Total Maximum Daily Load Compliance Plan

CTSW-RT-24-428.08.3

January 13, 2025

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Hardeep Takhar

January 13, 2025

Hardeep Takhar, Chief Environmental Engineer **Date**
Division of Environmental Analysis
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1 Introduction

The State Water Resources Control Board (SWRCB) adopted the *National Pollutant Discharge Elimination System Statewide Stormwater Permit and Waste Discharge Requirements for State of California Department of Transportation* (Order 2022-0033-DWQ) (NPDES Permit) on June 22, 2022. The effective date of the permit is January 1, 2023. The NPDES Permit regulates stormwater and non-stormwater discharges from the state highway system and discharges from California Department of Transportation (Caltrans) properties and facilities associated with operation and maintenance of the state highway system. Caltrans properties and facilities include but are not limited to maintenance stations/yards; equipment storage areas; storage facilities; fleet vehicle parking and maintenance areas; and warehouses with material storage areas. The NPDES Permit's Attachment D requires preparation of a Total Maximum Daily Load Compliance Plan (TMDL Compliance Plan) that describes Caltrans' long-term plan to comply with the total maximum daily loads (TMDL) listed in NPDES Permit Attachment D.

Attachment D, Provision D3.3, TMDL Compliance Plan, states the following:

> "The Department shall develop, implement and update a TMDL Compliance Plan that provides the Department's long-term plan to comply with the TMDLs listed in Tables D-1, D-2, and D-3 of this Attachment. The Department shall submit its initially developed TMDL Compliance Plan within 12 months of the Adoption Date of this Order. The TMDL Compliance Plan shall cover the period from the Effective Date of this Order through the final TMDL compliance deadlines listed in Attachment A (and incorporated into this Order by reference).
>
> The TMDL Compliance Plan and annual updates shall include the following:
>
> 1. A technical discussion that describes the proposed translation from previously earned compliance units under the previous Order 2012-0011-DWQ (as amended by Orders WQ 2014-0006-EXEC, WQ 2014-0077-DWQ, WQ 2015-0036-EXEC and WQ 2017-0026-EXEC) to comply with TMDL waste load allocations in this Order.
>
> 2. A technical discussion that describes how the updated Prioritized Inventory of Reaches is reflected in the TMDL Compliance Plan.
>
> 3. A strategy for implementing Regional Water Board-specific requirements.
>
> 4. A summary of cooperative agreement projects that will be implemented.
>
> 5. A schedule for completing interim and final milestones for each of the TMDLs listed in the Time Schedule Order.
>
> 6. A spreadsheet of tabulated data containing the following information:

- TMDL Name,
- Reach name,
- Individual pollutant,
- Proposed compliance strategy,
- Total watershed acres,
- Department's acres in the watershed,
- The Department's percentage of right-of-way (ROW) in the watershed, and
- TMDL waste load allocations applicable to the Department.

7. Electronic geographic information system data files including location and information on the following:

   - TMDL watersheds,
   - Pollutants, and
   - Location and type of best management practices.

8. A proposed implementation schedule for each TMDL waterbody-pollutant combination, with the anticipated start and completion date for implementation of each TMDL.

9. A tabulated list and accompanying description of the TMDL watersheds and the locations and type of best management practices, cooperative agreements, and controls.

10. A tabulated list and accompanying description of the Department's compliance strategy to achieve compliance with each TMDL. One or more of the following compliance strategies shall be identified for each TMDL:

    a. *Modeling Analysis.* Modeling analysis, including analysis of cooperative projects, that quantitatively demonstrates that best management practices reduce pollutant loads to comply with TMDL waste load allocations;
    b. *Receiving Water Quality Monitoring.* Receiving water analysis demonstrates compliance with the TMDL allocations at the point of the Department's discharge or as determined by monitoring immediately upstream and downstream of the Department's discharge location;
    c. *Loads from Other Sources.* Analytical results demonstrate that exceedances of the receiving water limits are due to loads from other sources and that the Department's pollutant loads are not causing or contributing to the exceedances;
    d. *Discharge Sampling.* Analytical results demonstrate that the Department's discharge complies with a concentration-based waste load allocation;
    e. *Mass-Based Waste Load.* Analytical results demonstrate that the Department's discharge complies with the individual or joint allocation or the percent reduction where a mass-based waste load has been

allocated individually, jointly to a group, or is expressed as a percent reduction in load;

f. *Allowable Exceedance Days.* Discharge conforms to the allowable exceedance days where a waste load allocation is expressed as the number of allowable exceedance days;
g. *No Discharge.* No discharges occurred during the relevant period either directly or indirectly from the Department's ROW to the waterbody; or
h. *TMDL-Specific Demonstrations*. Demonstration that the waste load allocation is attained through other factors as described by the specific TMDL.

11. The compliance strategy options selected for the North Coast, San Francisco Bay, Los Angeles, Lahontan, Santa Ana, and San Diego Water Boards, as described in sections D5.7, D5.8, D5.10, D5.11, D5.12, D5.13, and D5.14 of this Attachment.

12. The Inventory and Assessment Report with the drainage infrastructure condition for Department facilities in the San Lorenzo River Watershed, as required by the Central Coast Water Board TMDL. The Inventory and Assessment Report shall include a schedule for completing necessary upgrades to the drainage infrastructure. See section D5.3 [in Attachment D of the NPDES Permit]."

A Time Schedule Order (TSO) (Order No. 2022-0089-DWQ) was also approved with the NPDES Permit that identifies sixty-three (63) TMDLs in which Caltrans needs or may need additional time to comply with the existing TMDL-specific compliance deadlines due to Caltrans' unique conditions, including extensive, diverse ROW and its high quantity of TMDLs.

Therefore, the objective of the TMDL Compliance Plan is to describe Caltrans' long-term plan to comply with the TMDLs to which Caltrans has a waste load allocation (WLA) or load allocation (LA) assigned. The TMDL Compliance Plan's scope is statewide and covers the time frame between the NPDES Permit's effective date through final TMDL compliance deadlines.

1.1 Overview

Caltrans Districts are responsible for participating in the development and implementation of plans for stakeholder participation to meet the TMDL requirements for a given waterbody or watershed.

This TMDL Compliance Plan discusses Caltrans' past TMDL compliance strategies and accomplishments, and a summary of NPDES Permit TMDL requirements. Caltrans' overall statewide compliance strategy is presented, which includes an approach to convert compliance units (CUs) to WLA reductions, and WLA reductions achieved by treatment best management practices (T-BMPS) constructed after approval date of the TMDLs. In addition, it includes:

- Regional TMDL implementation approaches;
- Compliance schedule, the factors affecting TMDL project implementation, and the reporting strategy; and
- Appendices to provide context as needed.

1.2 Past Compliance Strategies and Accomplishments

Caltrans' prior NPDES Permit (Order 2012-0011-DWQ as amended by Order WQ 2014-0006-EXEC, Order WQ 2014-0077-DWQ, and Order WQ 2015-0036-EXEC) required TMDL implementation and measured compliance by calculating CUs. The Regional Water Quality Control Boards (RWQCB), SWRCB, and the United States Environmental Protection Agency (USEPA) had named Caltrans as a stakeholder in 84 TMDLs. Per the prior NPDES Permit, Caltrans was required to achieve a minimum of 1,650 CUs annually. A CU was defined as either:

1. One acre of stormwater runoff (including run-on) that is retained, treated, or otherwise controlled before discharge to the relevant reach; or

2. Caltrans contributes funds to a cooperative implementation project administered by other Municipal Separate Storm Sewer System (MS4) to install T-BMPs to improve regional water quality. For every $88,000 contributed, one acre or CU credits can be claimed.

For the treatment of one acre, Caltrans reported the CU credits once the project completed the plans, specifications, and estimate (PS&E) phase or was in the final stages of PS&E development. Additionally, CU credits could be reported for T-BMPs installed to monitor their effectiveness within a TMDL watershed. When a funding contribution was made to a cooperative implementation effort, the CU was credited when funding was transferred to the implementing agency.

To achieve compliance, Caltrans implemented the following strategies:

- Stand-alone T-BMP implementation
- T-BMP implementation through multiple asset projects
- Fish passage remediation
- Stakeholder cooperative implementation
- Design pollution prevention BMPs
- Erosion control
- Open-graded friction course
- Monitoring program-related retrofits
- Post-construction treatment beyond permit requirements
- Other pollution reduction practices

Table 1 shows the CUs achieved during the prior permit term by fiscal year. These may be found in the TMDL Status Review Reports submitted annually to the SWRCB with each Annual Report.

Caltrans constructed T-BMPs after the approval date of the TMDLs in various watersheds. Additionally, Caltrans implemented erosion control measures to prevent the discharge of sediment, thus controlling pollutants within its ROW.

Table 1: Past CUs Reported by Fiscal Year[1]

Fiscal Year	Total CUs Reported
2014-2017[2]	4,096
2017-2018	1,174
2018-2019	1,982
2019-2020	3,197
2020-2021	1,132
2021-2022	4,246

1.3 New NPDES Permit TMDL Requirements Summary

Caltrans implements a consistent approach statewide to address TMDL compliance. Compliance with Attachment D of the NPDES Permit is planned to be achieved by treatment of stormwater discharges from the Caltrans ROW through structural and non-structural BMPs and cooperative opportunities.

The prior NPDES Permit required a CU process to track Caltrans implementation of projects intended to ultimately achieve compliance with WLAs. This process established a 20-year time frame (through 2034) for implementation of activities aimed at addressing an estimated 33,000 acres of Caltrans TMDL ROW, or 1,650 acres per year. The current NPDES Permit does not continue the CU tracking process and instead requires compliance with WLA and LA reductions.

1.4 Caltrans-Approved Treatment Best Management Practices

Caltrans rigorously evaluates the T-BMPs that can be installed within its ROW to ensure that the state's resources are effectively used to remove potential pollutants. The T-BMP evaluation is annually documented in the *Caltrans Stormwater Monitoring and BMP Development Status Report*. Caltrans evaluates T-BMPs for their ability to treat typical highway runoff pollutants.

In addition, the Caltrans Division of Design identifies preliminary design considerations, limitations, and exceptions for each BMP type in the Caltrans Draft *Stormwater Quality Handbooks Project Planning and Design Guide*, CTSW-OT-23-425.03.01, June 2023. A Stormwater Data Report (SWDR) is prepared for each project that is processed through

[1] From the Annual TMDL Status Review Reports.
[2] Adjustments with submitted CUs were made for fiscal year 2014-2015 and 2015-2016 in subsequent TMDL Status Review Reports; for simplicity, the summation of CUs are shown with the 2016-2017 CUs.

the project delivery phases and documents the proposed project's consideration of temporary and permanent BMPs. Table 2 shows the Caltrans-approved T-BMPs that are available to treat the typical highway runoff pollutants of concern.

Table 2: Typical Highway Runoff Pollutants of Concern and Applicable Treatment BMPs

Pollutant of Concern	DPPIA	Biofiltration Devices	Infiltration Devices	Detention Devices	Dry Weather Flow Diversion[3]	Full-Capture Trash Devices[4]	Multi-Chambered Treatment Train	Media Filters[5]	Wet Basin	Traction Sand Traps	Bioretention	Open Graded Friction Course (OGFC)
Total Suspended Solids	X	X	X	X	X	-	X	X	X	X	X	X
Total Dissolved Solids[6]	X	-	X	-	X	-	-	-	-	-	-	-
Nutrients	X	X[7]	X	X[7]	X	-	X	X[8]	X[7]	-	-	X[8]
Pesticides[9]	X	X[7, 9]	X	X[9]	X	-	X[9]	X[9]	X	-	X[9]	X[9]
Particulate Metals	X	X	X	X	X	-	X	X	X	-	X	X
Dissolved Metals	X[7]	X[10]	X[7]	-	X	-	-	X[10]	-	-	-	-
Pathogens and Bacteria	X	X	X	X	X	-	-	-	X	-	X	-
Litter/Trash[11]	-	-	X[12]	X[12]	X	X	X	X[12]	X	X	X[12]	-
Biochemical Oxygen Demand[13]	X	X	X	-	X	-	-	X	-	-	X	-
Turbidity	X	X	X	X	X	-	X	X	-	X	X	X
Temperature	X[9]	X[9]	X[9]	X[9]	-	-	-	X[9]	X[9]	-	X[9]	X[9]
Mercury	X	X[9]	X	X[9]	X	-	-	-	-	-	X[9]	X[9]

Source: Caltrans *Project Planning and Design Guide*, CTSW-OT-23-425.03.01, June 2023.
X: T-BMP is appropriate for the particular pollutant of concern, except where noted.

[3] Dry weather flow diversions address non-stormwater flows only.
[4] Full-capture trash devices include gross solids removal devices, trash nets, capture housing, and multi benefit trash treatment systems.
[5] Media filters can use alternative media, which may vary pollutant removal (sand, compost, activated alumina, or others); see BMP Design Guidance document.
[6] Total dissolved solids may include chlorides and selenium.
[7] Soil needs to have adequate infiltration capacity for some pollutants of concern. See Caltrans SWDR Template T-1 Checklist.
[8] Phosphorus and nitrogen for the Austin sand filter; phosphorus only for the Delaware sand filter and OGFC.
[9] T-BMPs are listed based on their effectiveness at removing sediment.
[10] Dissolved metals vary. See Caltrans SWDR Template T-1 Checklist for appropriate BMP selection.
[11] Trash effectiveness requires addition of screen for many T-BMPs that can capture five millimeters and larger.
[12] T-BMP is eligible for certification as a multi benefit trash treatment system.
[13] Biochemical oxygen demand is typically used to assess water quality and how it will affect dissolved oxygen levels.

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1.5 Pollutant Specific Compliance Strategies

Caltrans uses the State Highway Operation and Protection Program (SHOPP) to maintain and preserve the state highway system and meet its performance objectives, including preservation and enhancement of water quality.

1.5.1 Sediment, Nutrients, Mercury, Siltation, and Turbidity TMDLs

- Caltrans has established a program to inspect roadside slopes for erosion on a five-year cycle. Slopes identified as prone to erosion are prioritized for stabilization. For road segments that are located in sensitive watersheds, or where there is an existing or potential threat to water quality, slope stabilization activities will be prioritized for implementing appropriate controls to the maximum extent practicable based on available resources. Based on the review of the slopes, remedial measures are developed, which can include minor grading, seeding, and installation of major slope stabilization systems.
- Caltrans implements source control measures for compliance with the Construction General Permit (Order WQ 2022-0057-DWQ, NPDES No. CAS0000002) on active construction sites to prevent the discharge of sediment.
- Caltrans works with local MS4 and other stakeholders in the watershed to look for other cooperative partnership projects or regional TMDL compliance projects that may be outside the Caltrans ROW.

1.5.2 Toxic Pollutants/Pesticides/Metals TMDLs

- Caltrans complies with NPDES Permit Attachment C Section C3.5.3.2, which specifies practices for the safe handling and use of pesticides, including compliance with federal, state, and local regulations and label directions. Caltrans is required to perform site assessments, applicator training, and implementation of integrated pest and vegetation management practices when using pesticides in order to prevent pesticide discharge in stormwater runoff.
- Toxic pollutants have a high affinity for adherence to fine sediment. A major source of toxic impairments is due to historical loading from the pollutants adhering to sediment. Therefore, the appropriate control measures for toxics are to control erosion and prevent or minimize the discharge of fine sediment.
- Caltrans does not have placement of new polychlorinated biphenyl (PCB) sources within its ROW. Caltrans properly disposes of legacy sources of PCBs.

1.5.3 Bacteria TMDLs

- Caltrans minimizes wet-weather discharges from its ROW into receiving waterbodies impaired for bacteria by implementing T-BMPs and source control/ preemptive activities such as street sweeping, cleanup of illegal dumping, prohibition of non-stormwater discharges, and public education on littering.
- Caltrans utilizes comprehensive Maintenance and Encampment Policies to facilitate transportation access, safety needs, and provide guidance regarding encampment removal activities (see attached Encampment Removal Policy).

1.5.4 Temperature TMDLs

- Caltrans preserves existing riparian biotic conditions immediately adjacent to, and provides effective shade near, receiving waters susceptible to temperature increases. Caltrans maintains site potential effective shade near receiving waters susceptible to temperature increases.
- Caltrans works with North Coast RWQCB, local MS4s and partners in the watershed to look for opportunities for cooperative partnership projects or regional TMDL compliance projects that may be outside the Caltrans ROW. This strategy is built around the North Coast Region Compliance Strategy, which encourages the use of cooperative partnership projects.

1.5.5 Trash TMDLs

- Caltrans uses several types of trash removal devices, including the construction of Austin sand filters, gross solids removal devices, infiltration trenches, and infiltration basins which have a full capture efficiency. Caltrans employs biofiltration swales, which have partial trash removal efficiency.
- NPDES Permit Section C3.9 requires Caltrans to initiate storm drain stenciling, covered trash bins and public education and participation. Although these permit requirements are not directly related to TMDL compliance, they are effective source control measures that support the TMDL mandates to construct and maintain full capture systems and to remove trash through institutional controls. Caltrans will annually report trash removal quantities from full capture systems and institutional controls in the TMDL Compliance Status Report, and planned full capture systems will be reported in the District Annual Work Plans.
- NPDES Permit provisions A9.3.9 and C3.9 require Caltrans to implement public education and outreach. Although these permit requirements are not directly related to TMDL compliance, they are effective source control measures that support the TMDL mandates to construct and maintain full capture systems and to remove trash through institutional controls.
- Programs such as the Adopt-A-Highway litter pick-up program, Road Sweeping, Caltrans Parolee Program, California Conservation Corps, District Crew Collection, and Storm Drain Maintenance activities help remove trash from the Caltrans ROW.
- Caltrans will track trash TMDL compliance actions through its Trash Dashboard, addressed in Section 4.2 of the Trash Monitoring Plan, and will report progress in its Annual TMDL Compliance Status Report by November 2026, in accordance with the Compliance Schedule in the TSO and the Compliance Schedule/Milestone Table related to the first 4-year interim average milestone. A table will be included as part of the Annual TMDL Compliance Status Report required in NPDES Permit provisions D3.3.1 and D3.3.2. Caltrans will work with the SWRCB and/or RWQCBs to develop a template for reporting TMDL compliance status in accordance with the NPDES Permit provisions.

2 Compliance Unit and Waste Load Allocation Translation (D3.3.3 – 1)

2.1 Treatment BMP Translation

The proposed translation from previously earned CUs from T-BMPs, and translation for T-BMPs constructed after the adoption date of the TMDLs, under the previous Order 2012-0011-DWQ (as amended by Orders WQ 2014-0006-EXEC, WQ 2014-0077-DWQ, WQ 2015-0036-EXEC and WQ 2017-0026-EXEC) to compliance with TMDL WLAs will be calculated as follows.

1. Determine total evaluation area.
2. Determine T-BMP treated area for each T-BMP type. In some cases, there are multiple T-BMPs so these treatment areas will be summed.
3. For the total T-BMP treated area, determine the T-BMP treated area for each T-BMP type.
4. For each T-BMP type, calculate the treated area runoff coefficient ($RC_{treated}$) using the runoff coefficient equation that is based on the USGS SELDM model[14] :
    a. The USGS SELDM model equation was derived using highway monitoring data for individual events,[15] and small events that did not result in measurable runoff were ignored. When performing calculations for projects that have annual WLAs, the rainfall factor in SELDM is assigned a value of 0.9 to account for the fact that small events are not monitored. For event-based calculations, use a rainfall factor of 1.
5. For each T-BMP type, calculate the T-BMP influent volume in liters.
    a. The T-BMP influent volume is assumed to be the same as the runoff volume for the area draining to the T-BMP type.
6. For each T-BMP type and for each pollutant, use the T-BMP influent volume and the untreated runoff concentration to calculate the T-BMP treated area influent pollutant load.
    a. The untreated runoff concentration is the representative runoff concentration for the pollutant of concern. Representative runoff concentrations should be obtained from empirical datasets that are representative of the site conditions.

[14] https://www.sciencebase.gov/catalog/item/601ff3ead34e94a4b9fdfcac
[15] Note that the USGS SELDM model equation is different than that in the Caltrans *Project Planning and Design Guide*.

7. For each T-BMP type and for each pollutant, use a representative T-BMP volume reduction and a representative pollutant reduction to calculate the T-BMP treatment (load reduction) efficiency using the Currier & Bonham equation[16].
    a. Representative volume and pollutant reductions are derived from Caltrans pilot study data[17] and, where Caltrans data are unavailable or limited, from data in the International BMP Database[18].
8. For each T-BMP type and for each pollutant, use the T-BMP treatment efficiency from Step 7 and the T-BMP influent pollutant load (Step 6) to calculate the effluent pollutant load.
9. For each pollutant, sum all T-BMP effluent pollutant loads from Step 8 to determine the total T-BMP effluent pollutant load.
10. If the evaluation area includes areas NOT treated by T-BMPs, runoff loads must also be determined for the untreated areas. First, determine total area not treated by T-BMPs using the results of Step 2.
11. Determine the untreated area using the results for Step 3.
12. Calculate the untreated area runoff coefficient ($RC_{untreated}$) using the SELDM equation (similar to Step 4). For annual calculations, use a rainfall factor of 0.9. For event-based, use a rainfall factor of 1.0.
13. Calculate the untreated area runoff volume for the project in liters (similar to Step 5).
14. For each pollutant, use the untreated runoff volume and the untreated runoff concentration to calculate the untreated area pollutant load. By definition, there are no T-BMPs in the untreated area, so the runoff pollutant load is assumed to be equal to the discharge pollutant load.
15. For each pollutant, calculate the total load discharged from the project area by summing the total T-BMP-treated area effluent load (Step 9) and the total untreated area runoff load (Step 14).
16. If desired, to determine the load reduction due to the project, complete all steps using the pre-project conditions, and then again using the post-project conditions. Compare the pre- and post-project difference in discharge loads for each pollutant. This is the load reduction resulting from the project.

An applied example of this method is provided in Appendix A.

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[16] Currier, B., Bonham, J. 2019. Load Removal Efficiency: Derivation of Load Removal Efficiency from Volume and Concentration Removal. Water Math Concepts, No. 6. Office of Water Programs at Sacramento State. Sacramento, CA.
[17] Caltrans BMP Retrofit Pilot Program, CTSW-RT-01-050. https://dot.ca.gov/-/media/dot-media/programs/design/documents/ctsw-rt-01-050-001-a11y.pdf
[18] https://bmpdatabase.org/

2.2 Fish Passage Translation

Caltrans has implemented over 16 fish passage projects since 2013 in TMDL watersheds. While the primary focus of these projects is to improve fish passage, each project provides additional benefits in the form of improved channel stability that results in reduced sediment transport. Caltrans is exploring simple and defensible technical methods for estimating reduction in sediment transport. These projects improve stream stability, attenuate erosive conditions upstream and downstream of the roadway crossings, and reestablish sediment transport continuity. Caltrans intends to confer with the RWQCB and SWRCB on a mutually agreeable approach for assigning sediment reduction credits for fish passage projects. As an example, an effort to credit the Fish Creek fish passage project would need to:

1. Classify erosion downstream of the original culvert as a source of gullying/road crossing sediment load per field verification.
2. Determine subsequent reduction in the rate of sediment load after project implementation per modeling, field surveys, and monitoring.

2.3 Collaborative Projects Translation

Caltrans has collaborated with numerous municipalities through Cooperative Implementation Agreements and through Financial Contribution Only projects to partner in the construction of regional T-BMPs. Translation from CUs to waste load reductions is based on relative contribution to project funding.

After identifying the locations, configurations, and tributary drainage areas for each regional BMP, hydrologic response units are defined within the drainage areas for each T-BMP in accordance with latest applicable models. Runoff flows and TMDL pollutant loads delivered to T-BMPs are then quantified. Caltrans T-BMP and regional BMP load reductions are incorporated into the model according to BMP modeling requirements. The model is calibrated and validated to available Caltrans observed/historical TMDL constituent monitoring and T-BMP performance data, including both wet and dry weather conditions. Where Caltrans data are not available, information from adjoining jurisdictions may be utilized where obtainable. Once the model is calibrated and validated, Caltrans can determine if the TMDL compliance targets are met with existing and planned regional BMPs and Caltrans T-BMPs.

