Attachment H to Resolution R21-001

Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate an Implementation Plan for the U.S. EPA-Established Malibu Creek Nutrients TMDL and the U.S. EPA-Established Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments

Adopted by the California Regional Water Quality Control Board, Los Angeles Region (Regional Water Board) on December 8, 2016.

Amendments:

Table of Contents

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs

7-42 Implementation Plan for the Malibu Creek Nutrients TMDL and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments

List of Figures, Tables and Inserts

Add:

Chapter 7. Total Maximum Daily Loads (TMDLs)
Tables

7-42 Implementation Plan for the Malibu Creek Nutrients TMDL and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments

7-42.1 Malibu Creek Nutrients TMDL and Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments –Implementation

7-42.2 Malibu Creek Nutrients TMDL and Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments Implementation Schedule

Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries

Add: Implementation Plan for the Malibu Creek Nutrients TMDL and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments

This Implementation Plan was adopted by:

The Regional Water Board on December 8, 2016

This Implementation Plan was approved by:

The State Water Resources Control Board on February 22, 2017
The Office of Administrative Law on May 16, 2017
This Implementation Plan is effective on May 16, 2017

This TMDL was revised by:

The Regional Board on March 11, 2021.

This revised TMDL was approved by:

The State Water Resources Control Board on [date].
The Office of Administrative Law on [date].
The U.S. Environmental Protection Agency on [date].

In Chapter 7, add the following summary of the U.S. EPA-established TMDLs and tables. The TMDL Implementation Plan is presented in Table 7-42.1 and the Implementation Schedule in Table 7-42.

Summary of the Malibu Creek Nutrients TMDL and the Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments

The United States Environmental Protection Agency (U.S. EPA) established the "Malibu Creek Watershed Nutrients TMDL" (2003 TMDL) on March 21, 2003 to address impairments due to ammonia, nutrients, dissolved oxygen, algae, scum, and odor in Malibu Lagoon, Malibu Creek and its tributaries, and four lakes in the watershed. On July 2, 2013, U.S. EPA established the "Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments" (2013 TMDL) to address impairments of Malibu Creek and Las Virgenes Creek related to impacted benthic macroinvertebrates and sedimentation/siltation and impairments of Malibu Lagoon related to adverse benthic community effects.

The sources of nutrients and/or sediment loading in the Malibu Creek Watershed include point sources, such as discharges from storm drains regulated under municipal separate storm sewer system (MS4) permits, direct discharges from the Tapia Water Reclamation Facility (WRF), and nonpoint sources, such as discharges from onsite wastewater treatment systems (OWTS), Tapia WRF irrigation and sludge disposal, and runoff from golf courses, agriculture, livestock facilities, and open space.

Both TMDLs include a problem statement, numeric targets, source analysis, loading capacity, waste load allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources, and a margin of safety, but do not include an implementation plan or schedule. The 2003 TMDL sets numeric targets for nutrients, chlorophyll a, dissolved oxygen, ammonia, and algal cover; and assigns WLAs and LAs for total nitrogen (expressed as Nitrite-N + Nitrate-N in the 2003 TMDL) and total phosphorus to sources discharging to all waterbodies within the Malibu Creek Watershed. The 2013 TMDL sets numeric targets for nutrients, chlorophyll a, dissolved oxygen, and algal cover as well as sedimentation, benthic community diversity, and benthic community bioscores, and assigns WLAs and LAs for total nitrogen (expressed as organic-N + inorganic-N) and total phosphorus to sources discharging to waterbodies in the eastern portion of the Malibu Creek Watershed below Malibou Lake. These waterbodies include: Malibu Creek, Cold Creek, Stokes Creek, Las Virgenes Creek, and four lakes (Malibou Lake, Lindero Lake, Westlake Lake, and Sherwood Lake). In addition, the 2013 TMDL sets sediment WLAs and LAs based on a 38 percent reduction in the sediment transport capacity of the Malibu Creek Watershed. Sediment WLAs are assigned for point sources below Malibou Lake, and sediment LAs are assigned to discharges from the combined area upstream of Malibou Lake, discharges from protected land below Malibou Lake, and the Ventura County unincorporated area along Las Virgenes Creek. The following tables address implementation of the 2003 TMDL and the 2013 TMDL.

Table 7-42.1. Malibu Creek Nutrients TMDL and Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments: Implementation

Elements	Key Findings and Regulatory Provisions
2003 and 2013 TMDL Nutrient Implementation	I. Implementation and Determination of Compliance with Nutrient WLAs **<u>Tapia WRF</u>** The nutrient WLAs in the 2013 TMDL will be incorporated into the Tapia WRF NPDES permit and translated into effluent limitations expressed as concentration-based summer and winter seasonal averages. Compliance with the concentration-based seasonal averages shall be determined by calculating the sum of all nutrient concentration samples collected during the season divided by the number of samples collected during that season. The 2013 TMDL summer nutrient WLAs shall be achieved five years from the effective date of this Implementation Plan. The 2013 TMDL winter nutrient WLAs shall be achieved thirteen and a half years from the effective date of this Implementation Plan. Interim nutrient WLAs are established based on current performance equal to the maximum effluent concentration from the past three years and shall be updated during each permit renewal with the most current data or based on current permit limitations[2], whichever are more stringent.

[1] The current permit limits for the Tapia WRF (Order No. R4-2010-0165) include a monthly average limit for nitrite-N + nitrate-N of 8 mg/l and $1.1x10^3$ lbs/day and a monthly average limit for Total Phosphorus of 3.0 mg/L and $4.0x10^2$ lbs/day during the summer and winter season. The permit also sets a daily maximum limit for Total Phosphorus at 4.0 mg/L and $5.4x10^2$ lbs/day during the winter season.

