Amendment to the Water Quality Control Plan – Los Angeles Region

to Incorporate the

Total Maximum Daily Load for Algae, Eutrophic Conditions, and Nutrients In the Ventura River and its Tributaries

Adopted by the California Regional Water Quality Control Board, Los Angeles Region on **[Insert date].**

Amendments:

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Chapter 7. Total Maximum Daily Loads (TMDLs)

List of Figures, Tables, and Inserts
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Chapter 7. Total Maximum Daily Loads (TMDLs)
Tables

Chapter 7. Total Maximum Daily Loads (TMDLs) Summaries
Add:
7-35 Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL

This TMDL was adopted by:

The Regional Water Quality Control Board on **[Insert date].**

This TMDL was approved by:

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

This TMDL is effective on **[Insert Date].**

The elements of the TMDL are presented in Table 7-35.1 and the Implementation Plan in Table 7-35.2.

Table 7-35.1. Ventura River and Tributaries Algae, Eutrophic Conditions, and Nutrients TMDL: Elements

TMDL Element	Regulatory Provisions
Problem Statement	The Ventura River Estuary and Reaches 1 and 2 are on the Clean Water Act (CWA) section 303(d) list as impaired for algae and eutrophic conditions. San Antonio Creek and Cañada Larga are on the CWA section 303(d) list as impaired for nitrogen and dissolved oxygen, respectively. Recent data confirm these impairments and demonstrate additional impairments for low dissolved oxygen in the Estuary, San Antonio Creek, and Reaches 1-4. The algae and nutrient-related impairments are caused by excessive loading of nutrients, particularly nitrogen and phosphorus, to Ventura River and its tributaries. The water quality impairments due to eutrophication and increased nutrient loading occur during the dry season when algae growth primarily occurs. For purposes related to this TMDL, the dry season is defined as occurring from May 1 to September 30. The water quality objectives used to assess impairment for this TMDL are the narrative water quality objective for biostimulatory substances and the numeric water quality objectives for dissolved oxygen (DO) and pH contained in Chapter 3. Nutrient loading and the resulting ecological responses in the Ventura River, including the Estuary, and its tributaries result in impairments of beneficial uses associated with recreation activities (water contact and non-contact) and aquatic life (warm and cold freshwater habitat; estuarine and wetland habitat; rare, threatened or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development). The most sensitive beneficial use is the cold water aquatic habitat use and the associated migratory and spawning and early development uses. The Ventura River and its tributaries are home to the Southern California Steelhead, which is an endangered species.

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td>Numeric Targets</td><td>The DO and pH numeric targets are set equal to their numeric water quality objectives in Chapter 3 of the Basin Plan. The numeric targets for algal and phytoplankton biomass and percent cover are established as a numeric interpretation of the water quality condition that will demonstrate attainment of the narrative water quality objective for biostimulatory substances contained in Chapter 3.

Numeric targets to interpret narrative water quality objectives are based on the California Nutrient Numeric Endpoints (NNE) approach, developed by USEPA Region 9 and the State and Regional Water Quality Control Boards.
<table>
<tr><th>Indicator</th><th>Numeric Target</th><th>Water body</th></tr>
<tr><td>Total Algal Biomass</td><td>150 mg/m^2 chlorophyll a as seasonal average</td><td>Ventura River and Tributaries</td></tr>
<tr><td>Macroalgal Cover (attached & unattached)</td><td>≤ 30 percent as seasonal average</td><td>Ventura River and Tributaries</td></tr>
<tr><td>Phytoplankton Biomass</td><td>20 µg/L chlorophyll a as seasonal average</td><td>Estuary (shallow subtidal area)</td></tr>
<tr><td>Macroalgal Cover</td><td>≤ 15 percent as seasonal average</td><td>Estuary (intertidal and shallow subtidal areas)</td></tr>
<tr><td>Dissolved Oxygen</td><td>≥ 7 mg/L as a daily minimum</td><td>Ventura River, Tributaries and Estuary</td></tr>
<tr><td>pH</td><td>6.5 – 8.5 (instantaneous value)</td><td>Ventura River, Tributaries, and Estuary</td></tr>
<tr><td colspan="3">Biomass and percent cover indicator targets apply during the dry season when algae growth primarily occurs. The seasonal averaging period for algal biomass and percent cover is the dry season of May 1 to September 30. River indicators are averaged over a sampling reach as required by the SWAMP monitoring protocol Bioassessment SOP 02. Estuary macroalgal cover is measured using 3 transects and evaluating percent cover at 10 random points along each transect. Results are reported as a transect average. See methods used in the Bight '08 Estuarine Eutrophication Assessment (McLaughlin K et al. Southern California Bight 2008 Regional Monitoring Program: Estuarine Eutrophication Assessment. Southern California Coastal Water Research Project. Costa Mesa, CA).</td></tr>
</table>
</td></tr>
<tr><td>Source Analysis</td><td>The source analysis is an estimate of the amount of TN and TP entering the river from point and nonpoint sources based on available information such as discharge nutrient concentration data, land use data, rainfall-runoff models, studies, and literature reviews.