2.4 Gap Analysis

The gap analysis for 63 Time Schedule Order (TSO) TMDLs excluding the TMDLs in the North Coast RWQCB jurisdiction is performed by identifying the current pollutant load and comparing it to the target load required to meet water quality standards. Schuller's method is used to evaluate the effectiveness of T-BMPs by assessing their removal efficiencies and calculating the waste load reductions achieved as compared to the waste load reductions required. The focus for the two PCB/mercury TMDLs in District 4 under the jurisdiction of San Francisco Bay RWQCB is to meet the acres treatment requirement of 2,970 acres. The 21 North Coast TSO TMDLs consider

financial contributions toward watershed projects as sediment load reductions. The Gap Analysis then assists Caltrans with programming projects in deficient areas.

3 Prioritized Inventory of Reaches (D3.3.3 – 2)

Caltrans developed a prioritized list of reaches for implementation activities as required in Section I.A of Attachment IV of the 2012 NPDES Permit. Steps taken to identify the list of prioritized reaches were:

1. An inventory of reaches was completed. If reaches were defined in the TMDL, this was used to complete the inventory. However, when reaches were not defined, Caltrans delineated the receiving waters into reaches.
2. The inventory of reaches was segregated based on the priority scoring matrix as shown in Table 3.
3. The reaches in each TMDL category were ranked based on the scoring matrix.
4. The prioritized list was submitted to the SWRCB by October 1, 2014.
5. The SWRCB and RWQCBs collaborated and presented the final prioritization of each reach. Factors considered to complete the final prioritization by the RWQCBs were:
    a) Opportunities for synergistic benefits with existing or anticipated projects within the reach
    b) Multiple TMDLs that can be addressed by T-BMPs within a reach
    c) TMDL deadlines specified in a basin plan
    d) RWQCB and SWRCB priorities
    e) Accessibility for construction and/or maintenance (e.g., safety considerations)
    f) Multi-benefit projects that provide benefits in addition to water quality improvement

Prioritized reaches per the 2012 NPDES Permit in approved TMDLs are listed in Appendix B.

Per the 2022 NPDES Permit, the Prioritized Inventory of Reaches has been updated to include the prioritization of all TMDLs that Caltrans is required to comply with, including the following five newly implemented TMDLs: (1) Los Peñasquitos Lagoon Sediment TMDL in the San Diego Region; (2) San Gabriel River, Estuary and Tributaries Indicator Bacteria TMDLs in the Los Angeles Region; (3) Pescadero-Butano Watershed Fine Sediment TMDL in the San Francisco Bay Region; (4) Petaluma River Bacteria TMDL in the San Francisco Bay Region and (5) Guadalupe River Mercury TMDL in the San Francisco Bay Region. Reaches were evaluated using criteria from 2012 NPDES Permit. For Reaches that already had an existing TMDL, the Reaches were place with the previous TMDL ranking. For new Reaches with Caltrans tributary area, they were placed at the end of the list of existing Reaches with Caltrans tributary area. For new Reaches with no Caltrans tributary area, they were placed at the end of the existing list. This updated Prioritized Inventory of Reaches can be found in Appendix C of this report. The watershed maps for these reaches can be found in Appendix D.

Table 3: Rating Factors from 2012 NPDES Permit Prioritized Inventory of Reaches

Rating Factor	High Criteria	Medium Criteria	Low Criteria
Impairment Status[19] Percent reduction needed	Over 75%	25% - 75%	Below 25%
Caltrans Drainage Area Contributing to the Reach[20]	Over 5% of drainage area	Between 1% and 5% of drainage area	Less than 1% of drainage area
Proximity to Receiving Waters[21]	Over 75% of ROW within 0.25 miles of reach	Between 25% and 75% of ROW within 0.25 miles of reach	Less than 25% of ROW within 0.25 miles of reach
Community Environmental Health Impact[22]	Top 3 categories	Middle 4 categories	Lower 3 categories

[19] The degree of impairment of the waterbody, measured by the percent pollution reduction needed to achieve the WLA. Reaches with higher degrees of impairment will be given higher priority.
[20] The contributing drainage area from the Caltrans ROW relative to the watershed draining to the reach.
[21] The relative proximity of the Caltrans ROW to the reach of the water that receives runoff from the Caltrans ROW.
[22] Requires use of the California Office of Health Hazard Assessment evaluation tool "CalEnviroScreen" which can be found at http://oehha.ca.gov/ej/ces11.html. Outcomes are segregated into 10 categories ranging from low to high environmental justice scores.

4 TMDL Region Specific Compliance Strategies (D3.3.3 – 3)

Three RWQCBs identified region-specific compliance requirements and strategies to be reported on in the TMDL Compliance Plan.

4.1 Regional Board 6 – Lahontan

Section D3.4 of the NPDES Permit requires that by March 15, 2022, Caltrans shall submit an updated Lake Tahoe Pollutant Load Reduction Plan (PLRP) for review and consideration of approval to the Lahontan Regional Board Executive Officer.

4.1.1 Lake Tahoe Sediment and Nutrients TMDLs Pollutant Load Reduction Plan

The SWRCB incorporated Lake Tahoe TMDL load reduction milestones for stormwater runoff into the Caltrans Municipal NPDES Permit.

The final PLRP Update was submitted in March 2023 and describes how Caltrans will achieve the 15-year (2026) pollutant load reduction required for compliance with the Lake Tahoe TMDL. The 15-year milestone consists of reducing the baseline fine sediment particle, total nitrogen, and total phosphorus loads by 34 percent, 21 percent, and 19 percent, respectively, before September 30, 2026. The 15-year milestone is referred to as the Clarity Challenge and is a major TMDL milestone in the successful implementation of the Lake Tahoe TMDL. The PLRP is attached in Appendix E.

4.2 Regional Board 1 – North Coast

4.2.1 Sediment and Temperature Load Reduction Projects

Caltrans has implemented cooperative agreement projects in the Scott, Eel, Klamath, and Shasta River Watersheds as shown in Table 4.

Table 4: 2022-2024 Caltrans North Coast Region TMDL Projects and Load Reduction Values

Project	TMDL Watershed	Project Sediment Load Reduction (tons/year)	Temperature Load Reduction (riparian acres)
Shasta Valley Tailwater Reduction Planning Project	Shasta River	-	2.4
Lower French Creek Sediment Reduction and Habitat Restoration Project	Scott River	-	5.5
Scott River Recovery Action Plan Project (Sediment)	Scott River	26.9	5
Windler Bar Habitat Enhancement Project	Klamath River	-	10
Big Mill Creek-East Fork Sediment Reduction and Habitat Restoration Project (Sediment and Temperature)	Scott River	22.6	-
MCRCD Eel River TMDL Proposal: Eel River Ranch Road Implementation	Middle Fork Eel River	5	-
MCRCD Eel River TMDL Proposal: Ten Mile Creek Ranch Implementation	South Fork Eel River	391	-
MCRCD Eel River TMDL Proposal: Jack of Hearts Road Implementation	South Fork Eel River	372	-
MCRCD Eel River TMDL Proposal: Jack of Hearts Road Assessment	South Fork Eel River	17	-
Total	**-**	**835**	**23**

**MCRCD: Mendocino County Resource Conservation District*

4.2.1.1 Shasta River – Shasta Valley Tailwater Reduction Planning Project

This project will locate and quantify the volume and impact of selected high-volume tailwater returns on temperature and dissolved oxygen levels, both of which are pollutants listed in the Shasta River TMDL. Project objectives include increasing riparian health and reducing temperature spikes and dissolved oxygen incursions due to the unmitigated return of warm nutrient-rich tailwater returning to the creek from irrigation. Caltrans will receive compliance credits for TMDL reductions by providing project funding support, and the aquatic and riparian habitat along the Shasta River and its tributaries will benefit from decreased sediment and temperature contributions within a critical salmonid-bearing watershed once it is constructed.

4.2.1.2 Scott River – Lower French Creek Sediment Reduction and Habitat Restoration Project

This project will address sediment and temperature TMDL contributing factors and the respective impacts to salmonid species within lower French Creek. The goal of the project is to facilitate sediment transport through the reach, enhance riparian shading, and increase habitat complexity through installation of large wood structures and live

willow stake plantings. The selected alternative consists of alternating vegetated sills constructed using wood piles and horizontal log members, backfilled with alluvium, and staked with live willow. These sills would increase sediment sorting, resulting in a narrow channel with bar formation and increased riparian cover. Excavated material will be added to the floodplain benches, between the existing levees, and large wood structures will be installed across the floodplain benches to focus higher velocities into the low flow channel and improve sediment transport of fine material. Live willow stakes will be planted in linear trenches within the floodplain bench to add hydraulic roughness. Caltrans will receive compliance credits for TMDL reductions by providing project funding support, and the Scott River community will benefit from decreased sediment and temperature contributions within a critical salmonid-bearing tributary.

4.2.1.3 Scott River – Scott River Recovery Action Plan Project

This project will holistically evaluate the fundamental hydro and geo-fluvial degradation of the entire Scott River, from the headwaters to the confluence of the Klamath River. A detailed existing condition analysis will include sediment, temperature, and bio-stimulatory impairments that have led to the current TMDL listings in order to develop a landscape scale plan for solutions to address them. This project will produce the first-ever holistic management action plan that will establish a sufficient “river process space” and the necessary restoration and water management actions for the mainstem Scott River to provide floodplain reconnection, groundwater recharge, and increased riparian corridor health. By providing project funding support, Caltrans will receive compliance credits for TMDL reductions and will help decrease sediment and temperature impairments within a critical salmonid-bearing stream system once it is constructed.

4.2.1.4 Klamath River – Windler Bar Habitat Enhancement Project

This project aims to implement engineered designs to enhance and revegetate the Windler Bar complex floodplain, and to enhance Cronan Gulch and Gallia Pond. The Windler Bar project area was selected by the Salmon River Restoration Council for restoration due to its location along a reach of the North Fork Salmon River that offers low-gradient habitat known to host both spawning and year-round rearing of juvenile salmonids, including Coho and spring-run Chinook. The conceptual designs include increasing year-round floodplain complexity through excavation, large wood additions, and revegetation on the Main Bar by enhancing the remnant high-flow channels (Back-Bar Channel, Mid-Bar Channel, and North Channel). The downstream portion of the floodplain complex, the Split-Channel Bar and Side Channel, would be enhanced through large wood additions and revegetation. By providing project funding support, Caltrans will receive compliance credits for TMDL reductions and will help increase habitat within a critical salmonid-bearing stream system.

4.2.1.5 Scott River – Big Mill Creek-East Fork Sediment Reduction and Habitat Restoration Project

This project will contribute to reducing sediment loads to Big Mill Creek-East Fork. The creek is a tributary to the Scott River, which is impaired due to excess sediment and temperature. Caltrans' LA reduction responsibility under the Scott River Sediment TMDL is 87 tons per year and this project would meet 22.6 tons per year of that total load reduction responsibility. Additionally, riparian restoration elements of the project will improve instream temperature conditions by blocking incoming solar radiation as riparian plantings mature over time to reach the potential effective shade at each planting site.

The project also examines sediment and temperature TMDL contributing factors and the respective impacts to salmonid species within the lower East Fork Scott River through a detailed existing conditions assessment. Project objectives include reducing sediment and increasing riparian health in both the East Fork Scott River and its tributary, Big Mill Creek, as well as restoring volitional fish passage to over two miles of Coho salmonid-rearing habitat, currently blocked by a perched culvert on the Highway 3 crossing over Big Mill Creek. By providing project funding support, Caltrans will receive compliance credits for TMDL reductions and will help increase habitat within a critical salmonid-bearing stream system.

4.2.1.6 Eel River TMDL Implementation and Planning Projects: 2022–2026

The Eel River TMDL Implementation and Planning Projects for the years 2022 through 2026 will result in a reduction of sediment loads to the Eel River Watershed. Caltrans' total LA reduction responsibility under the South Fork Eel River TMDL for sediment and the Middle Fork Eel River TMDL for sediment is 13,157 tons per year and 41 tons per year, respectively. The proposed projects will provide a sediment load reduction of 780 tons/year and 5 tons/year for the South Fork Eel River and Middle Fork Eel River, respectively. By providing project funding support, Caltrans will receive compliance credits for TMDL reductions and will help increase habitat within a critical salmonid-bearing stream system.

4.2.1.6.1 Eel River Ranch Road

In 2020, approximately 1.5 miles of Eel River Ranch Road was inventoried to develop a comprehensive plan of action to identify and prevent ongoing and future road-related erosion and sediment delivery from entering Mill Creek, an important anadromous stream. Eel River Ranch Road lies on the streamside valley floor setting of Round Valley adjacent to Mill Creek that includes critical spawning, rearing, and migratory habitats for all species of salmonids and lamprey.

4.2.1.6.2 Ten Mile Creek Road

In 2019, approximately 4.2 miles of road within the Ten Mile Creek Watershed near Laytonville was inventoried. These roads lie 1 mile north of town and cross Ten Mile Creek via a wet ford. This TMDL implementation proposal presented by the Mendocino

County Resource Conservation District is intended to address all 4.2 miles of road hydrologic connectivity issues that chronically deliver fine sediment and road runoff to the adjacent Class I and II streams, as well as the 18 other site-specific road erosion and sediment delivery sites, which are mostly stream-crossing sites (excludes the wet crossing site).

4.2.1.6.3 Jack of Hearts Creek Road

Jack of Hearts Creek Road parallels Jack of Hearts Creek, a tributary to the upper South Fork Eel River, both of which are considered by state and federal resource agencies as one of the most important Coho salmon habitat areas in the Eel River Watershed. The lowest four miles of road lie along the creek valley floor and contain several tributary stream-crossing sites and long segments of hydrologically connected road that discharge excessive amounts of fine sediment to Jack of Hearts Creek on an annual basis. Although these four miles are on private property, the road is comanaged by the US Department of the Interior, Bureau of Land Management. Approximately six miles of Jack of Hearts Creek Road will be assessed, and implementation of the selected prioritized road storm-proofing treatment segments will be performed between 2023 and 2025 on at least four miles of the inventoried Jack of Hearts Road.

4.3 Regional Board 9 – San Diego

As required in the NPDES Permit, Caltrans shall report the status of Chollas Creek TMDL best practices implementation including: (i) current and proposed BMPs and treatment acres implemented through cooperative agreements; (ii) existing acreage treated with existing Caltrans-specific BMPs; (iii) proposed Caltrans-specific BMPs and acreage to be treated for the upcoming year; and (iv) proposed total acreage that will be treated with Caltrans-specific BMPs by the compliance deadline.

4.3.1 Chollas Creek TMDL (District 11)

4.3.1.1 Cooperative Agreement - Current and Proposed

There are no current or planned cooperative agreement projects within the Chollas Creek Watershed.

4.3.1.2 Existing Caltrans-Specific Best Management Practices

The Caltrans ROW comprises approximately 940 acres, or roughly five percent, of the Chollas Creek Watershed. Of those 940 acres, an estimated 54 percent, or 508 acres, has been developed for highway land use; the remaining 432 acres are considered undeveloped open space. Within its ROW, Caltrans has implemented 14 T-BMPs to reduce the concentration and mass loading of TMDL constituents prior to discharge to receiving waters. A load reduction analysis was performed to generate an estimated load reduction for TMDL constituents (dissolved copper, lead, and zinc) from the Caltrans ROW on an annual basis, using the historical annual average of 10.13 inches of rainfall for San Diego International Airport (Western Regional Climate Center 2016).

A geographic information systems drainage analysis indicates that the total 1,811-acre tributary area to the 14 structural T-BMPs in the Chollas Creek Watershed consists of 268 acres of Caltrans ROW and an additional 1,543 acres of non-Caltrans ROW. For the Design Storm, the 14 structural T-BMPs treat comingled runoff from an estimated 121 acres, or 45 percent of the contributing Caltrans ROW, based on estimated design capacity and available tributary area (Table 5 and Figure 1). The estimated T-BMP treatment areas, including both Caltrans ROW and from comingled sources outside of Caltrans jurisdiction, are presented in Table 6.

Table 5: Caltrans ROW Contributing Drainage Area

Contributing Region	Area (acres)
Caltrans ROW[23]	940
Caltrans ROW developed for highway land use	508
Caltrans ROW contributing drainage area to structural T-BMPs	268
Non-Caltrans ROW contributing drainage area to structural T-BMPs	1,543
Estimated area treated by Caltrans T-BMPs for the Design Storm	121
Design Storm treated area vs. Total Caltrans ROW	13%
Design Storm treated area vs. Total Caltrans paved ROW	24%
Design Storm treated area vs. contributing Caltrans ROW to T-BMPs	45%

[23] The total Caltrans acreage in Chollas Creek is approximately 940 acres, of which an estimated 54 percent, or 508 acres, has been developed for highway land use. The remaining 432 acres are considered undeveloped open space.

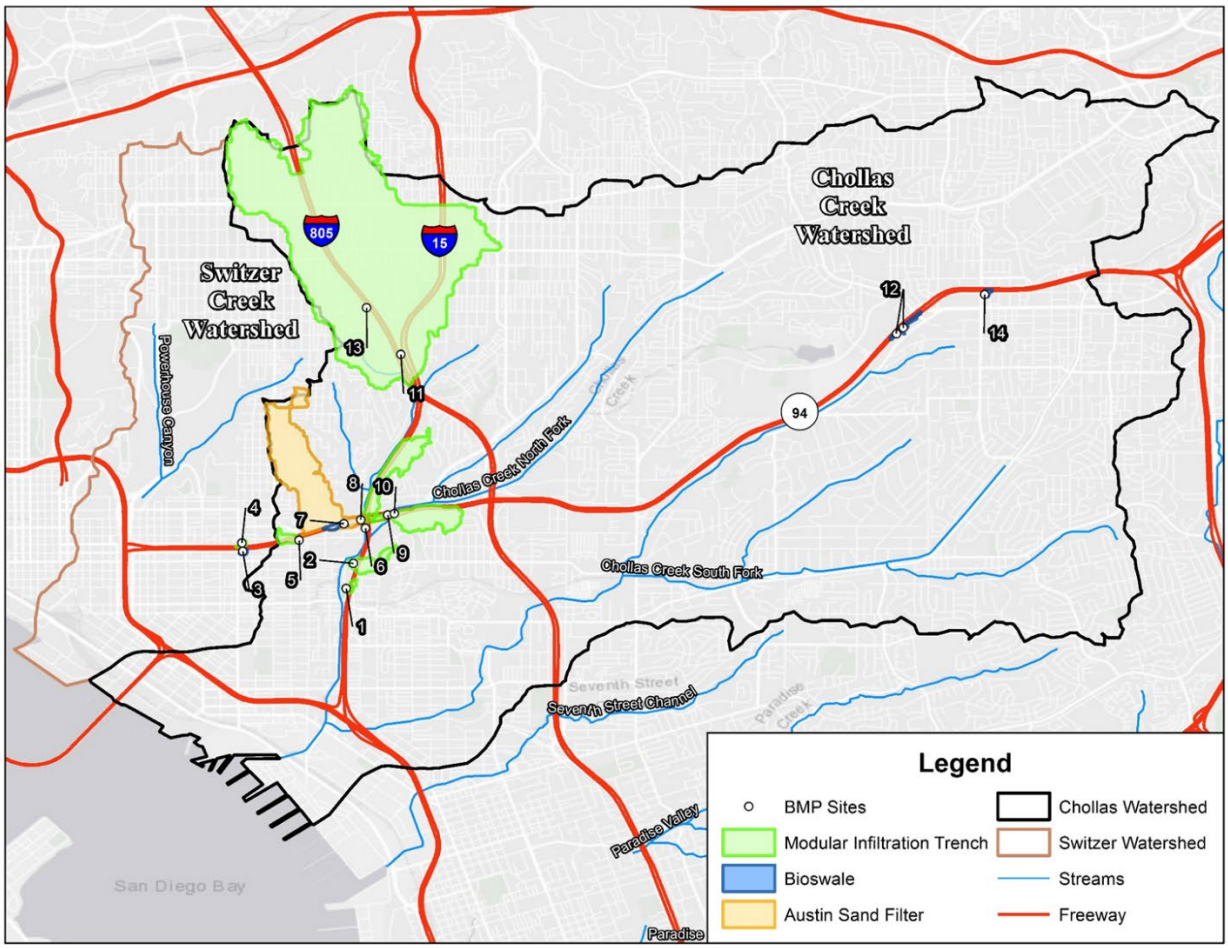

Figure 1: Caltrans T-BMPs and Corresponding Total Tributary Areas in the Chollas Creek Watershed

Table 6: Chollas Creek TMDL T-BMP Contributing Areas and Design Capacities

BMP #	BMP Type[24]	Total Tributary Area = Dry Weather Area (acres)[25]	Contributing ROW Area (acres)	Design Capacity Area (acres)[26]
1	Modular Infiltration Trench	2.90	2.52	8.75
2	Modular Infiltration Trench	19.93	10.09	4.25
3	Bio-infiltration Swale[27]	1.54	-	3.36
4	Bio-infiltration Swale[27]	1.93	-	14.02
5	Modular Infiltration Trench	7.94	5.66	5.57
6	Modular Infiltration Trench	51.94	21.01	8.82
7	Bio-infiltration Swale	3.47	3.47	15.66
8	Austin Sand Filter	198.12	16.24	3.62
9	Modular Infiltration Trench	2.73	2.73	4.69
10	Modular Infiltration Trench	54.81	15.38	10.75
11	Instream Modular Infiltration Trench	1,458.19	182.04	42.22
12	Bio-infiltration Swales	5.32	4.03	12.89
13	Instream Modular Infiltration Trench	770.28	56.07	26.08
14	Bio-infiltration Swale	2.02	2.02	17.33

4.3.1.3 Proposed Caltrans-Specific Best Management Practices

There are currently no proposed T-BMPs planned in the watershed for the upcoming year.

4.3.1.4 Proposed Total Acreage by the Compliance Deadline

Caltrans currently treats and will continue to treat a minimum of 121 acres of the Chollas Creek Watershed as shown in Table 6. Historical metals trends were assessed using data collected from 2006 through 2022:[28]

- Dissolved copper concentrations in Chollas Creek are consistently below TMDL acute and chronic thresholds during wet weather monitoring events in the North and South Forks of Chollas Creek. This continues to be the case based on the revised water effects ratio (WER) adopted in 2020 for copper.
- Dissolved lead concentrations are consistently below the acute TMDL threshold and of similar magnitude to the chronic California Toxics Rule (CTR) water quality objective (WQOs). However, wet weather flows in Chollas Creek are ephemeral

[24] BMP 1-8 built on EA 11-28240 BMP 9-14 built on EA 11-28250.
[25] Tributary area is the total (includes comingled flow) contributing drainage area for dry weather flow that the BMP would treat under ideal conditions.
[26] Design capacity area calculations based on Caltrans plan sets and design guidelines. No consideration for time-varied runoff or pipe conveyance limitations.
[27] Bio-infiltration swale located outside Chollas Creek Watershed.
[28] Source: Chollas Creek Diazinon and Dissolved Metals Total Maximum Daily Load FINAL 2021–2022 Water Quality Compliance Monitoring Report, September 2022

and therefore do not typically provide adequate exposure time for chronic effects to occur; thus, the acute threshold is a more representative benchmark.

- Dissolved zinc concentrations in the North and South Forks of Chollas Creek have been consistently below acute and chronic CTR WQOs. A TMDL exceedance for zinc has not been reported since October 2016.

Table 7 illustrates the compliance status with the CTR WQOs calculated with site-specific WER values met during the 2021–2022 wet season.