Implementation Schedule	Total Nitrogen Summer WLA	Total Nitrogen Winter WLA	Total Phosphorus Summer WLA	Total Phosphorus Winter WLA
Upon effective date of the Implementation Plan	Current performance	Current performance	Current performance	Current performance
5 years from effective date of Implementation Plan	1.0 mg/L	Current performance	0.10 mg/L	Current performance
13.5 years from effective date of Implementation Plan	1.0 mg/L	4.0 mg/L[1]	0.10 mg/L	0.20 mg/L[2]

Total Nitrogen = Organic-N + Inorganic-N
Summer: April 15-November 15
Winter: November 16-April 14

1-Concentration-based WLA applies unless, due to a rain event, Tapia WRF discharges the excess of 11 MGD to Malibu Creek or its tributaries and all other discharge options have been exhausted. In that case, the concentration-based WLA does not apply and the mass-based WLA is:

$$\sum_{i=1}^{n} x_i \times 1.0\frac{mg}{L} \times 0.35 \times 8.34$$

x = average flow at gage F-130 during the period of discharge (MGD)
i = number of days when Tapia's discharge is greater than 11 MGD

Compliance with the mass-based WLA shall be determined by:

$$\sum_{i=1}^{n} y_i \times z_i \times 8.34$$

y = average flow of Tapia's discharge during the period of discharge (MGD)
z = total nitrogen concentration in Tapia's discharge (mg/L)
i = number of days when Tapia's discharge is greater than 11 MGD

2-Concentration-based WLA applies unless, due to a rain event, Tapia WRF discharges the excess of 11 MGD to Malibu Creek or its tributaries and all other discharge options have been exhausted. In that case, the concentration-based WLA does not apply and the mass-based WLA is:

$$\sum_{i=1}^{n} x_i \times 0.2\frac{mg}{L} \times 0.62 \times 8.34$$

x = average flow at gage F-130 during the period of discharge (MGD)
i = number of days when Tapia's discharge is greater than 11 MGD

Compliance with the mass-based WLA shall be determined by:

$$\sum_{i=1}^{n} y_i \times z_i \times 8.34$$

y = average flow of Tapia's discharge during the period of discharge (MGD)

Elements	Key Findings and Regulatory Provisions

MS4 Permits

The 2003 TMDL encompasses the whole Malibu Creek Watershed; therefore, the 2003 TMDL MS4 nutrient WLAs will be implemented through NPDES permits that regulate MS4 discharges within the Malibu Creek Watershed, which include but may not be limited to the Los Angeles County MS4 Permit, Ventura County MS4 Permit, and California Department of Transportation (Caltrans) Statewide Storm Water Permit. The 2013 TMDL only addresses the portion of the watershed below Malibou Lake; therefore, the 2013 TMDL MS4 nutrient WLAs will be implemented through the Los Angeles County MS4 and Caltrans MS4 permits only.

Additional MS4 discharges within the Malibu Creek Watershed that may be designated in the future under Phase II of the U.S. EPA Stormwater Permitting Program will implement the MS4 WLAs through the applicable NPDES permit. Other discharges may also be required to implement the MS4 WLAs if the State or U.S. EPA exercise their residual designation authority under CWA section 402(p)(2)(E).

The 2003 TMDL nutrient LAs for "runoff from developed areas" and "dry weather urban runoff" are newly interpreted as nutrient WLAs for MS4 permittees in this Implementation Plan. These newly interpreted nutrient WLAs were summed and apportioned between MS4 permittees based on their relative area above and below Malibou Lake. The newly interpreted nutrient WLAs for MS4 permittees below Malibou Lake are superseded by the 2013 TMDL nutrient WLAs.

Los Angeles County and Ventura County

The newly interpreted 2003 TMDL nutrient WLAs above Malibou Lake shall be achieved by July 15, 2026 for the discharges covered under the Los Angeles County MS4 Permit and within five years of the effective date of the permit renewal for discharges covered under the Ventura County MS4 Permit, but not to exceed 10 years from the effective date of this Implementation Plan. The 2013 TMDL nutrient WLAs below Malibou Lake shall be achieved by July 15, 2026 for the discharges covered under the Los Angeles County MS4 Permit. Interim nutrient WLAs are included based on existing permit requirements.

Implementation Schedule	Total Nitrogen Summer	Total Nitrogen Winter	Total Phosphorus Summer	Total Phosphorus Winter
LA County MS4s above Malibou Lake				
December 28, 2017	8.0 lbs/day*	8.0 mg/L*	0.80 lbs/day	N/A
July 15, 2026	1.6 lbs/day*	8.0 mg/L*	0.16 lbs/day	N/A
LA County MS4s below Malibou Lake				

December 28, 2017	8.0 lbs/day*	8.0 mg/L*	0.80 lbs/day	N/A
July 15, 2026	1.0 mg/L**	4.0 mg/L**	0.10 mg/L	0.20 mg/L
Ventura County MS4s				
Effective date of this Implementation Plan	Current permit limits***	8.0 mg/L*	Current permit limits***	N/A
5 years from the effective date of the Ventura County MS4 Permit adoption, renewal, or modification but no later than 10 years from the effective date of this Implementation Plan	3.1 lbs/day*	8.0 mg/L*	0.31 lbs/day	N/A
* Total Nitrogen = Nitrate-N + Nitrite-N ** Total Nitrogen = Organic-N + Inorganic-N *** Current Permit = Order No. R4-2010-0108 Summer: April 15 to November 15 Winter: November 16 to April 14				

Nutrient WLAs shall be incorporated into MS4 permits as water quality-based effluent limitations (WQBELs). The 2003 TMDL summer nutrient WLAs shall be incorporated as daily loads and the winter nutrient WLA shall be incorporated as a seasonal average. The 2013 TMDL summer and winter nutrient WLAs shall be incorporated as seasonal averages. MS4 Permittees may be deemed in compliance with WQBELs if they demonstrate that:

(1) there are no violations of the WQBEL at the Permittee's applicable MS4 outfall(s);

(2) there are no exceedances of the numeric targets in the receiving water downstream of the Permittee's outfalls; or

(3) there is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the WQBEL.

