



**Comprehensive
Total Maximum Daily Load
Monitoring Plan**

CTSW-PL-17-350.01.01

January 2017

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- Appendix A Permit Attachment II; Non-ASBS Monitoring Constituent List
- Appendix B Quality Assurance Project Plan Template

List of Abbreviations and Acronyms

ASBS	Areas of Special Biological Significance
BMP	Best Management Practice
BMP PSGM	Best Management Practice Pilot Study Guidance Manual
Caltrans / Department	California Department of Transportation
CEDEN	California Environmental Data Exchange Network
CIMP	Comprehensive Implementation Monitoring Plan
CMP	Comprehensive Total Maximum Daily Load Monitoring Plan
MOA	Memoranda of Agreement
Permit	Caltrans National Pollutant Discharge Elimination System Storm Water Permit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
Regional Water Board	California Regional Water Quality Control Board
SMARTS	Storm Water Multi-Application Reporting and Tracking System
SWAMP	Surface Water Ambient Monitoring Program
SWMGM	Caltrans Stormwater Monitoring Guidance Manual
State Water Board	California State Water Resources Control Board
TMDL	Total Maximum Daily Load
WLA	Waste Load Allocation

1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this Comprehensive Total Maximum Daily Load Monitoring Plan (CMP) is to present the California Department of Transportation (Caltrans) plan for complying with the Total Maximum Daily Load (TMDL) monitoring requirements set forth in its current National Pollutant Discharge Elimination System Permit (hereafter Permit).

1.2 PERMIT REQUIREMENTS

The Permit was adopted on September 19, 2012, and became effective on July 1, 2013. The Permit describes water quality compliance monitoring at Tier-1 sites, composed of all Areas of Biological Significance (ASBS) and TMDL watersheds for which Caltrans is a named stakeholder, and, if necessary, Tier-2 sites, which are projects/locations that are outside of these areas. This CMP addresses monitoring for Tier-1 sites in watersheds with adopted TMDLs.

The Permit Monitoring and Discharge Characterization requirement are described in Provision E.2.c, which states in part; *“The Department shall conduct without limitation all Tier-1 monitoring ... under the adopted and approved TMDLs.”* This provision also references Attachment IV of the Permit, which contains additional details of TMDL monitoring requirements. Attachment IV was later amended on April 7, 2015.

Attachment IV, Section III.A.1.b, requires Caltrans to submit a CMP for its TMDL watersheds by January 1, 2015. The plan is required to contain the following elements:

- Include existing, approved water quality monitoring plans and include monitoring for all TMDLs that do not have existing approved water quality monitoring plans.
- A proposed plan for conducting water quality monitoring at TMDL sites where an approved water quality monitoring plan does not exist.
- A description of how Best Management Practices (BMPs) will be assessed for effectiveness.

- A discussion of linkages between water quality monitoring and future TMDL reach prioritization submittals.
- A time-schedule for the CMP implementation.

Caltrans submitted its CMP for review by State Water Resources Control Board (State Water Board) staff on January 1, 2015. State Water Board staff reviewed the draft document and provided comments in May 2016, subsequent to the clarifications provided by the adoption of the amended Attachment IV. From March 2016 through December 2016, State Water Board and Caltrans' staff coordinated to revise the CMP to fully meet the Permit TMDL monitoring requirements.

1.3 CALTRANS STORMWATER PROGRAM MONITORING GUIDANCE

Over 15 years ago, Caltrans established the Caltrans Stormwater Program, a well-developed and extensive program that has received environmental awards. This program includes water quality monitoring for chemical constituents, microbiological constituents, gross solids; and BMP testing for assessing feasibility and effectiveness within the highway environment; and source control studies. Additionally, guidance documents for this program have been created and are routinely updated. Implementation of this CMP will be supported by the following Caltrans Stormwater Program guidance documents:

- The *Stormwater Monitoring Guidance Manual* (Caltrans, 2015). This document provides direction on (1) planning and implementation of stormwater monitoring projects; (2) standardized procedures for sample collection, sample analysis, and data reporting to ensure that all monitoring is performed consistently throughout the state; and (3) data quality objectives that should be adhered to by all program laboratories and guidance on other aspects of stormwater monitoring such as monitoring equipment maintenance, training, and health and safety.
- The *BMP Pilot Study Guidance Manual* (BMP PSGM) (Caltrans, 2009). This document provides guidance on planning, performing, evaluating, and reporting of BMP pilot studies. Appendix K of the BMP PSGM contains guidance on selecting an appropriate statistical method, understanding the limitations of the analysis method, and interpreting statistically valid conclusions.

1.4 ORGANIZATION

The CMP is organized into the following six sections plus appendices:

Section 1 – Introduction. This section contains the purpose and outlines the organization of the CMP. A list of the 84 TMDLs where Caltrans has been identified as a responsible party is provided in this section.

Section 2 – Caltrans Monitoring. This section contains an overview of the planning and activities needed for monitoring.

Section 3 – Compliance Monitoring Through Cooperative Agreements. This section contains a brief overview of Caltrans' strategy for participating in regional collaborative monitoring through cooperative agreements.

Section 4 – Plan Implementation and Schedule. This section discusses how the CMP will be implemented, and includes a table providing the status of monitoring in each TMDL watershed.

Section 5 – Reporting and Future TMDLs. This section contains the reporting requirements, when updates to the CMP will occur, and a discussion of how future TMDLs will be integrated into the Caltrans monitoring program.

Section 6 – References. This section contains the list of references cited in the CMP.

Appendix A contains the monitoring constituent list from the Permit.

Appendix B contains the most recent Quality Assurance Project Plan (QAPP) template that will be used for Caltrans TMDL monitoring projects.

1.5 TMDLs LISTED IN THE PERMIT

Figure 1.1 presents a map of California with the 84 TMDL watershed areas where Caltrans has been identified as a responsible party. Table 1.1 presents a list by watershed of the 84 TMDLs. For each TMDL, the table includes the relevant Regional Water Quality Control Board (Regional Water Board), Caltrans district, watershed name, and TMDL pollutant.

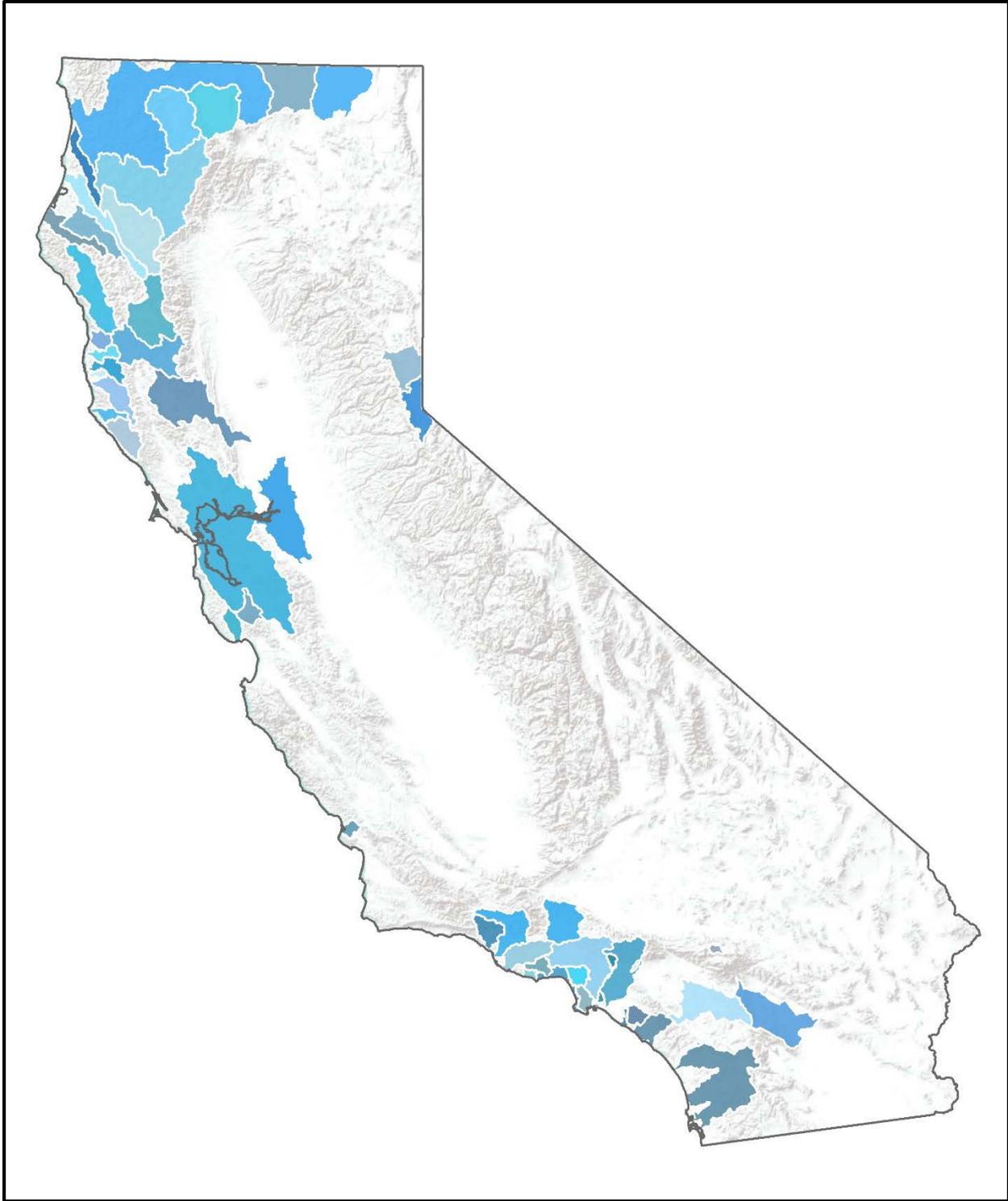


Figure 1.1 Map of TMDL Watershed Areas

Note: The blue shaded areas in the figure distinguish the 84 different watershed areas.

