plan prioritization process where the Lower River was identified as part of the geographic extent of the HPWQC. This re-evaluation was a result of new information included in the analysis, revisions made to the prioritization process, and identification of TMDL[11] bacteria loads in the WMA that are not under control of the Permittees. Strategies will continue to address bacteria as the HPWQC for the watershed based on the TMDL at the beach located at the mouth of the San Luis Rey River.

2.2.3.3 Adaptation of Goals and Schedules

The re-evaluation resulted in a change in status for bacteria on the Lower San Luis Rey River from a HPWQC to a PWQC. Therefore, numeric goals for bacteria specific to the Lower River are no longer required and are proposed to be removed from the Water Quality Improvement Plan when updated in response to issuance of the next Permit.

2.2.3.4 Adaptation of Strategies and Schedules

Only one year of implementation and monitoring has been completed under the accepted Water Quality Improvement Plan, and progress has been made toward attainment of the Watershed Permittees' identified goals (**Appendix D**, Section 3.4.2, with greater detail provided in the 2015-2016 Water Quality Improvement Plan Annual Report). Overall, additional data will be necessary to supplement these data before an accurate assessment of the effectiveness of these strategies can be made. In addition, no updates to strategies are needed to address changes in priorities since no new HPWQCs or PWQCs have been identified.

[11] *A Resolution Amending the Water Quality Control Plan for the San Diego Basin (9) To Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria Project I—Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek),* Resolution No. R9-2010-0001, San Diego Regional Water Quality Control Board, February 10, 2010 (Bacteria TMDL).

2.2.3.5 Adaptation of Monitoring and Assessment Program

Re-evaluation of the MAP yielded the recommended program modifications described below. Supporting information for each recommendation can be found in **Appendix D**, **Table 3-30**.

1. Reduce the frequency of field screening visits to consistently "dry" outfalls to one annual visit in order to confirm the outfall continues to remain "dry," and reallocate efforts to evaluate flow conditions at transient and persistently flowing sites.
2. Assessment requirements in the Permit should be revised to provide more appropriate information for measuring progress towards achieving goals. For example, the annual pollutant load estimations required by the Permit are expected to contain large amounts of error and do not support effective evaluation of watershed conditions over time. Data presented in Table 3-16 of **Appendix D** demonstrate the high level of uncertainty in non-stormwater volume estimates required by the Permit. Recommended Permit modifications are discussed further in **Section 2.3** and **Section 4**.

2.2.4 Carlsbad Watershed Management Area

The Carlsbad WMA Water Quality Improvement Plan was accepted by the Regional Water Board on November 22, 2016. Therefore, less than one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the Carlsbad WMA's RMAR, included herein as **Appendix D**, Section 4 of the ROWD.

2.2.4.1 Carlsbad WMA Description

The Carlsbad WMA is approximately 211 square miles and includes six individual watersheds in northern San Diego County. The WMA is bordered by the San Luis Rey River WMA to the north and by the San Dieguito River WMA to the south (**Appendix D,** Figure 4-2). It reaches inland nearly 24 miles to just northeast of Lake Wohlford. The maximum elevation of the WMA is approximately 2,400 feet, descending westward to sea level at the Pacific Ocean. The WMA is the third most densely populated watershed in the San Diego region.

The WMA is made up of six distinct HAs: Loma Alta, Buena Vista Creek, Agua Hedionda, Encinas, San Marcos Creek, and Escondido Creek, all of which flow into the Pacific Ocean at discrete locations (**Appendix D,** Figure 4-2). The watershed is known for its five unique coastal lagoons: Loma Alta Slough, Buena Vista Lagoon, Aqua Hedionda Lagoon, Batiquitos Lagoon, and San Elijo Lagoon.

Watershed Permittees within the Carlsbad WMA include the following:

- City of Carlsbad
- City of Encinitas
- City of Escondido
- City of Oceanside
- City of San Marcos
- City of Solana Beach
- City of Vista
- County of San Diego

Although not identified as a watershed Permittee in the Permit, Caltrans is working cooperatively with the local jurisdictions to implement the Water Quality Improvement Plan.

2.2.4.2 Re-Evaluation of Priority Water Quality Conditions

The results of the re-evaluation support the initial HPWQCs and PWQCs as the main focus of the Water Quality Improvement Plan implementation. No modifications to the PWQCs or HPWQCs are proposed at this time.

2.2.4.3 Adaptation of Goals and Schedules

The re-evaluation included a consideration of new and current water quality data and information; the findings demonstrate support for the current goals and schedules. No modifications to the goals or their respective schedules are proposed at this time.

2.2.4.4 Adaptation of Strategies and Schedules

During this first year of implementation, the Carlsbad Watershed Permittees plan to continue implementing the Water Quality Improvement Plan strategies without modification to continue achieving pollutant load reductions for the HPWQCs, which addresses PWQCs at the same time as a secondary benefit. Water Quality Improvement Plan strategies can then be re-evaluated when sufficient time has passed to observe the effects of implementation through assessment of collected monitoring data. No modifications to the Carlsbad WMA strategies or their respective implementation schedules are proposed at this time.

2.2.4.5 Adaptation of Monitoring and Assessment Program

The following adaptations to the MAP are recommended concurrent with the regional recommendation:

Assessment requirements in the Permit should be modified to provide more appropriate information for measuring progress towards achieving goals. For example, the MS4 stormwater assessments (Permit Provisions D.4.b(2)(b)(i)[a-d]) require a number of assumptions that introduce potential errors, making it difficult to discern trends in stormwater volume and pollutant load reduction over time as strategies are implemented. These potential errors are derived primarily from the assumptions necessary to extrapolate watershed-wide estimates of discharge volumes and pollutant loads from the available monitoring data. Recommended Permit revisions are discussed in more detail in **Section 2.3** and in **Section 4**.

2.2.5 San Dieguito River Watershed Management Area

The San Dieguito River WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 17, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the San Dieguito River WMA's RMAR, included herein as **Appendix D**, Section 5 of the ROWD.

2.2.5.1 San Dieguito River WMA Description

The San Dieguito River WMA drains an area of 346 square miles in the west-central part of San Diego County. The San Dieguito River WMA is separated into three main subwatersheds,

which are used to help give geographical context to the conditions and strategies. These subwatersheds are the San Dieguito River below Lake Hodges, the San Dieguito River above Lake Hodges, and the San Dieguito River above Sutherland Reservoir subwatersheds, as shown in Figure 5-1 of **Appendix D**.

Major surface water bodies located in the San Dieguito River WMA include the San Dieguito River, San Dieguito Lagoon, and the Pacific Ocean. Watershed Permittees within the San Dieguito WMA include the following:

- City of Del Mar
- City of Escondido
- City of Poway
- City of San Diego
- City of Solana Beach
- County of San Diego

Although not identified as a watershed Permittee in the Permit, Caltrans is working cooperatively with the local jurisdictions to implement the Water Quality Improvement Plan.

2.2.5.2 Re-evaluation of Priority Water Quality Conditions

Based on the review of the receiving water data and MS4 contributions as presented in the San Dieguito River WMA RMAR (**Appendix D**, Sections 5.4 and 5.5), no new PWQCs were identified. However, during the review of new MS4 data, three new potential PWQCs were identified:

1. Impairment of the MUN beneficial use due to manganese at Green Valley Creek during wet and dry weather;
2. Impairment of MUN beneficial use due to manganese at Hodges Reservoir during wet and dry weather; and
3. Impairment of WARM beneficial use due to eutrophication (phosphorus) at the San Dieguito River during dry weather.

These potential PWQCs may be added to **Section 2** of the Water Quality Improvement Plan the next time it is updated.

The Regional Water Board and members of the public have requested that the Watershed Permittees further evaluate the Hodges Reservoir nutrient impairments as a potential HPWQC. Accordingly, in fiscal year 2016, Watershed Permittees completed the Hodges Reservoir Nutrients Evaluation Technical Memorandum (**Appendix D,** Attachment 5C) to address concerns raised by the public and the Regional Water Board. However, more data are needed to characterize the sources of nutrients in Hodges Reservoir. Accordingly, the San Dieguito River WMA Permittees coordinated with the City of San Diego's Public Utilities Department to develop a study plan and associated monitoring plans for the Hodges Reservoir Nutrient Source Study. The Study Plan is included as **Appendix E**. If nutrient impairments are found to meet HPWQC selection criteria, new or additional HPWQCs may be selected.

2.2.5.3 Adaptation of Goals and Schedules

Based on data collected to date, the San Dieguito River WMA Permittees are on track to achieve the fiscal year 2018 permit term Water Quality Improvement Plan goals identified in **Appendix D**, Section 5.4.2. No updates to the goals or schedules are recommended at this time.

2.2.5.4 Adaptation of Strategies and Schedules

The San Dieguito River WMA Permittees plan to continue implementing the Water Quality Improvement Plan strategies without modification to continue achieving pollutant load reductions for the HPWQCs and PWQCs (and potential PWQCs). No updates to strategies or their respective schedules are recommended at this time.

2.2.5.5 Adaptation of Monitoring and Assessment Program

Based on the integrated assessment of the monitoring performed during the Permit term, only minor modifications related to MS4 assessments are recommended for the MAP:

> MS4 assessments required in the Permit should be revised to more closely align with the goals of the Water Quality Improvement Plan and Illicit Discharge, Detection, and Elimination (IDDE) program implementation and corresponding revisions to the MAP should be developed. Currently, some assessments required annually as part of the MAP do not meaningfully assess program effectiveness or progress toward goals. For example, the error inherent in the pollutant loading calculations will make it difficult to discern trends in stormwater volume and pollutant load reduction over time as strategies are implemented. Recommended Permit revisions are discussed further in **Section 2.3** and in **Section 4**.

2.2.6 Los Peñasquitos Watershed Management Area

The Los Peñasquitos WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 12, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the Los Peñasquitos WMA's RMAR, included herein as **Appendix D**, Section 6 of the ROWD.

2.2.6.1 Los Peñasquitos WMA Description

The Los Peñasquitos WMA drains an area of approximately 94 square miles in central San Diego County. The Los Peñasquitos WMA was divided into four main subwatersheds to focus on receiving waters when selecting PWQCs and implementing jurisdictional programs during the Water Quality Improvement Plan development process. The four subwatersheds in the Los Peñasquitos WMA are Carmel Valley Creek, Carrol Canyon, Los Peñasquitos Creek, and Los Peñasquitos Lagoon, and are shown in **Appendix D,** Figure 6-1.

Major surface water bodies located in the Los Peñasquitos WMA include the Los Peñasquitos Lagoon and the Pacific Ocean. Watershed Permittees within the Los Peñasquitos WMA include the following:

- City of Del Mar
- City of Poway
- City of San Diego
- County of San Diego

Although not identified as a watershed Permittee in the Permit, Caltrans is working cooperatively with the local jurisdictions to implement the Water Quality Improvement Plan.

2.2.6.2 Re-evaluation of Priority Water Quality Conditions

Based on the review of the receiving water data, no new priority water quality conditions have been designated. Based on the nine considerations reviewed as part of MS4 Permit Provision F.3.c(1), no new receiving water conditions and no new priority water quality conditions were identified.

However, during the review of new MS4 data, two new potential priority water quality conditions were identified:

1. Impairment of WARM beneficial use due to selenium in Los Peñasquitos Creek during dry weather.
2. Elevated TSS and turbidity near the Los Peñasquitos NPDES monitoring location in Los Peñasquitos Creek during wet weather.

It is recommended that these new priority water quality conditions be added to the Water Quality Improvement Plan the next time it is updated.

2.2.6.3 Adaptation of Goals and Schedules

Based on data collected to date, the Los Peñasquitos WMA Permittees are on track to achieve the fiscal year 2018 permit term Water Quality Improvement Plan goals identified in **Appendix D**, Section 6. No updates to the goals or schedules are recommended at this time.

2.2.6.4 Adaptation of Strategies and Schedules

The Los Peñasquitos WMA Permittees plan to continue implementing the Water Quality Improvement Plan strategies without modification to continue achieving pollutant load reductions for the HPWQCs and PWQCs (and potential PWQCs). No updates to strategies or their respective schedules are recommended at this time.

2.2.6.5 Adaptation of Monitoring and Assessment Program

Based on the integrated assessment of the monitoring performed during the Permit term, the following modifications are recommended for the monitoring program:

1. As discussed in **Appendix D**, Section 6.7.3, a modification to the time period for aerial vegetation monitoring should be considered. The Sediment TMDL currently states that aerial mapping should take place annually. It is anticipated the changes observed annually will be minimal. A better use of resources would be to implement aerial monitoring once per Permit term until restoration of the Lagoon is complete.
2. Permit Provision D requirements for the MS4 assessments should be updated to more closely align with the goals of the Water Quality Improvement Plan and IDDE program implementation. For example, there are significant errors associated with the jurisdictional annual stormwater pollutant loads (Provision D.4.b(2)(b)(i)[c]) for various pollutants. With such high error estimates, it may be difficult to see trends in stormwater volume and

pollutant load reduction as strategies are implemented. Recommended Permit revisions are discussed further in **Section 2.3** and **Section 4**.

2.2.7 Mission Bay Watershed Management Area

The Mission Bay WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 12, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the Mission Bay WMA's RMAR, included herein as **Appendix D**, Section 7 of the ROWD.