The MS4 permittees shall provide an implementation plan to the Regional Water Board outlining how they intend to achieve the nutrient WLAs. A Regional Water Board approved Watershed Management Program (WMP) or Enhanced Watershed Management Program (EWMP) developed in accordance with a MS4 permit will satisfy the requirements of an implementation plan where the WMP or EWMP addresses the applicable waterbody-pollutant combinations of the TMDLs consistent with the implementation schedules in Table 7-42.2. MS4 permittees shall modify their WMP/EWMP no later than the next Adaptive Management Process cycle after provisions consistent with the assumptions and requirements of the TMDL nutrient WLAs are incorporated into the applicable MS4 permits.

Caltrans

The nutrient WLAs assigned to Caltrans will be implemented through the Caltrans statewide stormwater permit (Order No. 2012-0011-DWQ as amended by Order No. 2014-02006-EXEC, Order No. 2011-0077-DWQ, and Order No. 2015-0036-EXEC, or other successor order).

Implementation Schedule	Total Nitrogen Summer	Total Nitrogen Winter	Total Phosphorus Summer	Total Phosphorus Winter
Caltrans above Malibou Lake				
According to the schedule in the revised TMDL Reach Prioritization, but no later than 2032	0.032 lbs/day*	8.0 mg/L*	0.0032 lbs/day	N/A
Implementation Schedule	**Total Nitrogen Summer**	**Total Nitrogen Winter**	**Total Phosphorus Summer**	**Total Phosphorus Winter**
Caltrans below Malibou Lake				
According to the schedule in the revised TMDL Reach Prioritization, but no later than 2032	1.0 mg/L**	4.0 mg/L**	0.10 mg/L	0.20 mg/L
* Total Nitrogen = Nitrate-N + Nitrite-N ** Total Nitrogen= Organic-N + Inorganic-N Summer: April 15 to November 15 Winter: November 16 to April 14				

Some of the 2013 TMDL nutrient WLAs are currently included Order No. 2012-0011-DWQ, but none of the 2003 TMDL nutrient WLAs are. The Caltrans statewide stormwater permit includes TMDL-specific requirements for the TMDLs incorporated into the permit. Order No. 2012-0011-DWQ requires Caltrans to prioritize impaired reaches subject to TMDLs for implementation by reach, so that all TMDLs are addressed by 2032.

In order to reflect this Implementation Plan, the reaches covered by the 2013 TMDL, which were previously not included in Order No. 2012-0011-DWQ, and all of the reaches covered by the 2003 TMDL shall be added to Attachment IV of Order No. 2012-0011-DWQ when it is reopened consistent with provision E.11.b. of the Order. Within a year of the permit reopener, Caltrans shall submit a revised TMDL Reach Prioritization to include the additional reaches.

II. Implementation and Determination of Compliance with Nutrient LAs

Tapia WRF

The nutrient LAs for irrigation from the Tapia WRF to the Rancho Las Virgenes Farm (also known as the spray field), Pepperdine University, Rancho Las Virgenes Compost Facility, and other recycled water users will be implemented through the Tapia WRF Water Reclamation Requirements. The nutrient LAs for sludge applied to the Rancho Las Virgenes Farm will be implemented through the Rancho Las Virgenes Waste Discharge Requirements (WDRs).

The nutrient LAs shall be incorporated into these permits as requirements for the application of sludge and reclaimed water for irrigation. The permits shall require that irrigation and sludge be applied in compliance with current regulations and at rates to ensure that the amount of total nitrogen and phosphorus applied does not exceed the vegetative requirements of the crops or landscaping.

Elements	Key Findings and Regulatory Provisions
	The nutrient LAs in the 2003 and 2013 TMDL for Tapia WRF sludge and irrigation shall be attained upon the effective date of this Implementation Plan. **<u>Onsite wastewater treatment systems (OWTS)</u>** The 2003 TMDL and 2013 TMDL LAs for OWTS shall be implemented through WDRs or waivers of WDRs and local agency oversight where local agencies (city and county health departments and/or building departments) are implementing their permitting authority. Commercial and multifamily OWTS are currently regulated by the Regional Water Board through WDRs. Single family residential OWTS are currently regulated by local agencies through a memorandum of understanding (MOU) with the Regional Water Board or, in lieu of an MOU, by the Regional Water Board directly, via WDRs. The State Water Resources Control Board (State Water Board) adopted a water quality control policy for siting, design, operation, and maintenance of onsite wastewater treatment systems (OWTS Policy) as Resolution No. 2012-0032 to comply with Water Code sections 13290 and 13291. The policy emphasizes local management of OWTS. The policy requires an Advanced Protection Management Program (APMP) for OWTS near impaired waterbodies. Local agencies are authorized to implement APMPs in conjunction with their existing programs and in collaboration with the Regional Water Board through a Local Agency Management Program (LAMP). The U.S.EPA-established TMDLs assign LAs generally to all OWTS in the watershed, but do not specify which, if any, specific OWTS must reduce discharges to meet the LAs. As such, the TMDLs define the geographic area for the APMP as the entire watershed. Local agencies may conduct a special study to determine which existing OWTS are contributing to the nutrient loading to any waterbody within the Malibu Creek Watershed. Areas found not to be contributing to the overall loading may be removed from the APMP as approved in a LAMP. The study may build upon previous studies completed according to the Malibu Creek Bacteria TMDL (Resolution No. 2004-019). Existing,new, and replacement OWTS included in an APMP are required to be upgraded or modified to meet the supplemental treatment requirements for nitrogen per Tier 3 of the OWTS Policy and any other requirements of the APMP. If a local agency chooses to develop a LAMP, the LAMP shall include a schedule for upgrades or modifications based on the results of the study. Existing OWTS shall remain regulated by the existing MOU and LAMP until the above determination is made, the LAMP is revised, and subsequent OWTS upgrades are required. The Regional Water Board will evaluate existing MOUs and any future submittal of a LAMP under the OWTS Policy to determine if additional changes are needed to implement the LAs. All OWTS discharges within the APMP shall achieve compliance with LAs as soon as possible, but no later than 10 years after the effective date of this Implementation Plan. The owners of OWTS are ultimately responsible for achieving the LAs. **<u>Golf Courses</u>** The nutrient LAs for nutrients for golf courses in the 2003 and 2013 TMDLs will be implemented through WDRs or conditional waivers of WDRs consistent with the State's Nonpoint Source Implementation and Enforcement Policy. WDRs or conditional waivers of WDRs may include requirements that golf courses submit fertilizer application plans and implement designated types of BMPs to comply with the TMDLs.