Table 1.1. List of Caltrans' 84 TMDLs

TMDL Watershed No.	Watershed Name	Pollutant(s)	Regional Board No.	Caltrans District No.
1	Albion River	Sediment	1	1
2	Ballona Creek	Metals (Ag, Cd, Cu, Pb, Zn) and Selenium	4	7
3	Ballona Creek	Trash	4	7
4	Ballona Creek Estuary	Toxic Pollutants Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs	4	7
5	Ballona Creek Wetlands	Sediment and Invasive Exotic Vegetation	4	7
6	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria	4	7
7	Big Bear Lake	Nutrients for Dry Hydrological Conditions	8	8
8	Big River	Sediment	1	1
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch	Mercury	5	1,3
10	Calleguas Creeks, its Tributaries and Mugu Lagoon	Metals and Selenium	4	7
11	Calleguas Creeks, its Tributaries and Mugu Lagoon	Organochlorine Pesticides, PCBs, and Siltation	4	7
12	Chollas Creek	Diazinon	9	11
13	Chollas Creek	Dissolved Copper, Lead and Zinc	9	11
14	Clear Lake	Nutrients	5	1
15	Coachella Valley Storm Water Channel	Bacterial Indicators	7	8,11
16	Colorado Lagoon	Organochlorine Pesticides, PCBs, Sediment Toxicity, PAHs and Metals (Pb & Zn)	4	7
17	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters	Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs	4	7
18	Garcia River	Sediment	1	1
19	Gualala River	Sediment	1	1,4
20	Klamath River in California	Temperature, Dissolved Oxygen, Nutrient, and Microcystin	1	1
21	Lake Elsinore and Canyon Lake	Nutrients	8	8

Table 1.1. List of Caltrans' 84 TMDLs

TMDL Watershed No.	Watershed Name	Pollutant(s)	Regional Board No.	Caltrans District No.
22	Lake Tahoe	Sediment and Nutrients	6	3,10
23	Legg Lake	Trash	4	7
24	Long Beach City Beaches and Los Angeles River Estuary	Indicator Bacteria	4	7
25	Los Angeles Area Echo Park Lake	Nitrogen, Phosphorus, Chlordane, Dieldrin, PCBs, and Trash	4	7
26	Los Angeles Area Lake Sherwood	Mercury	4	7
27	Los Angeles Area North, Center & Legg Lake	Nitrogen, Phosphorus	4	7
28	Los Angeles Area Peck Road Park Lake	Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash	4	7
29	Los Angeles Area Puddingstone Reservoir	Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, Dieldrin	4	7
30	Los Angeles River	Trash	4	7
31	Los Angeles River and Tributaries	Metals	4	7
32	Los Angeles River Watershed	Bacteria	4	7
33	Los Cerritos	Metals	4	7
34	Lost River	Nitrogen, Biochemical Oxygen Demand, and pH	1	2
35	Lower Eel River	Temperature and Sediment	1	1
36	Machado Lake	Eutrophic, Algae, Ammonia, and Odors (Nutrients)	4	7
37	Machado Lake	Pesticides and PCBs	4	7
38	Machado Lake	Trash	4	7
39	Mad River	Sediment and Turbidity	1	1
40	Malibu Creek and Lagoon	Sedimentation and Nutrients to address Benthic Community Impairments	4	7
41	Malibu Creek Watershed	Bacteria	4	7
42	Malibu Creek Watershed	Trash	4	7
43	Marina del Rey Harbor	Toxic Pollutants (Cu, Pb, Zn, Chlordane and Total PCBs)	4	7

Table 1.1. List of Caltrans' 84 TMDLs

TMDL Watershed No.	Watershed Name	Pollutant(s)	Regional Board No.	Caltrans District No.
44	Marina del Rey Harbor, Mothers' Beach, and Back Basins	Bacteria	4	7
45	Middle Fork Eel River	Temperature and Sediment	1	1
46	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary)	Sediment	3	5
47	Napa River	Sediment	2	4
48	Navarro River	Sediment and Temperature	1	1
49	Noyo River	Sediment	1	1
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)	Indicator Bacteria	9	11,12
51	Rainbow Creek	Total Nitrogen and Total Phosphorus	9	8,11
52	Redwood Creek	Sediment	1	1
53	Revolon Slough and Beardsley Wash	Trash	4	7
54	Rhine Channel Area of the Lower Newport Bay	Chromium and Mercury	8	12
55	Richardson Bay	Pathogens	2	4
56	Sacramento - San Joaquin River Delta Estuary	Methyl mercury	5	10
57	San Diego Creek and Newport Bay, including Rhine Channel	Metals (Cu, Pb, and Zn)	8	12
58	San Diego Creek and Upper Newport Bay	Cadmium	8	12
59	San Diego Creek Watershed	Organochlorine Compounds (DDT, Chlordane, PCBs, and Toxaphene)	8	12
60	San Francisco Bay	Mercury	2	4
61	San Francisco Bay	PCBs	2	4
62	San Francisco Bay Urban Creeks	Diazinon and Pesticide Toxicity	2	4
63	San Gabriel River	Metals (Cu, Pb, Zn) and Selenium	4	7

Table 1.1. List of Caltrans' 84 TMDLs

TMDL Watershed No.	Watershed Name	Pollutant(s)	Regional Board No.	Caltrans District No.
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks)	Sediment	3	5
65	San Pedro & Pacifica State Beach	Bacteria	2	4
66	Santa Clara River Estuary & Reaches 3,5,6,7	Coliform	4	7
67	Santa Clara River Reach 3	Chloride	4	7
68	Santa Monica Bay	DDTs and PCBs	4	7
69	Santa Monica Bay Beaches	Bacteria	4	7
70	Santa Monica Bay Nearshore & Offshore	Debris (trash & plastic pellets)	4	7
71	Scott River	Sediment and Temperature	1	2
72	Shasta River	Dissolved Oxygen and Temperature	1	1,2
73	Sonoma Creek	Sediment	2	4
74	South Fork Eel River	Temperature and Sediment	1	1
75	South Fork Trinity River and Hayfork Creek	Sediment	1	1,2
76	Ten Mile River	Sediment	1	1
77	Trinity River	Sediment	1	1,2
78	Truckee River	Sediment	6	3
79	Upper and Lower Newport Bay	Organochlorine Compounds (DDT, Chlordane, & PCBs)	8	12
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury	Temperature and Sediment	1	1
81	Upper Santa Clara River	Chloride	4	7
82	Van Duzen River and Yager Creek	Sediment	1	1
83	Ventura River and its Tributaries	Algae, Eutrophic Conditions, and Nutrients	4	6,7
84	Ventura River Estuary	Trash	4	5,7

1.5.1 Reach Prioritization

Caltrans has prepared a prioritized list of the reaches within the 84 TMDL watersheds where Caltrans is a responsible party. Each reach was scored and ranked based on the rating factors and criteria listed in Attachment IV, Section I.B., Table IV.1. The TMDL Reach Prioritization List was subsequently reviewed, revised, and approved by the Executive Officer of the State Water Board on September 10, 2015. As a result of the TMDL Reach Prioritization List submittal and approval process, each of Caltrans' 84 watershed areas have 2 separate priority rankings as described below:

1. *Final Ranking by TMDL Reach.* There are 298 discrete watershed reaches. This method ranks all the reaches regardless of the pollutant(s) involved.
2. *Final Ranking Pollutant Category by Reach.* There are 382 discrete reach-TMDL combinations since many reaches are listed for multiple pollutants. This method ranks the reaches by pollutant categories specified in the Attachment IV (e.g., trash, sediment etc.).

Table 1.2 presents the approved TMDL Reach Prioritization List. Since the Permit requires Caltrans to perform monitoring within each of the 84 watersheds, the TMDL Reach Prioritization List was considered during siting activities where appropriate to determine feasible sites within higher ranking reaches.

Caltrans will use the TMDL Reach Prioritization List for future monitoring in conjunction with safety and resource constraints.

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
1	Albion River (Sediment)	Albion River	1	233	329
1	Albion River (Sediment)	Albion River	2	294	378
2	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium)	Ballona Creek	1	4	12
2	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium)	Ballona Creek	2	13	32
2	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium)	Sepulveda Canyon	3	195	285
3	Ballona Creek (Trash)	Ballona Creek	1	4	13
3	Ballona Creek (Trash)	Ballona Creek	2	13	30
4	Ballona Creek Estuary (Toxic Pollutants Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs)	Ballona Creek	1	4	11
4	Ballona Creek Estuary (Toxic Pollutants Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs)	Ballona Creek	2	13	29
5	Ballona Creek Wetlands (Sediment and Invasive Exotic Vegetation)	Ballona Creek	1	4	10
5	Ballona Creek Wetlands (Sediment and Invasive Exotic Vegetation)	Ballona Creek	2	13	28
6	Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria)	Ballona Creek	1	4	9
6	Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria)	Ballona Creek	2	13	31
6	Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria)	Sepulveda Canyon	3	195	284
7	Big Bear Lake (Nutrients for Dry Hydrological Conditions)	Big Bear Creek	1	23	51
8	Big River (Sediment)	Big River North Fork	2	141	217
8	Big River (Sediment)	Big River	1	226	322
8	Big River (Sediment)	Big River	3	267	351
8	Big River (Sediment)	Big River South Fork	4	268	352
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Cache Creek	6	70	131
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Cache Creek North Fork	4	73	134

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Cache Creek	1	74	135
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Bear Creek	2	78	139
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Harley Gulch	3	79	140
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Scotts Creek	9	84	148
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Middle Creek	8	93	160
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Cache Creek	7	188	277
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch (Mercury)	Cache Creek	5	237	275
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Conejo Creek, Arroyo Conejo	6	87	152
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Calleguas Creek, Arroyo Las Posas	4	88	154
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Arroyo Simi	5	92	159
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Revolon Slough, Beardsley Wash	3	102	175
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Calleguas Creek	2	104	178
10	Calleguas Creeks, its Tributaries and Mugu Lagoon (Metals and Selenium)	Calleguas Creek and Estuary	1	107	182
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Conejo Creek, Arroyo Conejo	6	87	151
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Calleguas Creek, Arroyo Las Posas	4	88	153
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Arroyo Simi	5	92	158
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Revolon Slough, Beardsley Wash	3	102	174
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Calleguas Creek	2	104	177
11	Calleguas Creeks, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	Calleguas Creek and Estuary	1	107	181

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
12	Chollas Creek (Diazinon)	Chollas Creek	2	80	141
12	Chollas Creek (Diazinon)	Chollas Creek	1	82	145
13	Chollas Creek (Dissolved Copper, Lead and Zinc)	Chollas Creek	2	80	142
13	Chollas Creek (Dissolved Copper, Lead and Zinc)	Chollas Creek	1	82	146
14	Clear Lake (Nutrients)	Clear Lake	2	18	42
14	Clear Lake (Nutrients)	Cache Creek	1	20	46
14	Clear Lake (Nutrients)	Scotts Creek	4	35	79
14	Clear Lake (Nutrients)	Middle Creek	3	36	80
15	Coachella Valley Storm Water Channel (Bacterial Indicators)	Whitewater River	1	198	288
16	Colorado Lagoon (Organochlorine Pesticides, PCBs, Sediment Toxicity, PAHs and Metals (Pb & Zn))	Colorado Lagoon	1	190	279
17	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)	Dominquez Channel	2	86	150
17	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)	Los Angeles & Long Beach Harbor	1	98	169
17	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)	Dominquez Channel	3	106	180
18	Garcia River (Sediment)	Garcia River	1	223	319
18	Garcia River (Sediment)	Garcia River	2	289	373
18	Garcia River (Sediment)	Garcia River	3	295	379
19	Gualala River (Sediment)	Gualala River South Fork, Marshall Creek, Makenzie Creek	1	229	325
19	Gualala River (Sediment)	Rockpile Creek	3	288	372
19	Gualala River (Sediment)	Gualala River North Fork, Billings Creek	2	290	374
19	Gualala River (Sediment)	Buckeye Creek, Flat Ridge Creek	4	292	376