<u>Point sources:</u>

Stormwater runoff discharged via the municipal separate storm sewer system (MS4) contributes a large percentage of the nutrients to the Ventura River and its tributaries (21.3% in dry weather and 28.3% in wet weather). The Ojai Valley waste water treatment plant (WWTP) contributes a large portion of nutrient loading in dry weather (37.6%) but a smaller portion in wet weather (1.7%).

<u>Nonpoint sources:</u>

Horses/livestock and agricultural land uses contribute significant loading in both dry weather (33.5%) and wet weather (36.1%). Open space loading is a</td></tr>
</table>

TMDL Element	Regulatory Provisions
	significant source of nutrients in wet weather (19.1%) and a smaller source of nutrients in dry weather (7.6%). Septic systems are estimated to contribute 4.7% of the annual nutrient load. Groundwater discharge and direct atmospheric deposition to the water surface are responsible for a small portion of the annual load (1.3% and 0.2%, respectively).
Linkage Analysis	The critical condition is the dry season and the linkage analysis for both the Ventura River and Estuary is for dry-weather conditions. Basing the linkage analysis on *dry-weather* conditions is a conservative approach to assessing conditions in the *dry season*. Nutrients are loaded from the watershed to the Ventura River and Estuary in both dry and wet weather, but the nutrients loaded in the dry season are predominately responsible for the algae, eutrophic conditions, and nutrient impairments in the Ventura River and Estuary. <u>Linkage analysis for the river</u> The linkage analysis for the river is based on the River and Stream Water Quality Model (QUAL2K). QUAL2K predicts the nutrient concentrations and algal biomass in the various reaches of the Ventura River based on an estimate of watershed-based loading. The results of the model are used to determine allowable in-stream nutrient concentrations to meet algal biomass targets and to evaluate various source reduction scenarios to set dry-weather load and waste load allocations. <u>Linkage analysis for the Estuary</u> The linkage analysis for the Estuary is based on two lines of evidence that establish the relationship between nutrient loading to the Estuary and the resulting nutrient concentrations and algal biomass in the Estuary. The first approach uses the NNE BATHTUB spreadsheet modeling tool to establish the linkage between nutrient loading to the Estuary and the predicted water quality response, assuming that the open water portion of the Estuary, formed by the closing of the berm in the late summer and early fall, acts like a freshwater reservoir. The second approach uses empirical relationships between nutrient loading and algal biomass (peak macroalgae biomass and annual average chlorophyll a) in estuaries developed as part of a 2008 Southern California Bight Regional Monitoring Program study. Both approaches predict that the current nutrient loading to the Estuary will attain the phytoplankton numeric target. Moreover, the watershed loading reductions required to protect the river will reduce nutrient concentrations delivered to the Estuary and ensure attainment of numeric targets and protection of beneficial uses.

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td>Allocations</td><td>
Waste load allocations (WLAs) and load allocations (LAs) addressing point and nonpoint sources of nutrients are assigned to discharges to the Ventura River watershed. Because the critical condition for this TMDL is dry weather, and it is the dry-weather loading that results in water quality impairments, the allocations are primarily focused on dry-weather nutrient loading reductions. However, wet-weather WLAs and LAs are assigned as well.