Elements	Key Findings and Regulatory Provisions
	Golf courses shall attain the nutrient LAs within five years of the effective date of this Implementation Plan. **Agriculture Sources** The nutrient LAs for agriculture in the 2003 and 2013 TMDLs will be implemented through the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Agricultural Lands (Order No. R4-2016-0143) (Agriculture Waiver) or other appropriate Regional Water Board order. The existing Agriculture Waiver includes the 2003 and 2013 TMDL nutrient LAs as benchmarks. Agricultural lands shall achieve the nutrient LAs in the 2003 and 2013 TMDLs by October 14, 2022. This compliance date shall be updated in the waiver when it is renewed or replaced with another order by April 2022. **Livestock Sources** The nutrient LAs for livestock in the 2003 and the 2013 TMDLs, including horse facilities and grazing, will be regulated by WDRs, conditional waivers of WDRs, or other regulatory mechanisms in accordance with the Nonpoint Source Implementation and Enforcement Policy. The Regional Water Board will determine which horse/livestock facilities and grazing operations shall be subject to the WDRs, waivers of WDRs or other regulatory mechanisms during the development of these regulatory mechanisms based on factors that may include, but are not limited to, type of operation, density of animals, and risk to water quality. As part of the regulatory mechanism, horse/livestock facilities and grazing operations shall be required to develop management plans for Executive Officer approval and implement management measures identified in management plans to attain nutrient LAs. Horse/livestock facilities and grazing operations shall achieve compliance with the nutrient LAs in the 2003 and 2013 TMDLs within 5 years of the effective date of this Implementation Plan. The estimated costs for practices to control agricultural discharges such as filter strips, mulching, improved irrigation efficiency, nutrient management, manure management, and grazing management are approximately $1031 per acre, $808 per acre, $1784 per acre, $55 per acre-year, $4,500 (average cost of manure bunker), and $1,356 (average cost of a typical watering facility), respectively. Potential sources of financing for these implementation alternatives, such as Clean Water Act section 319(h) grant funding, are discussed in Chapter 4. As discussed in Chapter 4, the U.S. Department of Agriculture Soil Conservation Service and the Resource Conservation Districts provide information on, and assistance in, implementing BMPs. **Lakes** The nutrient LAs in the 2013 TMDL for lake overflow from Malibou Lake, Lindero Lake, Westlake Lake, and Sherwood Lake will be implemented through WDRs, conditional waivers of WDRs, or other regulatory mechanisms in accordance with the Nonpoint Source Implementation and Enforcement Policy. The nutrient LAs will apply at the outlet of the lake or dam and are shared among the cities, counties, state, and federal lands in the subwatersheds draining to each lake, and the owners/operators of each lake. Cooperative parties for the lake nutrient LAs are identified, not as responsible parties or as dischargers, but as landowners and

<table>
<tr><th>Elements</th><th>Key Findings and Regulatory Provisions</th></tr>
<tr><td></td><td>lake operators who have an interest in source identification of nutrient pollutants entering and exiting the lakes within Malibu Creek Watershed.
<table>
<tr><th>Lakes</th><th>Cooperative Parties</th></tr>
<tr><td>Malibou Lake</td><td>Los Angeles County
Los Angeles County Flood Control District
Ventura County
City of Agoura Hills
City of Westlake Village
U.S. National Park Service
California Department Parks and Recreation
City of Simi Valley
Owner/Operator:
Malibou Lake Mountain Club, Ltd.</td></tr>
<tr><td>Lake Lindero</td><td>Los Angeles County Flood Control District
Ventura County
City of Thousand Oaks
City of Agoura Hills
City of Westlake Village
City of Simi Valley
Owner/Operator:
Lake Lindero Homeowners Association</td></tr>
<tr><td>Westlake Lake</td><td>Los Angeles County
Los Angeles County Flood Control District
Ventura County
Ventura County Watershed Protection District
City of Thousand Oaks
City of Westlake Village
Owners:
Windward Shores Homeowners Association
Westshore Homeowners Association
Westlake Bay Homeowners Association
Southshore Homeowners Association
Lakeshore Homeowners Association
Westlake Island Homeowners Association
Northshore Homeowners Association
The Landing
Operator:
The Westlake Management Association</td></tr>
<tr><td>Sherwood Lake</td><td>Ventura County
U.S. National Park Service
Owner/Operator:
Sherwood Valley Homeowners Association</td></tr>
</table>