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
19	Gualala River (Sediment)	Wheatfield Fork Gualala River	5	293	377
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Klamath River	21	110	186
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Klamath River	22	124	200
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Cottonwood Creek, Hutton Creek, Miller Gulch	23	147	223
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Klamath River	1	151	227
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Yreka Creek	19	246	330
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Lower Klamath River	25	247	331
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Willow Creek	3	248	332
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Little Grass Valley Creek	12	249	333
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River	2	250	334
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Rattlesnake Creek, Bone Gulch	7	251	335
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Salt Creek, Ditch Gulch	9	252	336
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Shasta River	18	253	337
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Shasta River, Dale Creek	20	254	338
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Scott River	17	256	340

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River	10	257	341
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River, Clair Engle Lake	13	258	342
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Lower Klamath River	26	259	343
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Scott River South Fork	15	260	344
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River South Fork	4	261	345
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Hayfork Creek, Summit Creek	8	263	347
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Scott River East Fork	14	265	349
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River South Fork	5	266	350
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River	11	271	355
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Klamath River	24	272	356
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Scott River	16	275	359
20	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	Trinity River South Fork	6	278	362
21	Lake Elsinore and Canyon Lake (Nutrients)	San Jacinto River South Fork	3	170	247
21	Lake Elsinore and Canyon Lake (Nutrients)	San Jacinto River	1	171	248
21	Lake Elsinore and Canyon Lake (Nutrients)	San Jacinto River	2	172	249
22	Lake Tahoe (Sediment and Nutrients)	Lake Tahoe	1	158	234

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
22	Lake Tahoe (Sediment and Nutrients)	Upper Truckee River	2	164	240
23	Legg Lake (Trash)	Legg Lake	1	14	33
24	Long Beach City Beaches and Los Angeles River Estuary (Indicator Bacteria)	Los Angeles River	2	199	289
24	Long Beach City Beaches and Los Angeles River Estuary (Indicator Bacteria)	Los Angeles River Estuary	1	235	290
25	Part B-Los Angeles Area Echo Park Lake (Nitrogen, Phosphorus, Chlordane, Dieldrin, PCBs, and Trash)	Echo Park Lake	1	5	14
26	Los Angeles Area Lake Sherwood (Mercury)	Potrero Valley	1	182	265
26	Los Angeles Area Lake Sherwood (Mercury)	Potrero Valley Creek, Lake Sherwood	2	240	260
26	Los Angeles Area Lake Sherwood (Mercury)	Hidden Valley	3	241	261
26	Los Angeles Area Lake Sherwood (Mercury)	Potrero Valley Creek	4	242	262
27	Part B-Los Angeles Area North, Center & Legg Lake (Nitrogen, Phosphorus)	Legg Lake	1	14	34
28	Part B, C, D-Los Angeles Area Peck Road Park Lake (Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash)	Santa Anita Wash	2	6	15
28	Los Angeles Area Peck Road Park Lake (Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash)	Rio Hondo, Peck Road Park Lake	1	15	35
29	Los Angeles Area Puddingstone Reservoir (Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, Dieldrin)	Live Oak Wash, Puddingstone Reservoir	1	49	108
30	Los Angeles River (Trash)	Los Angeles River Reach 2 (Carson to Figueroa)	2	10	23
30	Los Angeles River (Trash)	Los Angeles River Reach 1	1	19	43
30	Los Angeles River (Trash)	Los Angeles River Reach 3 & 4	4	21	47
30	Los Angeles River (Trash)	Los Angeles River Reach 4, 5 & 6	5	24	52
30	Los Angeles River (Trash)	Los Angeles River Reach 2 (Carson to Figueroa)	3	25	55
30	Los Angeles River (Trash)	Rio Hondo Reach 2	7	27	60

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
30	Los Angeles River (Trash)	Tujunga Wash	11	28	62
30	Los Angeles River (Trash)	Compton Creek	6	29	65
30	Los Angeles River (Trash)	Burbank Western Channel	10	30	68
30	Los Angeles River (Trash)	Arroyo Seco Reach 1 & 2	8	37	81
30	Los Angeles River (Trash)	Verdugo Wash Reach 1 & 2	9	38	84
30	Los Angeles River (Trash)	Bell Creek	13	39	87
30	Los Angeles River (Trash)	Arroyo Calabasas	14	40	90
30	Los Angeles River (Trash)	Aliso Canyon Wash	12	42	94
31	Los Angeles River and Tributaries (Metals)	Los Angeles River Reach 2 (Carson to Figueroa)	2	10	25
31	Los Angeles River and Tributaries (Metals)	Los Angeles River Reach 3	1	19	45
31	Los Angeles River and Tributaries (Metals)	Los Angeles River Reach 3 & 6	4	21	49
31	Los Angeles River and Tributaries (Metals)	Los Angeles River Reach 4, 5 & 8	5	24	54
31	Los Angeles River and Tributaries (Metals)	Los Angeles River Reach 2 (Carson to Figueroa)	3	25	57
31	Los Angeles River and Tributaries (Metals)	Rio Hondo Reach 3	7	27	61
31	Los Angeles River and Tributaries (Metals)	Tujunga Wash	11	28	64
31	Los Angeles River and Tributaries (Metals)	Compton Creek	6	29	67
31	Los Angeles River and Tributaries (Metals)	Burbank Western Channel	10	30	70
31	Los Angeles River and Tributaries (Metals)	Arroyo Seco Reach 1 & 4	8	37	83
31	Los Angeles River and Tributaries (Metals)	Verdugo Wash Reach 1 & 4	9	38	86
31	Los Angeles River and Tributaries (Metals)	Bell Creek	13	39	89
31	Los Angeles River and Tributaries (Metals)	Arroyo Calabasas	14	40	92

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
31	Los Angeles River and Tributaries (Metals)	Aliso Canyon Wash	12	42	96
32	Los Angeles River Watershed (Bacteria)	Los Angeles River Reach 2 (Carson to Figueroa)	2	10	24
32	Los Angeles River Watershed (Bacteria)	Los Angeles River Reach 2	1	19	44
32	Los Angeles River Watershed (Bacteria)	Los Angeles River Reach 3 & 5	4	21	48
32	Los Angeles River Watershed (Bacteria)	Los Angeles River Reach 4, 5 & 7	5	24	53
32	Los Angeles River Watershed (Bacteria)	Los Angeles River Reach 2 (Carson to Figueroa)	3	25	56
32	Los Angeles River Watershed (Bacteria)	Rio Hondo Reach 1	7	27	59
32	Los Angeles River Watershed (Bacteria)	Tujunga Wash	11	28	63
32	Los Angeles River Watershed (Bacteria)	Compton Creek	6	29	66
32	Los Angeles River Watershed (Bacteria)	Burbank Western Channel	10	30	69
32	Los Angeles River Watershed (Bacteria)	Arroyo Seco Reach 1 & 3	8	37	82
32	Los Angeles River Watershed (Bacteria)	Verdugo Wash Reach 1 & 3	9	38	85
32	Los Angeles River Watershed (Bacteria)	Bell Creek	13	39	88
32	Los Angeles River Watershed (Bacteria)	Arroyo Calabasas	14	40	91
32	Los Angeles River Watershed (Bacteria)	Aliso Canyon Wash	12	42	95
33	Los Cerritos (Metals)	Lost Cerritos Channel	1	41	93
34	Lost River (Nitrogen, Biochemical Oxygen Demand, and pH)	Lower Klamath River	1	230	326
34	Lost River (Nitrogen, Biochemical Oxygen Demand, and pH)	Lower Klamath River	2	231	327
35	Lower Eel River (Temperature and Sediment)	Eel River	1	144	220
35	Lower Eel River (Temperature and Sediment)	Larabee Creek	2	281	365
36	Machado Lake (Eutrophic, Algae, Ammonia, and Odors (Nutrients))	Machado Lake	1	17	41

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
37	Machado Lake (Pesticides and PCBs)	Machado Lake	1	17	40
38	Machado Lake (Trash)	Machado Lake	1	17	39
39	Mad River (Sediment and Turbidity)	Mad River	5	130	206
39	Mad River (Sediment and Turbidity)	Mad River North Fork	2	138	214
39	Mad River (Sediment and Turbidity)	Mad River	1	146	222
39	Mad River (Sediment and Turbidity)	Mad River	6	282	366
39	Mad River (Sediment and Turbidity)	Mad River	3	283	367
39	Mad River (Sediment and Turbidity)	Pilot Creek	4	284	368
40	Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments)	Lindero Canyon	3	1	3
40	Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments)	Las Virgenes Creek	5	3	8
40	Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments)	Medea Creek	4	8	19
40	Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments)	Malibu Creek, Malibu Lake	1	9	22
40	Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments)	Triunfo Canyon	2	16	38
41	Malibu Creek Watershed (Bacteria)	Lindero Canyon	3	1	2
41	Malibu Creek Watershed (Bacteria)	Las Virgenes Creek	5	3	7
41	Malibu Creek Watershed (Bacteria)	Medea Creek	4	8	18
41	Malibu Creek Watershed (Bacteria)	Malibu Creek, Malibu Lake	1	9	21
41	Malibu Creek Watershed (Bacteria)	Triunfo Canyon	2	16	37
42	Malibu Creek Watershed (Trash)	Lindero Canyon	3	1	1
42	Malibu Creek Watershed (Trash)	Las Virgenes Creek	5	3	6