2.2.7.1 Mission Bay WMA Description

The Mission Bay WMA drains a highly-urbanized area of approximately 64 square miles, almost entirely west of Interstate 15 in coastal San Diego County. The watershed includes La Jolla, Pacific Beach, University City, Clairemont Mesa, and Miramar. Rose Canyon, San Clemente Canyon, Tecolote Creek, and smaller canyons and urban drains carry runoff in this watershed downstream to Mission Bay and the Pacific Ocean. Major surface water bodies located in the Mission Bay WMA include Mission Bay, the Pacific Ocean, and the San Diego Marine Life Refuge ASBS. The City of San Diego is the only Permittee with jurisdictional area within the Mission Bay WMA. Caltrans maintains multiple major transportation corridors. Caltrans has partial responsibility for the implementation of the Bacteria TMDL and is therefore included as a Responsible Agency within the Water Quality Improvement Plan, even though Caltrans is not listed in the Permit as a Permittee.

2.2.7.2 Re-evaluation of Priority Water Quality Conditions

No new receiving water conditions and no new PWQCs were designated. However, during the review of the MS4 data gaps associated with receiving water conditions noted in the Water Quality Improvement Plan, one new PWQC is recommended. It is related to the impairment of the warm water habitat beneficial use (WARM) due to copper in Tecolote Creek during dry weather. This new potential PWQC did not meet the criteria to be elevated to a HPWQC.

2.2.7.3 Adaptation of Goals and Schedules

Based on data collected to date, the City of San Diego is on track to achieve the fiscal year 2018 permit term Water Quality Improvement Plan goals identified in **Appendix D**, Section 7. No updates to the goals or schedules are recommended at this time.

2.2.7.4 Adaptation of Strategies and Schedules

Given that the City of San Diego already has met the current permit term performance-based goals, the City plans to continue implementing the Water Quality Improvement Plan strategies without modification to continue achieving pollutant load reductions for the HPWQCs. These strategies also address PWQCs (e.g., copper), providing multiple benefits. No modifications to the Mission Bay WMA strategies or their associated schedules are needed at this time.

2.2.7.5 Adaptation of Monitoring and Assessment Program

Based on the integrated assessment of the monitoring performed during the Permit term, the following modifications are recommended for the MAP:

1. Bifenthrin will be added to the constituent list for the wet weather MS4 monitoring program because concentrations of bifenthrin were found to persistently exceed water quality objectives (WQOs) in the receiving water monitoring data. There are no recommendations to modify the Mission Bay WMA Water Quality Improvement Plan special studies.
2. Recommendations for modifying the assessments in Provision D of the Permit include updating the requirements for the MS4 assessments to more closely align with the goals of the Water Quality Improvement Plan and IDDE program implementation. For example, the error associated with the Permit-required MS4 assessments (Provision D.4.b) was investigated. The investigation showed that significant errors are associated with the jurisdictional annual stormwater pollutant loads (Provision D.4.b(2)(b)(i)[c]) for various pollutants. With such high error estimates, it will be difficult to see trends in stormwater volume and pollutant load reduction. This recommended Permit revision is discussed further in **Section 2.3** and **Section 4**.

2.2.8 San Diego River Watershed Management Area

The San Diego River WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 12, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the San Diego River WMA's RMAR, included herein as **Appendix D**, Section 8 of the ROWD.

2.2.8.1 San Diego River WMA Description

The San Diego River WMA is located in central San Diego County, bordered by the Mission Bay and La Jolla, Peñasquitos, and San Dieguito River WMAs to the north and the San Diego Bay WMA to the south (Figure 8-1 of **Appendix D**). The San Diego River WMA (hydrologic unit [HU] 907) encompasses approximately 277,543 acres, or 434 square miles. For the purposes of the San Diego River WMA Water Quality Improvement Plan, the watershed was separated into upper and lower portions to better focus water quality prioritization JRMP implementation efforts.

The San Diego River originates in the Cuyamaca Mountains near Santa Ysabel, over 6,000 feet above sea level along the western border of Anza Borrego Desert State Park, and extends more than 52 miles across central San Diego County. It ultimately discharges to the Pacific Ocean at Dog Beach in Ocean Beach, a community within the City of San Diego.

Major surface water bodies located in the San Diego River WMA include the San Diego River and the Pacific Ocean. Watershed Permittees within the San Diego River WMA include the following:

- City of El Cajon
- City of La Mesa
- City of San Diego
- City of Santee
- County of San Diego

Although not identified as a watershed Permittee in the Permit, Caltrans is working cooperatively with the local jurisdictions to implement the Water Quality Improvement Plan.

2.2.8.2 Re-evaluation of Priority Water Quality Conditions

The methodology used in the Water Quality Improvement Plan PWQC and HPWQC selection process was revised for the re-evaluation. The assessment methodology and results are presented in detail in Attachment 8G to **Appendix D**, Section 8. New PWQCs identified through the re-evaluation process included trash, nitrogen, and phosphorus during wet weather in the Lower San Diego River and eutrophic conditions during wet weather in Famosa Slough. The Water Quality Improvement Plan will be updated to include new PWQCs after the Permit is renewed.

2.2.8.3 Adaptation of Goals and Schedules

Progress has been demonstrated toward achievement of each non-stormwater and stormwater goal listed in Table ES.8-1 of **Appendix D**, Section 8. Therefore, modifications to goals and Permittee schedules are not necessary at this time. However, the City of Santee has identified some changes to their goals that they plan to propose as part of the FY16-17 Water Quality Improvement Plan Annual Report. Modifications currently being proposed by the City of Santee involve revision from load reduction-based to performance-based goals for the interim goals required to be completed in the current Permit term. This change will facilitate the measurement of progress made, and will be more consistent with the performance-based goals used by other Watershed Permittees in the San Diego River WMA. Regional Water Board staff indicated concurrence with the City of Santee's proposed goal modifications at the San Diego River WMA's Consultation Committee meeting, held on May 10, 2017.

2.2.8.4 Adaptation of Strategies and Schedules

At the time of development of the San Diego River WMA RMAR, only one year of monitoring has been completed under the accepted Water Quality Improvement Plan, and progress has been made toward attainment of each of the Permittee's goals (Section 8.4.2 of **Appendix D,** with greater detail provided in the 2015-2016 Water Quality Improvement Plan Annual Report). Overall, additional data will be necessary to supplement this data before an accurate assessment of the effectiveness of these strategies can be made. In addition, no updates to strategies are needed since current strategies address the existing and new PWQCs.

2.2.8.5 Adaptation of Monitoring and Assessment Program

Based on the re-evaluation of the Water Quality Improvement Plan MAP, the following minor modifications are recommended:

1. For the Permit renewal, it is recommended that the assessment requirements in Permit Provision D be revised to provide information for measuring progress towards achieving goals. For example, the annual pollutant load estimations currently required by the Permit provisions do not support effective evaluation of watershed conditions over time because of the significant level of error introduced from the assumptions and extrapolations used. This recommendation for Permit revision is discussed further in **Section 2.3** and **Section 4**.

2.2.9 San Diego Bay Watershed Management Area

The San Diego Bay WMA Water Quality Improvement Plan was accepted by the Regional Water Board on February 12, 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the San Diego Bay WMA's RMAR, included herein as **Appendix D**, Section 9 of the ROWD.

2.2.9.1 San Diego Bay WMA Description

The San Diego Bay WMA encompasses a 444-square-mile area (approximately 284,500 acres) that extends eastward from the San Diego Bay for more than 50 miles to the Laguna Mountains (Figure 1-1 in the San Diego Bay WMA Water Quality Management Plan). The WMA ranges in elevation from sea level at San Diego Bay to a maximum elevation of approximately 6,000 feet above sea level at the eastern boundary. Most of the WMA land area generally lies north of the Tijuana River WMA, south of the San Diego River WMA, west of the Anza Borrego WMA, and east of the Pacific Ocean.

Major surface water bodies in the San Diego Bay WMA include the Sweetwater River, Otay River, San Diego Bay, and the Pacific Ocean. Watershed Permittees within the San Diego Bay WMA include the following:

- City of Chula Vista
- City of Coronado
- City of Imperial Beach
- City of La Mesa
- City of Lemon Grove
- City of National City
- City of San Diego
- County of San Diego
- San Diego County Regional Airport Authority
- San Diego Unified Port District (Port of San Diego)

Although not identified as a watershed Permittee in the Permit, Caltrans is working cooperatively with the local jurisdictions to implement the Water Quality Improvement Plan.

2.2.9.2 Re-evaluation of Priority Water Quality Conditions

The integrated assessment, included in **Appendix D**, Section 9, found a number of persistent exceedances with a potential MS4 contribution. Some of these persistent exceedances had already been identified as PWQCs in the Water Quality Improvement Plan. However, several had not previously been identified and have now been added as new PWQCs based on application of the Water Quality Improvement Plan priority condition identification process, namely:

- Lower Sweetwater River, HA 909.1: Total manganese (wet weather);
- Middle Sweetwater River, HA 909.2: Total dissolved solids (TDS) (dry weather); and
- Otay River, HA 910.2: bacteria (dry weather), total phosphorus (dry weather), and TDS (dry weather).

2.2.9.3 Adaptation of Goals and Schedules

While it is still early in the Water Quality Improvement Plan implementation process, the Watershed Permittees have seen significant progress toward the established numeric goals. Meeting current permit term numeric goal milestones indicates reductions in MS4 contributions to receiving water impairments of critical beneficial uses. Progress toward Water Quality Improvement Plan interim goals scheduled to be met by the end of the current Permit term (2018) is summarized in **Appendix D**, Table 9. As a result, no changes to Water Quality Improvement Plan goals or their schedules are proposed at this time.

2.2.9.4 Adaptation of Strategies and Schedules

Because strategies included in the Water Quality Improvement Plan address a wide range of pollutants and conditions, no changes to Water Quality Improvement Plan strategies were determined to be necessary to address these newly identified priority conditions. No changes to Water Quality Improvement Plan goals, schedules, or monitoring activities are proposed at this time.

2.2.9.5 Adaptation of Monitoring and Assessment Program

Based on the evaluation of the Water Quality Improvement Plan MAP, the following modification to the MAP is recommended:

1. Watershed Permittees found that some of the assessments in Permit Provision D do not meaningfully assess program effectiveness or progress toward goals. These requirements for the MS4 assessments should be updated to more closely align with the goals of the Water Quality Improvement Plan and IDDE program implementation.
2. In order to ensure the MAPs adequately support WMA programs, the primary recommendation for Provision D is to provide an option for the Permittees to customize the MAPs by WMA. In particular, the current load-based MS4 outfall assessments can have numerous compounding factors that lead to inconclusive data analysis and do not support evaluating the HPWQCs in a significant way.

2.2.10 Tijuana River Watershed Management Area

The Tijuana River WMA Water Quality Improvement Plan was accepted by the Regional Water Board in March 2016. Therefore, one year of Water Quality Improvement Plan implementation has been completed in this WMA. Information for this section is summarized from the Tijuana River WMA's RMAR, included herein as **Appendix D**, Section 10 of the ROWD.

2.2.10.1 Tijuana River WMA Description

The Tijuana River Watershed includes approximately 1,750 square miles that straddle the international border between California and Mexico. The Tijuana River Estuary has been designated as a national research reserve (Tijuana River National Estuarine Research Reserve, or TRNERR) and is protected and managed through a federal-state cooperative effort for long-term research, education and interpretation. The Tijuana River flows through the Tijuana River Valley into the Tijuana River Estuary and then into the Pacific Ocean. The watershed drains surface runoff

from Mexico and the U.S. to the Tijuana River Estuary and Pacific Ocean on the U.S. side of the border.

The Tijuana River WMA consists of the 467-square-mile land area on the U.S. side of the international border within southern San Diego County, with the remaining three quarters of the total watershed located in Mexico. Regulations enforced under the Permit dictate actions in the U.S. but do not have jurisdiction in Mexico. Although the portions of the watershed located in Mexico are not regulated by the Permit, pollutants carried in stormwater runoff, such as sediment and trash, contribute to water quality impairments on the U.S. side of the international border.

Major surface water bodies in the Tijuana River WMA include the Tijuana River, Tijuana Estuary, and the Pacific Ocean. Watershed Permittees within the Tijuana River WMA include the following:

- City of Imperial Beach
- City of San Diego
- County of San Diego

2.2.10.2 Re-evaluation of Priority Water Quality Conditions

Results of the re-evaluation support the initial HPWQCs and PWQCs as the main focus of the Water Quality Improvement Plan implementation. No modifications to the PWQCs or HPWQCs are proposed at this time.

2.2.10.3 Adaptation of Goals and Schedules

Based on the first year of implementation of the Water Quality Improvement Plan, Permittees are on track to achieve the sediment load reduction goals. This is anticipated to benefit other PWQCs as many other pollutants tend to be carried along in runoff with sediment. Watershed Permittees will continue to implement strategies to reduce sediment discharges from their MS4s and will continue to engage federal and state authorities with respect to additional cross-border sediment discharges from Mexico that significantly impact beneficial use attainment at the receiving waters. Progress toward Water Quality Improvement Plan sediment load reduction goals is summarized in **Appendix D,** Table 10. No changes to Water Quality Improvement Plan goals and schedules are proposed at this time.

2.2.10.4 Adaptation of Strategies and Schedules

As discussed in **Appendix D**, Section 10.5.2.3, Watershed Permittees are on track to meet applicable numeric goals, and no modifications to Water Quality Improvement Plan strategies or their implementation schedules are proposed at this time.

2.2.10.5 Adaptation of Monitoring and Assessment Program

It was determined that modifications to the assessment requirements would help strengthen the Watershed Permittees' ability to evaluate the effectiveness of Water Quality Improvement Plan implementation. The assessment requirements in the current Permit are not well suited to evaluating progress toward the numeric goals established in the Water Quality Improvement Plan. Therefore, the following recommendation is proposed:

The MAP should support the needs of the WMA and focus more on meaningful assessments. In particular, the current load-based MS4 outfall assessments can have substantial error and do not help address the HPWQCs. In order to ensure that the MAP adequately supports WMA programs, the primary recommendation for Permit Provision D is to provide an option for the Watershed Permittees to customize the MAP by WMA. This recommendation is discussed further in **Section 2.3** and **Section 4**.