The nutrient LAs will be implemented in stages. First, the Regional Water Board will issue investigative orders to the cooperative parties for each lake that will require them to submit a monitoring plan to the Regional Water Board within one year of receipt of an investigative order. The monitoring plan shall be designed to determine the impact of lake overflows on nutrient loading downstream. The monitoring plan shall include sufficient samples to characterize overflows from the lake during both dry- and wet-weather conditions. Then, if monitoring results show an impact on nutrient loading downstream, the Regional Water Board will revise this Implementation Plan within five years of its effective date. The revised Implementation Plan will include implementation methods to reduce the external loading to the lakes and/or internal loading within the lakes and a schedule to meet</td></tr>
</table>

Elements	Key Findings and Regulatory Provisions
	the nutrient LAs. Cooperative parties may propose their own approaches for the revised Implementation Plan that the Regional Water Board may consider.
2013 TMDL Sedimentation Implementation	The sedimentation WLAs and LAs in the 2013 TMDL apply to the eastern portion of the watershed, below Malibou Lake and above gage F-130. Compliance with the sedimentation WLAs and LAs in the 2013 TMDL can be achieved through an individual compliance alternative or as part of a watershed-wide implementation alternative. I. Individual Compliance Alternative **<u>Los Angeles County MS4 and Caltrans MS4 Permits</u>** The sedimentation WLAs shall be incorporated into the Los Angeles County and Caltrans MS4 permits as receiving water limits. To determine compliance, the annual sediment load at the F-130 gage shall be multiplied by the allocation fractions (17.4% for Los Angeles County MS4 permittees subject to the WLA and 0.8% for Caltrans) and compared to the respective WLAs (1,012 tons/year for Los Angeles County and 44 tons/year for Caltrans). Due to the annual variability of sediment transport, which is linked to wet-weather events, compliance shall be averaged over a three-year period. The Los Angeles County MS4 permittees shall provide an implementation plan to the Regional Water Board outlining how they intend to achieve the sedimentation WLAs. The plan shall include implementation methods, proposed interim milestones, and proposed receiving water monitoring to determine compliance. A Regional Water Board approved WMP or EWMP developed in accordance with a MS4 permit that explicitly addresses the sedimentation WLAs will satisfy the requirements of an implementation plan. Caltrans shall implement Order No. 2012-0011-DWQ as discussed in the Nutrients Implementation section in order to meet the sedimentation WLAs. In order to reflect this Implementation Plan, additional TMDL specific monitoring requirements shall be added to Attachment IV of Order No. 2012-0011-DWQ when it is reopened consistent with provision E.11.b. of the Order. The Los Angeles County MS4 permittees and the Caltrans MS4 below Malibou Lake and above F-130 shall attain the sedimentation WLAs by December 2025. **<u>Protected Land Below Malibou Lake</u>** The sedimentation LA in the 2013 TMDL for the protected land below Malibou Lake will be implemented through WDRs, conditional waivers of WDRs, or other regulatory mechanisms assigned to State Parks and National Park Service lands in accordance with the Nonpoint Source Implementation and Enforcement Policy. The sedimentation LAs may be incorporated into the regulatory mechanisms as water quality benchmarks or receiving water limits. To determine compliance, the annual sediment load at the F-130 gage will be multiplied by the allocation fraction of 13.7% and compared to the LA of 796 tons/year. Due to the annual variability of sediment transport, which is linked to wet-weather events, compliance will be averaged over a three-year period. If the sedimentation LAs are not being achieved, the responsible entities will be required to submit a plan(s) for

Elements	Key Findings and Regulatory Provisions
	riparian/stream bank restoration and/or improved operation and management of impervious areas, including roads. The sedimentation LA for protected land below Malibou Lake and above gage F-130 shall be attained by December 2025. **<u>Combined Area Upstream Malibou Lake</u>** The parties responsible for implementing the sedimentation LA in the 2013 TMDL for the area above Malibou Lake are the same as the cooperative parties identified for the nutrient LA in the 2013 TMDL for lake overflow. The sedimentation LA applies at a point below Malibou Lake. Within one year of the effective date of the Implementation Plan, the Regional Water Board intends to issue an investigative order to the cooperative parties to install a new gage below Malibou Lake to collect TSS and flow data to determine the annual sediment load from the area above Malibou Lake. If monitoring results show that the sediment discharged is greater than the sediment load from the area above Malibou Lake. If monitoring results show that the sediment discharged is greater than the sedimentation LA of 3,950 tons/year, the Regional Water Board will revise this Implementation Plan within five years of its effective date to identify applicable sedimentation WLAs and LAs for specific jurisdictions upstream of Malibou Lake. **<u>Unincorporated Area along Las Virgenes Creek</u>** To meet the sedimentation LA in the 2013 TMDL for the unincorporated area along Las Virgenes Creek, within one year of receipt of an investigative order, Ventura County shall submit a monitoring plan to collect sediment data at the county line or at an appropriate downstream site in order to determine the annual sediment load for the unincorporated area along Las Virgenes Creek. If monitoring results show sediment has discharged is greater than the sedimentation LA of 16 tons/year, the Regional Water Board will revise this Implementation Plan within five years of its effective date to identify potential sedimentation WLAs and/or LAs for specific jurisdictions in the unincorporated area along Las Virgenes Creek. II. Watershed-wide approach The responsible entities in the Malibu Creek Watershed may work collaboratively to develop a comprehensive implementation approach to reduce sediment transport capacity watershed-wide. This compliance alternative is a hybrid of the implementation options described above and would ensure long-term compliance with the 2013 TMDL and attainment of the required 38% reduction in sediment transport capacity at gage F-130. This approach would include a combination of (1) projects to reduce work on the stream caused by elevated flows in the upper urbanized portion of the watershed above gage F-130 and (2) stream restoration projects on eroding stream channels in the upper and lower watershed (above and below gage F-130) caused by the elevated work on the stream. A watershed-based approach implemented collectively by the responsible parties should focus on reducing effective work because effective work is what controls sediment transport capacity. Effective work is based on excess shear stress and stream velocity. Compliance will be assessed by demonstrating a reduction in the 2-year and 10-year peak flows to achieve a 38 percent reduction in effective work at gage F-130. The 2013 TMDL report identifies the required peak flows at gage F-130 for the two storm sizes (1,180 cfs for the 2-year interval and 5,370 cfs for the 10-year interval) and calculation of change in effective work.