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
42	Malibu Creek Watershed (Trash)	Medea Creek	4	8	17
42	Malibu Creek Watershed (Trash)	Malibu Creek, Malibu Lake	1	9	20
42	Malibu Creek Watershed (Trash)	Triunfo Canyon	2	16	36
43	Marina del Rey Harbor (Toxic Pollutants (Cu, Pb, Zn, Chlordane and Total PCBs))	Marina del Rey Harbor	1	95	164
44	Marina del Rey Harbor, Mothers' Beach, and Back Basins (Bacteria)	Marina del Rey Harbor	1	95	165
45	Middle Fork Eel River (Temperature and Sediment)	Eel River Middle Fork	1	131	207
45	Middle Fork Eel River (Temperature and Sediment)	Mill Creek, Cold Creek	3	145	221
45	Middle Fork Eel River (Temperature and Sediment)	Elk Creek	2	280	364
45	Middle Fork Eel River (Temperature and Sediment)	Black Butte River	4	287	371
45	Middle Fork Eel River (Temperature and Sediment)	Eel River Middle Fork	5	291	375
46	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary) (Sediment)	Chorro Creek	2	163	239
46	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary) (Sediment)	Morro Bay	1	165	241
46	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary) (Sediment)	Osos Creek	3	243	272
47	Napa River (Sediment)	Napa River	2	22	50
47	Napa River (Sediment)	Napa River	1	26	58
47	Napa River (Sediment)	Conn Creek, Sage Creek	3	48	107
48	Navarro River (Sediment and Temperature)	Rancheria Creek	6	118	194
48	Navarro River (Sediment and Temperature)	Anderson Creek, Soda Creek	4	121	197
48	Navarro River (Sediment and Temperature)	Navarro River	1	127	203
48	Navarro River (Sediment and Temperature)	South Branch North Fork Navarro River	2	137	213

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
48	Navarro River (Sediment and Temperature)	Rancheria Creek	5	143	219
48	Navarro River (Sediment and Temperature)	Indian Creek	3	227	323
49	Noyo River (Sediment)	Noyo River South Fork	2	152	228
49	Noyo River (Sediment)	Noyo River	1	225	321
49	Noyo River (Sediment)	Noyo River	4	232	328
49	Noyo River (Sediment)	Noyo River	3	270	354
49	Noyo River (Sediment)	Noyo River North Fork	5	274	358
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Carmel Valley, Deer Canyon	7	183	266
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Soledad Canyon	9	184	267
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Marcos	13	185	268
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Diego River, Murphy Canyon	10	186	269
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Juan Creek, Morrell Canyon	3	196	286
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Oso Creek	2	197	287
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Laguna Canyon	1	200	291
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Luis Rey River	4	201	292
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Los Peñasquitos Canyon	8	202	293
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Aliso Creek	12	203	294

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Dieguito River, Santa Ysabel Creek, Clevenger Canyon	6	204	295
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Chollas Creek	11	205	296
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	San Luis Rey River, Carrista Creek	5	207	299
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	Scripps	14	239	300
51	Part B-Rainbow Creek (Total Nitrogen and Total Phosphorus)	Rainbow Creek	1	169	246
52	Redwood Creek (Sediment)	Redwood Creek	2	132	208
52	Redwood Creek (Sediment)	Redwood Creek	1	220	316
52	Redwood Creek (Sediment)	Prairie Creek	3	222	318
53	Revolon Slough and Beardsley Wash (Trash)	Revolon Slough, Beardsley Wash	1	7	16
54	Rhine Channel Area of the Lower Newport Bay (Chromium and Mercury)	Rhine Channel	1	244	273
55	Richardson Bay (Pathogens)	San Francisco Bay	1	214	307
56	Sacramento - San Joaquin River Delta Estuary (Methyl mercury)	Sacramento River	2	75	136
56	Sacramento - San Joaquin River Delta Estuary (Methyl mercury)	San Joaquin River	3	76	137
56	Sacramento - San Joaquin River Delta Estuary (Methyl mercury)	San Joaquin River	1	191	280
57	San Diego Creek and Newport Bay, including Rhine Channel (Metals (Cu, Pb, and Zn))	Newport Bay, San Diego Creek	1	64	125
57	San Diego Creek and Newport Bay, including Rhine Channel (Metals (Cu, Pb, and Zn))	San Diego Creek, Serrano Creek	3	65	126
57	San Diego Creek and Newport Bay, including Rhine Channel (Metals (Cu, Pb, and Zn))	Peters Canyon Wash	4	68	129
57	San Diego Creek and Newport Bay, including Rhine Channel (Metals (Cu, Pb, and Zn))	San Diego Creek	2	69	130

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
57	San Diego Creek and Newport Bay, including Rhine Channel (Metals (Cu, Pb, and Zn))	Santa Ana Delhi Channel	5	72	133
58	San Diego Creek and Upper Newport Bay (Cadmium)	Newport Bay, San Diego Creek	1	64	185
58	San Diego Creek and Upper Newport Bay (Cadmium)	San Diego Creek 1, Serrano Creek	2	66	127
58	San Diego Creek and Upper Newport Bay (Cadmium)	Peters Canyon Channel	3	67	128
58	San Diego Creek and Upper Newport Bay (Cadmium)	Santa Ana Delhi Channel	4	71	132
59	San Diego Creek Watershed (Organochlorine Compounds (DDT, Chlordane, PCBs, and Toxaphene))	San Diego Creek, Serrano Creek	1	166	242
59	San Diego Creek Watershed (Organochlorine Compounds (DDT, Chlordane, PCBs, and Toxaphene))	Peters Canyon Wash	2	168	244
60	San Francisco Bay (Mercury)	Conn Creek, Sage Creek	8	77	138
60	San Francisco Bay (Mercury)	San Pablo Bay	11	81	144
60	San Francisco Bay (Mercury)	San Francisco Bay	12	85	149
60	San Francisco Bay (Mercury)	Alameda Creek	2	94	163
60	San Francisco Bay (Mercury)	Coyote Creek	1	96	167
60	San Francisco Bay (Mercury)	San Lorenzo Creek	4	97	168
60	San Francisco Bay (Mercury)	Petaluma River	10	99	170
60	San Francisco Bay (Mercury)	Arroyo Mocho	13	100	172
60	San Francisco Bay (Mercury)	Sonoma Creek, Calabazas Creek	9	103	176
60	San Francisco Bay (Mercury)	Napa River	7	105	179
60	San Francisco Bay (Mercury)	Napa River	6	109	184
60	San Francisco Bay (Mercury)	Suisun Bay	5	189	278
60	San Francisco Bay (Mercury)	San Francisco Bay	3	192	281
61	San Francisco Bay (PCBs)	San Pablo Bay	11	81	143

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
61	San Francisco Bay (PCBs)	San Francisco Bay	12	85	252
61	San Francisco Bay (PCBs)	Alameda Creek	2	94	162
61	San Francisco Bay (PCBs)	Petaluma River	10	99	256
61	San Francisco Bay (PCBs)	Arroyo Mocho	13	100	171
61	San Francisco Bay (PCBs)	Conn Creek, Sage Creek	8	174	251
61	San Francisco Bay (PCBs)	San Ramon Creek, Walnut Creek	1	175	253
61	San Francisco Bay (PCBs)	Arroyo Mocho	14	176	254
61	San Francisco Bay (PCBs)	San Francisco Bay	4	177	255
61	San Francisco Bay (PCBs)	Sonoma Creek, Calabazas Creek	9	178	257
61	San Francisco Bay (PCBs)	Napa River	7	179	258
61	San Francisco Bay (PCBs)	Napa River	6	180	259
61	San Francisco Bay (PCBs)	Suisun Bay	5	193	282
61	San Francisco Bay (PCBs)	San Ramon Creek, Arroyo de Laguna, Alameda Creek	3	194	283
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Alameda Creek	2	94	161
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Coyote Creek	1	96	166
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Sleepy Hollow Creek, Corte Madera Creek	7	208	301
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	San Lorenzo Creek, San Cantino Creek, Walnut Creek	3	209	302
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Novato Creek	6	210	303
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Novato Creek	8	211	304
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Ledgewood Creek	4	212	305
62	San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Petaluma River	5	213	306

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	San Gabriel River	1	83	147
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	San Gabriel River	2	89	155
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	San Gabriel River	3	90	156
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	San Gabriel River	4	91	157
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	San Jose Creek	5	101	173
63	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	Coyote Creek	6	108	183
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks) (Sediment)	Carbonera Creek	2	154	230
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks) (Sediment)	Boulder Creek	5	155	231
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks) (Sediment)	San Lorenzo River	3	159	235
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks) (Sediment)	San Lorenzo River	4	161	237
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks) (Sediment)	Carbonera Creek	1	162	238
65	San Pedro & Pacifica State Beach (Bacteria)	San Pedro Creek	1	206	297
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Santa Clara River	4	187	270
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Sespe Creek, Adobe Creek	3	215	308
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Santa Clara River	1	216	310
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Sespe Creek	2	217	313
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Castaic Creek	6	234	298
66	Santa Clara River Estuary & Reaches 3,5,6,7 (Coliform)	Bouquet Canyon	5	236	271
67	Santa Clara River Reach 3 (Chloride)	Sespe Creek, Adobe Creek	3	215	309
67	Santa Clara River Reach 3 (Chloride)	Santa Clara River	1	216	311

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
67	Santa Clara River Reach 3 (Chloride)	Sespe Creek	2	217	312
68	Santa Monica Bay (DDTs and PCBs)	Los Alisos Canyon Creek	10	31	71
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	2	32	73
68	Santa Monica Bay (DDTs and PCBs)	Topanga Canyon	11	33	75
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	1	34	77
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	5	43	97
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	8	44	99
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	4	45	101
68	Santa Monica Bay (DDTs and PCBs)	Ballona Creek	6	46	103
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	7	47	105
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	9	50	110
68	Santa Monica Bay (DDTs and PCBs)	Pacific Ocean Beaches	3	181	263
69	Santa Monica Bay Beaches (Bacteria)	Los Alisos Canyon Creek	10	31	72
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	2	32	74
69	Santa Monica Bay Beaches (Bacteria)	Topanga Canyon	11	33	76
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	1	34	78
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	5	43	98
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	8	44	100
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	4	45	102
69	Santa Monica Bay Beaches (Bacteria)	Ballona Creek	6	46	104
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	7	47	106
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	9	50	111

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
69	Santa Monica Bay Beaches (Bacteria)	Pacific Ocean Beaches	3	181	264
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	9	50	109
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	13	51	112
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	11	52	113
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	12	53	114
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Topanga Canyon	7	54	115
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	14	55	116
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Westlake Lake	2	56	117
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Pacific Ocean Beaches	15	57	118
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Westlake Lake	1	58	119
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Potrero Valley Creek	3	59	120
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Marina del Rey Harbor	16	60	121
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Palo Comando Canyon	5	61	122
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Santa Monica Canyon, Mandeville Canyon	8	62	123
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Solstice Canyon Creek	6	63	124
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Malibu Creek, Triunfo Canyon	4	238	276
70	Santa Monica Bay Nearshore & Offshore (Debris (trash & plastic pellets))	Stokes Canyon	10	245	274
71	Scott River (Sediment and Temperature)	Scott River East Fork	4	113	189
71	Scott River (Sediment and Temperature)	Scott River	2	134	210
71	Scott River (Sediment and Temperature)	Scott River	1	262	346
71	Scott River (Sediment and Temperature)	Scott River South Fork	3	264	348
72	Shasta River (Dissolved Oxygen and Temperature)	Yreka Creek	2	119	195