<u>Dry-weather Allocations</u>

The dry-weather WLAs for Ojai Valley WWTP are expressed as seasonal loads. The TN WLA is expressed as a summer dry-weather load based on an estimated 153 summer dry-weather days and a winter dry-weather load based on an estimated 178 winter dry-weather days. The TP WLA is expressed as a dry-weather load based on an estimated 331 dry-weather days. Dry-weather WLAs for the Ojai Valley WWTP are as follows:

<table>
<tr><th>Summer Dry-Weather TN WLA (lb/season)</th><th>Winter Dry-Weather TN WLA (lb/season)</th><th>Dry-Weather TP WLA (lb/season)</th></tr>
<tr><td>8,044</td><td>12,477</td><td>5,799</td></tr>
</table>

At the TMDL reconsideration, the Ojai Valley WWTP allocation may be revised (i.e. increased) if the Ojai WWTP has accepted additional flows from other watershed sources. The Ojai WWTP will document and report annually the number, flow and TN load from watershed sources for the Regional Board to consider as part of the TMDL reconsideration.

Dry-weather WLAs for Ventura County MS4 and Caltrans are expressed as daily loads based on an estimated 331 dry-weather days per year. Dry-weather WLAs for Ventura County MS4 and Caltrans are as follows:

<table>
<tr><th>Source Type</th><th>Dry-Weather WLA (lb/day)</th><th>Dry-Weather TP WLA (lb/day)</th></tr>
<tr><td>Dry-weather WLAs for Ventura MS4</td><td>28</td><td>0.26</td></tr>
<tr><td>Dry-weather WLAs for Caltrans</td><td>1.1</td><td>0.11</td></tr>
</table>

The dry-weather WLAs for the general industrial and construction stormwater permittees are equal to the in-stream nutrient concentrations required to meet algal biomass numeric targets. Dry-weather WLAs for general industrial and construction stormwater permittees are as follows:

<table>
<tr><th>Permittee</th><th>TN (mg/L)</th><th>TP (mg/L)</th></tr>
<tr><td>General Industrial Stormwater Permittees</td><td>1.15</td><td>0.115</td></tr>
<tr><td>General Construction Stormwater Permittees</td><td>1.15</td><td>0.115</td></tr>
<tr><td colspan="3">Applied as an annual dry-weather average.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td></td><td>
Dry-weather LAs for Agriculture are expressed as daily loads based on an estimated 331 dry-weather days per year as follows:
<table>
<tr><th>Source Type</th><th>Dry-Weather TN WLA (lb/day)</th><th>Dry-Weather TP WLA (lb/day)</th></tr>
<tr><td>Agriculture</td><td>16</td><td>0.06</td></tr>
</table>
Dry-weather LAs for Horse facilities and intensive livestock operations are expressed as daily loads based on an estimated 331 dry-weather days per year as follows:
<table>
<tr><th>Source Type</th><th>Dry-Weather TN WLA (lb/day)</th><th>Dry-Weather TP WLA (lb/day)</th></tr>
<tr><td>Horse facilities/Intensive Livestock</td><td>0.6</td><td>0.14</td></tr>
</table>
The dry-weather LA for grazing activities is equal to a 10% percent reduction of the existing TN and TP load. The existing load will be quantified as part of management plans required to implement the TMDL.

<u>Dry- and Wet-weather LAs for OWTS</u>

LAs for OWTS are equal to 7,478 pounds TN per year based on a required 50% reduction in loading. The LAs apply in dry and wet weather. No LAs are assigned to OWTS for TP.

<u>Dry- and Wet-weather WLAs for Other NPDES permittees</u>

Dry-weather WLAs for other NPDES permittees are equal to the in-stream nutrient concentrations required to meet algal biomass numeric targets of 1.15 mg/L TN and 0.115 mg/L TP. Wet-weather allocations are set to attain site-specific nitrogen water quality objectives from Table 3-8. There are no site-specific objectives for Reach 1 or the Estuary, nor are there any “Other NPDES permittees” that discharge to Reach 1 or the Estuary. Thus, there are no wet-weather WLAs assigned to Other NPDES permittees for Reach 1 or the Estuary.