Table 7: Chollas Creek 2021-2022 Compliance Status

Monitoring Location	Diazinon (Acute)	Diazinon (Chronic)	Dissolved Copper (Acute)	Dissolved Copper (Chronic)	Dissolved Lead (Acute)	Dissolved Lead (Chronic)	Dissolved Zinc (Acute)	Dissolved Zinc (Chronic)
SD8	✔	✔	✔	✔	✔	✔	✔	✔
Z Street	✔	✔	✔	✔	✔	✔	✔	✔

✔ = Monitoring results currently meet both acute and chronic WQOs.
Notes: Compliance with the Dissolved Metals TMDL was assessed by comparing wet weather analytical results with hardness dependent WQOs calculated according to the CTR with the WER values of 6.998 for dissolved copper, 1.0 for dissolved lead, and 1.711 for dissolved zinc.

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5 Cooperative Agreement Projects (D3.3.3 – 4)

The NPDES Permit allows for collaborative implementation between Caltrans and other local agencies or municipalities to achieve compliance with TMDLs. The Cooperative Implementation Agreements program was implemented in 2015 and encourages collaborative efforts between Caltrans and local agencies. These T-BMPs are located outside of the Caltrans ROW.

Cooperative implementation has the following advantages:

- Allows for retrofit projects off the ROW, at locations that may otherwise have space, access, or safety limitations within the ROW
- Provides for the involvement of local watershed partners who have an interest and expertise in the best way to protect, manage, and enhance water quality in the watershed
- Allows for implementation of T-BMPs and other solutions not typically available to Caltrans
- Allows for larger watershed scale projects
- Leverages resources from other entities

Appendix F lists the currently (2023) executed cooperative projects and upcoming cooperative projects that Caltrans is in the process of negotiating.

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6 Time Schedule Order Overview (D3.3.3 – 5)

TSO No. 2022-0089-DWQ requires the compliance schedule to include TMDL interim milestones for Caltrans to maintain scheduled compliance progress. The TMDL interim milestones are actions to be completed during progressive stages of the compliance schedule, with the requirement for Caltrans to demonstrate its progress towards compliance with the TMDLs listed in the TSO.

The four-year TMDL interim milestones to track the rate of compliance with WLAs are calculated from the following formula:

(63 TMDLs) / (Year 2034 – Year 202X) = Average Annual Rate of Compliance

63 TMDLS / 2034-2022 = 5.25 TMDLs / year

4-Year Interim Average Milestone Compliance Rate =
Annual Rate of Compliance x 4 years

4-Year Interim Average Milestone Compliance Rate = 5.25 TMDLs/year x 4 years

4-Year Interim Average Milestone Compliance Rate = 21 TMDLs

Each TMDL watershed listed in the TSO has a customized compliance strategy as shown in the TMDL Fact Sheets in Appendix G and is consistent with the limitations of T-BMP implementation and pollutant types and sources. While pursuing partnerships with local agencies, the NPDES Permit phase and compliance method in regional permits will be considered. A preliminary estimate of the phase in which the TMDLs will meet the interim milestone is listed in Table 8. Phase I represents achieving compliance in approximately three years, Phase II represents achieving compliance in approximately seven years, and Phase III represents achieving compliance in approximately 11 years.

Following state statutes, Caltrans prepares and implements the state highway system Management Plan (SHSMP), which covers planning for the next 10 years to address California state goals and keep the infrastructure in good condition, including meeting compliance requirements for various state and federal regulations. The SHSMP is updated every other year. Caltrans will continuously review the planned projects in TMDL watersheds to add scope for addressing TMDL compliance requirements.

The TMDL compliance schedule will evolve as the SHSMP is prepared and implemented, T-BMPs are incorporated into planned projects, and the watersheds are monitored. Caltrans will review the currently programmed projects in the SHOPP in each TMDL watershed where WLA reductions are required and add scope as per available constrained funding. In addition, Caltrans will plan and implement new projects in the SHOPP to reduce WLA reductions. Every fiscal year, Caltrans will review the WLA reduction percentages and will add the partial reductions (percent reductions) to meet the four-year compliance reduction milestone of 21 TMDLs by 2027.

The NPDES Permit allows compliance strategies that have been applied historically to address Caltrans TMDLs; these are further explained in Section 10.

Table 8: Caltrans Planning Level Compliance Phases for TMDLs Listed in the TSO

RWQCB	TMDL Watershed	Pollutant	Final Compliance Deadline	Schedule Phase
North Coast	Albion River	Sediment	31-Dec-2001	Phase I
North Coast	Big River	Sediment	31-Dec-2001	Phase I
North Coast	Lower Eel River	Temperature and Sediment	18-Dec-2007	Phase II
North Coast	Middle Fork Eel River	Temperature and Sediment	Dec-2003	Phase II
North Coast	South Fork Eel River	Temperature and Sediment	16-Dec-1999	Phase I
North Coast	Upper Main Eel River and tributaries, including Tomki Creek, Outlet Creek, and Lake Pillsbury	Temperature and Sediment	29-Dec-2004	Phase II
North Coast	Garcia River	Sediment	16-Mar-1998	Phase I
North Coast	Gualala River	Sediment	29-Nov-2001	Phase II
North Coast	Klamath River	Temperature, Dissolved Oxygen, Nutrients, and Microcystin	28-Dec-2010	Phase III
North Coast	Lost River	Nitrogen, Biochemical Oxygen Demand, and pH	30-Dec-2008	Phase III
North Coast	Mad River	Sediment and Turbidity	21-Dec-2007	Phase II
North Coast	Navarro River	Sediment and Temperature	27-Dec-2000	Phase II
North Coast	Noyo River	Sediment	16-Dec-1999	Phase II
North Coast	Redwood Creek	Sediment	30-Dec-1998	Phase II
North Coast	Shasta River	Temperature	26-Dec-2017	Phase I
North Coast	Ten Mile River	Sediment	31-Dec-2000	Phase II
North Coast	Trinity River	Sediment	20-Dec-2001	Phase I
North Coast	South Fork Trinity River and Hayfork Creek	Sediment	Dec-1998	Phase I
North Coast	Van Duzen River and Yager Creek	Sediment	16-Dec-1999	Phase II
Los Angeles	Ballona Creek	Metals (Silver, Cadmium, Copper, Lead, Zinc, and Selenium)	11-Jan-2021	Phase III
Los Angeles	Ballona Creek	Trash	30-Sep-2015	Phase III
Los Angeles	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria	15-Jul-2021	Phase III
Los Angeles	Ballona Creek Estuary	Toxic Pollutants: Silver, Cadmium, Copper, Lead, Zinc, Chlordane, Polychlorinated Biphenyls, Polyaromatic Hydrocarbons, and Dichlorodiphenyltrichloroethane	11-Jul-2025	Phase III
Los Angeles	Ballona Creek Wetlands	Sediment and Invasive Exotic Vegetation	26-Mar-2012	Phase III

RWQCB	TMDL Watershed	Pollutant	Final Compliance Deadline	Schedule Phase
Los Angeles	Calleguas Creeks and its Tributaries and Mugu Lagoon	Metals and Selenium	26-Mar-2022	Phase III
Los Angeles	Calleguas Creeks, its Tributaries and Mugu Lagoon	Organochlorine Pesticides, Polychlorinated Biphenyls, and Siltation	24-Mar-2026	Phase I
Los Angeles	Colorado Lagoon	Organochlorine Pesticides, Polychlorinated Biphenyls, Sediment Toxicity, Polynuclear Aromatic Hydrocarbons, and Metals	28-Jul-2018	Phase I
Los Angeles	Los Angeles Area Lakes (Echo Park Lake)	Trash	26-Mar-2012	Phase II
Los Angeles	Los Angeles Area Lakes (Echo Park Lake)	Total Nitrogen and Total Phosphorus	26-Mar-2012	Phase III
Los Angeles	Los Angeles Area Lakes (Echo Park Lake)	Chlordane, Dichlorodiphenyltrichloroethane, Dieldrin, and Polychlorinated Biphenyls	26-Mar-2012	Phase III
Los Angeles	Los Angeles Area Lakes (Legg Lake)	Trash	26-Mar-2016	Phase II
Los Angeles	Los Angeles Area Lakes (Lake Sherwood)	Mercury	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (North, Center, and Legg Lake)	Nitrogen and Phosphorus	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (North, Center, and Legg Lake)	Chlordane, Dichlorodiphenyltrichloroethane, Dieldrin, Polychlorinated Biphenyls	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (Peck Road Park Lake)	Nitrogen and Phosphorus	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (Peck Road Park Lake)	Chlordane, Dichlorodiphenyltrichloroethane, Dieldrin, and Polychlorinated Biphenyls	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (Peck Road Park Lake)	Trash	26-Mar-2012	Phase II
Los Angeles	Los Angeles Area Lakes (Puddingstone Reservoir)	Nitrogen and Phosphorus	26-Mar-2012	Phase I
Los Angeles	Los Angeles Area Lakes (Puddingstone Reservoir)	Chlordane, Dichlorodiphenyltrichloroethane, Polychlorinated Biphenyls, Mercury, and Dieldrin	26-Mar-2012	Phase I
Los Angeles	Los Angeles River	Trash	30-Sep-2014	Phase III
Los Angeles	Los Angeles River and Tributaries	Metals	11-Jan-2028	Phase III
Los Angeles	Los Cerritos Channel	Metals	17-Mar-2010	Phase III
Los Angeles	Machado Lake	Eutrophic Algae, Ammonia, and Odors	11-Sep-2018	Phase III
Los Angeles	Machado Lake	Pesticides and Polychlorinated Biphenyls	30-Sep-2019	Phase III
Los Angeles	Machado Lake	Trash	6-Mar-2016	Phase II

RWQCB	TMDL Watershed	Pollutant	Final Compliance Deadline	Schedule Phase
Los Angeles	Malibu Creek and Lagoon	Sedimentation and Nutrients	2-Jul-2013	Phase III
Los Angeles	Malibu Creek Watershed	Bacteria	15-Jul-2021	Phase III
Los Angeles	Malibu Creek Watershed	Trash	7-Jul-2017	Phase II
Los Angeles	Marina del Rey Harbor	Toxic Pollutants: Copper, Lead, Zinc, Chlordane, and Total Polychlorinated Biphenyls	16-Mar-2021	Phase III
Los Angeles	Marina del Rey Harbor, Mothers' Beach, and Back Basins	Bacteria	15-Jul-2021	Phase III
Los Angeles	Revolon Slough and Beardsley Wash	Trash	27-Feb-2016	Phase II
Los Angeles	Santa Clara River Estuary and Reaches 3,5,6,7	Indicator Bacteria	19-Jan-2029	Phase II
Los Angeles	San Gabriel River and Impaired Tributaries	Metals (Copper, Lead, Zinc) and Selenium	30-Sep-2026	Phase II
Los Angeles	Santa Monica Bay	Dichlorodiphenyltrichloroethane and Polychlorinated Biphenyls	26-Mar-2012	Phase III
Los Angeles	Santa Monica Bay Beaches	Bacteria	15-Jul-2021	Phase III
Los Angeles	Santa Monica Bay Nearshore and Offshore	Debris (Trash & Plastic Pellets)	12-Mar-2028	Phase II
Los Angeles	Ventura River Estuary	Trash	27-Feb-2016	Phase II
Los Angeles	Ventura River and its Tributaries	Algae, Eutrophic Conditions, and Nutrients	28-Jun-2019	Phase I
Santa Ana	Lake Elsinore and Canyon Lake	Nutrients	31-Dec-2020	Phase II
Santa Ana	Big Bear Lake	Nutrients	31-Dec-2015	Phase I
Santa Ana	San Diego Creek Watershed	Organochlorine Compounds: Dichlorodiphenyltrichloroethane and Toxaphene	12-Nov-2013	Phase I
Santa Ana	Upper and Lower Newport Bay	Organochlorine Compounds: Dichlorodiphenyltrichloroethane, Chlordane, and Polychlorinated Biphenyls	12-Nov-2013	Phase I
San Diego	Rainbow Creek	Total nitrogen and total phosphorous	31-Dec-2021	Phase I

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7 TMDL Summary Information (D3.3.3 – 6 and 7)

Table 9 below contains data to satisfy requirement D3.3.3, Item 6, and includes the following information:

- TMDL watershed name
- Reach name
- Individual pollutant
- Proposed compliance strategy
- Total watershed acres
- Caltrans acres in the watershed
- Caltrans percentage of ROW in the watershed
- TMDL WLAs applicable to Caltrans

Additionally, a web map is available to satisfy the requirement D3.3.3, Item 7, and includes the following information:

- TMDL watersheds
- Pollutants
- Location and type of BMPs

The web map is available on this website: https://caltrans.maps.arcgis.com/apps/mapviewer/index.html?webmap=51cb3c10b3ee4acf80d3a7d6da534814

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Table 9: TMDL Summary Information

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
1	1	Albion River	Albion River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	27,529	2	0.01%	2 (tons/year)
1	1	Big River	Big River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	115,970	123	0.11%	44 (tons/year)
1	1	Garcia River	Garcia River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	73,276	22	0.03%	100 (tons/year)
1	1	Gualala River	Gualala River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	191,141	11	0.01%	21 (tons/year)
1	2	Klamath River in California	Klamath River in California	Temperature Dissolved Oxygen, Nutrients, and Microcystin	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	6,406,004	166	0.003%	Caltrans is required to conduct riparian restoration according to its proportional responsibility of 61 acres of riparian shade. No specific WLA is assigned to Caltrans.
1	2	Lost River	Lost River	Dissolved Inorganic Nitrogen Biochemical Oxygen Demand to address Dissolved Oxygen and pH Impairments	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	508,266	388	0.08%	Lost River from border to Tule Lake Refuge = 0.3 average kilograms/day Tule Lake Refuge = 0.3 average kilograms/day Lower Klamath Refuge = 0.3 average kilograms/day Lost River from border to Tule Lake Refuge = 0.5 average kilograms/day Tule Lake Refuge = 0.5 average kilograms/day Lower Klamath Refuge = 0.5 average kilograms/day
1	1	Lower Eel River	Lower Eel River	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	191,102	456	0.24%	74 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the Eel River, Lower Hydrologic Area = 37 acres
1	1	Mad River	Mad River	Sediment Turbidity	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	239,360	318	0.13%	515 (tons/year)
1	1	Middle Fork Eel River	Middle Fork Eel River	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	482,363	57	0.01%	105 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the Middle Fork Eel River = 17 acres
1	1	Navarro River	Navarro River	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	202,101	166	0.08%	1,364 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the Navarro River Hydrologic Area = 61 acres
1	1	Noyo River	Noyo River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	72,559	62	0.09%	33 (tons/year)

[29] See Permit Attachment A and Fact Sheets for detailed WLAs and load allocations. Tributary area is the total (includes comingled flow) contributing drainage area for dry weather flow that the BMP would treat under ideal conditions.

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
1	1	Redwood Creek	Redwood Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	180,480	181	0.10%	856 (tons/year)
1	2	Scott River	Scott River	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	521,092	163	0.03%	67 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the Scott River = 28 acres
1	2	Shasta River	Shasta River	Temperature Dissolved Oxygen	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	505,545	869	0.17%	Caltrans Proportional Responsibility of Riparian Shade = 131 acres No specific WLA is assigned to Caltrans.
1	1	South Fork Eel River	South Fork Eel River	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	441,197	748	0.17%	4,871 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the South Fork Eel River = 143 acres
1	2	South Fork Trinity River and Hayfork Creek	South Fork Trinity River and Hayfork Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	596,603	413	0.07%	358 (tons/year)
1	1	Ten Mile River	Ten Mile River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	76,632	7	0.01%	1 (ton/year)
1	2	Trinity River	Trinity River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	1,084,156	1,434	0.13%	89 (tons/year)
1	1	Upper Main Eel River and Tributaries	Upper Main Eel River and Tributaries	Sediment Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	453,689	255	0.06%	68 (tons/year) Caltrans Proportional Responsibility of Riparian Shade for the Upper Main Eel River = 127 acres
1	1	Van Duzen River and Yager Creek	Van Duzen River and Yager Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB	274,130	379	0.14%	68 (tons/year)
2	4	Guadalupe River	Guadalupe River	Mercury	e. Mass-Based Waste Load.	108,800	2,277	2.10%	0.2 milligrams/kilograms of suspended sediment
2	4	Napa River	Napa River	Sediment	h. TMDL-Specific Demonstrations.	269,770	1,148	0.43%	600 (tons/year)
2	4	Pescadero-Butano Watershed	Pescadero-Butano Watershed	Sediment	h. TMDL-Specific Demonstrations.	52,124	297	0.28%	50 (tons/year)
2	4	Petaluma River	Petaluma River	Fecal Indicator Bacteria	b. Receiving Water Quality Monitoring.	94,933	837	0.88%	Estuarine Waters Enterococcus: Geometric mean less than 30 Statistical Threshold Value = 110 colony forming unit per 100 mL Freshwater E. Coli: Geometric mean less than 100 Statistical Threshold Value = 320 colony forming unit per 100 mL
2	4	Richardson Bay	Richardson Bay	Pathogens	b. Receiving Water Quality Monitoring and/or d. Discharge Sampling and/or f. Allowable Exceedance Days	10,763	164	1.50%	Less than 14 most probable number per 100 millimeters, and a 90th percentile limit of less than 43 most probable number per 100 millimeters.
2	4	San Francisco Bay	San Francisco Bay	Mercury	e. Mass-Based Waste Load and h. TMDL-Specific Demonstrations.	2,400,544	13,475	0.56%	Treat a combined 2,970 acres in PCB and mercury TMDL for compliance.
2	4	San Francisco Bay (PCBs)	San Francisco Bay (PCBs)	PCBs	e. Mass-Based Waste Load and h. TMDL-Specific Demonstrations.	2,400,544	13,475	0.56%	Treat a combined 2,970 acres in PCB and mercury TMDL for compliance.

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
2	4 and 5	San Francisco Bay Urban Creeks	San Francisco Bay Urban Creeks	Diazinon Pesticide-Related Toxicity	g. No Discharge (Diazinon) and h. TMDL-Specific Demonstrations (Pesticide Toxicity).	1,394,431	14,150	1%	100 nanograms/liter (one-hour average) The targets require that toxicity not exceed 1.0 acute or chronic toxic units, as determined through standard toxicity tests.
2	4	San Pedro and Pacifica State Beach	San Pedro and Pacifica State Beach	Bacteria	h. TMDL-Specific Demonstrations.	5,252	16	0.30%	No specific WLA is assigned to Caltrans.
2	4	Sonoma Creek	Sonoma Creek	Sediment	h. TMDL-Specific Demonstrations.	106,592	284	0.28%	100 (tons/year)
3	4 and 5	San Lorenzo River (includes Carbonera Lompico, and Shingle Mill Creeks)	San Lorenzo River (includes Carbonera Lompico, and Shingle Mill Creeks)	Sediment	h. TMDL-Specific Demonstrations.	87,927	546	0.62%	No specific WLA is assigned to Caltrans.
3	5	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary)	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary)	Sediment	h. TMDL-Specific Demonstrations.	49,942	121	0.24%	No specific WLA is assigned to Caltrans.
4	7	Ballona Creek	Ballona Creek	Metals (Ag, Cd, Cu, Pb, & Zn) and Selenium	b. Receiving Water Quality Monitoring and/or d. Discharge Sampling.	81,795	1,143	1.40%	Dry-weather (g/day) Ballona Creek - Copper: 19.6, Lead: 10.8, Zinc: 246.2 Sepulveda Channel - Copper: 7.3, Lead: 4.0, Zinc: 91.3 Wet-weather (g/day) [V is daily storm volume in liters] Copper: 1.806 * V * 10^(-7) Lead: 1.012 * V * 10^(-6) Zinc: 1.381 * V * 10^(-6)
4	7	Ballona Creek	Ballona Creek	Trash	e. Mass-Based Waste Load.	83,820	1,176	1.40%	Zero Trash
4	7	Ballona Creek Estuary	Ballona Creek Estuary	Toxic Pollutants (Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs	b. Receiving Water Quality Monitoring and/or d. Discharge Sampling.	81,795	1,143	1.40%	Cadmium: 0.11 kg/year Copper: 3.2 kg/year Lead: 4.4 kg/year Silver: 0.09 kg/year Zinc: 14 kg/year Total Chlordane: 0.12 g/year Total DDTs: 0.18 g/year Total PCBs: 0.30 g/year
4	7	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria	b. Receiving Water Quality Monitoring and/or d. Discharge Sampling and/or f. Allowable Exceedance Days	81,980	1,206	1.50%	Ballona Creek Estuary - • Zero exceedance days for summer dry-weather • Nine exceedance days (daily sampling) or two exceedance days (weekly sampling) • 17 exceedance days (daily sampling) or three exceedance days (weekly sampling) Ballona Creek Reach 2 and Sepulveda Channel - • Five exceedance days (daily sampling) or one exceedance day (weekly sampling) • 15 exceedance days (daily sampling) or two exceedance days (weekly sampling) Ballona Creek Reach 1 - • No more than 10% of 4,000/100 ml • No more than 10% of 4,000/100 ml
4	7	Ballona Creek Wetlands	Ballona Creek Wetlands	Sediment and Invasive Exotic Vegetation	e. Mass-Based Waste Load.	81,980	1,206	1.50%	Sediment (Joint WLA) and Invasive Exotic Vegetated Species (0 or 10% coverage of these plants)
4	7	Calleguas Creeks and its Tributaries and Mugu Lagoon (Metals and Selenium)*	Calleguas Creeks and its Tributaries and Mugu Lagoon (Metals and Selenium)*	Copper	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	220,214	1,111	0.50%	Dry-Weather WLAs: Copper: Calleguas and Conejo Creek, Low Flow: 0.04 * WER - 0.02 Calleguas and Conejo Creek, Average Flow: 0.12 * WER - 0.02 Calleguas and Conejo Creek, Elevated Flow: 0.18 * WER - 0.02 Revolon Slough, Low Flow: 0.03 * WER - 0.01 Revolon Slough, Average Flow: 0.06 * WER - 0.03 Revolon Slough, Elevated Flow: 0.13 * WER - 0.02 Wet-Weather WLAs: Copper: Calleguas Creek: (0.00054*Q2*0.032*Q-0.17)*WER-0.06 Revolon Slough: (0.0002*Q2*0.0005*Q)*WER