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
72	Shasta River (Dissolved Oxygen and Temperature)	Shasta River	1	139	215
72	Shasta River (Dissolved Oxygen and Temperature)	Shasta River	3	140	216
73	Sonoma Creek (Sediment)	Sonoma Creek	1	11	26
73	Sonoma Creek (Sediment)	Sonoma Creek	2	12	27
74	South Fork Eel River (Temperature and Sediment)	Eel River South Fork	2	111	187
74	South Fork Eel River (Temperature and Sediment)	Eel River South Fork	3	112	188
74	South Fork Eel River (Temperature and Sediment)	Rattlesnake Creek	4	117	193
74	South Fork Eel River (Temperature and Sediment)	Eel River South Fork	1	125	201
74	South Fork Eel River (Temperature and Sediment)	Tenmile Creek	5	129	205
75	South Fork Trinity River and Hayfork Creek (Sediment)	Bone Gulch, Rattlesnake Creek	4	122	198
75	South Fork Trinity River and Hayfork Creek (Sediment)	Trinity River South Fork	2	135	211
75	South Fork Trinity River and Hayfork Creek (Sediment)	Hay Fork Creek, Summit Creek	5	142	218
75	South Fork Trinity River and Hayfork Creek (Sediment)	Salt Creek	6	149	225
75	South Fork Trinity River and Hayfork Creek (Sediment)	Trinity River South Fork	1	269	353
75	South Fork Trinity River and Hayfork Creek (Sediment)	Trinity River South Fork	3	296	380
76	Ten Mile River (Sediment)	Tenmile River	1	224	320
76	Ten Mile River (Sediment)	Tenmile River South Fork	2	273	357
76	Ten Mile River (Sediment)	Tenmile River Middle Fork	3	276	360
76	Ten Mile River (Sediment)	Tenmile River North Fork	4	279	363
77	Trinity River (Sediment)	Little Grass Valley Creek	5	114	190
77	Trinity River (Sediment)	Trinity River	3	115	191
77	Trinity River (Sediment)	Willow Creek	2	120	196

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
77	Trinity River (Sediment)	Trinity River	4	150	226
77	Trinity River (Sediment)	Trinity River	1	153	229
77	Trinity River (Sediment)	Trinity River, Trinity Lake	6	221	317
78	Truckee River (Sediment)	Middle Martis Creek	3	156	232
78	Truckee River (Sediment)	Little Truckee River	2	157	233
78	Truckee River (Sediment)	Truckee River	1	160	236
79	Upper and Lower Newport Bay (Organochlorine Compounds (DDT, Chlordane, & PCBs))	Newport Bay, San Diego Creek	1	64	245
79	Upper and Lower Newport Bay (Organochlorine Compounds (DDT, Chlordane, & PCBs))	Santa Ana Delhi Channel	3	167	243
79	Upper and Lower Newport Bay (Organochlorine Compounds (DDT, Chlordane, & PCBs))	San Diego Creek	2	173	250
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Outlet Creek	2	116	192
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Long Valley Creek	3	123	199
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Eel River	1	133	209
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Eel River	4	255	339
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Tomki Creek	5	277	361
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Rice Fork	6	285	369
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	Eel River, Lake Pillsbury	7	286	370
81	Upper Santa Clara River (Chloride)	Castaic Creek, Salt Creek	2	218	314

Table 1.2. Priority List by TMDL Reach and Pollutant Category by Reach

TMDL Watershed No.	TMDL Pollutants	Reach Name	Reach No.	Final Ranking (by TMDL Reach) ^A	Final Ranking (Pollutant Category by Reach) ^B
81	Upper Santa Clara River (Chloride)	Santa Clara	1	219	315
82	Van Duzen River and Yager Creek (Sediment)	Van Duzen River	2	126	202
82	Van Duzen River and Yager Creek (Sediment)	Van Duzen River	1	128	204
82	Van Duzen River and Yager Creek (Sediment)	Little Van Duzen River	3	136	212
82	Van Duzen River and Yager Creek (Sediment)	Van Duzen River	4	148	224
82	Van Duzen River and Yager Creek (Sediment)	Yager Creek, Indian Creek	6	228	324
82	Van Duzen River and Yager Creek (Sediment)	Van Duzen River	5	297	381
82	Van Duzen River and Yager Creek (Sediment)	Lawrence Creek, Painter Gulch	7	298	382
83	Ventura River Estuary (Trash)	Ventura River	1	2	4
84	Ventura River and its Tributaries (Algae, Eutrophic Conditions, and Nutrients)	Ventura River	1	2	5

Notes:

- A. Final Ranking by TMDL Reach. There are 298 discrete watershed reaches. This method ranks all the reaches regardless of the pollutant(s) involved.
- B. Final Ranking Pollutant Category by Reach. There are 382 discrete reach-TMDL combinations since many reaches are listed for multiple pollutants. This method ranks the reaches by pollutant categories specified in the permit Attachment IV (e.g., trash, sediment etc.).

2.0 CALTRANS MONITORING

TMDL monitoring performed by Caltrans is divided into two categories (1) characterization monitoring, and (2) BMP effectiveness monitoring. Characterization monitoring and BMP effectiveness monitoring within TMDL watersheds are addressed in this section. Caltrans also complies with monitoring requirements by entering into cooperative agreements with other TMDL responsible entities; these cooperative agreements are discussed in Section 3.

Caltrans has been identified as a responsible party, or stakeholder, in 84 TMDLs. In TMDL watersheds with monitoring requirements specified in the adopted and approved Regional Water Board Basin Plans or in US Environmental Protection Agency-established TMDLs, Caltrans will conduct characterization monitoring, BMP effectiveness monitoring, and/or participate in regional monitoring efforts through cooperative agreements. Caltrans will use the characterization monitoring data to evaluate the need for BMPs. Characterization monitoring will cease when a determination is made, by the Regional Water Board Executive Officer, that a site or discharge is in compliance with the TMDL.

2.1 MONITORING GUIDANCE MANUAL

Caltrans developed the *Caltrans Stormwater Monitoring Guidance Manual (SWMGM)* (Caltrans, 2015) to provide step-by-step guidance to its staff and contractors on the planning, implementation, and reporting for the different types of monitoring projects. These different types of monitoring projects include water quality monitoring of stormwater runoff for chemical, toxicity, and microbiological analysis; sediment monitoring; and gross solids monitoring. The SWMGM includes a standardized set of procedures for sample collection, sample analysis, and data management to ensure that (1) all water quality monitoring is performed in a consistent way throughout the state, and (2) all monitoring data collected are of satisfactory quality.

2.2 CHARACTERIZATION MONITORING

The general approach by Caltrans to conduct characterization monitoring is presented below:

Who: Caltrans typically awards contracts to consultants to conduct water quality monitoring. These contracts include the required laboratory services to conduct the analysis.

What: The analytical constituent list for the characterization monitoring will be based on two sources:

1. The standard list of constituents specified in the Permit Appendix II (non-ASBS list) (State Water Board, 2012) unless directed otherwise in Attachment IV, Section III.B through III.I. This list is provided in Appendix A of this document.
2. The list of constituents required by the specific TMDL.

Where: TMDL sites will be selected based on the approved TMDL Reach Prioritization List.

Chapter 6 of the SWMGM covers the approach for monitoring site selection.

When: The number of storm events to be monitored each wet season will be based on an individual TMDL's requirements. Caltrans will target three storm events per storm season if the number of storm events is not specified in the approved TMDL.

How: Characterization monitoring will be conducted in accordance with the Permit, any specific TMDL requirements, and the SWMGM. A QAPP will be prepared for each TMDL monitoring project in accordance with the State Water Board's Surface Water Ambient Monitoring Program (SWAMP). The most recent Caltrans QAPP template is provided in Appendix B of this document. A brief overview of Caltrans monitoring protocols is provided below.

Samples. Caltrans will collect grab samples for characterization monitoring unless otherwise specified in the approved TMDL. In specific circumstances both grab and composite samples may be collected. Grab and composite samples are discussed in Chapters 4 and 11 of the SWMGM.

Equipment. Equipment used for monitoring will depend on whether grab or composite samples are collected. Equipment is discussed in Chapters 4 and 8 of the SWMGM.

Sample Collection. Sample collection depend on whether grab or composite samples are required. Methods for grab sample collection are discussed in Chapters 4 and 11 of the SWMGM.

Sample Handling. Once the samples are collected, samples are preserved and transported to one or more laboratories for analysis. The samples must arrive at the laboratory for analysis within the regulatory holding time. Sample handling requirements, including preservation and holding time, are discussed in Chapter 11 of the SWMGM.

Sample Analysis. As required in the Permit, all samples will be analyzed by a certified or accredited laboratory. The selection of a laboratory and the analytical methods are discussed in Chapter 5 of the SWMGM. Quality assurance/quality control (QA/QC) procedures for both field and laboratory activities are discussed in Chapter 12 of the SWMGM.

Reporting. See Section 5 of this document for a discussion on reporting.

Characterization monitoring performed in one TMDL watershed may be considered as representative of another TMDL watershed with similar impairments. Implementation schedules for representative and represented watershed characterization monitoring are provided in Section 4 (Table 4.1).

2.3 BMP EFFECTIVENESS MONITORING

The purpose of BMP effectiveness monitoring is defined in the Permit as follows:

Attachment IV, Section III.A.2. The Department shall use monitoring data to conduct an on-going assessment of the performance and effectiveness of BMPs. The assessment shall include necessary modifications to control measures to achieve WLAs [Waste Load Allocations] and other applicable performance standards. Where an assessment indicates that control measures are inadequate to achieve WLAs and other performance standards in a reach, the Department must implement improved control measures/BMPs.

2.3.1 General Approach for BMP Effectiveness Monitoring

The SWMGM provides step-by-step guidance to its staff and contractors on the planning, implementation, and reporting for the different types of monitoring projects. The BMP PSGM provides detailed guidance to staff and contractors on evaluating and reporting BMP monitoring data.

2.3.2 BMP Effectiveness Monitoring Strategy

The effectiveness of BMPs is best measured by conducting water quality monitoring at the BMP influent and effluent to calculate load and concentration reductions for specified constituents. Caltrans will rely on representative monitoring for BMP effectiveness assessment, i.e., the effectiveness results of monitoring a BMP in one watershed will also apply to the same BMP in a different watershed.

The general approach by Caltrans to conduct BMP effectiveness monitoring, presented below, is similar to the approach for characterization monitoring.

Who: Caltrans typically awards contracts to consultants to conduct BMP effectiveness monitoring. These contracts include the required laboratory services to conduct the analysis.

What: The analytical constituent list for the BMP effectiveness monitoring will be based on two sources:

1. The standard list of constituents specified in the Permit Appendix II (non-ASBS list) (State Water Board, 2012) unless directed otherwise in Attachment IV, Section III.B through III.I. This list is provided in Appendix A of this document.
2. The list of constituents required by the specific TMDL.