<u>Wet-weather Allocations</u>

Wet-weather allocations for stormwater, agriculture, and horse/livestock sources are set to attain site-specific water quality objectives from Table 3-8 of the Basin Plan, provided in the table below. There are no site-specific objectives for Reach 1 or the Estuary. For Reach 1 and the Estuary, Wet-weather WLAs for stormwater sources are equal to existing water quality in stormwater discharges (maximum TN = 4.6 mg/L) and LAs for agriculture and horse/livestock sources are equal to water quality benchmarks of 10 mg/L nitrate-N + nitrite-N in the Agriculture Waiver.
</td></tr>
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<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td></td><td>
Wet-weather allocations for stormwater, agriculture, and horse/livestock sources are as follows:
<table>
<tr><th>Reach</th><th>Nitrate-N + Nitrite-N (mg/L)</th></tr>
<tr><td>Estuary</td><td>*</td></tr>
<tr><td>Reach 1</td><td>*</td></tr>
<tr><td>Reach 2</td><td>10</td></tr>
<tr><td>Cañada Larga</td><td>10</td></tr>
<tr><td>Reach 3</td><td>5</td></tr>
<tr><td>San Antonio Creek</td><td>5</td></tr>
<tr><td>Reach 4</td><td>5</td></tr>
<tr><td>Reach 5</td><td>5</td></tr>
</table>
*WLAs for stormwater are equal to 4.6 mg/ L TN and LAs for agriculture and horse/livestock sources are equal to 10 mg/L nitrate-N + nitrite-N.

Wet-weather WLAs for the Ojai Valley WWTP are based on existing performance of the facility. Existing performance was calculated as the 90th percentile of the last 12 years of effluent data.

Wet-weather WLAs for Ojai Valley WWTP
<table>
<tr><th>TN (mg/L)</th><th>TP (mg/L)</th></tr>
<tr><td>7.6</td><td>2.6</td></tr>
</table>
</td></tr>
<tr><td>Margin of Safety</td><td>The sources of uncertainty in this TMDL are related to the selection of the algal biomass target, the relationship between nutrient concentrations and algal biomass in freshwater river systems and estuaries, the estimate of watershed-based nutrient loading, and the model-predicted water quality conditions in the receiving water. These areas of uncertainty are addressed with both an implicit margin of safety that includes conservative assumptions made when estimating watershed-based nutrient loading and the assignment of dry-weather allocations to address a dry-season impairment, and an explicit margin of safety calculated as the difference between the model-predicted maximum concentration in-stream after implementation of reduction scenarios and the desired in-stream concentrations. The explicit margin of safety was calculated as seven percent.</td></tr>
<tr><td>Seasonal Variations and Critical Conditions</td><td>This TMDL addresses impairments that are causing exceedances of the biostimulatory substances water quality objective during the dry season, when algae growth primarily occurs, in the Ventura River, the Estuary and its tributaries. The critical condition is the dry season. Nutrients are loaded from the watershed to the Ventura River and its tributaries, and the Estuary in both dry and wet weather, but the nutrients loaded in the dry season are predominately responsible for the algae, eutrophic conditions, and nutrient impairments. Nutrient</td></tr>
</table>

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	concentrations present in the river during the winter months are sufficient to support algal growth; however, cofactors in the winter, such as greater flow and lower temperatures, mitigate algal growth in the winter. Also, the typical seasonal succession of primary producers generally shifts in the winter to be dominated by aquatic plants. The watershed nutrient wet-weather loads are generally delivered directly to the ocean and thus do not contribute to exceedance of the biostimulatory substances objective in the river or Estuary, which occurs during the dry season when algae growth primarily occurs. Nonetheless, to protect water quality year-round, wet-weather WLAs and LAs are assigned to meet water quality objectives and/or maintain existing discharge quality.
Monitoring	The TMDL monitoring program consists of three components: 1) receiving water monitoring, 2) discharge monitoring, and 3) optional special studies. All monitoring requirements may be included in subsequent permits or other orders and are subject to Executive Officer approval. <u>Receiving Water Monitoring</u> Responsible parties (Ojai Valley Sanitary District, Ventura County Watershed Protection District, Ventura County, City of Ojai, City of Ventura, Caltrans, and agricultural dischargers) are responsible for developing and implementing a comprehensive monitoring plan to assess numeric target attainment and measure in-stream nutrient concentrations. Responsible parties are encouraged to work together to submit a joint watershed wide plan. After horse and livestock owners are covered by a regulatory mechanism to implement their assigned LAs, they shall participate in the implementation of the watershed-wide monitoring plan or submit their own plan. The monitoring plan should outline a program to sample for algal biomass, algal percent cover, nutrients (total and dissolved), *in situ* water quality parameters (dissolved oxygen, pH, temperature, electrical conductivity), and flow for the river and estuary. Monitoring should include visual observations documenting whether the Estuary is open or closed. The monitoring procedures/methods, analysis, and quality assurance shall be SWAMP comparable, where appropriate. The sampling frequency and locations must be adequate to assess beneficial use condition and attainment of applicable water quality objectives. At a minimum, for algal biomass and percent cover, the monitoring frequency shall be once per month in the dry season (May 1st to September 30th). After two years, if a significant difference between monthly algal biomass measurements is not observed, algal biomass monitoring may be reduced to three times per dry season, during the months of May, July, and September. DO and pH shall be measured continuously for two week periods on a quarterly basis. Continuous monitoring of DO and pH shall occur during the months of May and September in the 2nd and 3rd quarters. . All other parameters shall be monitored monthly. River indicators shall be averaged over a sampling reach as described in the SWAMP monitoring protocol - Bioassessment SOP 02. Estuary macroalgal cover is measured using three transects and evaluating percent cover at 10 random points along each transect. Results are reported as a transect average.