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
4	7	Calleguas Creeks and its Tributaries and Mugu Lagoon	Calleguas Creeks and its Tributaries and Mugu Lagoon	Nickel	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	220,214	1,111	0.50%	Dry-Weather WLAs - Nickel: Calleguas and Conejo Creek, Low Flow: 0.100 Calleguas and Conejo Creek, Average Flow: 0.120 Calleguas and Conejo Creek, Elevated Flow: 0.440 Revolon Slough, Low Flow: 0.050 Revolon Slough, Average Flow: 0.069 Revolon Slough, Elevated Flow: 0.116 Wet-Weather WLAs - Nickel: Calleguas Creek: 0.014*Q2+0.82*Q Revolon Slough: 0.027*Q2+0.47*Q
4	7	Calleguas Creeks and its Tributaries and Mugu Lagoon	Calleguas Creeks and its Tributaries and Mugu Lagoon	Organochlorines, PCBs, and Siltation	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	220,214	1,111	0.005%	Mugu Lagoon - Total Chlordane: 3.3; 4,4-DDD: 2.0; 4,4-DDE: 2.2; 4,4-DDT: 0.3; Dieldrin: 4.3; Total PCBs: 180.0; Toxaphene: 360.0 Calleguas Creek - Total Chlordane: 3.3; 4,4-DDD: 2.0; 4,4-DDE: 1.4; 4,4-DDT: 0.3; Dieldrin: 0.2; Total PCBs: 120.0; Toxaphene: 0.6 Revolon Slough - Total Chlordane: 0.9; 4,4-DDD: 2.0; 4,4-DDE: 1.4; 4,4-DDT: 0.3; Dieldrin: 0.1; Total PCBs: 130.0; Toxaphene: 1.0 Arroyo Las Posas - Total Chlordane: 3.3; 4,4-DDD: 2.0; 4,4-DDE: 1.4; 4,4-DDT: 0.3; Dieldrin: 0.2; Total PCBs: 120.0; Toxaphene: 0.6 Arroyo Simi - Total Chlordane: 3.3; 4,4-DDD: 2.0; 4,4-DDE: 1.4; 4,4-DDT: 0.3; Dieldrin: 0.2; Total PCBs: 120.0; Toxaphene: 0.6 Conejo Creek - Total Chlordane: 3.3; 4,4-DDD: 2.0; 4,4-DDE: 1.4; 4,4-DDT: 0.3; Dieldrin: 0.2; Total PCBs: 120.0; Toxaphene: 0.6 Siltation WLA for municipal separate storm sewer system discharges (including Caltrans discharges) = 2,496 (tons/year)
4	7	Colorado Lagoon	Colorado Lagoon	Organochlorine Pesticides, PCBs, Sediment Toxicity, PAHs, and Metals (Pb & Zn)	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	1,104	13	1.20%	Dieldrin: 0.02 (ug/dry kilograms) Chlordane: 0.50 (ug/dry kilograms) DDTs: 1.58 (ug/dry kilograms) PCBs: 22.7 (ug/dry kilograms) PAHs: 4,022 (ug/dry kilograms) Lead: 46,700 (ug/dry kilograms) Zinc: 150,000 (ug/dry kilograms)
4	7	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters	Toxic Pollutants: Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	76,242	1,442	1.90%	Waterbody and weather specific WLA
4	7	Legg Lake (Trash)	Legg Lake (Trash)	Trash	e. Mass-Based Waste Load.	1,249	40	3.20%	Zero Trash
4	7	Long Beach City Beaches and Los Angeles River Estuary	Long Beach City Beaches and Los Angeles River Estuary	Indicator Bacteria	f. Allowable Exceedance Days.	6,968	101	1.40%	Number of exceedances in summer dry, winter dry and winter wet
				Nitrogen, Phosphorus	e. Mass-Based Waste Load.	800	17	2.10%	Northern Total Phosphorus: 0.608 lbs/year; Northern Total Nitrogen: 4.77 lbs/yr; Southern Total Phosphorus: 0.051 lbs/year; Southern Total Nitrogen: 0.403 lbs/yrs
				PCBs	e. Mass-Based Waste Load.	800	17	2.10%	Suspended Sediment Northern and Southern Subwatersheds = 1.77 µg/kg (dry weight) and 0.17 ng/L (concentrations in water column) Fish Tissue Targets Northern and Southern Subwatersheds = 59.8 µg/kg (dry weight) and 0.17 ng/L (concentrations in water column)
				Chlordane	e. Mass-Based Waste Load.	800	17	2.10%	TSS: Northern and Southern Subwatersheds = 2.10 µg/kg (dry weight) and 0.59 ng/L (concentrations in water column); Fish Tissue Targets: Northern and Southern Subwatersheds = 3.24 µg/kg (dry weight) and 0.59 ng/L (concentrations in water column)
				Dieldrin	d. Discharge Sampling.	800	17	2.10%	TSS : Northern and Southern Subwatersheds = 0.80 µg/kg (dry weight) and 0.14 ng/L (concentrations in water column); Fish Tissue Targets: Northern and Southern Subwatersheds = 1.90 µg/kg (dry weight) and 0.14ng/L (concentrations in water column)
				Trash	e. Mass-Based Waste Load.	800	17	2.10%	Zero Trash

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
4	7	Los Angeles Area (Lake Sherwood)	Los Angeles Area (Lake Sherwood)	Mercury	e. Mass-Based Waste Load.	10,792	4	0.04%	0.014 (grams/year)
4	7	Los Angeles Area (North, Center, and Legg Lakes)	Los Angeles Area (North, Center, and Legg Lakes)	Nitrogen	e. Mass-Based Waste Load.	1,249	40	3.20%	Direct to Center Lake = 15.5 pounds/year; Direct to Legg Lake = 4.0 pounds/year; Direct to North Lake = 64.1 pounds/year; Northwestern = 29.3 pounds/year; Northwestern = 34.0 pounds/year
				Phosphorus	e. Mass-Based Waste Load.	1,249	40	3.20%	Direct to Center Lake = 4.6 pounds/year; Direct to Legg Lake = 1.2 pounds/year; Direct to North Lake = 19.1 pounds/year; Northwestern = 9.4 pounds/year; Northwestern = 10.9 pounds/year
4	7	Los Angeles Area (Peck Road Park Lake)	Los Angeles Area (Peck Road Park Lake)	Nitrogen	e. Mass-Based Waste Load.	23,709	113	0.47%	Eastern Subwatershed = 1,165 pounds per year; Western Subwatershed = 251 pounds per year
				Phosphorus	e. Mass-Based Waste Load.				Eastern Subwatershed = 158 pounds per year; Western Subwatershed = 34.2 pounds per year
				Chlordane	e. Mass-Based Waste Load.				Eastern and Western Subwatersheds: Suspended Sediment = 1.73 micrograms per kilogram dry weight; Water Column = 0.59 nanograms per liter; Eastern and Western Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 3.24 micrograms per kilogram dry weight; Water Column = 0.59 nanograms per liter
				DDT	e. Mass-Based Waste Load.				Eastern and Western Subwatersheds: Suspended Sediment = 5.28 micrograms per kilogram dry weight; Water Column = 0.59 nanograms per liter
				Dieldrin	e. Mass-Based Waste Load.				Eastern and Western Subwatersheds: Suspended Sediment = 0.43 micrograms per kilogram dry weight; Water Column = 0.14 nanograms per liter; Eastern and Western Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 1.9 micrograms per kilogram dry weight; Water Column = 0.14 nanograms per liter
				PCBs	e. Mass-Based Waste Load.				Eastern and Western Subwatersheds: Suspended Sediment = 1.29 micrograms per kilogram dry weight; Water Column = 0.17 nanograms per liter; Eastern and Western Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 59.8 micrograms per kilogram dry weight; Water Column = 0.17 nanograms per liter
				Trash	e. Mass-Based Waste Load.				Zero Trash

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
4	7	Los Angeles Area (Puddingstone Reservoir)	Los Angeles Area (Puddingstone Reservoir)	Nitrogen	e. Mass-Based Waste Load.	8,337	109	1.30%	Northern Subwatershed = 745 (pounds/year); Southern Subwatershed = 68.2 (pounds/year)
				Phosphorus	e. Mass-Based Waste Load.				Northern Subwatershed = 167 (pounds/year) Southern Subwatershed = 14.8(pounds/year)
				Mercury	e. Mass-Based Waste Load.				Northern Subwatershed = 0.702 (grams/year); Southern Subwatershed = 0.051 (grams/year)
				PCBs	e. Mass-Based Waste Load.				Northern and Southern Subwatersheds: Suspended Sediment = 0.59 (micrograms/ kilogram dry weight); Water Column = 0.17 (nanograms/liter); Northern and Southern Subwatersheds (if Fish Tissue Targets are Met); Suspended Sediment = 59.8 (micrograms/kilogram dry weight); Water Column = 0.17 (nanograms/ liter)
				Chlordane	e. Mass-Based Waste Load.				Northern and Southern Subwatersheds: Suspended Sediment = 0.75(micrograms/ kilogram dry weight); Water Column = 0.57 (nanograms/liter); Northern and Southern Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 3.24 (micrograms/ kilogram dry weight); Water Column = 0.57 (nanograms/liter)
				DDT	e. Mass-Based Waste Load.				Northern and Southern Subwatersheds: Suspended Sediment = 3.94 (micrograms/ kilogram dry weight); Water Column = 0.59 (nanograms/liter); Northern and Southern Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 5.28 (micrograms/ kilogram dry weight); Water Column = 0.59 (nanograms/liter)
				Dieldrin	e. Mass-Based Waste Load.				Northern and Southern Subwatersheds: Suspended Sediment = 0.22 (micrograms/ kilogram dry weight); Water Column = 0.14 (nanograms/liter); Northern and Southern Subwatersheds (if Fish Tissue Targets are Met): Suspended Sediment = 1.90 (micrograms/ kilogram dry weight); Water Column = 0.14 (nanograms/liter)
4	7	Los Angeles River and Tributaries	Los Angeles River and Tributaries	Metals	b. Receiving Water Quality Monitoring and/or e. Mass-Based Waste Load.	533,855	6,091	1.10%	Reach and weather specific WLAs.
4	7	Los Angeles River	Los Angeles River	Trash	e. Mass-Based Waste Load.	533,855	6,091	1.10%	Zero Trash
4	7	Los Angeles River Watershed	Los Angeles River Watershed	Bacteria	e. Mass-Based Waste Load and/or h. TMDL-Specific Demonstrations.	533,855	6,091	1.10%	Daily Sampling: Dry Weather = 5 Non-High Flow Suspension Waterbodies Wet Weather = 15 High Flow Suspension Waterbodies Wet Weather =10 (not including High Flow Suspension days) Weekly Sampling: Dry Weather = 1 Non-High Flow Suspension Waterbodies Wet Weather = 2 High Flow Suspension Waterbodies Wet Weather = 2 (not including High Flow Suspension days)
4	7	Los Cerritos (Metals)	Los Cerritos (Metals)	Copper, Lead, and Zinc	e. Mass-Based Waste Load.	17,725	175	0.99%	Copper (dry weather flow only) = 0.070 x daily storm volume x 10^{-6} Lead (wet weather and dry weather) = 0.397 x daily storm volume x 10^{-6} Zinc (wet weather and dry weather) = 0.680 x daily storm volume x 10^{-6}
4	7	Machado Lake	Machado Lake	Eutrophic Algae, Ammonia, and Odors Trash Eutrophic, Algae, Ammonia, and Odors Nutrients	e. Mass-Based Waste Load.	14,820	255	1.70%	Total PCBs: 59.8 DDT (all congeners): 4.16 DDE (all congeners): 3.16 DDD (all congeners): 4.88 Total DDT: 5.28 Total Chlordane: 3.24 Dieldrin: 1.9 Zero Trash Phosphorus: 0.1 mg/L Nitrogen: 1.0 mg/L

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4	7	Malibu Creek Watershed	Malibu Creek Watershed	Bacteria	f. Allowable Exceedance Days.	70,369	279	0.40%	Total coliform, fecal coliform, E. coli and Enterococcus specific targets (single sample and geometric mean) for determining number of exceedances for WLA compliance.
4	7	Malibu Creek and Lagoon	Malibu Creek and Lagoon	Sedimentation and Nutrients to address Benthic Community Impairments	e. Mass-Based Waste Load.	70,369	279	0.40%	Caltrans baseline WLA is 10,813 cubic feet per year.
4	7	Malibu Creek	Malibu Creek	Trash	e. Mass-Based Waste Load.	70369	279	0.004	Zero Trash
4	7	Marina del Rey Harbor	Marina del Rey Harbor	Toxic Pollutants (Cu, Pb, Zn, Chlordane, and Total PCBs)	e. Mass-Based Waste Load.	1,879	33	1.80%	Copper: 2.06 kg/yr Lead: 2.83 kg/yr Zinc: 9.11 kg/yr Total Chlordane: 0.0005 g/yr Total PCBs: 0.024 g/yr Total DDT: 0.0017 g/yr DDE: 0.0024 g/yr
4	7	Marina del Rey, Harbor Back Basins, & Mother's Beach	Marina del Rey, Harbor Back Basins, & Mother's Beach	Bacteria	f. Allowable Exceedance Days.	1,879	33	1.80%	Total coliform, fecal coliform, and Enterococcus specific targets (single sample and geometric mean) for determining number of exceedances for WLA compliance.
4	7	Revolon Slough and Beardsley Wash	Revolon Slough and Beardsley Wash	Trash	e. Mass-Based Waste Load.	39,358	240	0.61%	Zero Trash
4	7	San Gabriel River	San Gabriel River	Copper Lead Zinc Selenium	e. Mass-Based Waste Load.	410,487	3,881	0.95%	Wet Weather WLAs: San Gabriel River Reach 2: Applies when the maximum daily flow at United States Geological Survey station 11085000 is 260 cubic feet per second or greater. Coyote Creek = Daily storm volume (equals total daily flow of Coyote Creek) x 27 micrograms per liter x 91.5% = kilograms per day Dry Weather WLAs: San Gabriel River Estuary = 3.7 micrograms per liter San Gabriel Reach 1 = 18 micrograms per liter Coyote Creek = 20 micrograms per liter Wet Weather WLAs: Coyote Creek: Applies when the maximum daily flow at Los Angeles County Department of Public Works flow gauge station F345-R is 156 cubic feet per second or greater Daily storm volume (equals total daily flow of Coyote Creek) x 106 micrograms per liter x 91.5% = kilograms per day San Gabriel Reach 2: Applies when the maximum daily flow at United States Geological Survey station 11085000 is 260 cubic feet per second or greater. Daily storm volume (equals total daily flow of San Gabriel Reach 2) x 166 micrograms per liter x 49% = kilograms per day Wet Weather WLAs: Coyote Creek: Applies when the maximum daily flow at Los Angeles County Department of Public Works flow gauge station F345-R is 156 cubic feet per second or greater Daily storm volume (equals total daily flow of Coyote Creek) x 158 micrograms per liter x 91.5% = kilograms per day No specific WLA is assigned to Caltrans.
4	7	San Gabriel River, Estuary and its Tributaries	San Gabriel River, Estuary and its Tributaries	Bacteria	f. Allowable Exceedance Days.	410,487	3,881	0.95%	Summer dry weather, winter dry weather and wet weather targets for number of exceedances are identified to establish WLA compliance.

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
4	7	Santa Clara River Estuary and Reaches 3, 5, 6, and 7	Santa Clara River Estuary and Reaches 3, 5, 6, and 7	Coliform	f. Allowable Exceedance Days.	611,245	1,402	0.23%	Santa Clara River Reaches 3, 5, 6, and 7 Dry Weather: five allowable exceedance days of single sample objectives, and zero allowable exceedances of geometric mean objectives Wet Weather: 16 allowable exceedance days of single sample objectives, and zero allowable exceedances of geometric mean objectives Santa Clara River Estuary Wet Weather: 25 allowable exceedance days of single sample objectives, and zero allowable exceedances of geometric mean objectives Summer Dry Weather (April 1–October 31): 10 allowable exceedance days of single sample objectives, and zero allowable exceedances of geometric mean objectives Winter Wet Weather (November 1–March 31): 12 allowable exceedance days of single sample objectives, and zero allowable exceedances of geometric mean objectives
4	7	Santa Clara River Reach 3	Santa Clara River Reach 3	Chloride	d. Discharge Sampling.	249,835	425	0.17%	80 (milligrams/Liter)
4	7	Santa Monica Bay	Santa Monica Bay	DDTs PCBs	e. Mass-Based Waste Load.	266,010	2,184	0.82%	0.75 (grams/year) 3.9 (grams/year)
4	7	Santa Monica Bay Nearshore & Offshore	Santa Monica Bay Nearshore & Offshore	Debris (trash & plastic pellets)	e. Mass-Based Waste Load.	126,801	704	0.56%	Trash = Zero Trash Debris = None
4	7	Santa Monica Bay Beaches	Santa Monica Bay Beaches	Bacteria	f. Allowable Exceedance Days.	266,010	2,184	0.82%	Total coliform, fecal coliform, and Enterococcus specific targets (Single sample and geometric mean) for determining number of exceedances for WLA compliance.
4	7	Upper Santa Clara River	Upper Santa Clara River	Chloride	d. Discharge Sampling.	264,851	581	0.22%	100 mg/L (3-month averaging period) Note: The WLA is a combined allocation for NPDES discharges and non-point sources
4	7	Ventura River Estuary	Ventura River Estuary	Trash	e. Mass-Based Waste Load.	144,672	431	0.30%	Zero Trash
4	7	Ventura River and its Tributaries	Ventura River and its Tributaries	Algae, Eutrophic Conditions, and Nutrients	e. Mass-Based Waste Load.	144,672	431	0.30%	Dry-weather (lb/day): Total Nitrogen: 1.1 and Total Phosphorus: 0.11 Wet-weather (by Reach, Nitrate-as-Nitrogen Plus Nitrite, mg/L): Estuary: 7.4 & Reach 1: 7.4
5	1 and 3	Cache Creek, Bear Creek, Sulphur Creek and Harley Gulch	Cache Creek, Bear Creek, Sulphur Creek and Harley Gulch	Mercury	h. TMDL-Specific Demonstrations.	745,640	1,468	0.20%	No specific WLA is assigned to Caltrans.
5	1	Clear Lake	Clear Lake	Nutrients	h. TMDL-Specific Demonstrations.	282,239	845	0.30%	100 (kilograms/year)
5	3, 4, and 10	Sacramento-San Joaquín River Delta Estuary	Sacramento-San Joaquín River Delta Estuary	Methylmercury	h. TMDL-Specific Demonstrations.	738,162	2,457	0.33%	Caltrans WLA: comply with respective jurisdictional allocations. AND LA: Delta Subarea -Urban (Nonpoint Source) Runoff LA (grams per year) Central Delta 0.14 Mokelumne River - 0.018 Sacramento River - 0.62 San Joaquin River - 0.0022 West Delta - 0.066

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
6	3	Lake Tahoe	Lake Tahoe	Fine Sediment Particles Total Nitrogen Total Phosphorus	h. TMDL-Specific Demonstrations.	233,585	538	0.23%	2004 Baseline Load Estimate = 271 (metric tons/ year) Milestone Load Reductions: • September 30, 2016 (5 years) = 10 % • September 30, 2021 (10 years) = 21% • September 30, 2026 (15 years) = 34% Standard Attainment: • September 30, 2076 (65 years) = 71% 2004 Baseline Load Estimate = 0.78 (metric tons/ year) Milestone Load Reductions: • September 30, 2016 (5 years) = 8% • September 30, 2021 (10 years) = 14% • September 30, 2026 (15 years) = 19% Standard Attainment: September 30, 2076 (65 years) = 50% 2004 Baseline Load Estimate = 2.7 (metric tons/ year) Milestone Load Reductions: • September 30, 2016 (5 years) = 7% • September 30, 2021 (10 years) = 14% • September 30, 2026 (15 years) = 21% Standard Attainment: September 30, 2076 (65 years) = 46%
6	3	Truckee River	Truckee River	Sediment	h. TMDL-Specific Demonstrations.	260,336	704	0.27%	No specific WLA is assigned to Caltrans.
7	8 and 11	Coachella Valley Storm Water Channel	Coachella Valley Storm Water Channel	Bacterial Indicators	d. Discharge Sampling	1,206,000	1,368	0.10%	Less than or equal to the 126 Most Probable Number per 100 milliliters (based on a minimum of not less than five samples during a 30-day period) or 400 Most Probable Number per 100 milliliters for a single sample
8	8	Big Bear Lake	Big Bear Lake	Nutrients for Dry Hydrological Conditions	d. Discharge Sampling e. Mass-Based Waste Load.	23,398	139	0.59%	23 (pounds/year) for dry hydrological conditions, which is 4.8 percent of the group urban WLA.
8	8	Lake Elsinore and Canyon Lake	Lake Elsinore and Canyon Lake	Nutrients	h. TMDL-Specific Demonstrations.	483,883	1,540	0.32%	Canyon Lake: TP - 9.2 kg/yr TN - 119.2 kg/yr Lake Elsinore: TP - 3.72 kg/yr TN - 10.5 kg/yr
8	12	Rhine Channel Area of Lower Newport Bay	Rhine Channel Area of Lower Newport Bay	Chromium Mercury	g. No Discharge.	87	0	0%	0.89 (kilograms/year) 0.0027 (kilograms/year)
8	12	Newport Bay	Newport Bay	Copper, Lead, & Zinc	e. Mass-Based Waste Load d. Discharge Sampling	97,127	3,509	4%	Final Mass-Based Dissolved Copper WLAs in Newport Bay including Rhine Channel (pounds per year) Applicable to Caltrans: Dissolved Copper: 423 pounds per year Final Concentration-Based Dissolved Copper WLAs in Newport Bay including Rhine Channel (micrograms per liter) Applicable to Caltrans: Dissolved Saltwater Acute Dissolved Copper: 4.8 micrograms per liter Dissolved Saltwater Chronic Dissolved Copper: 3.1 micrograms per liter

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
8	12	San Diego Creek	San Diego Creek	Dissolved Copper Dissolved Cd, Dissolved Pb, and Dissolved Zn	e. Mass-Based Waste Load d. Discharge Sampling	76,263	2,978	4%	Concentration-Based WLA Based for San Diego Creek Watershed by Flow Tiers (micrograms per liter) Applicable to Caltrans: Flow Tier 1 Acute (Base flow is less than 20 cubic feet for second; hardness = 400 milligrams per liter) for Dissolved Copper = 50 micrograms per liter Flow Tier 1 Chronic (Base flow is less than 20 cubic feet per second; hardness = 400 milligrams per liter) for Dissolved Copper = 29.3 micrograms per liter Flow Tier 2 Acute (Small flows are 21-181 cubic feet per second; hardness = 322 milligrams per liter) for Dissolved Copper = 40 micrograms per liter Flow Tier 2 Chronic (Small flows are 21-181 cubic feet per second; hardness = 322 milligrams per liter) for Dissolved Copper = 24.3 micrograms per liter Flow Tier 3 Acute (Medium flows are 182-815 cubic feet per second; hardness = 236 milligrams per liter) for Dissolved Copper = 30.2 micrograms per liter Flow Tier 3 Chronic (Medium flows are 182-815 cubic feet per second; hardness = 236 milligrams per liter) for Dissolved Copper = 18.7 micrograms per liter Flow Tier 4 Acute (Flows greater than 815 cubic feet per second; hardness = 197 milligrams per liter) for Dissolved Copper = 25.5 micrograms per liter None – On April 20, 2020, the Santa Ana RWQCB stated that Dissolved Cd, Dissolved Pb, and Dissolved Zn were delisted for San Diego Creek.
8	12	San Diego Creek and Upper Newport Bay (Cadmium)	San Diego Creek and Upper Newport Bay (Cadmium)	Cadmium	e. Mass-Based Waste Load and d. Discharge Sampling	92,717	3,424	4%	None – On April 20, 2020, the Santa Ana RWQCB stated that cadmium was delisted for Newport Bay.
8	12	San Diego Creek Watershed	San Diego Creek Watershed	Organochlorine Compounds (DDT, Chlordane, PCBs, & Toxaphene	e. Mass-Based Waste Load.	76,263	2,978	4%	Caltrans-Specific WLAs Expressed as a Daily Value (grams per day): Total DDT: 0.11 grams per day Toxaphene: 0.002 grams per day Caltrans-Specific WLAs Expressed as an Annual Value (grams per year): Total DDT: 39.2 grams per year Toxaphene: 0.6 grams per year
8	12	Upper & Lower Newport Bay	Upper & Lower Newport Bay	Organochlorine Compounds (DDT, Chlordane, & PCBs	e. Mass-Based Waste Load.	97,127	3,509	0.04%	WLAs Expressed (g/yr): Upper Newport Bay: Total DDT: 15.8; Chlordane: 9.2; Total PCBs: 9.1 Lower Newport Bay: Total DDT: 5.8; Chlordane: 3.4; Total PCBs: 23.9
9	11	Chollas Creek	Chollas Creek	Diazinon	g. No Discharge.	18,175	940	5.20%	Diazinon Acute 1-hour average 0.07 µg/L Diazinon Chronic 4-day average 0.05 µg/L
9	11	Chollas Creek	Chollas Creek	Dissolved Copper, Lead and Zinc	h. TMDL-Specific Demonstrations.	18,175	940	5.20%	WLAs Expressed as 90 Percent of the Numeric Targets for Acute Conditions (ug/L) in Receiving Water: Copper: 0.9 * 6.998 * (0.96) * {e^ [0.9422 * ln(hardness) - 1.700)} Lead: 0.9 * 1 * {1.46203 - [0.145712 * ln(hardness)]} * {e^ [1.273 * ln(hardness) - 1.460]} Zinc: 0.9 * 1.711 * (0.978) * {e^ [0.8473 * ln(hardness) + 0.884]} WLAs Expressed as 90 Percent of the Numeric Targets for Chronic Conditions (ug/L) in Receiving Water: Copper: 0.9 * 6.998 * (0.96) * {e^ [0.845 * ln(hardness) - 1.702)} Lead: 0.9 * 1 * {1.46203 - [0.145712 * ln(hardness)]} * {e^ [1.273 * ln(hardness) - 4.705]} Zinc: 0.9 * 1.711 * (0.986) * {e^ [0.8473 * ln(hardness) + 0.884]
9	11	Los Peñasquitos Lagoon	Los Peñasquitos Lagoon	Sediment	h. TMDL-Specific Demonstrations.	59,212	1,555	2.60%	48 (tons/wet season)
9	8 and 11	Rainbow Creek	Rainbow Creek	Total Nitrogen Total Phosphorus	h. TMDL-Specific Demonstrations.	6,059	279.42	4.60%	49 (kilograms/year) 5 (kilograms/year)

RWQCB	District	TMDL Watershed Name	Reach Name	TMDL Pollutant	Compliance Strategy	Total Watershed Area (acres)	Caltrans Right-of-Way (ROW) Area in TMDL (acres)	Percentage of Caltrans ROW in TMDL Watershed	Caltrans WLA and LA[29]
9	8, 11, and 12	Project 1- Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)	Project 1- Revised Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek)	Indicator Bacteria	b. Receiving Water Quality Monitoring.	1,114,011	12,236	1%	Receiving water limitations.