2.3 SUMMARY OF PROPOSED MODIFICATIONS

A common finding in the evaluations discussed above is that some of the annual assessments required in Permit Provision D, as part of the MAP, do not meaningfully contribute to assessments of program effectiveness or progress toward goals. Having the opportunity to develop and implement a custom-tailored monitoring and assessment program, as an alternative to the standardized Provision D monitoring, would address this critical shortcoming. ROWD **Section 4** provides a discussion of recommended Permit modifications, which are intended to provide for such an option.

In addition, as stated in **Section 2.1**, updates to each Water Quality Improvement Plan will be made to incorporate recommended revisions once the Permit renewal process is completed. At that time, any identified modifications will be addressed in one comprehensive update. In the meantime, Permittees will continue to implement the identified strategies, collect monitoring and program data, and assess their progress toward goals on an annual basis. Additional data and information will be used, as it becomes available, to improve Water Quality Improvement Plans.

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3 Jurisdictional Runoff Management Program Evaluations and Proposed Changes

Each Permittee is required to develop and maintain a JRMP in accordance with Provision E of the Permit[12]. The JRMP describes the Permittee-specific programs implemented to control the discharge of pollutants to and from the MS4 within its jurisdiction. The JRMPs are required to include programs and actions that are designed to address the highest priority water quality conditions for the WMA and that are reflective of strategies articulated within the Water Quality Improvement Plan(s).

With the advent of the Water Quality Improvement Plans, the Permittees are required to update their JRMPs concurrent with the submittal of the Plan. Updates to the JRMPs must be submitted in Annual Reports or within the ROWD.

3.1 SAN DIEGO COUNTY PERMITTEES

Permittees in San Diego County updated their JRMPs in accordance with their Water Quality Improvement Plans. Implementation of the Water Quality Improvement Plans began in 2016, upon acceptance by the Regional Water Board. Implementation is in the early stages and the JRMPs were updated recently to reflect the priorities and strategies within the Water Quality Improvement Plans. Therefore, the San Diego Permittees have evaluated their JRMPs and are not proposing any changes at this time. Updates subsequent to the ROWD will be provided in future Water Quality Improvement Plan Annual Reports as appropriate. The San Diego Permittees completed and submitted updates to their Model BMP Design Manual in February 2016 concurrent with completion of the Water Quality Improvement Plans. The Model BMP Design Manual is currently undergoing additional minor updates and changes will be submitted in a future Water Quality Improvement Plan Annual Report. Preceding the Model BMP Design Manual, San Diego Permittees also completed their Water Quality Equivalency document in December 2015.

3.2 ORANGE COUNTY PERMITTEES

The South Orange County WMA Water Quality Improvement Plan was submitted to the Regional Water Board April 2017 and is not yet approved. In accordance with the Permit, the Best Management Practice (BMP) Design Manual was also submitted to the Regional Water Board on April 1, 2017. In addition, the Permittees updated their Local Implementation Plans (LIPs) so that they align with the priorities and strategies established within the Water Quality Improvement Plan[13]. At the present time, Permittees are operating under their existing LIPs and no modifications to these documents are proposed. Updates to the LIPs will be submitted with the first Water Quality Improvement Plan Annual Report.

3.3 RIVERSIDE COUNTY PERMITTEES

The Permit did not take effect for Permittees in Riverside County until January 6, 2016. Because of their more recent enrollment, the Riverside County Permittees are currently developing the

[12] JRMP-based strategies for the respective Orange County Permittees in the South Orange County WMA are described in equivalent plans referred to as LIPs.

[13] The LIPs are posted online so that they are publicly available.

Water Quality Improvement Plan for the Santa Margarita River WMA, which will be submitted to the Regional Water Board in January 2018. The Riverside County Permittees are also updating their BMP Manual and their JRMPs to align with the priorities and strategies established within the proposed Water Quality Improvement Plan. As required by Permit Provision E, Riverside County Permittees are currently operating under their existing JRMPs and no modifications to these documents, in advance of Water Quality Improvement Plan completion, are proposed.

4 Recommended Permit Modifications

As a result of their experiences in developing and implementing Water Quality Improvement Plans and preparing the first Annual Reports, the Permittees are requesting certain Permit modifications to better support the programs required by the Permit. In particular, the Permittees have identified the need for three key modifications to the Permit:

1) A more streamlined and meaningful reporting process;
2) A more WMA-focused, custom monitoring and assessment program; and
3) An option to pursue the USEPA-supported IP approach to implementation and scheduling of Permit obligations.

In addition, the Permittees are proposing clarifications to the land development requirements in Provision E that are intended to facilitate improved implementation for Permittees' new development and redevelopment programs.

All proposed edits to Permit language are included in **Appendix G**. Permittee-specific requested Permit language changes are included in **Appendix H**.

4.1 REPORTING (PROVISION F)

The Permittees understand that it was the Regional Water Board's intent to streamline reporting requirements in the Permit by using a two-page JRMP Annual Report Form (Permit Attachment D) and a requirement that Permittees submit only a single Water Quality Improvement Plan Annual report for each of the 10 WMAs. The experience of the Permittees in San Diego County[14], however, is that the reporting under this Permit has been more, not less, burdensome and less useful than anticipated.

The Permittees' expectation of a reduction in the annual reporting burden under the Permit was not realized, as demonstrated by the degree of resources required to complete the annual reports submitted on January 31, 2017. Due to the complexity of the current reporting requirements, not only were the reports voluminous, but the process to develop the annual reports was required to be initiated up to eight months prior to the due date. Therefore, Permittees were required to start the reporting process at the beginning of the fiscal year (i.e., July 1) for reports due January 31 of the following year.

To address this task and to provide consistency across the reports prepared for 10 WMAs, the San Diego Permittees developed a Water Quality Improvement Plan Annual Report Framework. In order to ensure that all Permit reporting requirements were included in the annual report, the Framework required over 100 pages of guidance instructions. Part of the reason that the annual reporting requirements continue to be overly burdensome is that the Permit contains numerous, overlapping, and sometimes unclear requirements for reporting. Those reporting requirements and how those requirements are generally addressed within the initial Annual Reports submitted by Permittees in San Diego County are summarized in **Appendix C**.

Despite these planning efforts, the first Annual Reports proved to be cumbersome, overly complicated, and ultimately not useful as management tools. Furthermore, Regional Water Board

[14] Due to the various enrollment dates under the Permit, the Permittees in San Diego County are the only Permittees in the Region to date that have developed and submitted Water Quality Improvement Plan Annual Reports.

staff feedback on the first year of Annual Reports has suggested that the San Diego Permittees' efforts did not provide useful information on the progress to achieve desired outcomes.

Additionally, the San Diego Permittees found that development of the Annual Reports was extremely resource-intensive. To illustrate the level of effort required to meet the Annual Report requirements, a summary of the size and costs for the development of the FY 2015-16 annual reports is provided in **Table 4-1**. The magnitude of these costs is similar to the reporting costs of the San Diego Permittees under the 2007 San Diego County Permit and demonstrates that reporting requirements have not been reduced under the current Permit.

Table 4-1. Water Quality Improvement Plan (WQIP) Annual Reporting Level of Effort

2015-2016 Annual Report	Total # Pages	Main Report (# Pages)	Appendices (# Pages)	Cost
San Juan WQIP	WQIP Annual Reports not yet required to be submitted.			
Santa Margarita River WQIP				
San Luis Rey River WQIP	289	83	206	$101,274
Los Peñasquitos WQIP	2,252	87	2,165	$156,189
Mission Bay WQIP	866	54	812	$84,230
San Diego Bay WQIP	1,172	183	989	$98,796
San Dieguito River WQIP	893	79	814	$165,962
Tijuana River WQIP	1,346	77	1,269	$82,368
Carlsbad WQIP [a]	-	-	-	-
San Diego River WQIP	395	91	304	$111,873
Totals	**7,213**	**654**	**6,559**	**$800,692**

a. The Carlsbad WMA was not required to provide an annual report for Year 1.

4.1.1 Request

In light of the issues identified above, the Permittees propose a modification of the reporting requirements. The proposed modification will reduce complexity and expense for the Permittees while still supporting a robust evaluation of program effectiveness, both on a short-term and long-term basis. Importantly, this revised reporting structure will provide the public with a clearer understanding of watershed conditions, activities, and engagement.

To ensure accountability and transparency, the Permittees recommend that the federal standard reporting requirements set forth in 40 CFR Section 122.26 and 122.42 be used as a baseline (**Table** 4-2**)**.

Table 4-2. Annual Reporting Requirements [a]

	Reporting Requirement	CFR Citation
1	A summary describing the number and nature of enforcement actions, inspections, and public education programs	40 CFR 122.42(c)(6)
2	Status of implementing the components of the stormwater management program that are established as Permit conditions	40 CFR 122.42(c)(1)
3	Annual expenditures and budget for year following each annual report	40 CFR 122.42(c)(5)
4	Proposed changes to the stormwater management programs that are established as permit conditions	40 CFR 122.26(d)(2)(iii), 40 CFR 122.42(c)(2)
5	Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application	40 CFR 122.26(d)(2)(iv-v) 40 CFR 122.42(c)(3)
6	A summary of data, including monitoring data, that is accumulated throughout the reporting year	40 CFR 122.42(c)(4)
7	Identification of water quality improvements or degradation	40 CFR 122.42(c)(7)

a. Order No. R9-2013-0001, as amended, Attachment B, Standard Provision 1.o; Pages B-9 through B-10

Instead of preparing a Water Quality Improvement Plan Annual Report, a combination of three annual "snap shot" reports and two "assessment" reports during the permit term will provide more meaningful results on appropriate time scales. The shorter-term assessments, performed on an annual basis, would focus on program changes (e.g., JRMP activities) supported by data collection and analysis, while the more robust assessment reports would focus on elements that require several years or more of data (such as monitoring results/environmental data) to support more comprehensive modifications to watershed programs (e.g., Water Quality Improvement Plans, monitoring plans). The proposed alternative reporting framework is as follows:

1. *JRMP Focused Progress Reports* (Reporting Year 1, Year 3, and Year 5) – These reports would both address short-term/programmatic elements and satisfy the CFR reporting requirements. Progress Reports would be submitted in the January following reporting Years 1, 3, and 5. In general, requirements from the following Permit sections would be addressed:
    - Provision B.3.c – Prohibitions and Limitations Compliance Option, as applicable
    - Provision D – Monitoring and Assessment (data submittal, high-level observations)

- Provision E – JRMP Form (Permit Attachment D)
- Provision F – Reporting (focus on Attachment D and consistency with CFR)
- Attachment E – TMDLs, as applicable

2. *Water Quality Improvement Plan Report With Strategy Assessments* (Reporting Year 2)[15] - This report would include elements of the Progress Reports to address both short-term and long-term elements. Assessments would be focused on JRMP programs and Water Quality Improvement Plan strategies, providing information to support the Permittees' adjustments to their programs, if needed. This Report would be submitted in January following the second reporting year. In general, requirements from the following permit sections would be included.

    - Provision A – Prohibitions and Limitations
    - Provision B – Focus on Water Quality Improvement Plan Strategies; Provision B.3.c as applicable
    - Provision D – Monitoring and Assessment (data submittal, observations, exceedance evaluations)
    - Provision E – JRMP (including Form – Attachment D)
    - Provision F – Reporting (consistent with mid-term strategy/program assessments)
    - Attachment E – TMDLs, as applicable

3. *ROWD* (Reporting Year 4) - This report would address short- and long-term elements and satisfy the CFR requirements. This report would include multiple assessments (e.g., progress to goals, assessment of the effectiveness of strategies, and detailed water quality assessments to demonstrate progress), satisfy Permit reapplication requirements, and substitute for the Year 4 annual report. Consistent with direction from USEPA[16] it would be the basis for jointly developing changes to the regulatory framework and permit requirements for stormwater management and monitoring. The ROWD would be submitted 180 days prior to Permit expiration, approximately January following the fourth reporting year. In general, requirements from the following permit sections would be included.

    - Provision A – Prohibitions and Limitations
    - Provision B – Progress to Goals, Strategy Implementation, Modifications; Provision B.3.c as applicable
    - Provision D – Monitoring and Assessment
    - Provision E – JRMP (including Form – Attachment D)

[15] The Year 2 report would not be required for the San Juan and Santa Margarita River Water Quality Improvement Plans since these plans have not yet been approved and it will be too soon to warrant such a comprehensive assessment. In their place, JRMP Focused Progress Reports will be prepared.

[16] 40 CFR Part 122 [FRL-5533-7] *Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems*; Federal Register, Volume 61, No. 155, August 9, 1996, Rules and Regulations.

- Provision F – Reporting (consistent with robust, multi-year assessments)
- Attachment E – TMDLs, as applicable

The approach is illustrated in **Figure 4-1**.