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	See methods used in the Bight '08 Estuarine Eutrophication Assessment (McLaughlin K et al. Southern California Bight 2008 Regional Monitoring Program: Estuarine Eutrophication Assessment. Southern California Coastal Water Research Project. Costa Mesa, CA). Existing receiving water monitoring conducted under other programs can be leveraged to assist in meeting these monitoring requirements. Responsible parties may build upon existing monitoring programs in the Ventura River watershed when developing the receiving water quality monitoring plan for this TMDL. Receiving water monitoring requirements shall be incorporated into the permit, waste discharge requirements (WDRs), or waiver for each responsible party upon issuance, renewal, or modification. The responsible parties may continue to coordinate a watershed-wide monitoring program to meet this requirement in order to fulfill individual permit, WDR, or waiver requirements. Receiving water monitoring shall continue beyond the final implementation date of the TMDL unless the Executive Officer approves a reduction or elimination of such monitoring. <u>Discharge Monitoring</u> Discharge monitoring will assess attainment of the WLAs and LAs. Discharge monitoring shall be required by regulatory mechanisms used to implement the WLAs and LAs. The monitoring to determine compliance with WLAs and LAs shall be conducted as specified in the Implementation Plan in the following section. The monitoring procedures/methods, analysis, and quality assurance shall be Surface Water Ambient Monitoring Program (SWAMP) comparable, where appropriate, and are subject to Executive Officer Approval. <u>Special Studies</u> Responsible parties within the watershed may conduct optional special studies designed to refine WLAs, LAs, and/or numeric targets. The results of special studies and monitoring may be used to revise numeric targets and allocations, if supported, when the TMDL is reconsidered. The following are potential special studies. ▪ Build upon the algal biomass and total nitrogen relationship established in the 2008 UCSB Study (UCSB, 2009) and collect data to support the establishment of reach-specific relationships. ▪ Confirm the conclusion that an algal biomass target of 150 mg/m^2 is fully protective of aquatic life and minimizes the risk of low DO events. ▪ Collect additional source assessment information and model input data to refine model-predicted relationships between watershed loading and in-stream nutrient concentrations. ▪ Investigate the influence of OWTS on surface water quality. ▪ Collect data to support development of an estuary model, which takes into account tidal influence, the dynamics of macroalgae and phytoplankton growth, residence time, and breaching conditions.

<table>
<tr><th>TMDL Element</th><th>Regulatory Provisions</th></tr>
<tr><td>Implementation Plan</td><td>
<u>WLA Implementation</u>

The regulatory mechanisms used to implement the WLAs include the Ojai Valley WWTP NPDES permit, the Ventura County MS4 permit, the Caltrans MS4 permit, the general industrial storm water permits, the general construction storm water permits, and other NPDES permits. Effluent limits consistent with the assumptions and requirements of the WLAs shall be incorporated into each permit, following the effective date of this TMDL, at the time of permit issuance, modification, or renewal.