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8 Compliance Schedule (D3.3.3 – 8)

8.1 Proposed Implementation Schedule

Presented in Table 10 is the current implementation schedule for projects within the TMDL watershed with the identified T-BMPs to be implemented.[30] The projects are subject to change due to ROW certification, environmental permitting, and fiscal constraints. Included in the table is anticipated start and completion date for each project. The current SHSMP can be found at this website: https://dot.ca.gov/-/media/dot-media/programs/asset-management/documents/2023_shsmp_draft_02-09-2023_1000.pdf

[30] Source: Caltrans, Stormwater Management Program *District Work Plans 2023-2024*

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Table 10: TMDL Projects Implementation Schedules

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
1	HUM	101	60.4	60.4	1	Construct New Materials Lab	Lower Eel River (Temperature and Sediment)	INDTRE (2), BIOSWL (2)	5/31/2019	3/1/2021	4/8/2022	1/1/2024
1	HUM	101	87.5	89.6	1	Arcate OH to Mad River Median Barrier	Mad River (Sediment and Turbidity)	DPPIA	2/25/2020	4/16/2021	3/2/2022	12/1/2023
1	HUM	299	R7.6	R29.2	1	CAPM	Mad River (Sediment and Turbidity)	BIOSTP (4)	10/27/2021	10/31/2022	7/14/2023	11/1/2024
1	MEN	1	41.8	42.3	1	Navarro Ridge Safety Project	Navarro River (Sediment and Temperature)	DPPIA (7)	3/14/2019	1/27/2023	8/29/2023	10/15/2024
1	MEN	1	42.3	42.5	1	Navarro Drainage	Navarro River (Sediment and Temperature)	Offset from 01-0C550	3/18/2019	4/29/2020	8/29/2023	10/15/2024
1	HUM	299	20.5	30.2	1	HUM-299 Blue Lake Widen & Rumble	Redwood Creek (Sediment)	BIOSTP (4), BIOSWL (2), DPPIA (1), TST (9)	4/3/2019	2/25/2020	9/11/2020	1/1/2024
1	HUM	254	4.2	4.2	1	Construct Bridge to Improve Fish Passage	South Fork Eel River (Temperature and Sediment)	FPR (1)	5/12/2021	5/16/2022	11/29/2022	12/2/2024
1	HUM	299	30.7	37.7	1	Willow Creek Widen & Rumble	Trinity River (Sediment)	BIOSTP (6), TST (9)	5/3/2019	2/7/2020	12/9/2020	9/1/2023
1	HUM	299	30.7	33.4	1	HUM 299 Curve Improvements	Trinity River (Sediment)	TST (3), BIOSTP (1)	4/16/2021	3/8/2022	10/11/2022	12/1/2028
1	MEN	162	8	8.4	1	Eel River Bridge Replacement	Upper Main Eel River and Tributaries including Tomki Creek, Outlet Creek, and Lake Pillsbury (Temperature and Sediment)	BIOSWL (4)	12/15/2020	5/13/2022	5/1/2023	12/1/2028
1	HUM	36	11.3	34.6	1	Bridge Rail Replacement – 3 bridges	Van Duzen and Yager Creek (Sediment)	BIOSTP (1); BIOSWL (2)	6/14/2021	5/17/2022	1/23/2023	12/1/2025
1	HUM	36	10.5	10.8	1	Carlotta Curve Improvement	Van Duzen and Yager Creek (Sediment)	BIOSTP (2); BIOSWL (2)	8/17/2020	3/17/2021	9/24/2021	1/16/2024
1	HUM	36	0.1	1.65	1	Shoulder Widening/	Van Duzen and Yager Creek (Sediment)	DPPIA (6)	9/4/2020	3/7/2022	11/29/2022	12/1/2023
2	SIS	96	60.8	93.8	1	Worker Safety	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	BIOSWL (12), TRCSND (1)	5/2/2022	3/2/2023	10/24/2023	1/6/2025
2	TRI	299	64.60	71.80	1	Tidy Waters	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	BS (1)	12/1/2020	4/19/2022	11/20/2022	1/2/2024
2	SIS	161	4.50	9.10	1	Klamath Lake Rehab 2R	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin)	DPPIA	2/5/2024	8/5/2024	4/1/2025	1/2/2026
2	SIS	VAR	0	0	1	Pavement Rehabilitation	Klamath River in California (Temperature, Dissolved Oxygen, Nutrient, and Microcystin), Shasta River (Dissolved Oxygen and Temperature)	BIOSTP (5)	4/21/2020	1/24/2022	8/15/2022	11/17/2025
3	NEV	80	13	16.5	6	Operational Improvements	Truckee River (Sediment)	DPPIA (3)	-	6/4/2021	5/1/2022	10/30/2023
4	NAP	29	33.13	33.13	2	Fish Passage Barrier Restoration Project	San Francisco Bay (Mercury and PCBs) and Napa River (Sediment)	BIORTN (1)	10/14/2020	-	11/1/2022	12/1/2023
4	NAP	29	7.3	13.5	2	Pavement Rehabilitation	San Francisco Bay (Mercury and PCBs) and Napa River (Sediment)	BIOSWL (TBD)	4/22/2022	3/1/2024	11/29/2024	12/1/2025
4	SCL	280	0	2.7	2	Pavement CAPM from 101/680 Interchange to SR87	San Francisco Bay (Mercury and PCBs) and San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: Full Trash Capture BMP (TBD)	4/22/2022	5/1/2023	11/20/2023	11/20/2024
4	CC	4	0	R20.4	2	Upgrade Existing MBGR and Install New MGS	San Francisco Bay (Mercury)	Other: End-of-Pipe Trash Net (3)	1/6/2020	4/12/2022	8/30/2022	12/1/2023
4	CC	4	12	25	2	Trash Capture Installation	San Francisco Bay (Mercury)	Other: In-line Trash Net (12); End-of-Pipe Trash Net (1)	5/2/2022	8/1/2023	2/21/2024	10/30/2026
4	CC	80	0	11	2	Storm Water Mitigation	San Francisco Bay (Mercury)	CNTBOX (6); LNGTBE (17); Other: End-of-Pipe Trash Net (3)	10/29/2021	-	11/1/2023	8/30/2025
4	ALA	80	0	0	2	BMPs	San Francisco Bay (Mercury) and (PCBs)	Other: End- of-Pipe Trash Net (4)	4/29/2022	5/5/2023	12/1/2023	3/2/2026
4	ALA	84	R0.73	3.06	2	Install Outer Separation Barriers	San Francisco Bay (Mercury) and (PCBs)	INDTRE	6/30/2021	12/17/2021	9/15/2022	12/29/2023
4	ALA	880	30.5	30.5	2	Lake Merritt Railroad Bridge Replacement	San Francisco Bay (Mercury) and (PCBs)	Other: Treatment included in EA: 04-0A710	5/11/2015	7/16/2021	3/30/2022	12/1/2023
4	ALA	84	17.2	17.2	2	Replacement of Arroyo de la Laguna Bridge	San Francisco Bay (Mercury) and (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	BIOSWL (1)	12/16/2021	-	1/1/2024	1/1/2027

[31] Acronyms used only in this column: AVSF Austin Sand Filter; BIORTN Bioretention; BIOSTP or BS or BST Biofiltration Strip; BIOSWL or BSW Biofiltration Swale; CNTBOX Gross Solids Removal Device; DETBAS Detention Basin; DPPIA Design Pollution Prevention Infiltration Area; DSF Delaware Sand Filter; FPR Fish Passage; GSRD Gross Solids Removal Device; INDTRE or INFT Infiltration Trench; INDBAS or INFBAS Infiltration Basin; INFGAL Infiltration Gallery; LNGTBE Gross Solids Removal Device; MEDF Media Filter; MF-ADS Austin Sand Filter; OGFC Open-Graded Friction Course; SA Stabilization Area; TRCSND or TST Traction Sand Traps

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
4	ALA	580	20.7	30.8	2	Rehabilitation	San Francisco Bay (Mercury) and (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	BIOSTP; BIOSWL;	5/2/2022	6/1/2023	1/15/2024	6/15/2027
4	ALA	680	10.2	10.2	2	Bridge Scour Mitigation	San Francisco Bay (Mercury) and (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	BIOSWL (1); Other: End-of-Pipe Trash Net (1)	8/12/2022	3/1/2024	10/1/2024	4/1/2026
4	SM	101	7.13	7.13	2	Bridge Replacement	San Francisco Bay (Mercury), San Francisco Bay (Mercury)	BIOSWL (1); Other: End-of-Pipe Trash Net (1)	12/8/2020	-	1/11/2023	10/15/2024
4	SM	VAR	VAR	VAR	2	Install APS (Accessible Pedestrian Signal)	San Francisco Bay (Mercury), San Francisco Bay (Mercury), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: Full Trash Capture BMP (TBD)	6/23/2020	5/2/2022	10/12/2022	9/26/2023
4	SON	116	46.5	46.8	2	SR 116/121 Intersection Improvements	San Francisco Bay (Mercury), San Francisco Bay (PCBs)	BIOSWL (2); Other: End-of-Pipe Trash Net (1)	4/13/2018	7/15/2022	2/1/2023	12/28/2023
4	SM, SM	1, 280	44.9, 25.3	47.3, 27.1	2	Trash Capture Installation	San Francisco Bay (Mercury), San Francisco Bay (PCBs)	LNGTBE (4); Other: End-of-Pipe Trash Net (7)	3/7/2022	-	8/1/2023	3/1/2024
4	CC	680	0	24	2	Stormwater Mitigation	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	CNTBOX (2), LNGTBE (2), Other: End-of-Pipe Trash Net (25)	5/16/2022	12/1/2023	7/1/2024	6/30/2026
4	SCL, SCL, SCL	101, 101, 680	17.9, 18.7, 1.74	17.9, 18.7, 1.74	2	Pump Station Restoration Project	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: Full Trash Capture (TBD)	9/22/2020	-	10/21/2023	2/21/2025
4	CC	680	12.61	24.26	2	HM-3	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: Full Trash Capture BMP (1)	4/29/2022	6/16/2023	9/22/2023	9/23/2024
4	SCL	17	6.16	6.55	2	Bridge Rail Upgrade and Replacement	San Francisco Bay (PCBs) and San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: Full Trash Capture (TBD)	5/31/2022	12/29/2023	6/30/2024	3/17/2025
4	SCL	101	0.1	49.6	2, 3	MBGR Replacement	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	BIOSWL (TBD); Other: Full Trash Capture (TBD)	2/2/2022	6/15/2023	2/6/2024	7/17/2026
4	SOL	80	11.3	38	2, 5	BMPs	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Other: End- of-Pipe Trash Net (16)	5/1/2022	6/1/2023	1/9/2024	11/1/2026
7	LA	91	11.8	13.2	4	Highway Widening Project (Southern Portion)	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	GSRD 5	5/28/2021	2/25/2022	4/27/2023	8/28/2026
7	LA	10	4.5R	5.6R	4	SOURCE CONTROL	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium), Ballona Creek (Trash), Ballona Creek Estuary (Toxic Pollutants Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs), Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria), Ballona Creek, Wetland (Sediment and Invasive Exotic Vegetation), Santa Monica Bay (DDTs and PCBs), Santa Monica Bay Beaches (Bacteria)	BIOSWL 1	3/31/2020	8/20/2021	7/29/2022	10/16/2026
7	LA	10	7.2R	9.6R	4	INTERCHANGE IMPROVEMENTS	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium), Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria)	GSRD 11, BIOSWL 9, BIOSTP 2	3/25/2021	11/19/2021	6/26/2023	5/28/2025
7	LA	405	31.54	31.54	4	Rail Improvements	Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium), Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria)	INFBAS 1	4/21/2017	7/6/2020	10/2/2020	4/1/2025
7	VEN	118	14.4	15.6	4	WEIGH STATION AND WEIGH-IN- MOTION FACILITIES	Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium) and Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	DPPIA 1	11/8/2023	3/12/2026	11/3/2026	6/8/2028
7	VEN	118	12	13.3	4	PERMANENT SLOPE REPAIR	Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium) and Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	DPPIA 25	1/20/2021	6/3/2022	1/30/2023	11/15/2024
7	VEN	23	3.3	11.4	4	Pavement Preservation (2R) Project	Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium), Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	BSW 11, AVSF 6	9/28/2017	5/16/2019	3/2/2020	12/31/2025
7	VEN	23, 118	10.9, 18.2	11.4, 26.9	4	Roadway Widening	Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium), Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation)	BSW 16, INFDEV 6, GSRD 2, MEDF 8	1/15/2019	1/4/2027	1/28/2028	10/30/2031
7	VEN	34	6.3	6.8	4	Grade Separation	Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium), Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation), Revolon Slough and Beardsley Wash (Trash)	DPPIA 4, BSW 1	5/17/2018	6/1/2022	12/30/2022	8/28/2026

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
7	LA	405	16.4	20.24	4	Freeway Widening	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs	BIOSWL 7	6/30/2020	4/29/2022	11/30/2022	5/30/2025
7	LA	47	0.3	0.8	4	Freeway Ramp Modifications/Configurations	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs	BSW 3, SA 1, DETDEV 1	6/21/2019	9/30/2021	6/30/2022	5/30/2025
7	LA	405	14.3	15.8	4	Crenshaw Blvd Interchange Modification	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs)	BSW 1	6/29/2016	9/15/2020	6/16/2021	3/27/2025
7	LA	405	9.3	13.2	4	AUXILIARY LANE CONSTRUCTION	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs)	DPPIA 6	11/23/2021	10/31/2022	9/11/2023	12/19/2025
7	LA	405	12.4	14.6	4	CONSTRUCTION AUXILARY LANE AND CONNECTORS WIDENING	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs)	GSRD 1, MEDF 1, BIOSWL 3	12/16/2022	2/20/2024	12/15/2026	12/8/2028
7	LA	405	0	12.8	4	PAVEMENT REHABILITATION	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs), Los Angeles River and Tributaries (Metals), Los Angeles River (Trash), Los Angeles River (Bacteria), Long Beach City Beaches and Los Angeles River Estuary (Indicator Bacteria), Los Cerritos (Metals), San Gabriel River, Estuary and Tributaries (Indicator Bacteria), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	BIOSWL 2	6/28/2022	2/28/2024	10/25/2024	12/4/2026
7	LA	213	0	9.984	4	Pavement Rehabilitation	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs), Machado Lake (Eutrophic, Algae, Ammonia, and Odors (Nutrient)), Machado Lake (Pesticides and PCBs), Santa Monica Bay Beaches (Bacteria), Santa Monica Bay Nearshore and Offshore (Debris (trash and plastic pellets))	BIOSWL 5	2/15/2023	12/24/2025	10/21/2026	5/12/2028
7	LA	91	7	11	4	OPERATIONS AND CAPACITY IMPROVEMENT	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs, Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BIOSWL 3, GSRD 2	8/12/2021	9/30/2023	3/15/2024	12/30/2025
7	LA	105	0	18.1	4	Convert HOV to HOT Lanes	Dominguez Channel & Greater Los Angeles & Long Beach Harbor Waters (Metals and DDT, PAHs, PCBs, Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), Los Cerritos (Metals), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria), Santa Monica Bay (DDTs and PCBs), Santa Monica Bay Beaches (Bacteria), Santa Monica Bay Nearshore and Offshore (Debris (trash and plastic pellets))	BSW 15, GSRD 3, DPPIA 7, DETBAS 1, MEDF 1	5/21/2021	6/23/2023	12/27/2023	12/27/2027
7	LA	2	14.2	57.5	4	REPLACE/REPAIR DAMAGED CULVERTS, ROADSIDE SAFETY IMPROVEMENTS	Los Angeles Area Echo Park Lake (Nitrogen, Phosphorus, Chlordane, Dieldrin, PCBs, and Trash), Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 1	8/2/2021	10/31/2022	8/28/2023	3/16/2026
7	LA	605	20R	26R	4	Stormwater Mitigation	Los Angeles Area Peck Road Park Lake (Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash), Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BIOSWL 7, BIOSTP 5, GSRD 1, DPPIA 3	6/29/2020	11/30/2021	8/15/2022	5/30/2024
7	LA	5	23.2	36.3	4	STORMWATER MITIGATION	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BIOSWL 15, BIOSTRP 2, AVSF 1, DETBAS 1	7/30/2021	9/28/2022	12/29/2023	12/31/2025
7	LA	210	19.4R	27R	4	SEISMIC RESTORATION, ROADSIDE REHAB AND DRAINAGE RESTORATION	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BIOSWL 3	2/11/2022	1/16/2024	12/20/2024	7/6/2026
7	LA	210	16.77	18.77	4	Construct Soundwalls	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BST 1, BSW 2, INFT 1	6/1/2023	12/15/2025	9/4/2026	10/13/2028
7	LA	5	23.6	23.9	4	Glendale Blvd- Hyperion Ave Viaduct Complex Improvement Project	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BSW 1, INFBAS 1	6/1/2017	3/2/2020	1/20/2023	4/15/2025
7	LA	210	0	9.7	4	Roadway Rehabilitation (2R)	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BSW 16, DPPIA 13, GSRD 3, AVSF 1	9/29/2017	6/14/2019	5/8/2020	3/3/2025
7	LA	405	40.1	48.1	4	Source Control	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	BSW 8, BST 4, DPPIA 4, SA 232	11/27/2019	6/8/2021	3/10/2022	2/9/2026
7	LA	710	6	6.4	4	Bridge Replacement	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	DETBAS 1	6/30/2020	9/24/2024	4/28/2028	1/31/2025
7	LA	5	15.1	22.9	4	ASSET MANAGEMENT	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	DPPIA 1	12/18/2019	1/31/2022	9/30/2022	9/3/2024
7	LA	118	11	14	4	Stormwater Mitigation	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	GSRD 14, DPPIA 6	4/7/2021	11/30/2021	8/22/2022	12/15/2023
7	LA	710	26.7	32.1	4	New Roadway Construction	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	GSRD 2	2/1/2019	5/31/2022	12/28/2022	1/30/2024

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
7	LA	134	8.35	13.34	4	Stormwater Mitigation	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	GSRD 5, BIOSWL 2, MEDF 3	2/13/2023	12/1/2025	9/15/2026	9/15/2028
7	LA	170	17	17	4	FCO LADWP project.	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	INFGAL 1	Not Listed	3/10/2026	10/31/2024	5/19/2026
7	LA	170	19.4	19.4	4	Comply with the 2012 NPDES permit TMDL requirements for the Los Angeles River watershed, this project will achieve 216 compliance units.	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	INFGAL 1	11/4/2022	11/2/2022	8/23/2024	12/4/2026
7	LA	170	17.6	17.6	4	Construct Treatment BMP for storm water mitigation in Los Angeles River Watershed.	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	INFGAL 1	7/11/2023	6/18/2024	4/28/2025	8/5/2027
7	LA	170	18	18	4	Stormwater Mitigation	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	INFGAL 1	6/23/2022	6/5/2023	4/11/2024	7/21/2026
7	LA	134	2.9	4.8	4	ADD AUXILIARY LANE	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	MEDF 3, BIOSWL 1	12/15/2023	2/28/2025	10/30/2025	10/29/2027
7	LA	710	20.9	26.7	4	SOURCE CONTROL	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	SA 172	6/25/20	10/23/21	8/8/22	6/23/26
7	LA	134	2.6	4.8	4	Stormwater Source Control	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	SA 2	2/1/2018	12/27/2019	8/20/2020	9/30/2024
7	LA	101	0	1.5	4	Stormwater Source Control	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	SA 396	5/27/2020	2/28/2022	9/9/2022	1/9/2026
7	LA	5	36.5	43.8	4	Pavement Rehabilitation	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	BSW 2, BST 2	4/10/2019	6/15/2022	4/28/2023	2/19/2026
7	LA	2	26.4	79.8	4	Install and upgrade MBGR	Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 6	6/19/2019	3/1/2021	12/10/2021	12/15/2023
7	LA	405	31.6	41.4	4	Pavement Rehabilitation	Los Angeles River and Tributaries (Metals), Los Angeles River (Trash), Los Angeles River (Bacteria), Ballona Creek, Ballona Estuary, and Sepulveda Channel (Bacteria), Ballona Creek (Metals (Ag, Cd, Cu, Pb, Zn) and Selenium)	BIOSWL 3	3/18/2021	2/22/2023	11/6/2023	7/2/2027
7	VEN	23	0	24.2	4	CONSTRUCT STORMWATER BEST MANAGEMENT PRACTICES (BMPS)	Malibu Creek (Trash), Malibu Creek and Lagoon (Sedimentation and Nutrients to address Benthic Community Impairments), Malibu Creek Watershed (Bacteria), Santa Monica Bay (DDTs and PCBs), Santa Monica Bay Beaches (Bacteria), Santa Monica Bay Nearshore and Offshore (Debris (trash and plastic pellets)),Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium), Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation), Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Santa Clara River Reach 3 (Chloride)	DPPIA 19	6/10/2022	2/15/2024	12/30/2024	12/30/2026
7	VEN	101	12.2	17.8	4	Auxiliary Lanes and Ramp Metering	Revolon Slough and Beardsley Wash (Trash), Calleguas Creek, its Tributaries and Mugu Lagoon (Metals and Selenium), Calleguas Creek, its Tributaries and Mugu Lagoon (Organochlorine Pesticides, PCBs, and Siltation), Revolon Slough and Beardsley Wash (Trash)	BIOSWL 9, DPPIA 2, BIOSTP 2	11/30/2022	9/30/2024	7/30/2025	7/30/2027
7	LA	605	0R	7.65R	4	INTERSECTION IMPROVEMENT	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BIOSTP 4, BIOSWL 23	3/30/2001	7/26/2022	2/16/2023	4/29/2026
7	LA	605	16.5R	19.5R	4	STORMWATER MITGATION PROJECT	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BIOSWL 10, BIOSTP 6, DPPIA 18	6/25/2020	10/29/2021	8/15/2022	4/30/2024
7	LA	605	9.6	15.7	4	STORM WATER MITIGATION	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BIOSWL 14, BIOSTP 2, DETBAS 1, INDBAS 1, MF-ADS 2,	5/8/2020	9/30/2021	7/1/2022	3/28/2025
7	LA	605	14.1	14.6	4	Interchange Improvement	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BIOSWL 3, DETBAS 1	3/23/20	11/8/21	10/24/22	10/29/23
7	LA	71	0.5	4.8	4	Widening and Constructing HOV Lane	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 13, BST 14, GSRD 3, DSF 3, DETBAS 1	5/31/2013	6/30/2023	3/15/2024	7/15/2027
7	LA	91, 605	16.63, 0	16.83, 10.39	4	Roadway Rehabilitation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 14, BST 4, INFBAS 3, DETBAS 1, DPPIA 1, GSRD 1	6/19/2019	1/28/2022	1/30/2023	10/30/2025
7	LA	91, 605	16.63, 0	16.83, 10.39	4	Roadway Rehabilitation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 15, BST 6, INFBAS 3, DETBAS 1, DPPIA 1, GSRD 1	6/19/2019	6/23/2022	12/30/2022	7/30/2025