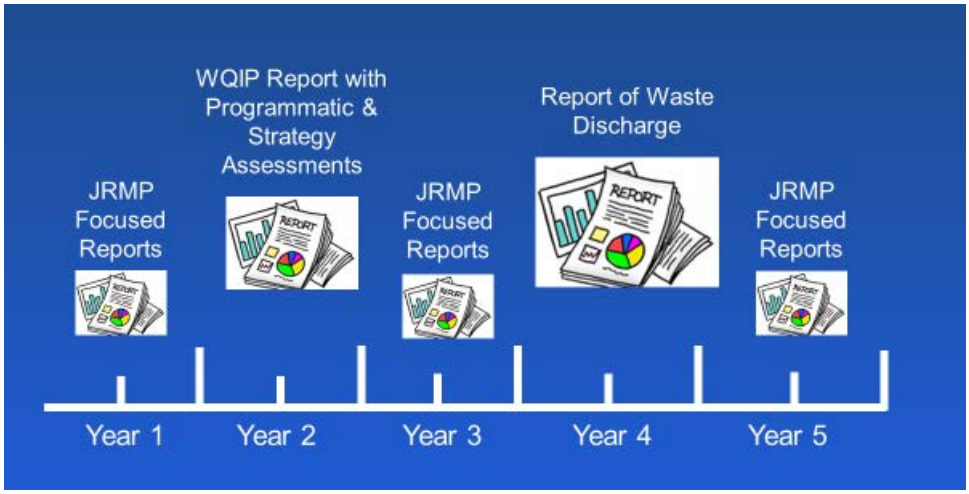

Figure 4-1. Recommended Reporting Approach

A table with detailed reporting requirements for each type of annual report is in **Appendix F.** Proposed language for the requested reporting modifications is in **Appendix G**.

A summary of the recommended reporting formats, schedule, and overview of the information to be included in each report is presented in **Table 4-3**.

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Table 4-3. Summary of Report Content

	CFR Requirements	Permit Section – General Reporting Requirements						Content to be Provided in Reports		
		Provision A	Provision B	Provision D	Provision E	Provision F	Attachment E	JRMP Focused Progress Reports (Yr 1,Yr 3,Yr 5)	WQIP Report with Strategy Assessments (Yr 2)	ROWD (Yr 4)
1	**Summary of Enforcement, Inspections, Public Education** - A summary describing the number and nature of enforcement actions, inspections, and public educ. programs				X	X	TMDL Reports As applicable	JRMP Form [a]		
2	**Status of Implementation** - Status of implementing the components of the stormwater management program that are established as Permit conditions		X			X		Updated Strategy Tables & Summary of Actions (Annual Milestones, as applicable)		
3	**Annual Expenditures/Budget** - Annual expenditures and budget for year following each annual report				X	X		Jurisdictional Fiscal Tables		
4	**Proposed Changes** - Proposed changes to the stormwater management programs that are established as permit conditions	X	X			X		As Applicable; Includes Updates to the JRMP and BMP Design Manual		
5	**Revisions to Assessment** - Revisions, if necessary, to the assessment of BMPs and the fiscal analysis reported in the permit application	X	X	X		X		As Needed		Recommended Modifications
6	**Summary of Data** - A summary of data, including monitoring data, that is accumulated throughout the reporting year									
	Data Tables [b]	X		X		X		X	X	X
	Programmatic Data and Assessments [c]					X			X	X
	Water Quality Data and Assessments [d]	X		X		X				X
7	**Water Quality Improvements/Degradations** - Identification of water quality improvements or degradation	X		X		X		General Observations of Water Quality Conditions (descriptive)		Robust Analysis/ Trends

a – Order No. R9-2013-0001, as amended, Attachment D

b – Submittal of data and general observations (standard statistics, etc.)

c – Focus may be on the implementation/analysis of the strategies

d – Focus may be on the analysis of data generated by the monitoring program(s)

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4.2 MONITORING AND ASSESSMENT PROGRAMS (PROVISION D)

The current Provision D monitoring and assessment requirements are aimed at characterizing receiving water conditions as well as MS4 discharges by describing their relationship to water quality objectives, and determining whether key indicators (e.g., loads) are improving over time. Although these goals are generally relevant to all watersheds, there are important differences across watersheds. However, because Provision D requirements apply uniformly to all watersheds, Permittees must design their programs to meet these minimum requirements, limiting their ability to customize their monitoring and assessment programs to address the specific features of each watershed. The following subsections explain the need for greater flexibility in the application of an optional structured study design process applied to the fundamental questions derived from the Provision D monitoring and assessment requirements.

4.2.1 Watershed Specific Monitoring and Assessment Alternative

The Permittees' recommendation for a watershed-based custom monitoring and assessment program is based on their increased understanding of the ways in which the WMAs differ in terms of pollutant priorities, hydrology, geology, land uses, and other factors. In addition, there are different levels of understanding of water quality issues in each watershed, different or emerging data gaps and special study needs, and multiple implementation priorities, all of which create different management challenges. These differences require watershed specific information for management and decision-making. For these reasons, the one-size-fits-all monitoring approach under the current Permit does not yield the most useful information to support management actions. Specific examples where watershed specific monitoring programs would provide more useful information that current Permit required monitoring include:

> In all cases [of successful monitoring], monitoring provided clear and important input to management decisions, and it was targeted at issues that the public and decision makers recognized as important.
>
> *Managing Troubled Waters: The Role of Marine Environmental Monitoring*, NAS, 1990

- Due to often substantially differing mix of land uses across WMAs, watershed-specific information is necessary to respond to the revised Bacteria TMDL's likely emphasis on site-specific identification and tracking of human sources of contamination.
- The close functional relationship between the San Diego Bay watershed and the Bay itself will affect how monitoring data are used to support the Regional Water Board's Strategy for a Healthy San Diego Bay.
- Nutrient enrichment issues associated with Lake San Marcos do not have a direct analog in other watersheds and must be dealt with in their local context.
- Information necessary to design stream rehabilitation projects, where appropriate, will differ from what is needed to achieve best-possible outcomes in concrete channels, or to reduce irrigation runoff from targeted industrial or residential areas.

Monitoring, data analysis, and assessment should provide a feedback loop for determining whether intended outcomes for each WMA are being realized or if management actions need to be adapted. It is also widely understood that identifying the causes of non-stormwater and stormwater impacts and linking these actions to receiving water improvement is the most challenging aspect of municipal stormwater program implementation (CASQA, 2015). Although program actions (e.g.,

inspections) often focus on source control, such preventive activities do not always result in a one-to-one correspondence with, or remedy for, an existing receiving water problem. Nevertheless, "connecting the dots" that link stormwater management actions to improvements in MS4 discharges, and then ultimately to waterbody conditions, should be the overall goal of the monitoring and assessment program.

The Permittees' proposal aims to ensure relevance at the watershed scale while assuring that such custom monitoring programs are designed according to a consistent, justifiable process that will ensure their validity and comparability. The following subsections describe the main elements of this process, as reflected in three key guidance documents from the Regional Water Board, the State Water Board's Surface Water Ambient Monitoring Program (SWAMP) program, and USEPA. Allowing Permittees to adopt customized, watershed-specific monitoring and assessment programs will enable them to design programs around targeted, question-driven studies to support future management actions; improve their ability to measure progress toward attaining goals; and support their effective evaluation of program strategies. The customized monitoring programs would include minimum requirements for receiving waters and MS4 outfall monitoring to provide accountability, as well as meeting Attachment A and E monitoring requirements. Further, the customized monitoring and assessment program would be fully vetted through an update to the Water Quality Improvement Plan, including review by the respective Consultation Panels and the general public, as well as by the Regional Water Board.

In particular, the Permittees note the adoption of Resolution No, R9-2012-0069, "Resolution in Support of a Regional Monitoring Framework", in which the Regional Water Board endorsed the staff report "*A Framework for Monitoring and Assessment in the San Diego Region*" (Framework) and expressed its support for developing and implementing improved, question-driven monitoring and assessment programs in the San Diego Region. The proposed alternative to Provision D creates a mechanism that will enable the Permittees to incorporate the Framework's recommendations within their Permit-mandated monitoring and assessment programs.

The recommendations presented below are intended to define a consistent and rigorous process for developing watershed-specific custom monitoring and assessment programs. The overall process is taken from USEPA's *Guidance Document for the Data Quality Objectives Process* (USEPA 2000). This guidance defines criteria to ensure that all custom designs meet accepted benchmarks of effective study design. Certain aspects of each of the seven steps in the data quality objectives (DQO) process are then linked with material in two other relevant guidance documents, the *SWAMP Assessment Framework* (Bernstein 2010), and the previously mentioned Regional Water Board Framework (Regional Water Board 2012).

4.2.1.1 Question-Driven Monitoring

The SWAMP assessment framework (Bernstein 2010) presents a hierarchy of monitoring/ management questions (**Figure 4-2**) that are directly analogous to the seven steps in the USEPA DQO guidance. The first and second level questions in **Figure 4-2** match those in the Regional Water Board's Framework (**Figure 4-3**) and the second level questions correspond to the underlying intent of the discharge monitoring specified in Provision D, **Figure 4-3**. These first two levels focus on beneficial uses and on setting out a sequence of questions related to problem characterization, source identification, and performance tracking. The third level questions in **Figure 4-2** focus on the more technical design issues addressed by the DQO guidance document (e.g., time and space scales, basis for comparison).

By framing these three levels of study design issues as questions, the SWAMP assessment framework lays out a structure for developing question-driven monitoring programs. Its illustrative questions show how technical design elements can be restated more simply in ways that foster communication with managers and other interested parties. For example:

- Level 1: Do ambient waters exceed water quality objectives?
- Level 2: How persistent and widespread are exceedances of water quality objectives?
- Level 3: Do levels of X exceed water quality objectives during dry weather in the lower portion of the watershed by more than a factor of two over four dry weather seasons?

Design questions presented in narrative form are much more easily understood by the non-technical parties who will be involved in developing, commenting on, or approving the watershed-specific monitoring and assessment designs. The outputs from the DQO process should therefore be presented in narrative form whenever possible.

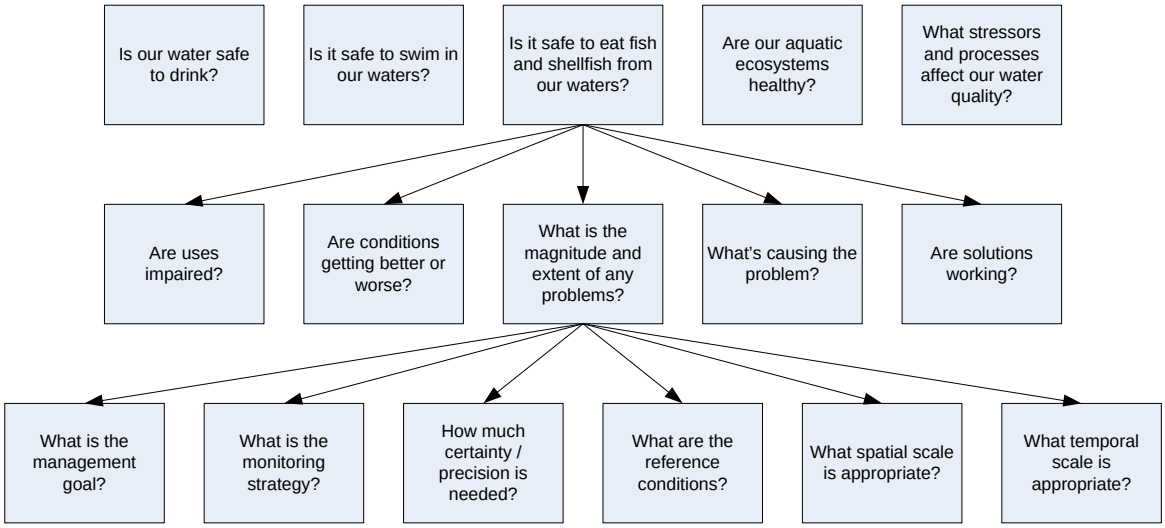

Figure 4-2. The Hierarchy of Monitoring / Management Questions Presented in the SWAMP Assessment Framework (Bernstein 2010).

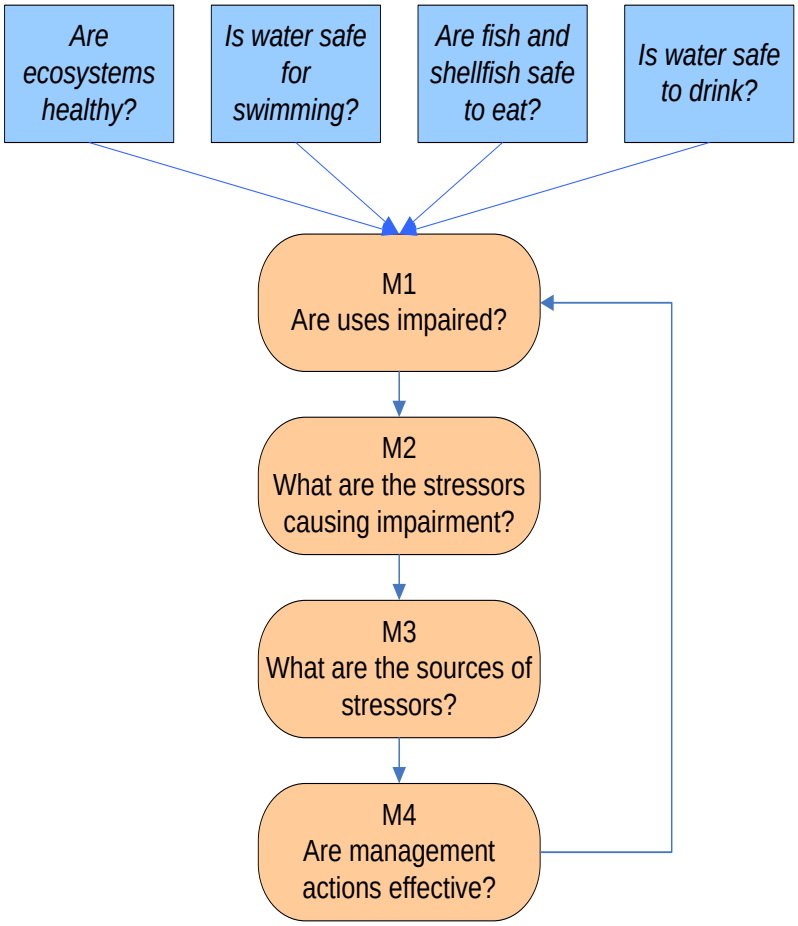

Figure 4-3. Hierarchy of High-level Management Questions that Underlie the Vast Majority of Stormwater Monitoring and Assessment Programs. Adapted from Bernstein (2010) and Regional Water Board (2012).