<u>Ojai Valley WWTP</u>

The dry-weather TN WLAs for the Ojai WWTP shall be incorporated into the permit as seasonal numeric effluent limitations. The summer dry-weather effluent limitation shall be equal to the summer dry-weather WLA of 8,044 lbs/season (May 1 to September 30). Compliance with the summer dry-weather effluent limitation shall be determined by calculating the sum of the products of the average monthly TN concentration and the daily flow for each dry-weather day, over the summer season. The winter dry-weather WLA and wet-weather WLA shall be combined into a single concentration-based winter season effluent limitation, calculated as the weighted average of 4 mg/L (the allowable winter dry-weather concentration) and 7.6 (the allowable wet-weather concentration), based on the assumption that there are 178 winter dry-weather days and 34 wet-weather days in a year. The resulting concentration of 4.6 mg/L shall be expressed as a monthly effluent limitation from October 1 to April 30. This calculation is consistent with the assumptions and requirements of the winter dry-weather and wet-weather WLAs.

For TP, compliance with the dry-weather WLA-based effluent limitation shall be determined by calculating the sum of the products of the monthly average TP concentration and the daily flow for each dry-weather day, over an annual period. Wet-weather days shall be excluded from the dry-weather WLA compliance determination.

The wet-weather WLAs shall be incorporated as effluent limitations, expressed as a daily maximum concentration, to be assessed at a minimum with monthly sampling during months when rain occurs. Ojai WWTP shall achieve compliance with wet-weather WLAs upon incorporation into the permit and shall achieve compliance with dry-weather WLAs within 10 years of the effective date of the TMDL. Ojai Valley WWTP shall have interim dry-weather WLAs based on current plant performance; i.e., equal to wet-weather WLAs.

Ojai Valley WWTP interim dry-weather WLAs
<table>
<tr><th>TN (mg/L)</th><th>TP (mg/L)</th></tr>
<tr><td>7.6</td><td>2.6</td></tr>
</table>
</td></tr>
</table>

TMDL Element	Regulatory Provisions
	Ventura County MS4 and Caltrans The WLAs for the Ventura County MS4 permittees and Caltrans shall be incorporated into the permits as numeric water quality-based effluent limitations. Permittees may be deemed in compliance with water-quality based effluent limitations if they demonstrate that (1) there are no violations of the water quality-based effluent limitation at the Permittee's applicable MS4 outfall(s); or (2) there is no direct or indirect discharge from the Permittee's MS4 to the receiving water during the time period subject to the water quality-based effluent limitation. Wet-weather numeric effluent limitations shall be expressed as event mean concentrations and shall apply immediately upon issuance, modification, or renewal of the permits. Compliance with wet-weather WLAs shall be assessed at a minimum with two wet-weather sampling events per year. If permittees provide a quantitative demonstration that watershed control measures and BMPs will achieve wet-weather water quality-based effluent limitations, then compliance with wet-weather water quality-based effluent limitations can be determined by implementing those actions, subject to Executive Officer approval. Dry-weather numeric effluent limitations shall be assessed at a minimum with quarterly sampling and shall be attained within 6 years of the effective date of the TMDL. Compliance will only be assessed on the day of sampling. Dry-weather sampling may occur 72 hours after a storm event. Consistent with the assumptions of the dry-weather waste load allocations, compliance with water quality-based effluent limitations may be demonstrated with area-weighted effluent limitations. Area-weighted effluent limitations shall be 0.0025 lb/day/acre TN and 2.3×10^{-5} lb/acre/day TP for the Ventura County MS4, and 0.0042 lb/acre/day TN and 4.2×10^{-4} lb/acre/day TP for Caltrans, derived by dividing the daily loads by the total land use area in the watershed covered by their respective permits (11,085 acres for the Ventura County MS4 and 251 acres for Caltrans, excluding the Coyote Creek subwatershed). Ventura County MS4 permittees and Caltrans shall provide an implementation plan to the Regional Board outlining how they intend to achieve compliance with the WLAs. The report shall include implementation methods and a quantitative analysis of the expected water quality outcomes of the implementation methods, an implementation schedule, proposed interim milestones, and compliance points. The report shall provide reasonable assurance that implementation methods will be sufficient to achieve the WLAs. General Industrial and Construction Stormwater Permittees The dry- and wet-weather WLAs for the general and industrial stormwater permittees shall apply immediately upon permit issuance, modification, or renewal and shall be incorporated into permits as numeric water quality-based effluent limitations. Wet-weather effluent limitations shall be expressed as event mean concentrations and dry-weather effluent limitations shall be expressed as instantaneous maximums. Compliance with wet-weather WLAs shall be assessed