Where: BMPs will be implemented based on the TMDL Reach Prioritization List approved by the State Water Board and as proposed in the Caltrans TMDL Implementation Plan. BMP effectiveness monitoring will be conducted at representative locations for the various pollutant categories. Chapter 3 of the BMP PSGM covers the approach for site selection for BMP effectiveness monitoring.

When: The number of storm events captured each wet season will be based on an individual TMDL's requirements. Caltrans will target three storm events per storm season if the number of storm events is not specified in the approved TMDL.

How: BMP effectiveness monitoring will be conducted in accordance with the Permit, any specific TMDL requirements, the SWMGM, and the BMP PSGM. A QAPP will be prepared for each BMP effectiveness monitoring project in accordance with the State Water Board's SWAMP. The most recent Caltrans QAPP template is provided in Appendix B of this document. A brief overview of the major topics on how Caltrans conducts monitoring is provided below.

Samples. Caltrans will usually collect composite samples for BMP effectiveness monitoring. In addition to the composite samples, some constituents may require grab samples to be collected (e.g., oil and grease). Grab and composite samples are discussed in Chapters 4 and 11 of the SWMGM.

Equipment. Automatic sampling equipment will be used to collect composite samples. Equipment is discussed in Chapters 4 and 8 of the SWMGM.

Sample Collection. Methods for sample collection are discussed in Chapters 4 and 11 of the SWMGM.

Sample Handling. Once the samples are collected, they are preserved and transported to one or more laboratories for analysis. The samples must arrive at the laboratory for analysis within the regulatory holding time. Sample handling requirements, including preservation and holding times, are discussed in Chapter 11 of the SWMGM.

Sample Analysis. As required in the Permit, all samples will be analyzed by a certified or accredited laboratory. The selection of a laboratory and the analytical methods are discussed in Chapter 5 of the SWMGM. The QA/QC procedures for both field and laboratory activities are discussed in Chapter 12 of the SWMGM.

Reporting. See Section 5 of this document for a discussion on reporting.

BMP effectiveness monitoring performed in one TMDL watershed may be considered as representative of another TMDL watershed with similar impairments and BMPs. Implementation schedules for representative and represented watershed BMP effectiveness monitoring are provided in Section 4 (Table 4.1).

2.3.3 Adaptive Management Strategy

BMP effectiveness will be assessed by comparing BMP water quality monitoring data to the applicable Waste Load Allocation (WLA). If the implemented BMP is not effective at reducing the TMDL constituent(s), Caltrans will consider alternative BMPs or methods to improve effectiveness.

3.0 COMPLIANCE MONITORING THROUGH COOPERATIVE AGREEMENTS

As previously mentioned in Section 1, Attachment IV allows Caltrans to participate in monitoring TMDL watersheds with other responsible permittees or stakeholders through implementation of group monitoring plans that are approved by the Regional Water Boards.

To this end, Caltrans continuously tracks the status of Comprehensive Integrated Monitoring Plans (CIMPs) that are pending approval, and considers whether to pursue cooperative agreements with other agencies in lieu of self-monitoring.

In general, Caltrans will seek to enter into a cooperative agreement for TMDL monitoring when there is a distinct water quality improvement benefit and advantage due to economies of scale. Other factors considered when deciding whether to enter into a cooperative agreement:

- Terms of the monitoring cooperative agreement
- Siting of cooperative monitoring locations
- Type of monitoring to be performed
- Pollutants to be monitored
- Caltrans' contribution to watershed runoff and share of the funding

Caltrans may enter into cooperative agreements for characterization monitoring, implementation monitoring or both, depending on the specific details in the approved CIMP. The status of Caltrans participation in CIMPs through cooperative agreements is detailed in Section 4 (Table 4.1). Actual Memoranda of Agreement (MOA) dates indicate when Caltrans entered into a cooperative agreement. Multiple dates indicate where more than one agreement has been established to address multiple stages of a CIMP. Target MOA dates are provided for new agreements that Caltrans anticipates being established within 8 to 12 months of the latest revision to this CMP.

4.0 PLAN IMPLEMENTATION AND SCHEDULE

This section discusses how the CMP will be implemented for conducting (1) characterization monitoring, (2) BMP effectiveness monitoring, and (3) cooperative agreements.

4.1 CMP IMPLEMENTATION

The CMP will be implemented in one of the following ways:

- Caltrans characterization monitoring
- Caltrans BMP effectiveness monitoring; or
- Monitoring compliance through cooperative agreements with other stakeholders.

4.1.1 Characterization Monitoring Implementation

Caltrans will perform characterization monitoring of untreated runoff within its TMDL watersheds to determine whether it has a significant contribution to the TMDL pollutants of concern. In general, characterization monitoring is performed when there are no existing or likely cooperative agreements in place, and where Caltrans has no structural treatment BMPs installed within a TMDL watershed. If characterization monitoring demonstrates compliance with a TMDL, Caltrans will seek a determination from the Executive Officer of the applicable Regional Water Board that no further monitoring is required. Conversely, if characterization monitoring does not demonstrate compliance, construction of appropriate treatment BMPs or other controls will be recommended, and BMP effectiveness monitoring will be planned upon their installation. In watersheds listed for sediment, Caltrans will perform erosion/sediment control projects and routine maintenance activities along highways as needed for compliance.

Table 4.1 at the end of this section presents the monitoring status of the 84 TMDLs. In Table 4.1, under the column heading *Ongoing Monitoring (Type)*, watersheds with the entry *CHAR* have characterization monitoring while the watersheds with the entry *BMP EFF* have BMP effectiveness monitoring.

Characterization monitoring in one TMDL watershed may be deemed representative of one or more other TMDL watersheds with similar pollutants of concern. In Table 4.1, under the column heading *Planned Site (Type)*, watersheds with the entries in parenthesis, e.g., (*CHAR*), indicate that characterization monitoring is being conducted in another representative watershed. The representative watershed is identified in the adjacent column, under the column heading *Represented TMDL WS (BMP EFF, Site in TMDL WS listed)*, by number. The number corresponds to the numbers under the column labeled *TMDL WS #*.

With the exception of completed monitoring dates, proposed start and end dates in Table 4.1 are for planning purposes and subject to change based on site conditions, budget, number of successfully monitored stormwater runoff events, and new TMDL monitoring cooperative agreement opportunities. Caltrans proposes to capture 3 storm events per year for 3 years to establish statistically reliable compliance data.

4.1.2 BMP Effectiveness Monitoring Implementation

Caltrans began Tier-1 TMDL BMP effectiveness monitoring at treatment BMPs sites within TMDL watersheds in October 2016.

BMP effectiveness monitoring of installed treatment BMPs is performed to confirm whether a particular BMP is effective for reducing or eliminating the pollutant(s) of concern within a given TMDL watershed. In general, BMP effectiveness monitoring begins once a BMP has been constructed and ends once a determination of effectiveness has been made. The BMP monitoring will be conducted among selected representative sites where BMPs are implemented; therefore, not every treatment BMP that is implemented will be monitored for water quality. Effectiveness assessment of a BMP in one TMDL watershed may be deemed representative of one or more other TMDL watersheds with similar installed BMPs and pollutants of concern, see Table 4.1.

With the exception of completed monitoring dates, proposed start and end dates in Table 4.1 are for planning purposes and subject to change based on site conditions, budget, number of successfully monitored stormwater runoff events, and new TMDL monitoring cooperative agreement opportunities. Caltrans proposes to capture 3 storm events per year for 3 years at BMPs to establish statistically reliable compliance data. Caltrans will continuously assess BMP effectiveness results to inform future TMDL monitoring and implementation efforts.

4.1.3 TMDL Monitoring Compliance Implementation through Cooperative Agreements

Table 4.1 lists the TMDL watersheds where cooperative agreements have been initiated and where cooperative agreements are planned. Cooperative agreements are discussed in Section 3.

4.2 SCHEDULE

Table 4.1 below provides the implementation schedule and status of TMDL compliance monitoring activities. The table will be updated and submitted to the State Water Board for review each year with the annual report.

Table 4.1. Monitoring Status within TMDL Watersheds

TMDL Watershed No.	Watershed Name	Pollutant(s)	Monitoring Requirements	Cooperative Agreement	Target MOA Date	Actual MOA Date(s)	Ongoing Monitoring Type	Planned Monitoring Type	Representative Monitoring in TMDL Watershed No.	Treatment BMP Category	Monitoring Start Date	Monitoring Completion Date	See Notes
1	Albion River	Sediment	No	No				(CHAR)	39	NA			
2	Ballona Creek	Metals (Ag, Cd, Cu, Pb, Zn) and Selenium	Yes	Yes	4/1/2017	2/6/2014 7/26/2011 5/18/2011							
3	Ballona Creek	Trash	No	No				(BMP EFF)	30	Gross Solids Removal			
4	Ballona Creek Estuary	Toxic Pollutants Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs	Yes	Yes	4/1/2017	2/6/2014 7/26/2011 5/18/2011							
5	Ballona Creek Wetlands	Sediment and Invasive Exotic Vegetation	Yes	In Process	4/1/2017								
6	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria	Yes	Yes	4/1/2017	2/6/2014 7/26/2011							
7	Big Bear Lake	Nutrients for Dry Hydrological Conditions	Yes	Yes		1/1/2007	CHAR				1/1/2010	12/1/2011	x
8	Big River	Sediment	No	No				(CHAR)	39	NA			
9	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch	Mercury	Yes	No				BMP EFF		Infiltration	10/1/2016	5/31/2019	
10	Calleguas Creeks, its Tributaries and Mugu Lagoon	Metals and Selenium	Yes	Yes		8/26/2009 7/28/2008 3/1/2008							
11	Calleguas Creeks, its Tributaries and Mugu Lagoon	Organochlorine Pesticides, PCBs, and Siltation	Yes	Yes		8/26/2009 7/28/2008 3/1/2008							
12	Chollas Creek	Diazinon	Yes	No			BMP EFF			Infiltration	3/30/2012	TBD	
13	Chollas Creek	Dissolved Copper, Lead and Zinc	Yes	No			BMP EFF			Infiltration	3/30/2012	TBD	
14	Clear Lake	Nutrients	Yes	No			CHAR			NA	5/1/2011	3/5/2013	x
15	Coachella Valley Storm Water Channel	Bacterial Indicators	Yes	In Process	1/1/2018		CHAR				1/1/2012	5/31/2015	x
16	Colorado Lagoon	Organochlorine Pesticides, PCBs, Sediment Toxicity, PAHs and Metals (Pb & Zn)	Yes	In Process	12/1/2016								
17	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters	Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs	Yes	In Process		9/1/2016 Dominguez Channel 3/1/2017 LA/LB Harbor							
18	Garcia River	Sediment	Yes	No				(CHAR)	39	NA			
19	Gualala River	Sediment	No	No				(CHAR)	39	NA			