Elements	Key Findings and Regulatory Provisions
	Compliance monitoring for this alternative shall include monitoring at gage F-130 and additional monitoring throughout the impaired reaches and areas downstream of LID projects, regional BMP facilities, and channel restoration projects. These data should be collected to ensure accurate calculation of effective work and 2-year and 10-year peak flows at gage F-130. Compliance with the watershed-wide approach would be required within 15 years from the effective date of this Implementation Plan. If this watershed-wide compliance strategy is chosen, responsible entities will work collaboratively, but their responsibilities and requirements will be included in their individual regulatory mechanisms.
Monitoring	The TMDL monitoring program shall consist of two components: (1) TMDL effectiveness monitoring in the receiving water to assess implementation progress and attainment of numeric targets, and (2) compliance monitoring of discharges to determine compliance with the WLAs and LAs. Monitoring requirements shall be included in subsequent permits or other orders. **<u>TMDL Effectiveness Monitoring</u>** Responsible entities are responsible for developing and implementing a comprehensive TMDL Effectiveness monitoring plan within two years of the effective date of this Implementation Plan to assess numeric target attainment and to determine the effectiveness of implementation actions on receiving water quality. Monitoring shall commence within six months of approval of the TMDL effectiveness monitoring plan. 1. Nutrient TMDL Effectiveness Monitoring Responsible entities include the Las Virgenes-Triunfo JPA, the Ventura County Watershed Protection District, the County of Ventura, the County of Los Angeles, the County of Los Angeles Flood Control District, Caltrans, the City of Thousand Oaks, the City of Westlake Village, the City of Agoura Hills, the City of Calabasas, the City of Hidden Hills, the City of Malibu, the California Department of Parks and Recreation, and the National Park Service. Responsible entities shall outline a nutrient monitoring program for total nitrogen (organic-N + inorganic-N), total phosphorus, dissolved oxygen, pH, temperature, ammonia and chlorophyll a. Monitoring shall also include field observations for percent algae cover, the presence of scum/foam, the presence of odors, and whether Malibu Lagoon is open or closed to the ocean. The sampling frequency and locations must be adequate to assess beneficial use conditions and attainment of nutrient related water quality objectives. Monitoring locations should be located at the upstream and downstream ends of nutrient impaired 303(d) listed streams and at downstream ends of hydrologically-connected segments directly above their confluence with listed streams. At a minimum, nutrient monitoring shall be conducted monthly in Malibu Lagoon, the Malibu Lagoon inlet, Malibu Creek, Las Virgenes Creek, Medea Creek Reach 1 and Reach 2, and Lindero Creek Reach 1 and Reach 2. In addition, nutrient monitoring shall be conducted quarterly in Hidden Valley Creek, Potrero Valley Creek, Triunfo Creek Reach 1 and Reach 2, Palo Comado Creek, Chesebooro Canyon Creek, Stokes Creek, and Cold Creek. To account for the critical condition for dissolved oxygen, dissolved oxygen shall be monitored at pre-dawn. Responsible entities may request a reduction in the frequency of nutrient sampling after four years of sampling has been

conducted if justified based on a demonstration of no variability between sample events or consistent improvements in water quality.

2. Benthic TMDL Effectiveness Monitoring
   Responsible entities include the Las Virgenes-Triunfo JPA, the County of Los Angeles, the County of Los Angeles Flood Control District, Caltrans, the City of Agoura Hills, the City of Calabasas, the City of Hidden Hills, the City of Malibu, the California Department of Parks and Recreation, and the National Park Service. Responsible entities shall include a benthic monitoring program to collect invertebrate and physical habitat data for benthic community evaluations and stream health assessments using the SC-IBI bioscore and the CSCI, pMMI, and CA-O/E scores.
   The sampling frequency and locations must be adequate to assess the beneficial use condition and attainment of benthic-related water quality objectives. Monitoring locations should be located at the upstream and downstream ends of benthic impaired 303(d) listed streams. At a minimum, benthic monitoring shall be conducted annually in Las Virgenes Creek, Middle Malibu Creek, the Malibu Lagoon inlet, and Malibu Lagoon. Attainment of the benthic community diversity numeric targets will be calculated as an annual average. Attainment of the SC-IBI, CSCI, pMMI, CA-O/E numeric targets will be calculated as a median of four years of data to account for year-to-year variability.

Responsible entities may build upon existing monitoring programs in the Malibu Creek Watershed when developing the TMDL effectiveness monitoring plans. TMDL effectiveness monitoring requirements shall be incorporated into the regulatory mechanisms for each responsible entity upon issuance, renewal, or modification or through separate investigatory orders. Monitoring procedures, analysis, and quality assurance shall be SWAMP comparable and shall continue beyond the final implementation date of the TMDL unless the Executive Officer approves a reduction or elimination of such monitoring. Exceedances of the biological response numeric targets (percent algae cover, benthic community diversity, or biological scores) at the Malibu Lagoon inlet at frequencies greater than the averaging periods specified in the numeric targets section will trigger additional TMDL effectiveness monitoring and additional preventative activities to reduce nutrient and sediment loads to Malibu Lagoon through existing adaptive management processes in Regional Board orders such as the Los Angeles County MS4 permit and/or a reconsideration of this Implementation Plan.