TMDL Element	Regulatory Provisions
	at a minimum with one wet-weather sampling event. Compliance with dry-weather WLAs shall be assessed at a minimum by averaging the results of two grab samples. Other NPDES Permittees The dry- and wet-weather WLAs for other NPDES permittees shall apply immediately upon permit issuance, modification, or renewal of applicable permits and shall be incorporated into permits as numeric effluent limitations. Wet-weather effluent limitations shall be expressed as event mean concentrations and dry-weather effluent limitations shall be expressed as instantaneous maximums. Compliance with wet-weather WLAs shall be assessed at a minimum with one wet-weather sampling event. Compliance with dry-weather WLAs shall be assessed at a minimum with two grab samples. LA Implementation The regulatory mechanisms that will be used to implement the LAs include Basin Plan discharge prohibitions, WDRs, and waivers of WDRs. Agricultural Discharges The LAs for irrigated agricultural lands shall be implemented through the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands or other appropriate Regional Board order. Agricultural lands shall achieve compliance with dry- and wet-weather LAs within 6 years of the effective date of the TMDL. To implement the LAs in this TMDL, the monitoring program shall be revised to add representative sites in the lower watershed to monitor runoff from other crop types. In addition, VCAILG shall work with the Regional Board staff to relocate monitoring sites in the upper watershed to better assess potential dry-weather runoff from agriculture. The existing monitoring program for the Agriculture Waiver requires two dry-weather and two wet-weather sampling events. In order to implement the dry-weather LAs, dry-weather sampling may occur 72 hours after a storm event. The revised monitoring program shall be subject to approval by the Executive Officer. To assist in implementation of LAs, area-weighted benchmarks can be applied; if used, they shall be 0.008 lb/day/acre TN and 3.2×10^{-5} lb/acre/day TP, derived by dividing the daily loads by the total agriculture area in the watershed (1971 acres, excluding orchards and the Coyote Creek subwatershed). Order No. 2010-0186 states, "It is expected that source control management practices, such as improved irrigation efficiency and fertilizer management, employed by Dischargers to attain surface Water Quality Benchmarks will reduce loading to groundwater as well." To implement this TMDL, the VCAILG water quality management plan shall specify that all growers in the Ventura River watershed shall implement nutrient-related source control BMPs. If the LAs are

TMDL Element	Regulatory Provisions
	implemented in another Regional Board order in the future, then that order shall require growers in the Ventura River watershed to implement nutrient-related source control BMPs. The estimated costs for BMPs 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. <u>OWTS</u> The LAs for OWTS shall be implemented through discharge prohibitions, WDRs, or waivers of WDRs. Commercial and multifamily OWTS are currently regulated by the Regional Board through WDRs. Single family residential OWTS are currently regulated by the City of Ojai, the City of Ventura, and the County of Ventura, as specified in memorandums of understanding (MOUs) with the Regional Board, in order to implement a waiver of WDRs for single family residential OWTS adopted by the Regional Board in 2004. The MOUs require the Regional Board to evaluate the local agency every five years to ensure their municipal plumbing code and OWTS program is substantially equivalent to any statewide standards adopted pursuant to California Water Code sections 13290 and 13291. The State Water Resources Control Board (State Board) Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy) was adopted by the State Board to comply with California Water Code sections 13290 and 13291 on June 19, 2012. The OWTS Policy must be approved by the Office of Administrative Law before it becomes final and in effect. The OWTS in the Ventura River watershed fall under Tier 3 of the OWTS policy and this TMDL establishes the Advanced Protection Management Program for the watershed. The geographic area for the Advanced Protection Management Programs to implement this TMDL shall initially be the entire Ventura River watershed. The Regional Board will work with local agencies to determine which existing OWTS or areas of OWTS are contributing to the overall loading from OWTS to the Ventura River and its tributaries. Areas found not to be contributing to the overall loading may be removed from the Advanced Protection Management Program as approved in a Local Agency Management Program. Existing OWTS are required to be upgraded or modified to enhance their nitrogen removal or meet other requirements of the Advanced Protection Management Program if it is determined they are contributing to the impairment, and are subsequently covered under approved special provisions of a Local Agency