4.2.1.2 Recommended Framework

The proposed adjustments to the Permit's monitoring and assessment requirements are based on an expanded conception of data quality and DQOs. Although the accuracy and precision of monitoring data are key elements of effective monitoring programs, data quality also reflects an overall emphasis on monitoring's role in supporting decision-making. It is based on ensuring that the level of detail in planning is commensurate with the importance and intended use of the work and the available resources (USEPA 2000). More formally:

> Data quality objectives clarify study objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions.

USEPA (2000) describes a seven-step process (**Figure 4-4**) for establishing DQOs that integrates decision making with the more technical aspects of study design. These seven steps form the core of the process recommended for developing custom monitoring and assessment programs for individual WMAs. This process should be explicitly applied to ensure that all monitoring programs are designed in a consistent manner and meet a common set of design criteria. A requirement for implementing a custom monitoring design should be documentation that all seven steps of the

USEPA process have been completed. The descriptions of the seven steps in the DQO process, as provided for in **Appendix I**, are brief summaries of more detailed descriptions and discussions in USEPA (2000). This systematic description and evaluation of information needs will help guarantee that existing data (e.g., from past special studies or historical monitoring and assessment efforts) will be fully utilized before resources are committed to collection of new data.

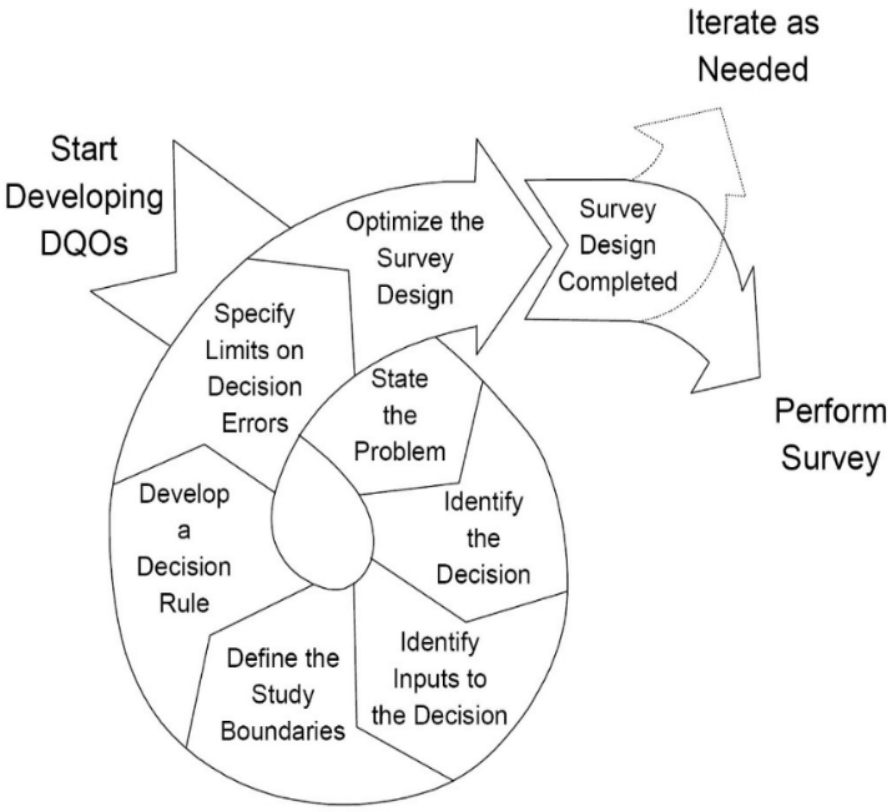

Figure 4-4. The 7 Steps in the USEPA Data Quality Objectives Process (USEPA 2000).

4.2.1.3 Permit Language

New permit language proposed to be included as Provision B.4.e would allow the Permittees to either comply with the requirements of Provision D when developing and implementing their monitoring and assessment program or implement a watershed specific monitoring and assessment alternative program that is equivalent to the programs in Provision D. Proposed language for the requested monitoring modifications is in **Appendix G**.

4.2.2 Provision D.3 Special Studies

The current Permit requires the Permittees to conduct two special studies in each WMA during the Permit Term and one "regional" special study that can substitute for one of the WMA-specific studies. The special studies are to be used to assess and improve strategy effectiveness, fill data gaps, or provide more refined information to assist Permittees in managing the generation and/or elimination of pollutants to and from the MS4. Findings from the special studies are expected to be incorporated and considered in the context of the receiving waters, MS4 discharges, and integrated assessments (Fact Sheet, F-82, F-86).

All special studies should be developed as necessary to support improved watershed management decisions in accordance to the process described in **Section 4.2.1**, rather than developed solely to meet a permit requirement. Under the current Permit, special studies requirements are prescriptive (e.g., two per WMA, focused on the HPWQC, and one WMA study can be replaced with a regional study). In order to support watershed management decisions in the next permit term, it is recommended that these prescriptive requirements be revised to ensure that special studies are focused on the unique needs of their watersheds and align with the framework presented in **Section 4.2.1**. In some cases, the Permittees need flexibility to utilize a mechanism such as a special study to support specific WMA objectives that are not necessarily focused on the high priority water quality condition; in other cases, watersheds may need to focus all of their resources locally and not on a regional study.

At this point in program implementation, at least one, well-planned and properly conducted special study for each WMA would be more effective and efficient than conducting two special studies per the Permit requirements. In addition, the focus of special studies should be expanded so the Permittees can focus on WMA-specific issues including PWQCs, HPWQCs, or other emerging issues such as biological integrity or trash. Note, under a customized, WMA-specific monitoring program such as the one mentioned above, the Permittees could structure their special studies to ensure the monitoring is suited to answer any WMA-specific needs or questions. Proposed language for the requested monitoring modifications is in **Appendix G**.

4.2.3 Provision D.4 Assessments

Permit Provision D.4 requires assessments for receiving waters, dry weather MS4 outfall discharge monitoring, and wet weather MS4 outfall discharge monitoring to "assess the effectiveness of each Copermittee's jurisdictional runoff management program and Water Quality Improvement Plan" (Permit Fact Sheet, F-84).

Based on their experience in implementing the monitoring and assessments required under Provision D (included in Water Quality Improvement Plan Annual Reports, the Transitional Monitoring Reports, and this ROWD), Permittees are proposing revisions for the MS4 Outfall Discharge Assessments to improve the assessment's usefulness for management decisions. The recommended modifications are consistent with Clean Water Act (CWA) requirements and are designed to complement the proposed revised reporting structure described in **Section 4.1**.

Non-Stormwater and Stormwater Discharges Reduction Assessments

The Permit Fact Sheet states that the goal of outfall monitoring is to demonstrate that the Permittees are achieving the CWA requirement to "effectively prohibit non-stormwater discharges into the storm sewers" and to "reduce the discharge of pollutants [in stormwater] to the maximum extent practicable," respectively (Permit Fact Sheet, F-84). An additional requirement is to provide a mechanism to assess progress, the effectiveness of current actions, and identify modifications necessary to achieve the "effective prohibition" requirement in dry weather and to reduce pollutants in stormwater in wet weather (Permit Fact Sheet, F-85).

However, the required assessments under Provision D.4.b.(1)(b) and (c) do not help to demonstrate achievement of the "effective prohibition" standard. First, as described in more detail in several of the WMA-specific sections of the RMAR (see **Appendix D**, Sections 2-11), the modeling method required by the Permit introduces substantial error into the assessments. The model requires unvalidated assumptions (e.g., consistent flows and pollutant loads across all outfalls, runoff

coefficients, event mean concentrations by land use) that do not reflect the available data set of monitored outfalls. These assumptions thus propagate significant error. The Permittees' request that only data from monitored outfalls be used, which will improve their ability under Provision D.4.b.(1)(c) to provide more accurate and useful information to program managers.

Second, the Permit requirement to produce annual assessments forces Permittees to attempt to draw important conclusions on a relatively limited, and highly variable, data set. The value of the annual assessments are thus, diminished. The Permittees therefore request that the assessments be performed once a Permit term as part of the ROWD, instead of annually, consistent with the proposed revised reporting structure discussed in **Section 4.1**. The longer time period will include a larger dataset, which will improve assessment of the effectiveness of implemented strategies compared to what would be available from an annual "snap shot".

Proposed language for the requested monitoring modifications is in **Appendix G**.

4.3 INTEGRATED PLANNING OPTION

The Permittees request that an option be included within the Permit that would provide agencies that develop an IP, in accordance with USEPA guidance (i.e., the IP Framework), the flexibility to modify compliance schedules in accordance with the outcomes of the IP. The USEPA IP Framework was developed in response to a call from the U.S. Conference of Mayors for USEPA to implement CWA regulatory requirements for municipalities in a way that maximizes the environmental benefits from use of available financial resources. The IP Framework is articulated in a series of memoranda issued by USEPA:

- October 27, 2011 Memorandum: *Achieving Water Quality Through Municipal Stormwater and Wastewater Plans*
- June 5, 2012 Memorandum: *Integrated Municipal Stormwater and Wastewater Planning Approach Framework*
- July 15, 2013 Memorandum: *Integrated Municipal Stormwater and Wastewater Planning Frequently Asked Questions*

The overarching objective of the USEPA IP Framework is to maintain existing regulatory standards protective of human health and water quality while addressing the most pressing public health and environmental protection issues first. IPs recognize and utilize available flexibilities in the CWA and in USEPA policies to allow for the development of appropriate implementation schedules, as well as, to determine the level of control that can be reached without imposing an undue economic burden on the community. Development of an IP is voluntary and the responsibility lies with the municipality, with the IP to be reviewed by State and Federal regulatory decision-makers. Implementation of an IP may occur through inclusion of plan provisions into NPDES permits, or through inclusion of plan commitments in an agreement resolving a state or federal enforcement action.

4.3.1 Application in the San Diego Region

Permittees are faced with a complex mix of resource and infrastructure needs over the next several decades. Many are actively moving to create more reliable water supplies, with greater local control capability and less susceptibility to drought impacts. Some are considering water reuse projects and water purification as water resource options. The Permittees are also confronted with

an array of regulatory requirements under the federal CWA and under the California Water Code that drive expenditures in stormwater and wastewater. MS4 and wastewater permit requirements, including those derived from TMDLs, are significant drivers in defining existing and projected resource needs. New statewide regulatory initiatives, focused on nutrients and biointegrity (i.e., Proposed Statewide Biostimulatory Substances Amendment for Wadeable Streams), contaminants of emerging concern, and other issues (e.g., Statewide Trash Amendments[17]) pose potential new drivers of future cost and resource commitments. The Permittees recognize that compliance with these regulations will require extensive resource commitments over time and will necessitate creative planning approaches to develop new revenues, regulatory program integration and synergy to maximize resources, reasonable compliance schedules, and improved program efficiencies.

The IP Framework provides a regulatory structure that could provide Permittees additional flexibility in meeting their multiple compliance requirements. The process includes a comprehensive review of the costs and water quality benefits of various regulatory requirements, recommends priorities and schedules for those requirements to achieve the greatest environmental and human health benefits first, and identifies relief needed to provide agencies the flexibility to implement the plan within its available resources. Results of an IP for stormwater programs would be implemented primarily through modifications to the Permit.

4.3.2 Core Elements of an Integrated Plan

Development of an IP would utilize a core set of information as a starting point. In many cases, information can be taken from previous work efforts (e.g., Water Quality Improvement Plans, Sanitary Sewer Management Plans), while other information may need to be developed. The core elements include the following:

- Identifying CWA regulatory obligations, schedules and associated costs and additional water-related obligations and associated costs over the next 20-40 years (including source water protection, asset management, and flood risk management costs);
- Conducting a financial capability assessment to evaluate and address fiscal impacts on the community and the ability for the community to fund water-related obligations;
- Outlining environmental and human health impacts and benefits;
- Establishing performance measures to measure progress on IP implementation in a clear and transparent way to support implementation and to ensure the Regional Water Board and stakeholders (including environmental groups) have confidence in the agency's commitment to satisfying its water-related obligations in a cost-effective way; and
- Developing an adaptive management process to ensure successful implementation of the IP over the long-term.

[17] State Water Resources Control Board, Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part I Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, April 7, 2015. https://www.waterboards.ca.gov/water_issues/programs/stormwater/trash_implementation.shtml

4.3.3 Benefits of Developing an Integrated Plan

An IP has the potential to provide significant benefits to the Permittees, regulators, and the community. Through a greater commitment to implementation, over time, there would be greater positive effects on water quality. Through an IP, the Permittees would have the ability to align implementation approaches with affordability, providing more assurance that projects would be constructed. Funding options for programs and projects would be better supported, as compliance would be achievable through implementation. Furthermore, through IP, there is an opportunity for Permittees to implement programs and projects, over time, which address multiple pollutants, potentially eliminating the need for future regulations (e.g., TMDLs). Finally, while the development of an IP would require participation from both the regulated community and regulators, the inclusion of an option to pursue IP for an agency could be incorporated in the upcoming Permit without substantial changes to the Permit, as the existing Water Quality Improvement Plans could provide the foundation for the IP process.