Table 4.1. Monitoring Status within TMDL Watersheds

TMDL Watershed No.	Watershed Name	Pollutant(s)	Monitoring Requirements	Cooperative Agreement	Target MOA Date	Actual MOA Date(s)	Ongoing Monitoring Type	Planned Monitoring Type	Representative Monitoring in TMDL Watershed No.	Treatment BMP Category	Monitoring Start Date	Monitoring Completion Date	See Notes
20	Klamath River in California	Temperature, Dissolved Oxygen, Nutrient, and Microcystin	Yes	No				BMP EFF		Detention Device	10/1/2016	5/31/2019	
21	Lake Elsinore and Canyon Lake	Nutrients	Yes	Yes		2/22/2013 6/18/2012 10/13/2006							
22	Lake Tahoe	Sediment and Nutrients	Yes	Yes		9/4/2013 3/1/2012							
23	Legg Lake	Trash	No	No				(BMP EFF)	30	Gross Solids Removal			
24	Long Beach City Beaches and Los Angeles River Estuary	Indicator Bacteria	Yes	In Process	4/1/2017								
25	Los Angeles Area Echo Park Lake	Nitrogen, Phosphorus, Chlordane, Dieldrin, PCBs, and Trash	Yes	In Process	4/1/2017								
26	Los Angeles Area Lake Sherwood	Mercury	No	No				(BMP EFF)	13	Infiltration			
27	Los Angeles Area North, Center & Legg Lake	Nitrogen, Phosphorus	Yes	In Process	4/1/2017								
28	Los Angeles Area Peck Road Park Lake	Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash	Yes	In Process	3/1/2017								
29	Los Angeles Area Puddingstone Reservoir	Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, Dieldrin	Yes	In Process	3/1/2017								
30	Los Angeles River	Trash	No	No				BMP EFF		Gross Solids Removal	10/1/2016	5/31/2019	
31	Los Angeles River and Tributaries	Metals	Yes	Yes	4/1/2017	9/4/2015 9/11/2013 3/7/2011 10/13/2008	BMP EFF			Biofiltration	11/1/2014	TBD	
32	Los Angeles River Watershed	Bacteria	Yes	In Process	3/1/2017		BMP EFF			Biofiltration	11/1/2014	TBD	
33	Los Cerritos	Metals	Yes	No				(BMP EFF)	13	Infiltration			
34	Lost River	Nitrogen, Biochemical Oxygen Demand, and pH	Yes	No				CHAR		NA	10/1/2016	5/31/2019	
35	Lower Eel River	Temperature and Sediment	No	No				CHAR		NA	10/1/2016	5/31/2019	
36	Machado Lake	Eutrophic, Algae, Ammonia, and Odors (Nutrients)	Yes	In Process	4/1/2017								
37	Machado Lake	Pesticides and PCBs	Yes	In Process	4/1/2017								
38	Machado Lake	Trash	Yes	No				(BMP EFF)	30	Gross Solids Removal			
39	Mad River	Sediment and Turbidity	Yes	No				CHAR		NA	10/1/2016	5/31/2019	
40	Malibu Creek and Lagoon	Sedimentation and Nutrients to address Benthic Community Impairments	Yes	In Process	3/1/2017		BMP EFF			Biofiltration	11/1/2014	TBD	

Table 4.1. Monitoring Status within TMDL Watersheds

TMDL Watershed No.	Watershed Name	Pollutant(s)	Monitoring Requirements	Cooperative Agreement	Target MOA Date	Actual MOA Date(s)	Ongoing Monitoring Type	Planned Monitoring Type	Representative Monitoring in TMDL Watershed No.	Treatment BMP Category	Monitoring Start Date	Monitoring Completion Date	See Notes
41	Malibu Creek Watershed	Bacteria	Yes	Yes		3/10/2015 3/7/2013 10/16/2012 7/31/2008	CHAR				11/1/2014	TBD	
42	Malibu Creek Watershed	Trash	Yes	In Process	2/1/2017								
43	Marina del Rey Harbor	Toxic Pollutants (Cu, Pb, Zn, Chlordane and Total PCBs)	Yes	Yes	4/1/2017	8/20/2014 12/14/2011 2/4/2011 7/8/2010							
44	Marina del Rey Harbor, Mothers' Beach, and Back Basins	Bacteria	Yes	Yes	4/1/2017	2/6/2014 6/5/2008							
45	Middle Fork Eel River	Temperature and Sediment	No	No				(CHAR)	35	NA			
46	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary)	Sediment	Yes	No				(CHAR)	39	NA			
47	Napa River	Sediment	Yes	No				BMP EFF		Biofiltration			
48	Navarro River	Sediment and Temperature	Yes	No				(CHAR)	35	NA			
49	Noyo River	Sediment	Yes	No				(CHAR)	39	NA			
50	Project I - Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)	Indicator Bacteria	Yes	No									x
51	Rainbow Creek	Total Nitrogen and Total Phosphorus	Yes	No			CHAR			NA	3/30/2012	5/5/2016	x
52	Redwood Creek	Sediment	Yes	No				(CHAR)	39	NA			
53	Revolon Slough and Beardsley Wash	Trash	Yes	In Process	3/9/2017								
54	Rhine Channel Area of the Lower Newport Bay	Chromium and Mercury	Yes	No				(BMP EFF)	57	Biofiltration/ Media Filters			
55	Richardson Bay	Pathogens	Yes	No				CHAR		NA	10/1/2016	5/31/2019	
56	Sacramento - San Joaquin River Delta Estuary	Methyl mercury	Yes	No			CHAR	BMP EFF		Biofiltration	CHAR 11/10/2014 BMP EFF 10/1/2016	CHAR 5/31/2019 BMP EFF 5/31/2019	
57	San Diego Creek and Newport Bay, including Rhine Channel	Metals (Cu, Pb, and Zn)	Yes	No			BMP EFF			Biofiltration/ Media Filters	11/1/2014	TBD	
58	San Diego Creek and Upper Newport Bay	Cadmium	Yes	No			BMP EFF			Biofiltration/ Media Filters	11/1/2014	TBD	

Table 4.1. Monitoring Status within TMDL Watersheds

TMDL Watershed No.	Watershed Name	Pollutant(s)	Monitoring Requirements	Cooperative Agreement	Target MOA Date	Actual MOA Date(s)	Ongoing Monitoring Type	Planned Monitoring Type	Representative Monitoring in TMDL Watershed No.	Treatment BMP Category	Monitoring Start Date	Monitoring Completion Date	See Notes
59	San Diego Creek Watershed	Organochlorine Compounds (DDT, Chlordane, PCBs, and Toxaphene)	Yes	No			BMP EFF			Biofiltration/ Media Filters	11/1/2014	TBD	
60	San Francisco Bay	Mercury	Yes	No	See Note	See Note							x
61	San Francisco Bay	PCBs	Yes	No	See Note	See Note							x
62	San Francisco Bay Urban Creeks	Diazinon and Pesticide Toxicity	Yes	No									x
63	San Gabriel River	Metals (Cu, Pb, Zn) and Selenium	Yes	In Process	2/1/2017								
64	San Lorenzo River (includes Carbonera, Lompico, and Shingle Mill Creeks)	Sediment	Yes	No				BMP EFF		Biofiltration	10/1/2016	5/31/2019	
65	San Pedro & Pacifica State Beach	Bacteria	Yes	No				(CHAR)	55				x
66	Santa Clara River Estuary & Reaches 3,5,6,7	Coliform	Yes	In Process	4/1/2017								
67	Santa Clara River Reach 3	Chloride	Yes	In Process	4/1/2017								
68	Santa Monica Bay	DDTs and PCBs	Yes	In Process	3/1/2017								
69	Santa Monica Bay Beaches	Bacteria	Yes	Yes		2/13/2015 4/20/2009 8/5/2008 11/8/2007							
70	Santa Monica Bay Nearshore & Offshore	Debris (trash & plastic pellets)	No	In Process	4/1/2017								
71	Scott River	Sediment and Temperature	Yes	No				(CHAR)	74	NA			
72	Shasta River	Dissolved Oxygen and Temperature	Yes	No				(CHAR)	34	NA			
73	Sonoma Creek	Sediment	Yes	No				(BMP EFF)	47	Biofiltration			x
74	South Fork Eel River	Temperature and Sediment	No	No				CHAR		NA	10/1/2016	5/31/2019	
75	South Fork Trinity River and Hayfork Creek	Sediment	Yes	No				(CHAR)	39	NA			
76	Ten Mile River	Sediment	No	No				(CHAR)	39	NA			
77	Trinity River	Sediment	Yes	No				(CHAR)	74	NA			
78	Truckee River	Sediment	Yes	No				BMP EFF		Detention Device	10/1/2016	5/31/2019	
79	Upper and Lower Newport Bay	Organochlorine Compounds (DDT, Chlordane, & PCBs)	Yes	No				(BMP EFF)	59	Biofiltration/ Media Filters			
80	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury	Temperature and Sediment	Yes	No				(CHAR)	74	NA			

Table 4.1. Monitoring Status within TMDL Watersheds

TMDL Watershed No.	Watershed Name	Pollutant(s)	Monitoring Requirements	Cooperative Agreement	Target MOA Date	Actual MOA Date(s)	Ongoing Monitoring Type	Planned Monitoring Type	Representative Monitoring in TMDL Watershed No.	Treatment BMP Category	Monitoring Start Date	Monitoring Completion Date	See Notes
81	Upper Santa Clara River	Chloride	Yes	In Process	4/1/2017								
82	Van Duzen River and Yager Creek	Sediment	Yes	No				(CHAR)	39	NA			
83	Ventura River and its Tributaries	Algae, Eutrophic Conditions, and Nutrients	Yes	Yes		1/19/2015 1/5/2015 5/1/2014							
84	Ventura River Estuary	Trash	Yes	Yes		12/15/2011							

Table 4.1. Monitoring Status within TMDL Watersheds

Acronyms & Abbreviations:

NA Not Applicable to column heading.

CHAR Characterization Monitoring of untreated Caltrans' runoff to determine whether Caltrans is a significant contributor to the TMDL pollutants of concern.

BMP EFF BMP Effectiveness Monitoring of installed treatment BMPs to confirm it is effective for reducing or eliminating the pollutant concentration in Caltrans' stormwater runoff.