Compliance Monitoring

To assess attainment of the nutrient and sedimentation WLAs and LAs, compliance monitoring shall include monitoring for total nitrogen (as defined by the 2003 TMDL or the 2013 TMDL), total phosphorus, TSS, and flow. The monitoring frequencies to comply with the WLAs and LAs are as follows:

- To demonstrate compliance with the nutrient WLAs for the Tapia WRF, nutrient monitoring shall be conducted monthly at the Tapia WRF discharge points, when discharging.
- To demonstrate compliance with the nutrient LAs for the Tapia WRF nonpoint source discharges, quarterly groundwater monitoring shall be incorporated into the WDRs for the Rancho Las Virgenes Farm spray fields to evaluate the quantity and quality of reclaimed water that re-enters the system through groundwater.
- To demonstrate compliance with the nutrient LAs for agriculture, dischargers shall monitor according to the requirements of Order No. R4-2016-0143 or other appropriate Regional Water Board order.
- To demonstrate compliance with the nutrient LAs for horse/livestock facilities, grazing operations, and golf courses, monitoring may consist of

	documentation of BMP implementation, and may include water quality monitoring as needed to determine the effectiveness of the BMPs in reducing nutrient loadings. o To demonstrate compliance with the nutrient LAs for OWTS, monitoring will be conducted in accordance with the local agencies' LAMPs. o To demonstrate compliance with the nutrient LAs for lake overflow, cooperative parties shall conduct monitoring as described in the nutrient implementation section. o To demonstrate compliance with the nutrient WLAs for MS4 discharges, monitoring will be conducted three times within the year during storm events and four times during non-storm events, with a minimum of two non-stormwater samples within the summer season. Stormwater monitoring will target the first significant rain event of the storm year. During dry weather, sampling shall occur a minimum of 72 hours after a storm event. MS4 permittees shall address the TMDL compliance monitoring requirements through their Monitoring Reporting Programs (MRPs). The Regional Board will modify the MRPs, or approve coordinated integrated monitoring program (CIMP) modifications proposed by permittees, to incorporate additional monitoring requirements to determine compliance with nutrient WLAs. Compliance monitoring will require MS4 permittees to include representative outfall and receiving water monitoring locations within their jurisdiction within the Malibu Creek watershed. o To demonstrate compliance with the sedimentation WLAs for Los Angeles County MS4 discharges, monitoring shall include flow and TSS during dry and wet weather to calculate the annual sediment load moving past gage F-130 if the individual compliance option is chosen. Dischargers shall modify their CIMPs to include sufficient sampling to accurately calculate the sediment load. Additional parameters that are more cost-effective or continuous may be useful to collect, such as turbidity. With a robust dataset, these can be used to develop statistical relationships and expand the extent of data. Upon approval by the Executive Officer, alternative parameters (based on statistical analyses) could be used to document compliance with the sedimentation WLAs. In addition, existing monitoring at gage F-130 conducted under other programs can be leveraged to assist in meeting these monitoring requirements. o To demonstrate compliance with the nutrient and sediment WLAs for Caltrans MS4 discharges, Caltrans will monitor according to the requirements of State Water Board Order No. 2012-0011-DWQ. o To demonstrate compliance with the sedimentation LA for the area above Malibou Lake, if the individual compliance option is chosen, responsible entities shall conduct monitoring as described in the sedimentation implementation section. o To demonstrate compliance with the sedimentation LA for the discharges from the unincorporated area along Las Virgenes Creek, if the individual compliance option is chosen, Ventura County shall conduct monitoring as described in the sedimentation implementation section. o To demonstrate compliance with the sedimentation LA for the discharges from the protected land below Malibou Lake and above F-130, if the individual compliance option is chosen, State Parks, and National Parks Service shall conduct monitoring as described in the sediment implementation section. o To demonstrate compliance with the sedimentation LAs and WLAs if the watershed-wide compliance option is chosen, responsible entities shall conduct monitoring as described in the sedimentation implementation section.

	Compliance monitoring shall be required through the regulatory mechanisms used to implement the sedimentation and nutrient WLAs and LAs. The monitoring procedures/methods, analysis, and quality assurance shall be SWAMP comparable where appropriate.

Table 7-42.2. Malibu Creek Nutrients TMDL and Malibu Creek and Lagoon Sedimentation and Nutrients TMDL to Address Benthic Community Impairments: Implementation Schedule