4.3.4 Request

The Permittees request that the Permit be amended to include an option for Permittees to develop an IP in accordance with USEPA guidance, and the flexibility to modify compliance schedules in accordance with the outcomes of the IP. Coordination with the Regional Water Board will be necessary to better understand what an IP would look like, to articulate and define benefits, and to develop an approach for inclusion in the Permit that could improve implementation efforts over the long-term.

4.4 JURISDICTIONAL RUNOFF MANAGEMENT PROGRAM (PROVISION E)

The San Diego Permittee Land Development workgroup, the south Orange County Permittees, and the Riverside County Permittees have identified critical modifications to new development and redevelopment requirements that would better support implementation efforts in their counties. The recommended modifications are focused on Provision E.3. The **recommendation** is provided first in **bold** font, followed by a brief rationale. Recommended permit modifications are provided within **Appendix G**.

4.4.1 Clarify that Provision E.3.b.(1)(c) Applies Only Where 5,000 Square Feet or More of a Qualifying Feature are Created or Replaced – Provide Similar Clarification for E.3.b.(1)(e)

New development projects must be classified as priority development projects (PDPs) if they add or replace 10,000 sq-ft or more of impervious surface. Under some circumstances, a project adding or replacing between 5,000 and 10,000 sq-ft of impervious surface can also be a PDP depending on the types of features it contains. Provision E.3.b.(1)(c) imposes a 5,000 sq-ft when some types of features (e.g., driveways, parking lots, or restaurants) are present. However, the Permit is unclear on whether this threshold must be applied to the project as a whole or only to the qualifying feature(s). For example, consider a residential project creating 11,000 sq-ft of impervious surface, of which 2,000 sq-ft is driveway. If the mere presence of the driveway drops the threshold from 10,000 to 5,000 sq-ft impervious for the entire site, then the project <u>is</u> a PDP. But if 5,000 sq-ft or more of driveway is needed to trigger the requirement, the project <u>is not</u> a PDP.

The County of San Diego requested clarification from the Regional Water Board in July 2016, specifically with respect to Provision E.3.b.(1)(c)(iv), which addresses streets, roads, highways, freeways, and driveways. Written clarification was provided by the Regional Water Board on

January 31, 2017. Consistent with that memorandum, the Permittees are requesting that the Permit be amended to clarify that 5,000 sq-ft or more of the features listed in Provision E.3.b.(1)(c) are required to trigger PDP classification, and that this threshold is independent of the 10,000 sq-ft threshold for all new development projects. The permittees are also requesting that Provision E.3.b.(1)(e) be amended to provide the same clarification for portions of new development projects compromised of automotive repair shops and retail gasoline outlets.

Suggested edits are provided in **Appendix G**.

4.4.2 Create an Exemption for Curb Ramp Replacement (for Americans with Disabilities Act (ADA) Compliance) Similar to Street Trenching.

Curb replacements required for ADA compliance are similar to restoring pavement and should be included in the list of project types which are not required to have permanent post-construction stormwater requirements. This specifically applies to Provision E.3.b.(1)(b) through (f) [PDP definitions that include redevelopment projects]. Rather than modifying specific PDP definitions, the Permittees request amendments to the Attachment C definition of "redevelopment", as set forth in **Appendix G**.

4.4.3 Extend Green Street Exemptions of Provision E.3.b.(3)(b) to Include Alleys, Streets, and Roads Within a Larger Priority Development Project (PDP).

The Permit appears to extend the use of the "Green Street" exemption to public roads, but not to alleys, private streets or streets/roads within a larger PDP. Expanding the "Green Street" exemption to such roads will further the use of green streets. The Permittees request addition of specific text to Provision E.3.b.(3)(b) as included in **Appendix G**.

Consistent with California Environmental Quality Act (CEQA) requirement to define a project based on the "whole of the action," the total project impervious area (inclusive of green streets areas and the larger PDP project area) should be used to determine whether the project is a PDP. This could be further clarified in the Fact Sheet as set forth in **Appendix G**.

4.4.4 Allow Permittees to Exempt Certain Structural BMP Retrofit Projects From Being Defined as PDPs

Provision E.3.b(3)(b) allows Permittees to exempt from PDP designations projects that involve "retrofitting" of existing right of ways. This exemption should not be limited only to BMP retrofits that occur within existing right of ways, but also BMP retrofit projects occurring outside of an existing right-of-way. Such retrofit projects may add marginal areas of impervious surface that collectively trigger PDP criteria, but these projects provide mitigation for substantially more impervious area than they add. Additionally, many aspects of the traditional PDP planning process are not applicable to structural BMP retrofit projects. Such a modification will encourage more development of BMP retrofit projects. Requested new language in Provision E.3.b.(3)(b) is set forth in **Appendix G**.

4.4.5 Allow Permittees to Exempt Certain Channel Rehabilitation Projects From Being Defined as PDPs

The Permit exempts from PDP designation various constrained linear projects such as paths, bike lanes, and retrofitting or redevelopment within an existing road right of way. Channel and stream

rehabilitation projects are similar to these projects due to their constrained linear nature. Additionally, channel rehabilitation projects serve important purposes, such as watershed rehabilitation, infrastructure protection, and/or flood risk reduction. While site design and source control measures can be applied to such channel rehabilitation projects, pollutant treatment and hydromodification BMPs are rarely practical or feasible for impervious surfaces associated with these types of projects. To address this issue, the Permittees request addition of specific text to Provision E.3.b.(3) as set forth in **Appendix G**.

4.4.6 Clarify How Project Area Associated with Non-MS4 Water Features Should Be Considered in Determining PDP Applicability

The Permit does not define whether the surface of a water feature is an impervious surface, and particularly the Permit does not explicitly consider the scenario where the water feature is hydrologically and hydraulically isolated from the MS4 system. The Permit regulates discharges to and from the MS4. Many water features, such as reservoirs, ponds, and swimming pools have no reasonable potential to discharge to the MS4 due to the amount of freeboard they provide and the routing of their overflow and drains. These portions of a project therefore do not behave as an impervious surface relative to potential impacts to the MS4 or receiving water and should not be tabulated as impervious surface in determining project stormwater requirements under the MS4 permit.

The Permittees request the language as set forth in **Appendix G** be added to the fact sheet or an appropriate section of the MS4 Permit to provide clarification in tabulating impervious surfaces.

4.4.7 Provide a Viable Pathway for Stream Rehabilitation Alternative Compliance Projects (ACPs)

It is currently unclear whether stream rehabilitation projects can be used to fulfill pollutant control requirements as an offsite compliance option (it is interpreted that they can only fulfill the hydromodification requirements). Specifically, the Permittees are concerned that stream rehabilitation is not a viable pathway for pollutant control requirements since pollutants from runoff are perceived as being treated (i.e., assimilated) in the rehabilitated stream, i.e., the receiving water, which appears to be contrary to the language included in the MS4 Permit at Finding 7:

> ***In-Stream Treatment Systems***. *Pursuant to federal regulations (40 CFR 131.10(a)), in no case shall a state adopt waste transport or waste assimilation as a designated use for any waters of the U.S. Authorizing the construction of a runoff treatment facility within a water of the U.S., or using the water body itself as a treatment system or for conveyance to a treatment system, would be tantamount to accepting waste assimilation as an appropriate use for that water body. Runoff treatment must occur prior to the discharge of runoff into receiving waters. Treatment control best management practices (BMPs) must not be constructed in waters of the U.S. Construction, operation, and maintenance of a pollution control facility in a water body can negatively impact the physical, chemical, and biological integrity, as well as the beneficial uses, of the water body.*

Provision E.3.c.(3)(b)(iv) of the Permit, however, seems to allow for stream rehabilitation as a part of an alternative compliance project:

> *If the Priority Development Project applicant chooses to implement a candidate project, then the Copermittees must ensure that pollutant control and/or hydromodification management*

within the candidate project are sufficient to mitigate for impacts caused by not implementing structural BMPs fully onsite, pursuant to the performance requirements described in Provisions E.3.c.(1) and E.3.c.(2)(a).

Permittees request that future Permit language be revised based on the following principles:

1. Clarify that the stream restoration component of the Alternative Compliance program is consistent with Clean Water Act regulations at 40 C.F.R. 131.10(a), and that the E.3.c.(1) standard (e.g., the pollutant treatment BMP requirements) is sufficient to negate any assimilation concerns;
2. Establish compliance pathways and specific criteria for implementation of stream rehabilitation options with the Alternative Compliance program.

4.4.8 Onsite Flow-Through BMPs for PDPs

The current Permit language should be revised to allow a Permittee to waive the requirement for onsite flow-thru treatment control BMPs for any PDP site where treatment equivalent to full retention of the design capture volume from the PDP will be provided at one or more alternative compliance project sites, so long as:

- Alternative compliance projects providing the additional treatment are located between the priority development project and any discharge to Waters of the US; OR
- For linear PDPs, such as roads, the Permittee determines that onsite flow-thru treatment control BMPs are infeasible.

The Permittees request addition of text to Provision E.3.c.(1)(b) as set forth in **Appendix G**.

4.4.9 Clarify that Permanent Occupancy or Permanent Intended Uses are the Trigger for Verification of Operational Post-Construction BMPs

The Permit does not clearly specify when post-construction BMPs should be installed, inspected, and verified as operational for projects that involve a temporary, interim use during the construction phase that does not represent the ultimate intended use of the project. Some jurisdictions issue temporary use permits or temporary occupancy for certain activities that can occur on a site during the construction phase, such as showing model homes. However, these uses represent only a portion of the site (typically small) and are not typically separate from the rest of the site with respect to the tributary area to treatment and hydromodification BMPs. Current Permit language might be interpreted to require installation of post-construction BMPs before the site has been stabilized. In such a case, sediment loading from disturbed areas could cause premature failure of the post-construction BMPs. Additionally, the site's construction-phase stormwater pollution prevention plan (SWPPP) is intended to protect water quality while the site is under construction, including accounting for progressive phases of completion prior to certificate of permanent occupancy or intended permanent use.

Recommended modifications include addition of the text to Provision E.3.e.(1)(d) as set forth in **Appendix G**.

4.4.10 Clarify that the Design Capture Volume is Equivalent to 80 Percent Long-Term Capture of Stormwater Runoff Volume

When appropriately designed, a BMP sized for the design capture volume (the runoff volume from the 85th percentile, 24-hour storm event) achieves approximately 80 percent long-term capture of stormwater runoff. This equivalency demonstration has been explained and justified in the Orange County Technical Guidance Document and the Model San Diego BMP Design Manual. This equivalency enables the use of continuous simulation models to evaluate pollutant treatment BMP sizing in addition to hydromodification design. Establishing this equivalency also helps avoid the use of under-performing BMPs that may retain the design capture volume but do not recover storage capacity quickly enough to treat the runoff from sequential storm events. Explicitly stating this equivalency also makes the linkage between the BMP Design Manuals (some of which are already based on this equivalency) and the MS4 Permit more explicit.

Recommended modification includes adding a clarifying statement to Provision E.3.c.(1)(a), Footnote 28 (**Appendix G**).

4.4.11 Clarify How PDP Classifications Apply to Remaining Phases of Prior Common Plans of Development

Provision E.3.e.(1)(a) describes criteria for when the Permittee may allow the applicant to utilize the BMP standards associated with a previous Permit. In some cases, projects that were previously approved as a common plan of development, and have built a stormwater drainage system (including all applicable structural BMPs) for the entirety of the common plan of development, will have unbuilt portions (lots, planning areas, etc.). In this case, certain of these remaining portions may have no further stormwater management obligations as set forth under the common plan of development, but no longer qualify for application of prior land development requirements.

The development of small unbuilt portions (e.g. individual remaining lots in an otherwise built-out planning area), could, under current Permit language, be *categorized as a PDP*, and, as a result, be required to conform to the structural BMP standards of the current (or newer) Permit. The Permittees believe this result would stem from an ambiguity in the PDP definition, and thus request that the Permit be modified to clarify how the PDP status of various project types and scenarios should be determined for project within a common plan of development, for which common drainage infrastructure (inclusive of all applicable stormwater BMPs to fully serve the remaining development) has been previously approved and implemented.

The requested clarification pertains <u>only</u> to the scenario in which both of the following conditions are met:

1. The common plan of development is no longer active. The timeframes specified in Provision E.3.e.(1)(a) have lapsed and any active development entitlements have lapsed, such that the Permittee finds that there is no longer prior lawful approval that would legally prevent the application of current BMP standards, <u>and</u>
2. A remaining unbuilt portion exists for which the full suite of applicable structural stormwater BMPs associated with the common plan of development has been previously built (i.e., a regional or sub-regional BMP approach). There are no remaining structural BMPs conditioned to be built as part of the remaining unbuilt portion. In other words, had the unbuilt portion been built as part of the original common plan of development, it would not have been required to build any additional stormwater BMPs within its footprint.

For the portion(s) of the development that meet both of the conditions above, the determination of whether a given project is a PDP should be made based on the largest scale of development that has yet to be permitted. This should be a standalone determination. In other words, the relationship between parcels or planning areas that was established via the original common plan of development should no longer be applicable in determining PDP status.

For example, consider a planning area where the neighborhood streets and common infrastructure have been fully installed to serve a neighborhood, and the remaining development includes individual home lots, which themselves are conditioned to have no structural BMPs. The determination of PDP status should be based on each home lot individually, as this would be the largest scale yet to apply for permits. The home sites would each receive separate building permits and would be each individual projects with respect to PDP determination. Cumulative impacts of adjacent or related home lots would have already been assessed as part of the original common plan of development, which is no longer active.