Description of Column Headers:

TMDL Watershed No.	The number associated with the alphabetical listing of the 84 TMDL watersheds.
Watershed	The descriptive name of the TMDL watershed, per Attachment IV of the Permit.
Pollutant(s)	The pollutant(s) listed for the watershed per Attachment IV of the Permit.
Monitoring Requirements	Marked "Yes" if monitoring requirements are in the approved TMDL; marked "No" if monitoring requirements are not in the approved TMDL and Caltrans is doing either individual monitoring, cooperative agreement monitoring, representative monitoring or currently no monitoring but will update this table to include monitoring information after Regional Water Board has amended the Basin Plan to include monitoring requirements for the TMDL.
Cooperative Agreement	Marked "Yes" if Caltrans is participating in monitoring with other TMDL stakeholders through a cooperative agreement. Marked 'No' means Caltrans is not participating in monitoring with other TMDL stakeholders through a cooperative agreement. Marked "In Process" if Caltrans has begun the process of entering into a cooperative agreement and expects an agreement within the next 8 months.
Target MOA Date	The estimated date when a cooperative agreement will be signed and executed. MOA Target Dates are provided by Caltrans districts. A target date is also entered where an amendment to an existing cooperative agreement is underway.
Actual MOA Date(s)	The date(s) Caltrans entered into a cooperative agreement or an amendment to an existing cooperative agreement.
Ongoing Monitoring Type	Caltrans is currently conducting or has completed monitoring in the TMDL Watershed. The type of monitoring being performed (characterization, BMP effectiveness) is indicated in this column; the monitoring start and completion dates are provided in other columns.
Planned Monitoring Type	Planned monitoring to be conducted in the TMDL watershed. The type of monitoring to be performed (characterization, BMP effectiveness) is indicated in this column. Where the Planned Monitoring Type is in parentheses, monitoring is being conducted in another representative watershed (see adjacent column titled, Representative Monitoring in TMDL Watershed No.).
Representative Monitoring in TMDL Watershed No.	Caltrans has selected monitoring in another TMDL watershed with similar pollutants and/or BMPs to be representative of this TMDL watershed. The number provided in this column is the TMDL watershed number, i.e., the first column, where the representative monitoring will take place.
Treatment BMP Category	For BMP Effectiveness Monitoring, or XXX; this column lists the Caltrans' approved treatment category for the selected BMP (e.g. Infiltration, Detention Device, etc.). "Erosion Control" may be listed for watersheds with sediment TMDLs which indicates Caltrans will perform Erosion/Sediment Control projects along highways as needed for compliance.
Monitoring Start Date	Proposed start dates are for planning purposes and subject to change based on site conditions, budget, number of successfully monitored stormwater runoff events, and new cooperative agreement opportunities. In general, monitoring consists of capturing 3 storm events per year for 3 years in order to establish statistically reliable compliance data.

Table 4.1. Monitoring Status within TMDL Watersheds

Monitoring Completion Date	Proposed end dates are for planning purposes and subject to change based on site conditions, budget, number of successfully monitored stormwater runoff events, and new cooperative agreement opportunities. In general, monitoring consists of capturing 3 storm events per year for 3 years in order to establish statistically reliable compliance data.
See Notes	Marked "x" if additional notes are provided for the specific TMDL Watershed No, see below.

Notes for the following specific TMDL Watershed No.:

7	A group monitoring plan was approved by the Regional Water Board in 2007, and was completed in 2011. Big Bear Lake stakeholders are to prepare implementation plan to reduce nutrients.
14	Caltrans and Regional Water Board agreed during a meeting that efforts should now focus on reducing sediment discharges to Clear Lake and its tributaries. A review of the lake areas shows that there are a few active erosion sites around the lake within Caltrans' Right-of-Way. A recently completed job on HWY 53 has significantly reduced erosion and improved the drainage systems. Caltrans will complete any existing erosion reduction and drainage system improvement project(s). Caltrans will conduct periodic inspection of its Right-of-Way near Clear Lake and continue erosion reduction and drainage improvement when new areas that prone to erosion occur.
15	Caltrans performed 3 years of wet weather characterization monitoring in Phase I, in which no runoff from Caltrans sites occurred. Caltrans has no dry weather flows. Regional Water Board has accepted Caltrans monitoring under its Phase 1 requirements. Caltrans will consider entering a cooperative agreement for implementation monitoring with other stakeholders pending more information from the Regional Water Board on the requirements for Phase 2.
50	Bacteria source study conducted during 2016 at San Juan Creek within TMDL Watershed No. 50; preliminary results indicate that Caltrans is not a source of indicator bacteria. Will provide information in TMDL Status Review Report FY 2016-17.
51	Caltrans completed 4 years of monitoring (2012-2016) and the District is discussing future course of action with the Regional Water Board.
60	Per agreement with Regional Water Board, Caltrans participation in the SF Bay RMP will cover this monitoring.
61	Per agreement with Regional Water Board, Caltrans participation in the SF Bay RMP will cover this monitoring.
62	As of December 2016, the San Francisco Regional Water Board says monitoring is not required at this time, but may be required in the future.
65	Regional Water Board agreed that they did not see a need for Caltrans to monitor at these locations. Representative monitoring is proposed.
73	Regional Water Board agreed that they did not see a need for Caltrans to monitor at these locations. Representative monitoring is proposed.

5.0 REPORTING AND FUTURE TMDLS

This section describes how Caltrans will provide progress updates to TMDL compliance monitoring activities for existing TMDLs and the approach for future monitoring as new TMDLs may be adopted and incorporated into the Caltrans Permit.

5.1 ANNUAL REPORT UPDATES

Caltrans is required to submit results of the previous year monitoring at Tier-1 sites in its annual Monitoring Results Report, and also summarize the previous year's TMDL monitoring results in the TMDL Status Review Report. Cumulative results will be compiled annually to inform future reach prioritization submittals.

For BMP effectiveness monitoring, Caltrans will report results and analysis in compliance with the Permit in the following documents:

- Stormwater Monitoring and BMP Development Status Report
- TMDL Status Review Report
- TMDL Progress Report

Table 5.1 presents the reporting requirements for both characterization monitoring and BMP effectiveness monitoring. Caltrans will also upload the collected water quality data to the State Water Board's Storm Water Multi-Application Reporting and Tracking System (SMARTS) using a format that conforms to the California Environmental Data Exchange Network (CEDEN). Caltrans has been uploading all data to the CEDEN system until SMARTS becomes available.

Table 5.1. Reporting Requirements

Reporting Requirement	Due Date	Frequency
Monitoring Results Report	October 1	Annually, starting in 2013
Stormwater Monitoring and BMP Development Status Report	October 1	Annually, starting in 2013 (Part of the Annual Report)
TMDL Status Review Report	October 1	Annually, starting in 2015 (Part of the Annual Report)
TMDL Progress Report	January 1, 2018	One-time submittal (Part of the Report of Waste Discharge)

5.2 CMP ANNUAL UPDATES TO TABLE 4.1 IMPLEMENTATION SCHEDULE

The monitoring status provided in Table 4.1 of this CMP will be updated and submitted annually to State Water Board staff for their review. In general, updates will include:

- Status of ongoing Caltrans characterization or BMP effectiveness monitoring
- New cooperative agreements established with other responsible MS4s
- Watershed notes as needed to accompany Table 4.1.
- Justification/explanation of changes

5.3 FUTURE TMDLS

In general, BMPs that achieve compliance with a TMDL will be dropped from further monitoring and new monitoring sites will be added with considering the approved prioritization list. As new TMDLs are adopted, their respective reaches will be prioritized and submitted for State Water Board approval.

After the new TMDLs are incorporated into the Caltrans permit and the revised TMDL Reach Prioritization List is approved it will be used when adding new monitoring projects or entering into cooperative agreements.

6.0 REFERENCES

Caltrans, 2015. California Department of Transportation. Stormwater Guidance Monitoring Manual. CTSW-OT-15-999.43.01. November.

Caltrans, 2009. California Department of Transportation. BMP Pilot Study Guidance Manual. CTSW-RT-06-171.02.1. January.

State Water Board, 2014. Amended National Pollutant Discharge Elimination System Statewide Storm Water Permit No. CAS000003 (Permit) Waste Discharge Requirements for State of California Department of Transportation. California State Water Resources Control Board. Order No. 2014-0077-DWQ. May.

State Water Board, 2012. National Pollutant Discharge Elimination System Statewide Storm Water Permit No. CAS000003 (Permit) Waste Discharge Requirements for State of California Department of Transportation. California State Water Resources Control Board. Order No. 2012-0011-DWQ. September.

APPENDIX A

Permit Attachment II; Non-ASBS Monitoring Constituent List

Permit Attachment II; Non-ASBS Monitoring Constituent List

Table A.1 lists the monitoring constituents, analytical methods, and reporting limits from Attachment II of the Permit. This list is not applicable to Areas of Special Biological Significance (ASBS) discharges.

Table A.1. Constituent List

Constituent	Analytical Method	Reporting Limit ¹	Units
Hardness as CaCO ₃	SM 2340 B or C	5	mg/L
pH	Calibrated Field Instrument		pH Units
Temperature	Calibrated Field Instrument		C +/-
Flow Rate	Calibrated Field Instrument		ft ³ /s
Total Dissolved Solids	EPA 160.1	1	mg/L
Total Suspended Solids	EPA 160.2	1	mg/L
Oil & Grease	EPA 1664B	1.4	mg/L
Polycyclic Aromatic Hydrocarbons (Total)	EPA 8310	0.05	µg/L
Total Kjeldahl Nitrogen (TKN)	EPA 351.3	100	µg/L
Nitrate as Nitrogen (NO ₃ -N)	EPA 300.0	100	µg/L
Phosphorous (Total)	EPA 365.2	30	µg/L
Aluminum (Total)	EPA 200.8	25	µg/L
Chromium (Total)	EPA 200.8	1	µg/L
Copper (Total)	EPA 200.8	1	µg/L
Iron (Total)	EPA 200.8	1	µg/L
Lead (Total)	EPA 200.8	1	µg/L
Zinc (Total)	EPA 200.8	5	µg/L
Fecal Coliform	SM 9221 C E	2	MPN/100 mL
Enterococcus ²	EPA 1600	2	CFU/100 mL
Chronic Toxicity ³	EPA 821-R-02-013	Pass/Fail	

¹ Reporting limits should be sufficient enough to detect the presence of a constituent based on the applicable Regional Water Board Basin Plan. If no limit is specified in the Basin Plan, the reporting limit specified in this table will be used. If no limit is specified in this table, then the Regional Boards shall be consulted.

² applicable only for direct discharges to marine waters. See definition of direct discharges and indirect discharges in [Permit] Attachment VIII (glossary).

³ To calculate either a Pass or Fail of the effluent concentration chronic toxicity test at the IWC, the instructions in Appendix A in the National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA/833-R-10-003) shall be used.

APPENDIX B

Quality Assurance Project Plan Template

(Electronic Only—see CD)