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
7	LA	91, 605	16.9, 5	19.8, 5.8	4	Mainline and Ramp Improvements	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 16, DPPIA 5, INFBAS 2, GSRD 1	1/18/2019	11/1/2022	9/1/2023	7/7/2026
7	LA	605	0	9.6	4	Stormwater Mitigation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 17, BST 5, INFBAS 3, DETBAS 1, GSRD 1	11/5/2020	1/28/2022	1/30/2023	8/30/2024
7	LA	605	18.9	19.5	4	Interchange Improvement Project	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 3	5/7/2021	10/14/2022	6/302023	1/17/2025
7	LA	605	14.1	14.6	4	Interchange Improvement	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 3, DETBAS 1	3/23/2020	6/21/2022	1/6/2023	11/1/2024
7	LA	210	41.3	44.6	4	Stormwater Mitigation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 12, MEDF 4, BSW 6	5/19/2020	8/11/2021	8/8/2022	2/29/2024
7	LA	60	20	26	4	Stormwater Mitigation (TMDL) Project	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 14	6/30/2020	6/7/2021	5/12/2022	10/23/2023
7	LA	60	14	14.7	4	IMPROVE MOBILITY AND FREEWAY/ ARTERIAL OPERATIONS; RELOCATE WALLS IMPACTED BY RAMP RECONFIGURATION	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 3	7/30/21	7/15/22	12/15/22	7/15/24
7	LA	210, 605	33.7, 25.7	36.5, 26	4	Stormwater Source Control	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria), Los Angeles Area Peck Road Park Lake (Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash)	OTHER 1	6/27/2018	7/19/2021	4/20/2022	2/5/2026
7	LA	210	36	40.6	4	Stormwater Mitigation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria), Los Angeles Area Puddingstone Reservoir (Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, Dieldrin)	BSW 4, INFGAL 2, DPPIA 6	5/11/2020	7/28/2021	8/8/2022	9/29/2023
7	LA	210	44.7	52.1	4	Stormwater Mitigation	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria), Los Angeles Area Puddingstone Reservoir (Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, Dieldrin)	BSW 6, BST 3, DPPIA 7, INFBAS 1	5/11/2020	8/11/2021	4/26/2022	10/19/2023
7	LA	57, 60	4.3, 23.2	4.5, 26.1	4	Interchange Improvement	San Gabriel River, Estuary and Tributaries (Indicator Bacteria), San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	DPPIA 2, MEDF 2	TBD	6/10/2022	8/1/2022	9/30/2027
7	VEN	118	1.2	1.8	4	Stormwater Mitigation Project	Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform)	GSRD 1, INFGAL 1	9/30/2020	3/15/2022	11/15/2022	2/28/2024
7	LA	5	54.3	54.8	4	Ramp Relocation and Widening	Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Upper Santa Clara River (Chloride)	BSW 1	10/15/2017	4/29/2022	1/30/2023	1/30/2024
7	LA	5	59.5	67.9	4	Roadway Protective Betterments	Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Upper Santa Clara River (Chloride)	DPPIA 4	3/28/2018	4/6/2021	3/30/2022	10/3/2023
7	LA	5	41.4, 45	43.8, 59.6	4	Construct HOV/Truck Lane	Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Upper Santa Clara River (Chloride), Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals)	GSRD 1, DPPIA 55, BSW 1, OTHER 6	9/29/2009	3/29/2019	8/23/2021	12/18/2026
7	VEN	126	13.2R	34.5R	4	CONSTRUCT STORMWATER BEST MANAGEMENT PRACTICES	Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Upper Santa Clara River (Chloride), Los Angeles River (Bacteria), Los Angeles River (Trash), Los Angeles River and Tributaries (Metals), Santa Clara River Reach 3 (Chloride)	DPPIA 19	6/15/2022	8/30/2023	4/30/2024	1/2/2026
7	VEN	33	6.5	12.8	4	ADA Infrastructure	Ventura River Estuary (Algae, Eutrophic Conditions, and Nutrients), Ventura River Estuary (Trash)	BSW 4	7/30/2020	10/4/2021	10/12/2022	7/15/2024
7	VEN	33	5.7T	27	4	SUSTAINABILITY/SW: TMDL	Ventura River Estuary (Algae, Eutrophic Conditions, and Nutrients), Ventura River Estuary (Trash), Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Santa Clara River Reach 3 (Chloride)	DPPIA 11	2/14/2022	9/29/2023	7/30/2024	7/30/2026
7	VEN	33	0	42.9	4	Stormwater Mitigation	Ventura River Estuary (Algae, Eutrophic Conditions, and Nutrients), Ventura River Estuary (Trash), Santa Clara River Estuary & Reaches 3,5,6 & 7 (Coliform), Santa Clara River Reach 3 (Chloride)	DPPIA 13	8/30/2021	2/27/2023	10/31/2023	4/23/2025
7	LA	71	0	4.7	4, 8	Convert Expressway to an 8-Lane Freeway	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 9, INFT 2	5/31/2013	6/30/2023	3/15/2024	7/15/2027
7	LA	71	0	4.7	4, 8	Convert Expressway to an 8-Lane Freeway	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium), San Gabriel River, Estuary and Tributaries (Indicator Bacteria)	BSW 9, INFT 2	5/31/2013	11/25/2019	3/16/2021	7/10/2024
8	RIV	10	54.9	56.5	7	CONSTRUCT TIGHT DIAMOND INTERCHANGE	Coachella Valley Storm Water Channel (Bacterial Indicators)	DETBAS/INDBAS 4	9/28/2021	10/28/2022	12/20/2023	8/20/2026
8	RIV	10	53.9	55.5	7	WIDEN EXISTING BRIDGES, LOCAL STREET & RECONFIGURE DIAMOND IC, ADD EB AUX LANE	Coachella Valley Storm Water Channel (Bacterial Indicators)	DPPIA 7	12/18/2020	4/12/2023	9/18/2023	12/16/2025
8	RIV	215	20.3	21.3	8	INTERCHANGE MODIFICATIONS	Lake Elsinore and Canyon Lake (Nutrients)	BIOSWL 1	6/2/2023	1/9/2025	2/13/2026	5/12/2028

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
8	RIV	60	22.1	26.61	8	CONSTRUCT A TRUCK CLIMBING LANE (E/B) AND TRUCK DESCENDING LANE (W/B) WITH STANDARD INSIDE & OUTSIDE SHOULDERS BOTH DIRECTIONS	Lake Elsinore and Canyon Lake (Nutrients)	DPPIA 16	5/16/2016	2/28/2018	1/25/2019	11/15/2024
8	RIV	15	15.9	20.3	8	CONSTRUCT BEST MANAGEMENT PRACTICES TO ACHIEVE STATEWIDE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT COMPLIANCE UNITS FOR TOTAL MAXIMUM DAILY LOAD	Lake Elsinore and Canyon Lake (Nutrients)	DPPIA, INDBAS, BIOSWL, or DETBAS	7/1/2022	3/1/2023	2/1/2024	2/3/2025
8	RIV	74	3.1	53.5	8, 9	REPLACE STRUCTURES/UPGRADE RAILS	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria), Lake Elsinore and Canyon Lake (Nutrients)	DPPIA 3	3/22/2021	1/11/2022	12/1/2022	12/2/2024
8	RIV	074	0	5.8	9	WIDEN EXISTING LANES TO PROVIDE 12' LANES, 4' SHOULDERS & GROUND-IN RUMBLE STRIPS CENTERLINE & SHOULDERS	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	DPPIA 5, SAND FILTER TRENCH 12	6/3/2019	9/30/2019	12/24/2020	2/7/2025
8	SBD	18	44.3	68.5	8	RELINE OR REPLACE EXISTING CULVERTS	Big Bear Lake (Nutrients for Dry Hydrological Conditions)	SEDIMENT TRAPS 31	8/21/2020	10/18/2021	12/1/2022	3/1/2024
9	RIV	10	54.9	56.5	7	CONSTRUCT TIGHT DIAMOND INTERCHANGE	Coachella Valley Storm Water Channel (Bacterial Indicators)	DETBAS/INDBAS 4	9/28/2021	10/28/2022	12/20/2023	8/20/2026
9	RIV	10	53.9	55.5	7	WIDEN EXISTING BRIDGES, LOCAL STREET AND RECONFIGURE DIAMOND IC, ADD EB AUX LANE	Coachella Valley Storm Water Channel (Bacterial Indicators)	DPPIA 7	12/18/2020	4/12/2023	9/18/2023	12/16/2025
9	RIV	215	20.3	21.3	8	INTERCHANGE MODIFICATIONS	Lake Elsinore and Canyon Lake (Nutrients)	BIOSWL 1	6/2/2023	1/9/2025	2/13/2026	5/12/2028
9	RIV	60	22.1	26.61	8	CONSTRUCT A TRUCK CLIMBING LANE (E/B) AND TRUCK DESCENDING LANE (W/B) WITH STANDARD INSIDE AND OUTSIDE SHOULDERS BOTH DIRECTIONS	Lake Elsinore and Canyon Lake (Nutrients)	DPPIA 16	5/16/2016	2/28/2018	1/25/2019	11/15/2024
11	SD	15	R31.3	R37.1	9	Pavement Rehabilitation	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	1 DPPIA	11/16/19	7/01/21	10/01/21	5/31/24
11	SD	52	5.1	9	9	Pavement Rehabilitation	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	3 BIOSWL	6/04/20	3/22/22	2/01/23	2/01/26
11	SD	56	0.3	3.0	9	Median Widening	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria), Los Peñasquitos Lagoon (Sediment)	8 BIOSWL, 1 INDTRE, 8 DPPIA	NA	1/20/22	7/14/22	12/26/23
12	ORA	55	6.40	10.40	8	In Orange County in Irvine, Santa Ana, and Tustin on Route 5 at Newport Avenue Overcrossing and on Route 55 from 0.4 Mile North of Route 55/405 Separation to 0.1 Mile South of Route 5/55 Separation Construct northbound auxiliary lane on Route 55 between Dyer Road and Edinger Avenue interchanges and Widen Route 55 for an additional high occupancy vehicle (HOV) lane and a general-purpose lane in each direction.	San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene)	5 BIOSWL, BIOSTP, GSRD	9/11/2017	9/2/2021	6/20/2022	12/22/2026
12	ORA	55	10.50	17.80	8	Increase Capacity and Improve Ops. In Orange County in Tustin, Santa Ana, Orange, and Anaheim from I-5 to SR-91.	San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium)	INDBAS, BIOSTP	3/30/2020	5/6/2025	12/5/2025	1/4/2028
12	ORA	241	27.60	33.60	8	Construct 3 general purpose lanes on SB SR 241, In Orange County in Irvine from SR-133 Confluence to 0.6 Mile North of SR-261 Confluence.	San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium), San Diego Creek and Upper Newport Bay (Cadmium)	DETBAS, BIOSTP, BIOSWL	1/25/2013	12/5/2023	2/10/2024	7/25/2026
12	ORA	241	27.80	38.00	8	Pavement repair, ground water exclusion and traffic safety devices In Orange County at Various Locations From 0.1 Mile North of Route 133 to 0.5 Mile South of Route 91.	San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium), San Diego Creek and Upper Newport Bay (Cadmium)	OGFC (3)	9/14/2018	5/14/2021	11/23/2021	8/15/2023
12	ORA	5	21.30	30.30	8	Provide new lanes on the I-5 in both direction and improve the interchange near El Toro.	San Diego Creek and Upper Newport Bay (Cadmium)	BIOSWL (29), BIOSTP (21), DETBAS (10)	2/28/2020	6/2/2025	2/1/2030	2/3/2031
12	ORA	133	8.30	9.30	8	Extend No. 4 lane on SB SR-133 from SB I-5 Connector and add a second lane to NB 405 Connector in Orange County in Irvine from I-405 To I-5.	San Diego Creek and Upper Newport Bay (Cadmium), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene)	BIOSTP	3/25/2020	10/12/2023	4/15/2024	2/15/2027

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
12	ORA	133	3.30	4.10	9	Widening shoulders for Bikeway Class III, SCE utilities relocation, drainage improvements, and additional lane at El Toro/SR 133 intersection. In Orange County in Laguna Beach From El Toro Road to State Route 73.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSTP	10/1/2018	4/1/2020	3/11/2021	6/5/2024
12	ORA	133	3.10	R4.3	9	Establish a detention basin, construct trapezoidal concrete channel along the southbound, and regrade the flow path to prevent flooding. In Orange County in Laguna Beach From El Toro Road to Route 73.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSTP	10/2/2018	4/1/2020	3/11/2021	6/5/2024
12	ORA	5	12.40	14.50	9	Add one lane in each direction between SR-73 and Oso Pkwy, Reconstruct Avery Pkwy IC and add Auxiliary Lane where needed. In Orange County in San Juan Capistrano and Mission Viejo from 0.5 Mile South of Avery Pkwy UC To 0.8 Mile North of Crown Valley Pkwy OC.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSTP (1); BIOSWL (2)	6/5/2014	5/22/2019	1/15/2020	9/13/2024
12	ORA	133	3.20	4.22	9	In Orange County, in the City of Laguna Beach, from 0.2 mile south of El Toro Road to Route 73/133 Separation Roadway widening, restriping and drainage work.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSTP (3)	-	6/17/2020	3/11/2021	3/1/2029
12	ORA	5	14.50	17.10	9	Add one lane in each direction between Oso Pkwy and Alicia Pkwy, reconstruct La Paz Rd UC and add Aux lane where needed. In Orange County in Mission Viejo and Laguna Hills from 0.7 Mile S of Oso Pkwy OC to 0.3 Mile S of Alicia Pkwy OC.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSWL	6/5/2014	6/13/2018	4/4/2019	12/28/2023
12	ORA	55	0.00	2.40	8	Improve Mobility in Orange County in Costa Mesa from 0.7 mile north of State Route 55/State Route 1 Separation to 0.3 mile north of Bay Street Overcrossing.	San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium), Upper and Lower Newport Bay (Organochlorine Compounds - DDT, Chlordane, & PCBs)	BIOSWL	6/30/2022	10/17/2030	9/18/2030	9/18/2031
12	ORA	605	1.10	1.60	4, 8	Improve freeway access and arterial connection to I-605 In Orange County in Alamitos at Katella Ave Interchange.	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	BIOSWL	11/8/2018	6/9/2023	11/10/2023	7/1/2025
12	ORA	74	1.00	2.09	9	Widen from 2 lanes to 4 lanes, in Orange County in San Juan Capistrano from Calle Entradero to City/County line.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	BIOSWL (3)	5/8/2020	5/26/2026	11/4/2026	12/27/2028
12	ORA	5	17.10	18.90	8, 9	Widen freeway and bridges, reconstruct bridge and walls In Orange County in Mission Viejo, Laguna Woods, and Lake Forest from 0.4-mile South of Alicia Parkway OC to 0.2 Mile North of El Toro Road UC.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria), San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium)	BIOSWL, DETBAS	6/5/2014	4/2/2020	10/13/2020	8/18/2024
12	ORA	1	0.00	0.90	9	In Orange County in San Juan Capistrano, between I-5 and San Juan Creek Bridge Improve roadside worker safety, provide slope stabilization, and prevent soil erosion.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	DETBAS (1)	7/23/2021	3/1/2023	2/1/2024	4/1/2026
12	ORA	74	6.30	6.90	9	New at grade intersection and widening of Ortega Highway in Orange County, in the unincorporated area of Orange County, from 4.2 miles West of Antonio Parkway to Caspers Park Road.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	DPPIA	-	7/15/2024	1/1/2025	10/1/2029
12	ORA	VAR	0.00	0.00	8, 9	Rehabilitate pavement by repairing broken concrete slabs and replacing asphalt concrete with Rubberized Hot Mix Asphalt (RHMA-G) at 17 connectors, on one ramp and one overcrossing. In Orange County in the cities of Santa Ana, Tustin, Irvine, Costa Mesa, Laguna Niguel, and Anaheim on various routes.	San Gabriel River (Metals (Cu, Pb, Zn) and Selenium)	DPPIA	9/30/2020	5/3/2022	12/15/2022	11/13/2024
12	ORA	73	10.00	28.02	8, 9	Upgrade safety devices, relocate control cabinet, CCTV's and Electroliers, remove and replace OH sign structures. IN ORA CO FROM 0.3 MILE SOUTH OF S73-S5 CONN VIADUCT IN SAN JUAN CAPISTRANO TO 0.1 MILE NORTH OF N73-N405 CONN OC IN COSTA MESA.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria), San Diego Creek (Organochlorine Compounds - DDT, Chlordane, PCBs, and Toxaphene), San Diego Creek and Newport Bay, including Rhine Channel (Metals - Cu, Pb, and Zn), San Diego Creek and Upper Newport Bay (Cadmium), Upper and Lower Newport Bay (Organochlorine Compounds - DDT, Chlordane, & PCBs)	OGFC	7/20/2017	3/10/2020	10/19/2020	12/4/2023

District	Co.	Route	Beginning PM	Ending PM	RWQCB	Project Description	TMDL Watersheds	Post-Construction Treatment Control Type, Quantity[31]	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Start Date	Planned Construction Start Date	Planned Construction End Date
12	ORA	133	0.96	3.42	9	In Orange County in Laguna Beach from Canyon Acres Drive To El Toro Road Enhance pedestrian and bicycle circulation, transit access, and roadway safety by under grounding the existing overhead utilities.	Project I - Twenty Beaches and Creeks in the San Diego Region (including Tecolote Creek) (Indicator Bacteria)	OGFC	8/11/2027	11/9/2028	6/1/2029	6/1/2034

9 TMDL Watershed BMP Locations (D3.3.3 – 9)

Appendix H lists the TMDL watersheds and the locations and type of T-BMPs, cooperative agreements, and controls. The BMPs shown are both constructed and planned/proposed. Data was exported from the Caltrans Stormwater Portal on May 11, 2023.

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10 TMDL Compliance Strategy (D3.3.3 – 10)

The unique land use and geology in each TMDL watershed results in a distinct distribution of TMDL pollutants. Additionally, individual stakeholders impact the method of compliance; therefore, each TMDL watershed has a customized compliance strategy as shown in Table 11, which is consistent with the limitations of T-BMP implementation and pollutant types and sources. Additional details on compliance within each specific TMDL watershed are located in Appendix G. The details of the future projects shown in Appendix G are shown in the District Annual Work Plans (DAWPs) that are submitted annually on November 30. The NPDES Permit allows compliance strategies that have been applied historically to address Caltrans TMDLs, as well as new innovative options. The strategies include the following:

- **Modeling Analysis** includes an analysis of cooperative projects that quantitatively demonstrates that BMPs reduce pollutant loads to comply with TMDL WLAs.
- **Receiving Water Quality Monitoring** includes a receiving water analysis that demonstrates compliance with the TMDL allocations at the point of Caltrans' discharge or as determined by monitoring immediately upstream and downstream of Caltrans' discharge location.
- **Loads from Other Sources** includes analytical results that demonstrate that exceedances of the receiving water limits are due to loads from other sources and that Caltrans' pollutant loads are not causing or contributing to the exceedances.
- **Discharge Sampling** includes analytical results that demonstrate how Caltrans' discharge complies with a concentration-based WLA.
- **Mass-Based Waste Load** includes analytical results that demonstrate how Caltrans' discharge complies with the individual or joint allocation, or the percentage reduction where a mass-based waste load has been allocated individually, jointly to a group, or is expressed as a percent reduction in load.
- **Allowable Exceedance Days** show how the discharge conforms to the allowable exceedance days where a WLA is expressed as the number of allowable exceedance days.
- **No Discharge** indicates that no discharges occurred during the relevant period either directly or indirectly from Caltrans' ROW to the waterbody.
- **TMDL-Specific Demonstrations** show that the WLA is attained through other factors as described by the specific TMDL.

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Table 11: Caltrans Compliance Strategy for Each TMDL

RWQCB	District	Watershed	Pollutant	Compliance Strategy
1	1	Albion River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Big River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Lower Eel River	Temperature and Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Middle Fork Eel River	Temperature and Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	South Fork Eel River	Temperature and Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Upper Main Eel River and Tributaries (including Tomki Creek, Outlet Creek and Lake Pillsbury)	Temperature and Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative watershed Improvement Projects approved by the North Coast Regional Board
1	1	Garcia River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Gualala River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	2	Klamath River	Temperature, Dissolved Oxygen, Nutrients, and Microcystin	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board

RWQCB	District	Watershed	Pollutant	Compliance Strategy
1	2	Lost River	Nitrogen, Biochemical Oxygen Demand to address Dissolved Oxygen and pH Impairments	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Mad River	Sediment and Turbidity	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Navarro River	Sediment and Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Noyo River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	1	Redwood Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast Regional Board
1	2	Scott River	Sediment and Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB
1	2	Shasta River	Dissolved Oxygen and Temperature	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB
1	1	Ten Mile River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB
1	2	Trinity River	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB

RWQCB	District	Watershed	Pollutant	Compliance Strategy
1	2	South Fork Trinity River and Hayfork Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB
1	1	Van Duzen River and Yager Creek	Sediment	Sediment and temperature load reductions accrued from funding Local Cooperative Watershed Improvement Projects approved by the North Coast RWQCB
2	4	Guadalupe River	Mercury	Mass-Based Waste Load
2	4	Napa River	Sediment	TMDL-Specific Demonstrations
2	4	Richardson Bay	Pathogens	Receiving Water Quality Monitoring and/or Discharge Sampling and/or Allowable Exceedance Days
2	4	San Francisco Bay	PCBs	Mass-Based Waste Load and TMDL-Specific Demonstrations
2	4	San Francisco Bay	Mercury	Mass-Based Waste Load and TMDL-Specific Demonstrations
2	4	San Pedro and Pacifica State Beach	Bacteria	TMDL-Specific Demonstrations
2	4	San Francisco Bay Urban Creeks	Diazinon and Pesticide-Related Toxicity	No Discharge (Diazinon) and TMDL-Specific Demonstrations (Pesticide Toxicity)
2	4	Sonoma Creek	Sediment	TMDL-Specific Demonstrations
2	4	Petaluma River	Fecal Indicator Bacteria	Receiving Water Quality Monitoring
2	4	Pescadero-Butano Watershed	Sediment	TMDL-Specific Demonstrations
3	5	San Lorenzo River (includes Carbonera Lompico and Shingle Mill Creeks)	Sediment	TMDL-Specific Demonstrations
3	5	Morro Bay (includes Chorro Creek, Los Osos Creek, and the Morro Bay Estuary)	Sediment	TMDL-Specific Demonstrations
4	7	Ballona Creek	Metals (Ag, Cd, Cu, Pb, and Zn) and Selenium	Receiving Water Quality Monitoring and/or Discharge Sampling
4	7	Ballona Creek	Trash	Mass-Based Waste Load
4	7	Ballona Creek Estuary	Toxic Pollutants (Ag, Cd, Cu, Pb, Zn, Chlordane, DDTs, Total PCBs, and Total PAHs)	Receiving Water Quality Monitoring and/or Discharge Sampling