In contrast, if a single project exceeds 10,000 sq-ft of added or replaced impervious cover, this would be classified as a PDP and be required to conform to the BMP requirements of the current permit. In this case, the Permittees request the permit be clarified that regional BMP capacity that is dedicated and available for the subject parcel can be considered when evaluating the remaining BMP obligations that would apply to the PDP site.

The Permittees request insertion of a new provision E.3.b.(4) to clarify how these project types should be considered in determining PDP applicability (as set forth in **Appendix G**).

4.4.12 Make Practical Updates to Provision E.3.e.(1)(a) to Acknowledge Projects Currently Under Development

Provision E.3.e.(1)(a) of the current Permit includes criteria that could allow a project to comply with the previous Permit. This provision includes certain time limits, including up to 5 years from the effective date of the BMP Design Manual for the project to be completed. The effective date of the updated Permit could occur before this time period has expired for qualifying projects. As part of permit renewal, consideration should be given to avoid conflicts with the current Permit. Additionally, reasonable time should be provided between Permit adoption and the effective date of the updated BMP Design Manual to allow for projects currently under plan development to reasonably obtain approval or adapt designs to reflect the updated requirements. A two year period between Permit effective date and BMP Design Manual effective date is requested.

5 Total Maximum Daily Loads

The Permit incorporates a number of TMDLs. Those Permittees who are required by the Permit to implement these TMDLs have found that TMDL implementation is a resource intensive process. To ensure maximum cost efficiency and effectiveness, TMDLs need to be updated to incorporate recent scientific studies, realistic compliance requirements, and revised compliance determination methods. Based on the experience gained from the implementation of approved TMDLs under the current Permit, the Permittees recommend several modifications of the TMDLs in Permit Attachment E to ensure consistency with the TMDL Technical Reports and Basin Plan Amendments. These modifications are intended to align the TMDLs with the latest available studies and clarify implementation strategies and compliance with TMDL targets. The recommendations also align TMDL requirements in Attachment E with the corresponding adopted Basin Plan Amendments. The recommended Permit modifications are provided within **Appendix G**.

5.1 TMDLS FOR DISSOLVED COPPER, LEAD, AND ZINC IN CHOLLAS CREEK (ATTACHMENT E.4)

Resolution No. R9-2007-0043 amended the Basin Plan to incorporate a TMDL for dissolved copper, lead, and zinc in Chollas Creek (Chollas Creek Dissolved Metals TMDL). The Chollas Creek Dissolved Metals TMDL contains final receiving water limitations and final effluent limitations expressed as concentrations using hardness-dependent equations. The hardness-dependent equations contain a Water-Effects Ratio (WER) variable that has a default value of 1.0 unless a site-specific and chemical-specific WER is developed and incorporated into the Basin Plan.

The City of San Diego submitted a final report to the Regional Water Board *Development of Site-Specific Water Quality Objectives for Trace Metals in Chollas Creek: Water-Effect Ratio Study for Copper and Zinc, and Recalculation of Lead* in October 2014. Based on this report, the Regional Water Board adopted a Basin Plan Amendment (Resolution R9-2017-0015 on February 8, 2017) that included WERs of 6.998 and 1.711 during wet weather for copper and zinc, respectively.

Request: Although Tables 5.1 through 5.3 within Attachment E.4 of the Permit include footnotes that state "The Water Effect Ratio is assumed to be 1.0 unless there is a site-specific and a chemical-specific WER provided in the Basin Plan", the Responsible Permittees request the WER values identified within the adopted Basin Plan Amendment be included within the Permit (see **Appendix G**).

5.2 TMDL FOR INDICATOR BACTERIA, BABY BEACH IN DANA POINT HARBOR AND SHELTER ISLAND SHORELINE PARK IN SAN DIEGO BAY (ATTACHMENT E.5) *AND* REVISED TMDLS FOR INDICATOR BACTERIA, PROJECT I - TWENTY BEACHES AND CREEKS IN THE SAN DIEGO REGION (INCLUDING TECOLOTE CREEK) (ATTACHMENT E.6) (COLLECTIVELY BACTERIA TMDLS)

During the current MS4 permit term, a number of regulatory changes and special studies have been completed that require revised permit provisions to ensure the Bacteria TMDLs are implemented in accordance with the best available science and information. **Appendix J** provides additional technical information supporting the summary provided in this section. The additional information includes four white papers that summarize the technical information supporting the major requests outlined in this section and a draft revised Bacteria TMDL technical report. Footnotes are included in the text to indicate where additional information can be found in this appendix to support the discussion and recommendations. Key activities that have occurred in recent years include:

1) As part of the 2014 Basin Plan Triennial Review, the Regional Water Board identified as a top priority project an evaluation of bacteria-related water quality objectives and regulatory programs. As part of this project - Evaluation of Contact Water Recreation (REC-1) Water Quality Objectives and Methods for Quantifying Exceedances (Issue 3) – the Regional Water Board requested a Bacteria TMDL Cost-Benefit Analysis that was completed by an independent group of economic and environmental experts with oversight by the regulatory, regulated, and environmental community. The Cost-Benefit Analysis used human health results from the Surfer Health Study, local data on beach usage, and a variety of other data sources to compare the relative cost-effectiveness of more than a dozen scenarios, or different ways to comply with the wet weather wasteload allocations for Phase I MS4s in the Bacteria TMDLs. The analysis showed that implementation approaches addressing high risk sources of human waste are significantly more cost-effective than the TMDL's current focus on managing bacteria inputs from the stormwater conveyance system.[18]
2) USEPA published revised recreational water quality criteria (RWQC) designed to protect the primary contact recreation beneficial use. Furthermore, unlike USEPA's 1986 recommendations, the 2012 RWQC define mean illness levels (32 or 36 excess illnesses per 1000 recreators compared to background illness rates) with associated concentrations of culturable enterococcus and *E. coli* to be used as surrogates for the illness levels in developing water quality criteria. The illness levels also can be used to estimate equivalent criteria values for alternative indicators[19].
3) The State Water Board intends to adopt the USEPA 2012 RWQC and associated implementation provisions as statewide objectives in 2018. The draft provisions released in 2017 proposed the use of the lower 32 excess illnesses per 1000 recreators as the basis for the objectives. The draft proposed implementation provisions include authorization for Regional Water Boards to adopt: alternative indicators, seasonal suspension of the objectives, and reference reach/natural source exclusions.

[18] Additional information can be found in White Paper #1 in Appendix J-1.

[19] The use of alternative indicators and tools for developing them are described in Section 6.0 of the USEPA 2012 RWQC.

4) A number of special studies have been conducted to determine local relationships between human health risk and indicator bacteria concentrations (SCCWRP, 2017; Colford, et. al., 2007, 2012). Two studies were focused on specific areas during dry weather (Doheny Beach and Mission Bay) and the Surfer Health Study (SHS) covered the entire San Diego Region. The County of San Diego and the City of San Diego jointly funded the SHS to investigate the linkage between surfer illness and exposure to bacteria in the ocean during wet weather. The SHS paired bacteria data collected in the ocean with ocean exposure and illness symptoms, and established a connection between recreator water exposure following wet weather events and the risk to human health (Arnold, et. al., 2017; Soller et. al., 2017). The results of the study demonstrated that the excess gastrointestinal illness risk for surfers during wet weather was below both the USEPA 2012 RWQC thresholds (12 versus 32 or 36 excess gastrointestinal illnesses per 1,000 recreators) even though bacteria levels were elevated.[20]

Combined, these efforts have demonstrated that modifications to the Bacteria TMDLs are needed to reflect the new science and information, and more effectively protect recreational beneficial uses by focusing on human sources of bacteria. The current Bacteria TMDLs incorporated into the order were developed to address waterbodies that were listed as impaired for fecal indicator bacteria (FIB) with the primary goal of restoring and ensuring protection of the recreational beneficial uses. The current Bacteria TMDLs include numeric targets and allocations for total coliform, fecal coliform, and enterococcus consistent with the beneficial uses and water quality objectives specified in the Basin Plan and Ocean Plan. The San Diego Water Board acknowledged at the time of adoption that revisions to the TMDLs, allocations, implementation plan, and potentially to beneficial uses and water quality objectives may be warranted as TMDL implementation progresses, experience is gained, and new information is developed[21]. Additionally, in a MOU signed by the Regional Water Board in August 2016, the County of San Diego, the County of Orange, and the City of San Diego committed these parties to collaborating on potential changes to the TMDL. The MOU anticipates a collaborative process but also indicates that if parties cannot come to agreement on whether TMDL changes are warranted based on the results of special studies and the Cost-Benefit Analysis, Permittee recommendations will be brought to the Regional Water Board in a public meeting or workshop for consideration.

As a result, the Permittees and Regional Water Board have been collaborating on a process to reconsider the Bacteria TMDL since 2014. Considering that completion of this effort may not occur prior to the adoption of the new permit, Regional Water Board staff indicated (in a meeting on December 12, 2017) that permit modifications might be made to incorporate the new science and information while the TMDL modifications are being completed. The Triennial Review Process and Bacteria TMDL reconsideration are still ongoing; therefore, potential changes to how the Bacteria TMDLs are incorporated in the permit to address the Bacteria TMDL reconsideration (Attachment E.5 and Attachment E.6) are necessary to ensure that implementation efforts and compliance determinations are focused on what matters most. The permit modifications needed are as follows:

[20] Additional information can be found in White Paper #2 in Appendix J-2.

[21] As described in Basin Plan Amendment for the Bacteria TMDL Implementation Plan in the discussion of Regional Water Board Actions.

- Include additional options for determining compliance that support a focus on addressing human waste rather than all sources of enterococcus. These options include using the human marker HF183[22] or an epidemiological study/quantitative microbiological risk assessment (QMRA), such as the SHS, to demonstrate that the risk of illness is lower than USEPA thresholds, independent of the concentration of enterococcus in the waterbody.[23]

- Revise the monitoring plan provisions in Permit Attachment E to focus on human health risk by placing compliance monitoring locations in the areas of highest recreational use (beaches). Include options to collect HF183[24] and conduct sanitary sewer surveys to assess compliance under the new compliance options, outline follow-up actions to investigate and address identified human sources of bacteria, and provide for participation in a joint monitoring plan with other agencies (e.g. sewer agencies) to more effectively address human sources.[25]

- Replace the receiving water and effluent limitations with the USEPA 2012 RWQC criteria as interpreted in the Draft Statewide Bacteria Provisions. As discussed in the draft Statewide Bacteria Provisions Staff Report, USEPA's criteria include two recommended illness rates, 36 excess illnesses per 1,000 recreators and 32 excess illnesses per 1,000 recreators. "While both recommended illness rates are considered protective of public health, the 32 illnesses per 1,000 would require a more stringent threshold for Fecal Indicator Bacteria." The higher illness rate is equivalent to the illness rate associated with the current Basin Plan objectives used to develop the current TMDL allocations. The draft Statewide Bacteria Provisions propose to use the lower illness rate to "provide better protection of human health", but acknowledge that the revised objectives "may lead to increased frequency of storm water permit violations." To be consistent with the draft Statewide Bacteria Provisions, the permit should be modified to include the illness rate of 32 excess illness per 1000 recreators interpreted as the surrogate enterococcus and *E. coli* concentrations. However, if the lower illness rate and associated surrogate enterococcus and *E. coli* concentrations are included, an associated extension in the compliance schedule is needed to allow time to address the new, more stringent requirements. As these are new, more stringent requirements being adopted by the State and incorporated into the permit, the revised receiving water limitations and effluent limitations should automatically include a corresponding modification to the final TMDL compliance schedule provisions of 10 years for dry weather and 20 years for wet weather, from when the Statewide Bacteria Provisions become effective.

- If an automatic extension is not provided, the permit should at a minimum include an option for obtaining a compliance schedule extending the final TMDL compliance deadlines for up to 10 years for dry weather and up to 20 years for wet weather through an analysis in an accepted WQIP or to the schedule identified in an accepted Integrated Plan developed in accordance with USEPA's Integrated Planning Framework. Additional time is needed in

[22] An equivalent human marker to HF183 may be used as molecular source tracking science develops and evolves.

[23] Additional information can be found in White Paper #2 in Appendix J-2 and Section 7 of the Bacteria TMDL technical report, Appendix J-5.

[24] An equivalent human marker to HF183 may be used as molecular source tracking science develops and evolves.

[25] Additional information can be found in White Paper #3 in Appendix J-3 and Section 7 of the Bacteria TMDL technical report, Appendix J-5.

some areas to allow the implementation of revised strategies to address human sources of bacteria and meet the new, more stringent, proposed Statewide Bacteria Provisions. The justification for a longer compliance schedule would need to be included in an accepted WQIP or Integrated Plan and meet the requirements specified in the Compliance Schedule Policy (SWRCB, 2008) for obtaining a compliance schedule to implement a "new, revised, or newly interpreted water quality objective." [26]

All of the potential Bacteria TMDL modifications are based on achieving the same outcome as the current TMDL -- protection of the recreational beneficial use. The differences are primarily in the method for achieving beneficial use protection, the ways in which the outcome is measured, and the schedule needed to implement revised implementation approaches focused on the greatest risk (i.e. human sources). Because several of the potential TMDL revisions are simply new methods of achieving the same outcome as the current Bacteria TMDLs, modifications to the permit language can be made now, prior to the Bacteria TMDL reconsideration, while still being consistent with the assumptions and requirements of the TMDL and wasteload allocations, as required by 40 C.F.R. § 122.44(d)(1)(vii)(B)). The current provisions of the permit do not clearly support, and in some cases conflict with, the goal of implementing actions targeted at reducing human sources of bacteria and associated human health risk. Therefore, modification of permit provisions prior to the TMDL reconsideration is needed to protect and restore beneficial uses more effectively and expediently. However, as some elements needed to achieve the desired outcome of protecting recreational beneficial uses may not be able to be achieved solely through modifying the permit, TMDL modifications should continue in parallel with the permit modifications. Explicit language to incorporate any modifications made to the Bacteria TMDLs by reference into the Permit once a Basin Plan Amendment is adopted should also be included in the Permit.