TMDL Element	Regulatory Provisions
	Management Program, or the Regional Board issues subsequent orders requiring upgrades or modifications. Existing OWTS will remain regulated by existing MOUs and future Local Agency Management Programs until the above determination is made and subsequent upgrades are required. New or replacement OWTS installations, as defined by the OWTS Policy upon its becoming effective, that are within the Advanced Protection Management Program area, shall meet the supplemental treatment requirements for nitrogen per Tier 3 of the OWTS Policy. The Regional Board will evaluate the existing MOUs and any future submittal of a Local Agency Management Program under the OWTS Policy with the City of Ventura, the City of Ojai, and the County of Ventura to determine if their OWTS programs need to be updated to reflect the OWTS Policy, or if additional changes are needed to implement the LAs. OWTS dischargers shall achieve compliance with dry- and wet-weather LAs within 10 years of the effective date of the TMDL. <u>Horse and Livestock Activities</u> The LAs for horse and livestock facilities shall be regulated by WDRs or waivers of WDRs. Horse and livestock facilities shall be required to conduct monitoring and develop management plans that will assess baseline water quality discharged from their facilities, determine reductions needed to attain LAs, and implement management measures to attain LAs. Compliance with LAs will be demonstrated at monitoring sites approved by the Executive Officer of the Regional Board through the monitoring program developed as part of the waiver or WDR, or through a monitoring program that is required to implement this TMDL in the event a waiver or WDR is not adopted. Horse and livestock facilities shall achieve compliance with dry- and wet-weather LAs within 10 years of the effective date of the TMDL.

Table 7-35.2. Ventura River, Ventura River Estuary, and Tributaries Algae, Eutrophic Conditions and Nutrients TMDL: Implementation Schedule

Task	Due Date
Submit results of optional special studies	4 years after effective date of TMDL
Reconsider TMDL to revise numeric targets and allocations if supported by special studies or other changes in the watershed.	5 years after effective date of TMDL
Ojai Valley Sanitary District	
Wet-weather and interim dry-weather WLAs apply	Effective date of TMDL
Submit receiving water monitoring plan to assess numeric target attainment and measure in-stream nutrient concentrations	1 year after effective date of TMDL
Initiate receiving water monitoring plan	90 days after approval of monitoring plan
Discharge monitoring plan incorporated into permit	Upon permit adoption, renewal, or modification
Dry-weather WLA apply	No later than 10 years after effective date of TMDL*
Ventura County MS4 Permittees and Caltrans	
Wet-weather WLAs apply	Effective date of TMDL
Discharge monitoring plan incorporated into permit	Upon permit adoption, renewal, or modification
Submit monitoring plan to assess numeric target attainment and measure in-stream nutrient concentrations.	1 year after effective date of TMDL
Initiate receiving water monitoring plan	90 days after approval of monitoring plan
Submit implementation plan to achieve compliance with the WLAs. The plan shall include implementation methods, an implementation schedule, proposed interim milestones, and compliance points.	2 years after effective date of TMDL
Dry-weather WLAs apply	6 years after effective date of TMDL
General Industrial and Construction Stormwater Permittees	
Wet-weather and dry-weather WLAs apply	Effective date of TMDL
Discharge monitoring plan incorporated into permit	Upon permit adoption, renewal, or modification
Other NPDES Permittees	
Wet-weather and dry-weather WLAs apply	Effective date of TMDL
Discharge monitoring plan incorporated into permit	Upon permit adoption, renewal, or modification

Task	Due Date
Agricultural Discharges	
Discharge monitoring plan incorporated into Agriculture Waiver or other order or waiver	Upon adoption, renewal, or modification
Submit monitoring plan to assess numeric target attainment and measure in-stream nutrient. concentrations.	1 year after effective date of TMDL
Initiate receiving water monitoring plan	90 days after approval of monitoring plan
Wet-weather and dry-weather WLAs apply	6 years after effective date of TMDL
Onsite Waste Water Treatment Systems	
Wet-weather and dry-weather WLAs apply	10 years after effective date of TMDL
Horse/Livestock Owners	
Discharge monitoring plan submitted as part of waiver requirement or in response to Regional Board order	5 years after effective date of TMDL
Conduct receiving water monitoring to assess numeric target attainment and measure in-stream nutrient concentrations	5 years after effective date of TMDL
Wet-weather and dry-weather WLAs apply	10 years after effective date of TMDL

* If TMDL reconsideration results in more stringent WLAs, then the implementation schedule for OVSD may be extended, if necessary, by only the amount of time required to upgrade treatment processes to meet the more stringent WLAs.