RWQCB	District	Watershed	Pollutant	Compliance Strategy
4	7	Ballona Creek, Ballona Estuary, and Sepulveda Channel	Bacteria	Receiving Water Quality Monitoring and/or Discharge Sampling and/or Allowable Exceedance Days
4	7	Ballona Creek Wetlands	Sediment and Invasive Exotic Vegetation	Mass-Based Waste Load
4	7	Calleguas Creeks and its Tributaries and Mugu Lagoon	Metals and Selenium	Receiving Water Quality Monitoring and/or Mass-Based Waste Load
4	7	Calleguas Creeks and its Tributaries and Mugu Lagoon	Organochlorine Pesticides, Polychlorinated Biphenyls, and Siltation	Mass-Based Waste Load
4	7	Colorado Lagoon	OC Pesticides, PCBs, Sediment, Toxicity, PAHs, and Metals (Pb and Zn)	Receiving Water Quality Monitoring and/or Mass-Based Waste Load
4	7	Dominguez Channel and Greater Los Angeles and Long Beach Harbor Waters	Toxic Pollutants: Metals (Cu, Pb, Zn), DDT, PAHs, and PCBs)	Receiving Water Quality Monitoring and/or Mass-Based Waste Load
4	7	Legg Lake	Trash	Mass-Based Waste Load
4	7	Long Beach City Beaches and Los Angeles River Estuary	Indicator Bacteria	Allowable Exceedance Days
4	7	Los Angeles Area (Echo Park Lake)	Nitrogen, Phosphorus, Chlordane, Dieldrin, PCBs, and Trash	Mass-Based Waste Load and Discharge Sampling
4	7	Los Angeles Area (Lake Sherwood)	Mercury	Mass-Based Waste Load
4	7	Los Angeles Area (North, Center, and Legg Lakes)	Nitrogen, Phosphorus, Chlordane, PCBs	Mass-Based Waste Load
4	7	Los Angeles Area (Peck Road Park Lake)	Nitrogen, Phosphorus, Chlordane, DDT, Dieldrin, PCBs, and Trash	Mass-Based Waste Load
4	7	Los Angeles Area (Puddingstone Reservoir)	Nitrogen, Phosphorus, Chlordane, DDT, PCBs, Mercury, and Dieldrin	Mass-Based Waste Load
4	7	Los Angeles River and Tributaries	Metals	Receiving Water Quality Monitoring and/or Mass-Based Waste Load
4	7	Los Angeles River	Trash	Mass-Based Waste Load

RWQCB	District	Watershed	Pollutant	Compliance Strategy
4	7	Los Angeles River Watershed	Bacteria	Mass-Based Waste Load and/or TMDL-Specific Demonstrations
4	7	Los Cerritos	Metals	Mass-Based Waste Load
4	7	Machado Lake	Pesticides and PCBs	Mass-Based Waste Load
4	7	Machado Lake	Trash	Mass-Based Waste Load
4	7	Machado Lake	Eutrophic, Algae, Ammonia, and Odor (Nutrients)	Mass-Based Waste Load
4	7	Malibu Creek Watershed	Bacteria	Allowable Exceedance Days
4	7	Malibu Creek and Lagoon	Sedimentation and Nutrients to address Benthic Community Impairments	Mass-Based Waste Load
4	7	Malibu Creek	Trash	Mass-Based Waste Load
4	7	Marina del Rey Harbor	Toxic Pollutants (Cu, Pb, Zn, Chlordane, and Total PCBs)	Mass-Based Waste Load
4	7	Marina del Rey, Harbor Back Basins, and Mother's Beach	Bacteria	Allowable Exceedance Days
4	7	Revolon Slough and Beardsley Wash	Trash	Mass-Based Waste Load
4	7	San Gabriel River	Metals (Cu, Pb, Zn) and Selenium	Mass-Based Waste Load
4	7	San Gabriel River, Estuary and its Tributaries	Bacteria	Allowable Exceedance Days
4	7	Santa Clara River Estuary and Reaches 3, 5, 6, and 7	Indicator Bacteria	Allowable Exceedance Days
4	7	Santa Clara River Reach 3	Chloride	Discharge Sampling
4	7	Santa Monica Bay	DDTs and PCBs	Mass-Based Waste Load
4	7	Santa Monica Bay Nearshore and Offshore	Debris (trash and plastic pellets)	Mass-Based Waste Load
4	7	Santa Monica Bay Beaches	Bacteria	Allowable Exceedance Days
4	7	Upper Santa Clara River	Chloride	Discharge Sampling
4	7	Ventura River Estuary	Trash	Mass-Based Waste Load
4	7	Ventura River and its Tributaries	Algae, Eutrophic Conditions, and Nutrients	Mass-Based Waste Load
5	1	Cache Creek, Bear Creek, Sulphur Creek, and Harley Gulch	Mercury	TMDL-Specific Demonstrations
5	1	Clear Lake	Nutrients	TMDL-Specific Demonstrations

RWQCB	District	Watershed	Pollutant	Compliance Strategy
5	3	Sacramento-San Joaquin River Delta Estuary	Methylmercury	TMDL-Specific Demonstrations
6	3	Lake Tahoe	Sediment and Nutrients	TMDL-Specific Demonstrations
6	3	Truckee River	Sediment	TMDL-Specific Demonstrations
7	8	Coachella Valley Storm Water Channel	Bacterial Indicators	Discharge Sampling
8	8	Big Bear Lake	Nutrients for Dry Hydrological Conditions	Discharge Sampling Mass-Based Waste Load
8	8	Lake Elsinore and Canyon Lake	Nutrients	TMDL-Specific Demonstrations
8	12	Rhine Channel Area of Lower Newport Bay	Chromium and Mercury	Loads from Other Sources and/or No Discharge
8	12	San Diego Creek and Newport Bay, including Rhine Channel	Metals (Cadmium, Copper, Lead, & Zinc)	Discharge Sampling and/or Mass-Based Waste Load
8	12	San Diego Creek and Upper Newport Bay	Cadmium	NA
8	12	San Diego Creek Watershed	Organochlorine Compounds (DDT, Chlordane, PCBs, and Toxaphene)	Mass-Based Waste Load
8	12	Upper and Lower Newport Bay	Organochlorine Compounds (DDT, Chlordane, and PCBs)	Mass-Based Waste Load
9	11	Project I – Twenty Beaches and Creeks	Bacteria	Receiving Water Quality Monitoring
9	11	Chollas Creek	Dissolved Copper, Lead, and Zinc	TMDL-Specific Demonstrations
9	11	Chollas Creek	Diazinon	No Discharge
9	11	Los Peñasquitos Lagoon	Sediment	TMDL-Specific Demonstrations
9	11	Rainbow Creek	Total Nitrogen and Total Phosphorus	TMDL-Specific Demonstrations

11 Regional Board Compliance Strategies for TMDLs (D3.3.3 – 11)

11.1 North Coast Regional Board Sediment and Temperature Load Reduction Projects (D5.7)

Caltrans is required to implement sediment control BMPs and control projects to reduce pollutant loads from Caltrans roads within each sediment- and temperature-impaired watershed. Sediment load reduction (in tons of sediment per year) is shown in Table 12.

Caltrans is using a multifaceted approach to address sediment and temperature TMDLs in the North Coast region. Details on the TMDL specific actions such as cooperative projects outside the Caltrans ROW are provided in the TMDL Fact Sheets in Appendix G.

Caltrans works with local MS4 and other stakeholders in the watershed to identify other cooperative partnership projects or regional TMDL compliance projects that may be outside Caltrans ROW. Details on the current and planned partnerships are provided in the Appendix F.

Caltrans has a program to inspect roadside slopes for erosion on a five-year cycle. Road segments identified as prone to erosion and sediment discharge are prioritized for stabilization. For road segments that are in sensitive watersheds, or where there is an existing or potential threat to water quality, slope stabilization activities are prioritized for implementing appropriate controls to the maximum extent practicable based on available resources. Based on the review of the slopes, remedial measures are developed and can include minor grading, seeding, and installation of major slope stabilization systems.

Caltrans implements source control measures for compliance with the Construction General Permit on active construction sites to prevent the discharge of sediment. Additionally, Caltrans uses the SHOPP to maintain and preserve the state highway system and support infrastructure through its continuous rehabilitation plan.

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Table 12: North Coast TMDL Sediment LAs[32]

Watershed	Watershed Area (square miles)	Road Density (miles per square mile)	Total Road Length (miles)	State Highway Length (miles)	Ratio of State Highway Length to Total Road Length (percent)	Watershed Road Sediment Load Less Road Surface Erosion (tons per square mile per year)	Caltrans Sediment Load (tons/year)	Watershed Road Sediment LA Less Road Surface Erosion (tons per square mile per year)	Caltrans Sediment LA (tons per year)	Caltrans Load Reduction Responsibility (tons per year)
Albion River	43	8.5	365.5	0.36	0.10%	170	7.2	44	1.9	5.3
Big River	181	6.9	1,248.9	15.04	1.21%	88	191.8	20	43.4	148.4
Eel River, Upper Main	708	7.1	5,026.8	45.92	0.92%	21	135.8	11	70.9	64.9
Eel River, Middle Fork	753	7.1	5,346.3	19.17	0.36%	54	145.8	39	105.7	40.1
Eel River, Lower Main	300	5.8	1,740.0	47.46	2.75%	43	351.9	9	73.7	278.1
Eel River, South Fork	689	3.6	2,480.4	115.60	4.69%	559	17,950.1	151	4,848.2	13,101.9
Garcia River	114	5.5	627.0	2.70	0.43%	509	249.9	204	100.0	149.9
Gualala River	299	4.8	1,435.2	1.44	0.10%	570	171.0	69	20.6	150.4
Mad River[33]	374	2.2	8,234.0	22.04	2.70%	455	4,595.0	51	515.0	4,056.0
Navarro River	316	6.6	2,085.6	51.15	2.45%	370	2,867.5	176	1,362.6	1,504.9
Noyo River	113	6.8	768.4	10.16	1.34%	77	115.0	22	32.8	82.2
Redwood Creek	282	5.4	1,522.8	22.55	1.48%	1,278	5,336.8	205	855.6	4481.2
Scott River	814	6.2	5,046.8	41.33	0.82%	23	153.3	10	66.7	86.6
Ten Mile River	120	7.9	948.0	0.95	0.10%	38	4.6	9	1.1	3.5
Trinity River[34]	1,694	2.3	159.5	219.29	4.00%	7,725	219.3	851	88.9	6,875.0
Trinity River, South Fork	931	3.3	3,072.3	52.99	1.75%	122	1,959.0	22	352.3	1,606.7
Van Duzen River	428	5.5	2,354	46.58	1.98%	53	448.9	8	67.8	381.1

[32] NPDES Permit Order 2022-0033-DWQ, Attachment A Table A-3
[33] Caltrans' proportional responsibility for the Mad River is calculated at a subwatershed level and exclude subwatersheds without state highways.
[34] Caltrans' proportional responsibility for the Trinity River is calculated at a subwatershed level and exclude subwatersheds without state highways.

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11.2 San Francisco Regional Board Mercury and Polychlorinated Biphenyls TMDLs (D5.8)

11.2.1 Measures to Mitigate Polychlorinated Biphenyls

Per NPDES Permit Attachment D5.8, Caltrans has developed a Standard Operating Procedure (SOP) for inspecting, removing, and reporting materials containing PCBs prior to demolition or renovation of structures. During the demolition of the Old East Span of the San Francisco Oakland Bay Bridge, Caltrans implemented a PCB inspection and removal plan at the direction of the San Francisco RWQCB. The SOP builds on lessons learned from that experience and from guidance developed by Bay Area municipalities in compliance with the San Francisco Bay PCBs TMDL. The purpose of this SOP is to define a consistent approach to evaluating Caltrans projects to determine whether inspection and proactive materials removal is needed to prevent the release of PCB-containing materials (priority materials) during demolition of other activities that modify existing Caltrans facilities or structures in a manner that can release PCB-containing materials. A copy of the SOP can be found in Appendix I Mercury and Polychlorinated Biphenyls TMDLs Compliance.

Caltrans is required to implement mercury and PCBs BMPs in 2,970 acres of ROW that are located within the San Francisco Bay RWQCB region. Both PCBs and mercury are satisfied by treating the 2,970 acres. Because of the higher pollutant yield (both PCBs and mercury) in old industrial land use areas, projects implemented in old industrial land use areas are recognized by the RWQCB as having a higher pollutant removal benefit. The NPDES Permit allows an acreage credit of three times the credit recognized for the projects implemented in the Caltrans ROW.

Presented in Table 13 is information on the T-BMPs planned for San Francisco Bay PCBs and Mercury TMDLs. Information includes the watershed, T-BMP type, installation date, and location for controls planned in the following five years. Caltrans has agreed upon a framework with the San Francisco Bay RWQCB for compliance with the PCBs and Mercury TMDLS as described in Table 14, which shows the interim compliance strategy for the San Francisco Bay PCBs and Mercury TMDLs. Presented in Table 15 are the regional partnership projects for the San Francisco Bay PCBs and Mercury TMDLs along with the treatment area and operational status.

Caltrans agreed upon a framework with the San Francisco Bay RWQCB for compliance with the PCBs and Mercury TMDLs is contingent upon demonstrating the efficacy of trash T-BMPs for PCBs and Mercury removal and OGFC efficiency, as described below.

- **Monitoring -T-BMP Effectiveness:** Caltrans proposes to perform water quality, operations and maintenance monitoring at one of the on-system pilot full trash capture devices within Caltrans ROW that are expected to be operational this year. Caltrans will also coordinate with local municipalities and the San Francisco Bay RWQCB to collaborate on a shared monitoring effort at an off-system T-BMP location funded by Caltrans to determine PCBs and Mercury removal efficiencies.

- **OGFC Efficiency Monitoring:** Caltrans has selected two OGFC/Control monitoring locations which are in PCBs impacted areas. In addition, five characterization sites have been selected in impacted areas. It is also proposed to monitor one of the San Francisco-Oakland Bay Bridge bioretention basin influent. This basin is now receiving influent from a section of recent OGFC pavement. The monitoring results from the influent could be compared to previous study results from traditional pavement prior to OGFC installation.

Appendix J contains additional information about OGFC projects in District 4.

Table 13: San Francisco Bay PCBs and Mercury TMDLs T-BMPs[35]

District	Co.	Route	Beg PM	End PM	Project Description	Waterbodies Within or Adjacent to Project Limits	Post-Const Treatment Control Type, Quantity	Planned Project Delivery PA&ED Date	Planned Project Delivery PS&E Date	Planned Const Start Date	Planned Const End Date
4	SM	101	7.13	7.13	Bridge Replacement	San Francisco Bay (Mercury, PCBs)	Biofiltration Swale (1); Other: End-of-Pipe Trash Net (1)	12/8/2020	-	1/11/2023	10/15/2024
4	NAP	29	33.13	33.13	Fish Passage Barrier Restoration Project	Napa River (Sediment), San Francisco Bay (Mercury), San Francisco Bay (PCBs)	Bioretention (1)	10/14/2020	-	11/1/2022	12/1/2023
4	ALA	84	17.2	17.2	Replacement of Arroyo de la Laguna Bridge	San Francisco Bay (Mercury), San Francisco Bay (PCBs), San Francisco Bay Urban Creeks (Diazinon and Pesticide Toxicity)	Biofiltration Swale (1)	12/16/2021	-	1/1/2024	1/1/2027
4	ALA	880	30.5	30.5	Lake Merritt Railroad Bridge Replacement	San Francisco Bay, Central via the Oakland Estuary and Lake Merit	Other: Treatment included in EA: 04-0A710	5/11/2015	7/16/2021	3/30/2022	12/1/2023
4	ALA	84	R0.73	3.06	Install Outer Separation Barriers	San Francisco Bay, Lower	Infiltration Trench	6/30/2021	12/17/2021	9/15/2022	12/29/2023
4	SCL	101	0.1	49.6	MBGR Replacement	San Francisco Bay, South; San Lorenzo River; Llagas Creek	Biofiltration Swale (TBD); Other: Full Trash Capture (TBD)	2/2/2022	6/15/2023	2/6/2024	7/17/2026

Table 14: Interim Compliance Strategy for the San Francisco Bay PCBs and Mercury TMDLs

Compliance Category	Acres of Treatment Achieved
Constructed On-System BMPs	300
Off-System Partnership Projects	877.3
Low Impact Development Projects	30
OGFC	373
Total	**1,580.3**

Note: The acres from on-system BMPs will be adjusted after the current reconciliation process is complete. Caltrans will report constructed and future proposed acres of treatment achieved in the Annual TMDL Compliance Status Report.

Table 15: San Francisco Bay PCBs and Mercury TMDLs Partnership Projects

District	Location Description/ Project Name	Partner Agency	Caltrans Funding Contribution	T-BMP Type	Pollutant Removal Efficiency[36]	Treated Caltrans ROW (acres)	Caltrans Shed Area Outside Old Industrial Land Use	Caltrans Shed Area Within Old Industrial Land Use	Dollars per Acre CT ROW	Treated Local ROW (acres)	Caltrans Shed Area Claimed Credits[37,38]	Caltrans Claimed Credits for Local Sheds[37,39]	Total Caltrans Claimed Credit	Delivery Status
4	Poplar Dore	City of San Mateo Phase I	$650,000	Debris Separating Baffle Box (DSBB)	20%	12.0	12.0	0.0	$54,167	765.0	3.4	0	3.4	2018 Operational
4	Coyote Point	City of San Mateo Phase I	$1,473,000	Debris Separating Baffle Box (DSBB)	20%	26.0	26.0	0.0	$56,654	Included in Poplar Dore	7.4	NA	7.4	2018 Operational
4	Marina Bay @ Regatta S 8th @ Potrero	City of Richmond Phase I	$2,500,000	Hydrodynamic Separator (HDS)	20%	74.0	74.0	0.0	$33,784	960	21.1	0	21.1	2018 Operational

[35] Source: Caltrans Stormwater Management Program 2022-2023 District 4 Work Plan
[36] The San Francisco Bay RWQCB recognizes an efficiency of 14% for gross solids removal devices and an efficiency of 20% for large full trash capture devices, hydrodynamic separator units, and baffle boxes. Bay Area Stormwater Management Agencies Association's report (Source Control Load Reduction Accounting for Reasonable Assurance Analysis.
[37] $Treatment\ Credit = \left(\frac{efficiency}{0.7}\right) * [(3 * old\ industrial\ area) + (non\ old\ industrial\ area)]$
[38] The NPDES Permit allows an acreage credit of three times the credit recognized for Caltrans funded regional partnership projects that reduce PCB and Mercury loading in old industrial areas. Caltrans and municipal partners will work with the San Francisco Bay RWQCB individually to determine appropriate PCBs and mercury reduction crediting toward their respective stormwater NPDES permit requirements based on the land uses within the treatment shed and removal efficiencies of the installed devices.
[39] For projects where Caltrans contributed more funds than average $100,000 per acre of Caltrans area treated.

District	Location Description/ Project Name	Partner Agency	Caltrans Funding Contribution	T-BMP Type	Pollutant Removal Efficiency[36]	Treated Caltrans ROW (acres)	Caltrans Shed Area Outside Old Industrial Land Use	Caltrans Shed Area Within Old Industrial Land Use	Dollars per Acre CT ROW	Treated Local ROW (acres)	Caltrans Shed Area Claimed Credits[37,38]	Caltrans Claimed Credits for Local Sheds[37,39]	Total Caltrans Claimed Credit	Delivery Status
4	HDS Units at Various Locations	City of San Jose	$5,500,000	Hydrodynamic Separator (HDS)	20%	163.6	163.6	0.0	$33,610	2,839	46.8	0	46.8	2019 Operational
4	Estudillo Canal	Alameda County	$2,175,000	Multiple Gross Solids Removal Devices in Parallel	14%	256.084	256.080	0.005	$8,493	2,620.0	51.2	0	51.2	2019 Operational
4	Alto's O'Connor Pump Station	City of East Palo Alto	$521,000	Trash Screen	20%	39.072	39.072	0.0	$13,334	864.0	11.2	0	11.2	2020 Operational
4	Memorial Park - Phase 1 and Phase 2	City of South San Francisco	$15,500,000	Trash Box, Grit Chamber, and Infiltration Gallery	100%	68.0	68.0	0.0	$227,941	6,336.0	68.0	0.0	68.0	2022 Operational
4	Hillcrest Park	City of Concord	$5,100,000	Debris Separating Baffle Box (DSBB)	20%	90.0	90.0	0.0	$56,667	539	25.7	0	25.7	2023 Operational
4	Tennyson	City of Hayward	$3,800,000	Hydrodynamic Separator (HDS)	20%	80.0	80.0	0.0	$30,159	407	22.9	0	22.9	2023 Operational
4	Cotter Way	City of Hayward	Included in Tennyson	Hydrodynamic Separator (HDS)	20%	20.0	20.0	0.0	Included in Tennyson	600.0	5.7	Included in Tennyson	5.7	2023 Operational
4	Arf	City of Hayward	Included in Tennyson	Hydrodynamic Separator (HDS)	20%	26.0	20.0	0.0	Included in Tennyson	414	5.7	Included in Tennyson	5.7	2024 (In Construction)
4	Embarcadero	City of Palo Alto	$774,837	Hydrodynamic Separator (HDS)	20%	21.6	21.6	0.0	$35,911	186.9	6.2	0	6.2	2023 Operational
4	MacArthur	City of Emeryville	$680,000	Debris Separating Baffle Box (DSBB)	20%	3.8	3.8	0.0	$178,947	77.4	1.1	0.9	1.9	2023 Operational
4	Meeker Ditch Cutting Blvd @ S. 3rd St. Bayview	City of Richmond Phase II	$5,678,133	Hydrodynamic Separator (HDS)	20%	79.0	79.0	0.0	$71,875	3,460	22.6	0	22.6	2020/2023 Operational
4	Poplar Golf Course	City of San Mateo	$330,000	Multiple Gross Solids Removal Devices in Parallel	14%	16.039	16.039	0.0	$20,575	333.0	3.2	0	3.2	2023 Operational
4	Tara Hills	Contra Costa County Phase I	$3,945,000	Debris Separating Baffle Box (DSBB)	20%	41.0	41.0	0.0	$66,550	139.0	11.7	0	11.7	2023 Operational
4	Large Trash Capture (LTC) Phase VII Jose Figueres Ave/Alexian Dr, Eastridge Loop/ Eastridge Blvd, Charcot Ave/ Hartog Dr, Blossom Hill Rd/ US85, Airport Blvd/Guadalupe River, San Antonio St/Scharff Ave	City of San Jose	$12,500,000	Full Trash Capture Device	20%	246.689	245.569	1.120	$50,671	1,233.0	71.1	0	71.1	2023 Operational
4	Austin Creek Nets Solano, Sonoma, and Mono St	Vallejo Wastewater	$4,000,000	Nets	20%	388.314	388.113	0.201	$10,301	9,500.0	111.1	0	111.1	2023 Operational
4	Saranap	Contra Costa County Phase I	Included in Tara Hills	Hydrodynamic Separator (HDS)	20%	18.279	18.279	0.0	Included in Tara Hills	150.0	5.2	NA	5.2	2025 (Design)
4	Bay Point	Contra Costa County Phase I	$1,000,000	Hydrodynamic Separator (HDS)	20%	20.659	20.659	0.0	$48,404	115.0	5.9	0	5.9	2024 (In Construction)
4	Caltrans HDS Pilot Willow Pass HDS	Contra Costa County	$2,000,000	Hydrodynamic Separator (HDS)	20%	35	35.000	0.0	$57,143	85	10.0	0	40	2024 (In Construction)
4	Mandela	City of Oakland	$6,990,825	Debris Separating Baffle Box (DSBB)	20%	17	16.8	0.0	$416,121	610.0	4.8	15.2	20.0	2024 (In Construction)
4	Cary	City of Oakland	$5,891,403	Debris Separating Baffle Box (DSBB)	20%	40.7	40.7	0.0	$144,752	739.0	11.6	5.2	16.8	2024 (In Construction)
4	Pacific Boulevard, South of 41st	City of San Mateo	$630,000	Gross Solids Removal Device (GSRD)	14%	6.662	6.662	0.0	$94,565	192.0	1.3	0	1.3	2025 (Design)
4	Solano Green SW Infrastructure/ Amtrak Park and Ride	City of Suisun	$893,270	Bioretention	70%	3.7	TBD	TBD	$241,424	0.0	3.7	5.2	8.9	2024 (In Construction)
4	LTC Program: Via Arriba, Lobert, Redwood Road, Norbridge and Walker, Mattox and Birch	Alameda County Public Works Agency	$9,500,000	Debris Separating Baffle Box Other LTC TBD	20%	84.0	84.000	0.000	$113,095	487.0	24.0	3	27.1	2025-2026
4	Southfront, El Charro	City of Livermore	$1,480,000	Debris Separating Baffle Box 5 mm Louvered Screen	20%	18.0	18.000	0.0	$82,222	259.0	5.1	0	5.1	2025 (Design)
4	Church Ln/Willow Rd	City of San Pablo	$445,000	Full Trash Capture Device	20%	5.238	5.238	0.0	$84,948	500.0	1.5	0	1.5	In Design

District	Location Description/ Project Name	Partner Agency	Caltrans Funding Contribution	T-BMP Type	Pollutant Removal Efficiency[36]	Treated Caltrans ROW (acres)	Caltrans Shed Area Outside Old Industrial Land Use	Caltrans Shed Area Within Old Industrial Land Use	Dollars per Acre CT ROW	Treated Local ROW (acres)	Caltrans Shed Area Claimed Credits[37,38]	Caltrans Claimed Credits for Local Sheds[37,39]	Total Caltrans Claimed Credit	Delivery Status
4	15 Local Projects	Various Cities around Marin	$12,500,000	Debris Separating Baffle Box (DSBB), Trash Nets, HDS	20%	284.586	284.586	0.0	$43,924	1,794.6	81.3	0	81.3	In Design
4	Port of Oakland	City of Oakland	$8,000,000	HDS	20%	18.950	14.348	4.6	$422,164	483.0	5.6	95.8	101.5	In Design
4	EPA/Menlo Park Newbridge St/Saratoga Ave	City of East Palo Alto	$1,500,000	Full Trash Capture Device	20%	19.613	19.613	0.0	$76,481	725.3	5.6	0	5.6	In Design
4	LTC Phase VIII	City of San Jose	$11,137,500	HDS	20%	163.922	163.089	0.833	$67,944	617.0	47.3	0	47.3	In Design
4	California Ave, SR-4/Willow Pass	Pittsburg	$2,040,000	Full Trash Capture Device	20%	20.480	20.479	0.001	$99,609	819.0	5.9	0	5.9	In Design
4	Merced Street	City of San Leandro	$3,500,000	Multi-GSRD	14%	25.0	25.000	0.0	$140,000	600.0	5.0	2	7.0	2025 (Design)
Total	-	-	**$162,918,666**	-	-	-	-	-	-	-	**720.0**	**127.3**	**877.3**	-

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11.3 Los Angeles Regional Board Trash TMDLs (D5.9)

Caltrans complies with ten trash TMDLs in the Los Angeles RWQCB's jurisdiction. These are Los Angeles Area Lakes, Peck Road Park Lake; Los Angeles Area Lakes, Echo Park Lake; Ballona Creek; Los Angeles Area Lakes, Legg Lake; Los Angeles River; Machado Lake; Malibu Creek Watershed; Revolon Slough and Beardsley Wash; Santa Monica Bay Nearshore and Offshore; and Ventura River Estuary.