Appendix G provides recommended permit language to facilitate the focus on human sources of bacteria when implementing the Bacteria TMDL. The rationale demonstrating that the proposed permit modifications are consistent with the assumptions and requirements of the wasteload allocations is as follows.

1) A significant body of peer reviewed and published scientific information indicates that enterococcus and *E. coli* are more appropriate indicators of adverse health effects in recreational waters than total coliform or fecal coliform (Havelaar,et. al., 2001; Prüss, et. al., 1998; USEPA, 1986; USEPA, 2012; Wade, et. al., 2003; WHO, 2003; Zmirou, et. al., 2003). As a result, TMDL and MS4 permit requirements that address total coliform and fecal coliform are no longer scientifically supported since the latest and most robust available science indicates that enterococcus and/or *E. coli* will provide better protection from adverse health effects in recreational waters. Basing the receiving water limitations and effluent limitations on the new USEPA criteria, as proposed in the draft Statewide Bacteria Provisions (SWRCB, 2017), will provide better protection of the beneficial use than the current TMDL wasteload allocations.

2) As part of the 2012 criteria, USEPA indicated that States could consider local environmental conditions and human exposure patterns in their water quality standard development, as long as the resulting water quality standards are scientifically defensible,

[26] Additional information can be found in White Paper #4 in Appendix J-4 and Section 7 of the Bacteria TMDL technical report, Appendix J-5.

protective of the use, and reflect risk management decisions regarding illness rate. The USEPA also indicated that FIB in recreational waters can result from both human and non-human fecal sources and that the potential human health risks from human versus non-human fecal sources can vary. Recent research indicates that human contamination is the riskiest source that has been evaluated (Schoen, 2010; Soller, et. al.; 2010). The SHS provides specific, local information about the presence of the human marker HF183, enterococcus, and human health risks from recreational activities in San Diego and Orange Counties (Arnold, et. al., 2017; Soller et. al., 2017), and the results support the use of HF183 as a supplemental indicator to ensure the protection of human health. In this context, the use of the human marker HF183 can provide verification that high FIB concentrations are the result of high risk human sources to improve the protection of water contact recreational beneficial uses. The use of HF183 to help distinguish between lower risk FIB sources and high-risk sources is consistent with the reference reach/anti-degradation approach in the current TMDL that allows a certain percentage of exceedances of the allocations to account for natural sources of bacteria. Therefore, a compliance pathway that allows for the use of HF183[28] in lieu of an allowable exceedance frequency is consistent with the assumptions and requirements of the current TMDL wasteload allocations[27].

3) Epidemiological studies, such as the SHS, provide an alternative method of demonstrating that recreational beneficial uses are being protected by directly measuring risk to human health. The criteria documents that formed the basis for the water quality objectives used in the current Bacteria TMDL included an approximated estimate of the illness rate associated with the objectives. In the 2012 RWQC, USEPA formalized illness rates into the criteria itself. This formalization allows for a direct assessment and evaluation of site-specific risk conditions. Given that EPA's 2012 RWQC recommendations describe the desired ambient water quality conditions to support the designated use of primary contact recreation, the resultant criteria are equal to or more stringent than the TMDL targets and allocations. As a result, it is possible to use the illness rates from the SHS, or other similar types of studies, to demonstrate that the designated use is being protected. Therefore, the proposed permit revisions include a method for determining compliance through direct measurements of human health risk. As water quality conditions observed during the SHS are at least as protective as USEPA's 2012 RWQC and the 2012 RWQC is at least as protective, if not more stringent than the current TMDL targets, the SHS can be used to demonstrate compliance with the current TMDL wasteload allocations. Observations at Ocean Beach conducted as a follow-up to the SHS confirmed that recreational use is lower during winter as compared to summer and that most people recreating in winter do not take part in water contact activities. Only 9% of the observed recreators participated in activities that involved head immersion. Of those involved in head immersion activities, 82% were surfers, supporting the selection of surfers as the appropriate population for the study.

4) Updates to the monitoring program are required to effectively assess compliance and inform implementation actions that protect recreational beneficial uses given the new science and information now available. An option to use a human genetic marker, (e.g.

[27] Additional information can be found in White Paper #2 in Appendix J-2 and Section 7 of the Bacteria TMDL technical report, Appendix J-5.

HF183)[28], instead of enterococcus to verify compliance with the TMDL would incorporate the latest, well documented science. A TMDL monitoring program that continues to focus on FIB is not state-of-the-art, and would potentially miss the opportunity to identify and abate high risk sources of human waste. Furthermore, the continued use of only FIB for compliance determination, wastes Copermittees' resources on mitigating all sources of bacteria that may not lower the risk of illness to water contact recreators[29].

5) As discussed above, inclusion of a compliance schedule that is longer than the current TMDL schedule is necessary to address the newly included receiving water and effluent limitations. Although the proposed new limits are consistent with the assumptions of the current TMDL wasteload allocations, they are more stringent and combined with the modified implementation actions necessary to focus on human sources, additional time will be needed to meet the new requirements. Including a compliance schedule provision is consistent with the assumptions of the implementation provision of the current Beaches Bacteria TMDL Basin Plan Amendment that states that the Phase I MS4 permit shall include a "Compliance schedule for Phase I MS4s to attain the MS4 WLAs" (SDRWQCB, 2016) While the Beaches Bacteria TMDL includes specific dates for compliance in a later section, the schedule discussion provides latitude for modifying the schedule based on the development of Bacteria or Comprehensive Load Reduction Plans, which have now been incorporated into WQIPs. The TMDL also includes a recognition that "restoring the beneficial uses of the waterbodies impaired by elevated bacteria levels will require time and multiple approaches to implement. Therefore, the bacteria TMDLs are expected to be implemented in a phased approach with a monitoring component to identify bacteria sources, determine the effectiveness of each phase, and guide the selection of BMPs" (SDRWQCB, 2016) Allowing for a longer TMDL compliance schedule in the permit, would be consistent with the assumptions of the current TMDLs by providing modifications to the schedule based on new information gained on bacteria sources and BMP effectiveness[30].

Request: Language is recommended within the Permit's Bacteria TMDLs sections (Attachment E.5 and Attachment E.6) to:

1. Remove total and fecal coliform receiving water and effluent limitations and replace them with enterococcus and *E. coli* receiving water and effluent limitations based on the USEPA 2012 RWQC and Draft Statewide Bacteria Provisions,
2. Incorporate new methods of demonstrating compliance with the receiving water and effluent limitations using HF183[31] and direct measurements of human health risk,
3. Incorporate a revised monitoring program to support these alternative methods of demonstrating compliance,
4. Provide a compliance schedule to allow additional time to attain new receiving water and effluent limitations prior to the Bacteria TMDL reconsideration,
5. Provide an explicit method to ensure that any modifications made to the Bacteria TMDLs are incorporated by reference into the Permit once a Basin Plan Amendment is adopted,

[28] An equivalent human marker to HF183 may be used as molecular source tracking science develops and evolves.
[29] Additional information can be found in White Paper #1 in Appendix J-1.
[30] Additional information can be found in White Paper #4 in Appendix J-4.
[31] An equivalent human marker to HF183 may be used as molecular source tracking science develops and evolves.

6. Clarify that delisted waterbodies are attaining the TMDL and only receiving water monitoring is required for those waterbodies, and
7. Clarify that Copermittees are not responsible for bacteria and associated receiving water objective exceedances due to natural sources, other NPDES dischargers, and other sources with wasteload or load allocations in the TMDL.

Appendix G includes proposed permit markup language to address the requests above for the Bacteria TMDLs. Although the additional information supporting the modification recommendations was completed primarily to support the 2014 Triennial Review of the Beaches and Creeks Bacteria TMDL, the findings are also applicable to the Baby Beach in Dana Point Harbor and Shelter Island Shoreline Park bacteria TMDL. Similar proposed markup language for this TMDL can be provided upon request.

5.3 TMDL FOR SEDIMENT LOS PEÑASQUITOS LAGOON (ATTACHMENT E.7)

Resolution No. R9-2012-0033 amended the Basin Plan to incorporate a Sediment TMDL for Los Peñasquitos Lagoon (Sediment TMDL). Attachment A to Resolution No. R9-2012-0033 includes a plan to implement the Sediment TMDL and monitor its effectiveness. Per Attachment A, approximately 170 acres of saltmarsh and brackish marsh vegetation are impaired by excessive sedimentation, which converted the coastal saltmarsh to non-tidal saltmarsh, freshwater marsh, and woody riparian habitats. The Sediment TMDL required the responsible parties to develop and submit a load reduction plan to identify the implementation actions that will be taken to meet the requirements of the TMDL. To assess the effectiveness of the load reduction plans, the Sediment TMDL also requires watershed and lagoon monitoring. For lagoon monitoring, the responsible parties must assess the changes in the extent of vegetation types annually during the fall and determine if additional implementation actions are necessary.

Although the Responsible Permittees recognize the importance of conducting lagoon vegetation monitoring, annual assessments are not an effective use of resources. Considering vegetation growth is variable year-to-year due to environmental conditions (rainfall, tidal influence, salinity, nutrients, etc.), it is difficult to ascertain useful information from resource intensive vegetation monitoring on an annual basis. Instead, it would be more effective and efficient to conduct vegetation monitoring in the lagoon once each Permit term. The five-year timeframe is more appropriate for assessing vegetation growth because the natural annual variability of vegetation growth is accounted for and the effects of implementation actions can be accurately assessed. In addition, this frequency would align with the ROWD process so the Responsible Permittees could recommend changes to their load reduction plans based on monitoring results.

Request: Attachment E.7.d.(2) should be modified to recognize the timeframe necessary to assess vegetation growth, assess implementation, and align the timeframe with the ROWD process (see **Appendix G**).

5.4 LOMA ALTA SLOUGH TMDL ALTERNATIVE

Due to eutrophic conditions within the Loma Alta Slough (Slough), it was placed on the 1996 Clean Water Act section 303(d) list (CWA 303(d) list) of impaired water bodies. The Regional Water Board, in conjunction with the USEPA and local stakeholders, investigated the conditions, sources of pollutants, loading capacity, and existing control requirements affecting the eutrophic conditions. This information was used to develop a draft TMDL for the pollutants affecting the eutrophic conditions in the Slough.

On June 26, 2014, the Regional Water Board adopted Resolution No. R9-2014-0020 - *Resolution of Commitment to an Alternative Process for Achieving Water Quality Objectives for Biostimulatory Substances in Loma Alta Slough* (Alternative Process) that outlined a process, which is a regulatory alternative to a TMDL, to eliminate the excessive algal growth in the Slough by implementing measures and programs required by the existing Regional MS4 Permit and strategies developed within Carlsbad WMA Water Quality Improvement Plan.

Efforts include a long-term water quality monitoring program to assess the effectiveness of the City of Oceanside's watershed management efforts through tracking the levels of algal biomass at various locations in the Slough, as well as measuring watershed nutrient loads.

Request: A new section should be added to Attachment E to indicate that the Alternative Process described within Resolution No. R9-2014-0020 will serve as the regulatory approach to address the eutrophic impairment in the Slough (see **Appendix G**).

5.5 SANTA MARGARITA ESTUARY TMDL ALTERNATIVE

Due to eutrophic conditions within the Santa Margarita Estuary (Estuary), it was placed on the 1996 Clean Water Act section 303(d) list (CWA 303(d) list) of impaired water bodies. The Regional Water Board, in conjunction with the USEPA and local stakeholders including the local agencies in the Santa Margarita River watershed, formed the Santa Margarita Nutrient Initiative Group (SMRNIG) to investigate the conditions, sources of pollutants, loading capacity, and existing control requirements affecting the eutrophic conditions. Several long-term water quality monitoring projects have been implemented and modeling of the Estuary and watershed have been performed. The information is currently being used to develop a TMDL Alternative to address the pollutants and conditions affecting eutrophication within the Slough.

Request: A new section should be added to Attachment E of the Permit to indicate that a TMDL Alternative has been developed that will serve as the regulatory approach to address the eutrophic impairment in the Estuary. While the TMDL technical report and resolution are currently under development, there are three key tenets that the watershed Permittees request for incorporation into Attachment E:

1. Attainment of the TMDL Alternative should be based on numeric goals included within the Water Quality Improvement Plan for the Santa Margarita River Watershed Management Area. The goals should be consistent with the targets and allocations developed within the TMDL Alternative technical report.
2. Permit language should reflect an implementation approach to attain the TMDL Alternative targets and allocations through the effective prohibition of non-stormwater discharges to the MS4, as currently required under Permit Provisions A.1 and E.2.
3. Consistent with the recommendations for an option to develop a watershed specific monitoring program presented in **Section 4.2.1**, the Permittees should participate in a Regional Monitoring Program that is tailored to the needs of the watershed to demonstrate attainment of Water Quality Improvement Plan goals (and thereby attainment of TMDL alternative targets and allocations). This monitoring program should satisfy, in whole or in part, the monitoring requirements under Provision D of the Permit.

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