Task	Date*
The Regional Water Board will reconsider this Implementation Plan within five years of its effective date	5 years from the effective date of this Implementation Plan
Tapia WRF	
Tapia WRF shall attain nutrient LAs for indirect discharges	Upon the effective date of this Implementation Plan
Las Virgenes-Triunfo JPA shall submit a TMDL effectiveness monitoring plan for nutrients and benthic community evaluations individually or in collaboration with other responsible entities	Two years from the effective date of this Implementation Plan
Tapia WRF shall attain interim 2013 TMDL nutrient winter WLAs and final 2013 TMDL nutrient summer WLAs	Five years from the effective date of this Implementation Plan
Tapia WRF shall attain final 2013 TMDL nutrient winter WLAs	13.5 years from the effective date of this Implementation Plan
Los Angeles County MS4-whole Malibu Creek Watershed	
Los Angeles County MS4 permittees within the whole Malibu Creek Watershed shall submit a nutrient implementation plan or modify existing WMP or EWMP	By the next adaptive management process cycle after WLAs are incorporated into MS4 permit
Los Angeles County MS4 permittees within the whole MCW shall submit a TMDL effectiveness monitoring plan for nutrients and benthic community evaluations individually or in collaboration with other responsible entities	Two years from the effective date of this Implementation Plan
Los Angeles County MS4-above Malibou Lake	
Los Angeles County MS4 permittees above Malibou Lake shall attain their current permit limits for nutrients (as set forth in Order No. R4-2012-0175)	December 28, 2017
Los Angeles County MS4 permittees above Malibou Lake shall attain newly interpreted 2003 nutrient WLAs	July 15, 2026
Los Angeles County MS4-below Malibou Lake	
Los Angeles County MS4 permittees below Malibou Lake shall attain their current permit limits for nutrients (as set forth in Order No. R4-2012-0175)	December 28, 2017
Los Angeles County MS4 permittees below Malibou Lake shall attain 2013 nutrient WLAs	July 15, 2026
Los Angeles County MS4 permittees below Malibou Lake shall submit a sedimentation implementation plan	By the next adaptive management process cycle after WLAs are incorporated into MS4 permit
Los Angeles County MS4 permittees below Malibou Lake shall attain 2013 sedimentation WLAs (if watershed-wide approach is not chosen)	December 28, 2025

Task	Date*
Ventura County	
Ventura County shall submit a monitoring plan for the area along Los Virgenes Creek to determine the annual sediment load	One year from receipt of an investigative order
Ventura County MS4	
Ventura County MS4 permittees shall attain 2003 TMDL nutrient winter WLAs for MS4 discharges	Upon the effective date of this Implementation Plan
Ventura County MS4 permittees shall submit a MS4 nutrient implementation plan or WMP or EWMP	One year from the effective date of this Implementation Plan or as per the schedule for the WMP/EWMP under the MS4 permit if appropriate
Ventura County MS4 permittees shall submit a TMDL effectiveness monitoring plan for nutrients individually or in collaboration with other responsible entities	Two years from the effective date of this Implementation Plan
Ventura County MS4 permittees shall attain newly interpreted 2003 TMDL nutrient summer WLAs	5 years from the effective date of the Ventura County MS4 Permit adoption, renewal, or modification, but no later than 10 years from the effective date of this Implementation Plan
Caltrans-entire Malibu Creek Watershed	
Additional reaches subject to the 2003 and 2013 TMDLs shall be added to Attachment IV of Order No. 2012-0011-DWQ	Upon reopener of Order No. 2012-0011-DWQ consistent with provision E.11.b. of the Order
Caltrans shall submit a revised TMDL Reach Prioritization to include the 2013 TMDL impaired reaches that were omitted from the prioritization and to add the 2003 TMDL impaired reaches	Within a year of reopener of Order No. 2012-0011-DWQ
Caltrans shall submit a TMDL effectiveness monitoring plan for nutrients and benthic community evaluations individually or in collaboration with other responsible entities	Two years from the effective date of this Implementation Plan
Caltrans-above Malibu Creek Watershed	
Caltrans above Malibou Lake shall attain newly interpreted 2003 nutrient WLAs	According to the schedule in the revised TMDL Reach Prioritization, but no later than 2032
Caltrans-below Malibu Creek Watershed	
Caltrans below Malibou Lake shall attain final 2013 nutrient WLAs	According to the schedule in the revised TMDL Reach Prioritization, but no later than 2032
The area of the Caltrans MS4 below Malibou Lake shall attain 2013 sedimentation WLAs (if watershed-wide approach is not chosen)	December 28, 2025
Onsite Wastewater Treatment Systems	
Local agencies (city and county health departments and/or building departments) may submit a work plan for a study to determine which existing OWTS are contributing to the nutrient loading to any waterbody within the Malibu Creek Watershed for approval by the Executive Officer.	Three years from the effective date of the Implementation Plan

Task	Date*
Local agencies (city and county health departments and/or building departments) may complete the OWTS study and submit a final report to the Regional Water Board.	Five years from the effective date of the Implementation Plan
Owners of OWTS shall attain 2003 or 2013 nutrient LAs, depending on OWTS location	Ten years from the effective date of the Implementation Plan
Golf Courses	
Owners of golf courses shall attain 2003 or 2013 nutrient LAs	Five years from the effective date of the Implementation Plan
Agriculture	
Owners and/or operators of irrigated agricultural land shall attain 2003 and 2013 nutrient LAs	October 14, 2022
Horse/Livestock and Grazing	
Owners and/or operators of horse/livestock facilities and grazing operations shall attain 2003 and 2013 nutrient LAs	Five years from the effective date of the Implementation Plan
Lakes	
Cooperative parties for each lake shall submit a monitoring plan to determine the impact of lake overflows on nutrient loading downstream	One year from the receipt of an investigative order
Cooperative parties for the combined area upstream of Malibou Lake shall submit a monitoring plan to determine the annual sediment load from Malibou Lake	One year from receipt of an investigative order.
Protected Land below Malibou Lake	
State Parks and National Park Service shall attain 2013 sedimentation LAs (if watershed-wide approach is not chosen)	December 2025
2013 Sedimentation TMDL - All Responsible Parties	
If a watershed-wide approach is chosen all responsible parties for the sedimentation TMDL shall submit an implementation plan and a monitoring plan for a comprehensive approach to reduce sediment transport capacity by 38% watershed-wide	Two years from the effective date of this Implementation Plan
If a watershed-wide approach is chosen all responsible parties for the sedimentation TMDL shall attain a 38% reduction in sediment transport capacity at gage F-130 and implement stream restoration projects on eroding stream channels in the upper and lower watershed (above and below gage F-130) caused by the elevated work on the stream	15 years from the effective date of this Implementation Plan