To achieve compliance with the trash TMDLs, Caltrans installs, operates, and maintains full capture systems, including multi-benefit projects, other treatment controls, and implements institutional controls, that remove trash from its storm drains that discharge to the TMDL watersheds. Fact sheets in Appendix G provide specific details on each trash TMDL. Trash waste load reduction allocations to satisfy the TMDLs are defined as gallons per year of trash that Caltrans is required to remove or reduce from its ROW. Caltrans ROW includes highway on- and off-ramps, rest areas, park-and-rides, and highways. Caltrans will track trash TMDL compliance actions using the Trash Dashboard, referred to in Section 1.5.5, and report on the progress in the Annual TMDL Compliance Status Reports beginning in November 2026. The Trash Dashboard will identify the Los Angeles RWQCB trash TMDL watersheds, ROW within the watershed, locations of full capture systems, quantity of trash removed, and the percent compliance with the TMDL waste load allocations.

11.4 Los Angeles Regional Board Other TMDLs (D5.10)

Caltrans complies with BMP implementation requirements for the other (non-trash) TMDLs in the Los Angeles region through both the implementation of T-BMPs and the cooperative projects Caltrans participates in with other entities and agencies in the watersheds, usually through contribution to the construction and maintenance of regional structural T-BMP projects that treat applicable TMDL pollutants for compliance with WLAs. Caltrans also implements T-BMPs in its ROW to meet the TMDL allocations. Fact sheets in Appendix G provide specific detail on each TMDL watershed. For specific project information on programmed future projects, see the Caltrans DAWPs.

11.5 Central Valley Regional Board TMDLs (D5.11)

Compliance with this TMDL is in progress as monitoring continues to evaluate mercury concentrations in the watershed. Caltrans participates in the Central Valley RWQCB-approved Delta Regional Monitoring Program (DRMP) (https://deltarmp.org/) for methylmercury monitoring to determine reduction. Caltrans has established a cooperative monitoring agreement in which it contributes funding toward the DRMP. The DRMP tracks and documents the effectiveness of beneficial use protection and restoration efforts through comprehensive monitoring of water quality constituents and their effects (habitat restoration, flood protection, water supply) in the Delta. The primary focus of the DRMP is to monitor contaminants to better understand their role in the declining ecosystem health and fish populations through evaluating five monitoring

sectors at 73 monitoring stations. Section 2 of the DRMP Annual Report for Fiscal Year 2021–2022 (https://deltarmp.org/Documents/DeltaRMP_AnnualReport_FY21_22_Final.pdf) shows the mercury monitoring data sets that are publicly available on the California Environmental Data Exchange Network (http://www.ceden.org/). DRMP's Monitoring Workplan for fiscal year 2022–2023 (https://deltarmp.org/Documents/DRMP_Workplan_FY22_23_Final_22_0501_Rev_22_0712.pdf) describes the mercury monitoring activities that are currently being implemented in the Delta.

For the Clear Lake Nutrient TMDL, based on monitoring results and the implemented management measures, Caltrans concluded that the annual rate of phosphorus/ sediment discharged from its ROW to Clear Lake complies with the TMDL WLAs. Therefore, Caltrans has met its WLA for the Clear Lake Watershed. The Central Valley RWQCB agreed to Caltrans' determination of its compliance with the TMDL. Caltrans continues to plan erosion control activities and BMP implementation activities within the Clear Lake Watershed.

11.6 Lahontan Water Board Lake Tahoe Sediment and Nutrients TMDL (D5.12)

The Final PLRP Update was submitted in March 2023 and describes how Caltrans will achieve the 15-year (2026) pollutant load reduction required for compliance with the Lake Tahoe TMDL. The 15-year milestone consists of reducing the baseline fine sediment particle, total nitrogen, and total phosphorus loads by 34 percent, 21 percent, and 19 percent, respectively, before September 30, 2026. The 15-year milestone is referred to as the Clarity Challenge and is a major TMDL milestone in the successful implementation of the Lake Tahoe TMDL. The PLRP is attached in Appendix E.

11.7 Santa Ana Water Board Lake Elsinore and Canyon Lake Nutrient TMDL (D5.13)

Caltrans complies with the Lake Elsinore and Canyon Lake Nutrient TMDL by continued participation as an active member with the Lake Elsinore and Canyon Lake Nutrients TMDL Task Force. Caltrans work with task force partners on cooperative implementation actions, monitoring, and special studies.

11.8 San Diego Water Board TMDLs (D5.14)

For the Twenty Beaches and Creeks TMDL, Caltrans participates in a cooperative watershed monitoring program with the other responsible municipalities.

The status of Chollas Creek TMDL T-BMP implementation is summarized in Section 4.3.1 including the following requirements:

1. Current and proposed T-BMPs and treatment acres implemented through cooperative agreements (see Section 4.3.1.1);

2. Existing acreage treated with existing Caltrans-specific T-BMPs (see Section 4.3.1.2);

3. Proposed Caltrans-specific T-BMPs and acreage to be treated for the upcoming year (see Section 4.3.1.3); and

4. Proposed total acreage that will be treated with Caltrans-specific T-BMPs by the compliance deadline (see Section 4.3.1.4).

For Los Peñasquitos Lagoon Sediment TMDL, based on the structural and non-structural T-BMPs implemented in the watershed, Caltrans estimates that they are achieving a sediment load reduction of 90 tons per year. Caltrans will continue to participate with the Phase I municipal responsible parties through cooperative agreements or other methods to ensure successful restoration of 346 acres of tidal and non-tidal salt marsh by the final compliance deadline. The Compliance Evaluation Technical Memorandum for Los Peñasquitos Watershed Sediment TMDL is included as Appendix K.

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12 San Lorenzo River Sediment TMDL Inventory and Assessment (D3.3.3 – 12)

The natural processes of erosion and sedimentation in the San Lorenzo River Watershed have been accelerated due to anthropogenic watershed disturbances. Studies conducted by various authors have concluded that erosion rates were two to four times the natural rates. These studies have also documented and quantified the decline in anadromous fisheries and the quality of fish habitat. Excessive sedimentation has interfered with the beneficial uses of these waterbodies including Rare, Threatened, or Endangered Species [RARE], Migration of Aquatic Organisms [MIGR], Spawning, Reproduction, and/or Early Development [SPWN], and Wildlife Habitat [WILD]. A sediment TMDL was established to address these issues and one of the TMDL's requirements is to perform an inventory of Caltrans facilities in the watershed and assess their functionality.

Most Caltrans facilities in the San Lorenzo River Watershed are culverts. Therefore, Caltrans' Culvert Inspection Program was used to assess the physical characteristics and condition of Caltrans' culverts and related drainage system assets that have been inventoried by state personnel within the San Lorenzo River Watershed. Table 16 shows the statuses of culverts within the San Lorenzo River Watershed based on currently available information.

Table 16: Culvert Status for San Lorenzo River Watershed Data

Culvert Status	San Lorenzo River Watershed
Good	615 (54%)
Fair	313 (27%)
Poor	181 (16%)
Pending Inspection	24 (2%)
Other	7 (1%)
Total	**1,140**

Figure 2 presents the Caltrans drainage system inventory locations in the San Lorenzo River Watershed. The map, culvert, and condition details can be accessed on the Caltrans Water Quality Planning Tool website: https://svctenvims.dot.ca.gov/wqpt/wqpt.aspx.

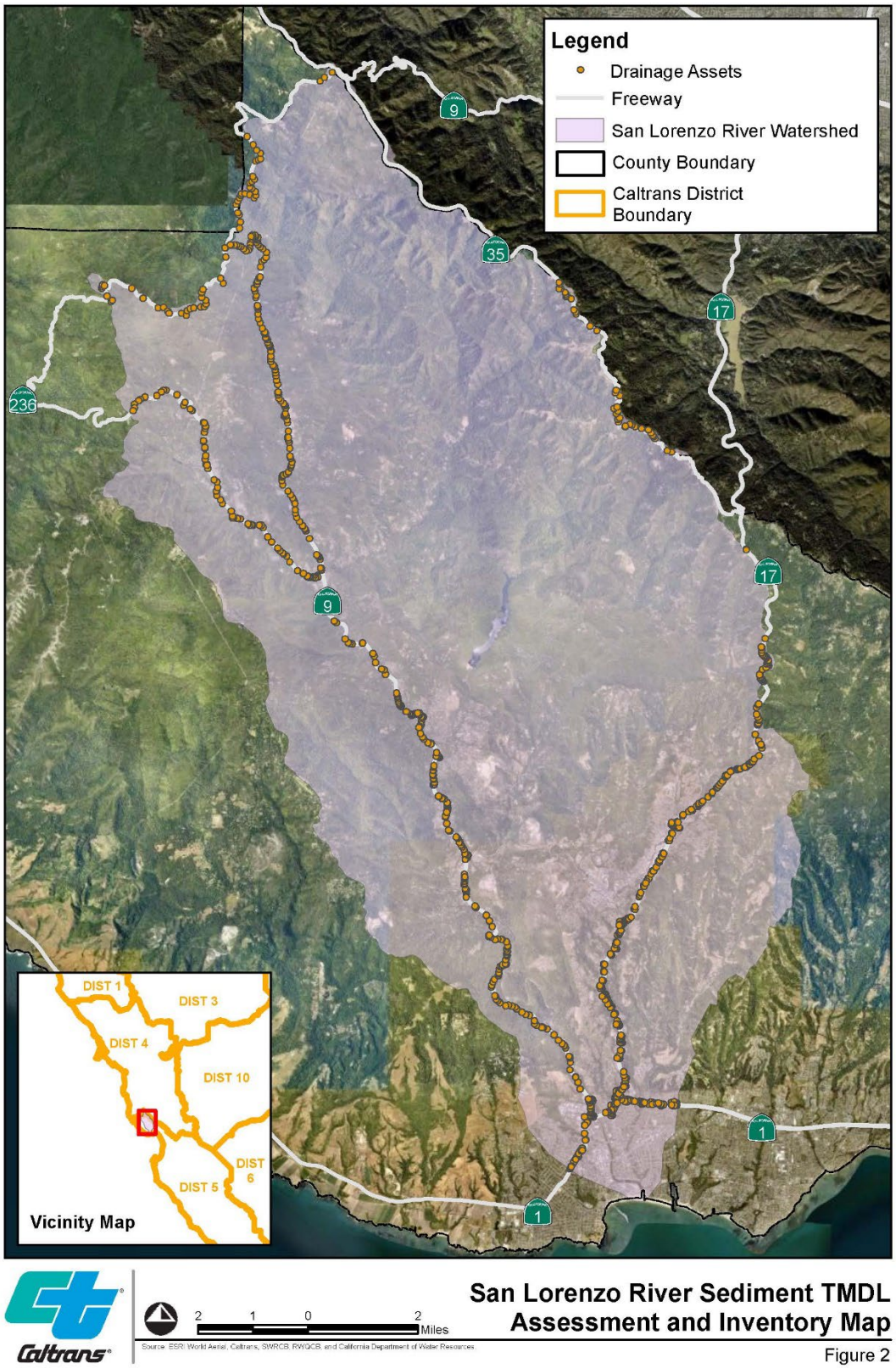

Figure 2: San Lorenzo River Sediment TMDL Assessment and Inventory Map

13 Factors Affecting TMDL Project Implementation

Several factors can affect TMDL compliance project implementation. Caltrans has identified the following potential factors.

13.1 Constrained Funding

Caltrans' Stormwater Management Program operational budget is $104,831,548 for compliance with the amended Conformed NPDES Permit and related activities in fiscal year 2021–2022. Consistent with state budget appropriation language, the funds are expended to attain compliance with (a) the stormwater discharge provisions of the amended Conformed NPDES Permit as promulgated by the SWRCB or RWQCB, (b) the Stormwater Management Plan, (c) a court order, or (d) other non-project water quality-related environment activity that protects the quality of the watersheds and receiving waters.

Following state statutes, Caltrans prepares and implements the SHSMP to meet California state goals by achieving performance measures for each goal, including performance measures for mandated programs such as Stormwater. Caltrans HQ Asset Management Programs set performance standards for each program based upon constrained funding available. Caltrans Districts develop and deliver projects to meet performance standards set for each program. Stormwater Program performance measures are set to meet the TMDL and trash requirements of the NPDES Permit. The SHOPP funds the costs for project delivery.

In addition, Caltrans continuously implements the Cooperative Implementation Agreements program based upon funding available in the operation budget, by entering into new agreements for this fiscal year. This program provides funds to projects, in conjunction with local agencies, to achieve compliance with TMDLs and trash mandates.

Availability of funding for Caltrans programs is dependent upon funds available for the state budget and funds available for the federal budget as 89 percent of SHOPP gets funded by federal funds.

13.2 Scheduling

The SHOPP is a four-year program of projects that collectively improves the condition, operation, and sustainability of the state highway system and associated transportation infrastructure in California. The SHOPP portfolio of projects is updated every two years, carrying forward projects programmed in the last two years of the preceding SHOPP and making those the first two years of projects in the new SHOPP. New projects are programmed in the year Caltrans estimates the projects can be delivered. All projects have a Project Initiation Document that identifies the project's scope, outputs, estimated capital and support costs, and delivery schedule. A risk register is prepared for each project. Every project's performance is monitored regularly. Projects can be delayed

based upon the risks associated with project delivery and/or funding, thus impacting the delivery of planned performance.

13.3 Permitting

13.3.1 Section 401 Permitting

Under Section 401 of the Clean Water Act, a project requiring a federal license or permit that may result in a discharge to a water of the United States must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permit triggering 401 Certification is a Clean Water Act Section 404 permit, issued by the US Army Corps of Engineers (USACE). The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may prescribe a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act). WDRs may specify the inclusion of additional project features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project. Delays in RWQCB issuance of 401 Certifications has an impact on project delivery schedules.

13.3.2 California Coastal Commission

The California Coastal Commission (CCC) plans and regulates the use of land and water in the coastal zone. The CCC's planning and regulatory responsibilities fall under the California Coastal Act, which mandates the protection of public access and recreation along the coast as well as the protection of coastal habitats and other sensitive resources and provides priority visitor-serving and coastal-dependent or coastal-related development while simultaneously minimizing risks from coastal hazards.

The CCC and local governments (through their Local Coastal Programs or LCPs) have jurisdiction in the Coastal Zone to protect water quality when permitting new development, including transportation projects that could have water quality impacts. The California Coastal Act Section 30601 states that, prior to the certification of an LCP and, where applicable, in addition to a permit from the local government pursuant to subdivision (b) or (d) of Section 30600, a coastal development permit shall be obtained from the CCC for the following:

1. Developments between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of beach or of the mean high tide line of the sea where there is no beach, whichever is the greatest distance.
2. Developments not included within paragraph (1) located on tidelands, submerged lands, public trust lands, within 100 feet of wetland, estuary, or stream or within 300 feet of the top of the seaward face of coastal bluff.
3. A development which constitutes a major public works project or a major energy facility.

Delays in issuing of permits by a regulating authority has a direct impact on project delivery schedule.

13.3.3 California Fish and Wildlife 1602

Fish and Game Code Section 1602 requires a person, state or local governmental agency, or public utility to notify the California Department of Fish and Wildlife prior to beginning an activity that may do one or more of the following:

- Divert or obstruct the natural flow of a river, stream, or lake;
- Change the bed, channel, or bank of a river, stream, or lake;
- Use material from a river, stream, or lake; or
- Deposit or dispose of material into a river, stream, or lake.

13.4 Technical Infeasibility

13.4.1 Safety

The Caltrans mission statement is “Provide a safe and reliable transportation network that serves all people and respects the environment.” The safety of the public and Caltrans crews must be considered for projects. It is challenging to design, construct, operate, and maintain stormwater treatment devices in the Caltrans ROW due to the limited availability of suitable devices appropriate for the high-speed freeway environment. Due to the linear nature of the state highway system, limited real estate precludes on-system opportunities, which may result in safety concerns for the traveling public and crews that maintain these devices.

13.4.2 Infeasible Soil Conditions

Certain T-BMPs rely on infiltration as the primary means of pollutant reduction; therefore, data must be gathered in the pre-screening process to screen potential sites for suitability. In locations with unsuitable soil type as identified from soil maps and/or US Department of Agriculture soil survey tables and/or background information, infiltration devices are deemed infeasible. If Hydrologic Soil Group D is present, vector control becomes a concern.

Other geotechnical considerations that may prohibit usage include location in seismic impact zones, unstable areas such as landslides and Karst terrains, and areas with soil

liquefaction and differential settlement potential or highly expansive/collapsible soils. Generally, Caltrans does not construct infiltration devices in fill or on a slope greater than 15 percent. The minimum acceptable spacing between the proposed infiltration device invert and the maximum seasonal high groundwater table is five feet.

Infiltration devices should not be located closer than: i) 1,000 feet from a municipal water supply well; ii) 100 ft from a private well, septic tank, or drain field; and/or iii) 200 ft from a Holocene fault zone. Additionally, infiltration devices may be considered unsuitable if in close proximity to a drinking water reservoir or a recharge facility, due to difficulty in cleaning in the event of a spill.

13.4.3 Limited ROW

T-BMPs must be located using the general roadway drainage considerations for safety and Clear Recovery Zone concept in the AASHTO manual (AASHTO 2011). Traffic safety and maintenance are an important part of highway drainage facility design. The shape of a roadside treatment device is designed to minimize vehicular impact and provide a traversable section for errant traffic, leaving the traveled way within the Clear Recovery Zone (Highway Design Manual Topics 304, 309, and 861.4). If there is insufficient ROW to provide for a Clear Recovery Zone, the site could be deemed infeasible.

13.4.4 Insufficient Hydraulic Head

Sufficient hydraulic head should be available to prevent an objectionable backwater condition in the upstream roadway storm drain system. Additionally, the site must have sufficient hydraulic head for the filter to operate by gravity. In the case of sand filters, generally, 3 to 6 feet of head are required between the flow line elevation at the inlet of the sediment chamber to the flow line elevation at the outlet of the filtration chamber in order for the sand filter to operate properly.

13.4.5 Environmental Constraints

Site selection for T-BMP placement needs to consider environmental constraints such as presence of wetlands or endangered species. All projects must be evaluated to determine if an endangered or threatened species and/or their habitat have the potential to occur within the project area, which may be affected by the project. Pursuant to 23 United States Code 326 and 327, Caltrans is assigned Federal Highway Administration's responsibilities for consultation and coordination with the US Fish and Wildlife Service and National Marine Fisheries Service for transportation projects.

14 Reporting Strategy

14.1 Annual TMDL Compliance Status Report

Caltrans will prepare an Annual TMDL Compliance Status Report on November 30 each year that will be uploaded to the Stormwater Multiple Application and Report Tracking System (SMARTS). The Annual TMDL Compliance Status Report will report on the TMDL compliance achieved during the prior fiscal year (July 1 through June 30), and the compliance proposed during the forthcoming two fiscal years. The first Annual TMDL Compliance Status Report will be submitted on November 30 following the NPDES Permit effective date. Each Annual TMDL Compliance Status Report will include the following information for the TMDLs noted in NPDES Permit Attachment D Tables D-1, D-2, and D-3.

- Proposed list of TMDL WLAs and LAs with which Caltrans has come into compliance, including documentation demonstrating compliance and ongoing maintenance or other efforts necessary to sustain compliance.
- Tabulated inventory and descriptive summary of TMDL compliance activities performed in the previous fiscal year by watershed. Compliance activities include all efforts to identify, plan, and implement TMDL compliance projects. The tabulated inventory will include the status of planning, designing, permitting, contributions, and implementation of all TMDL projects. Compliance activities will be described in detail and identify the activity location, impaired waterbody, T-BMPs, and TMDL pollutant. All TMDL work completed to date, work completed during the reporting period, work anticipated in the next two reporting periods, obstacles, and unresolved issues of concern will be included.
- Results of ongoing assessments of the performance, effectiveness, and adaptive management of a representative fraction of each type of Caltrans-installed T-BMPs and control measures.
- Tabulated list of cooperative agreements that includes the name of each agreement, signatories or major participating entities, the impaired waterbody, the WLA/TMDL pollutant, project type (e.g., within Caltrans ROW, outside Caltrans ROW, monitoring, T-BMPs), and the applicable WLA implementation requirement. (See NPDES Permit Attachment B for the definition of cooperative agreements.)
- Descriptive summary and tabulated data of all cooperative agreements, including the status of planning, designing, permitting, contributions, and implementing all cooperative agreement projects.
- For the San Francisco Bay Regional Board PCB and Mercury TMDLs, project status of T-BMPs and control shall be included, as required by NPDES Permit Attachment D Section D5.8.
- For the Santa Ana Regional Board Lake Elsinore and Canyon Lakes Nutrients TMDL, an annual status report on the in-lake nutrient reduction program must be included, as described in NPDES Permit Attachment D Section D5.13.
- Updates to the Pollutant Load Reduction Plan required by the Lahontan Regional Board.

- Delays affecting project implementation, including delays or cancellations due to environmental or permitting factors (e.g., CCC, California Department of Fish and Wildlife, USACE, local flood control agencies, local county) beyond Caltrans' control.
- Copies of watershed implementation reports for cooperative agreements established to comply with NPDES Permit Attachment D. Watershed implementation reports may be uploaded to SMARTS as separate attachments if each electronic file name includes the report date, name, and TMDL watershed.

14.2 TMDL Compliance Plan Annual Updates

Caltrans will evaluate the TMDL Compliance Plan annually to determine if updates are necessary. Caltrans will prepare annual updates to the TMDL Compliance Plan that will be submitted by November 30 each year and meet the requirements of NPDES Permit Attachment D Section D3.3.