

**Amendment to the Water Quality Control Plan – Los Angeles Region
to Incorporate a Total Maximum Daily Load for
Nutrients in the Santa Clara River Lakes (Elizabeth Lake, Lake Hughes, and Munz Lake)**

Adopted by the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) on [Date]

Amendments:

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**Chapter 7. Total Maximum Daily Loads (TMDLs)
Santa Clara River Lakes Nutrient TMDL**

This TMDL was adopted by:

The Los Angeles Water Board on [date]

This 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]

This TMDL is effective on [date]

The elements of the TMDL are presented in Table 7-41.1 and the Implementation Plan in Table 7-41.2

Table 7-41.1. Santa Clara River Lakes Nutrient TMDL: Elements

TMDL Element	Regulatory Provisions
Problem Statement	<p>The Santa Clara River Lakes (Elizabeth Lake, Lake Hughes, and Munz Lake) are impacted by water quality problems stemming from eutrophication. The eutrophic condition is due to excess nutrients (nitrogen and phosphorus) in the lakes. The nutrient enrichment results in high algal productivity and macrophyte growth. Algal respiration and decay deplete oxygen from the water column, creating an adverse aquatic environment. Likewise, the decay of algal blooms and other eutrophic-related impairments can create offensive odors leading to a nuisance and an unpleasant environment.</p> <p>Elizabeth Lake is on the Clean Water Act Section 303(d) list for eutrophic conditions, pH, low dissolved oxygen, and organic enrichment. Lake Hughes is on the 303(d) list for algae, eutrophic conditions, fish kills, and odor. Munz Lake is on the 303(d) list for eutrophic conditions. This nutrient TMDL addresses all of these listings.</p> <p>The nutrient-related listings affect the water contact recreation (REC1), non-contact water recreation (REC2), warm freshwater habitat (WARM), and wildlife habitat (WILD) beneficial uses of all three Santa Clara River Lakes. In addition, the nutrient-related listings also affect the rare/threatened/endangered species (RARE) beneficial use of Elizabeth Lake, and the groundwater recharge (GWR) beneficial use of Munz Lake.</p>
Numeric Targets	<p>The dissolved oxygen and pH numeric targets are set equal to their numeric water quality objectives in Chapter 3 of the Basin Plan. The numeric targets for chlorophyll <i>a</i> 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. Numeric targets for total nitrogen and total phosphorus are based on simulation of allowable concentrations from the NNE BATHTUB spreadsheet model. The following tables provide the numeric targets for the Santa Clara River Lakes.</p>

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TMDL Element	Regulatory Provisions	
Numeric Targets (continued)	ELIZABETH LAKE	
	Parameter	Numeric Target
	Chlorophyll <i>a</i>	≤20 µg/L summer average (May – September) and annual average
	Dissolved Oxygen	≥7 mg/L minimum mean annual ≥5 mg/L single sample minimum
	pH	The pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of waste discharge.
	Total Nitrogen	≤1.13 mg N/L summer average (May – September) and annual average
	Total Phosphorous	≤0.113 mg P/L summer average (May – September) and annual average
	LAKE HUGHES	
	Parameter	Numeric Target
	Ammonia	≤1.56 mg NH ₃ -N/L one-hour average ≤1.41 mg NH ₃ -N/L four-day average ≤0.56 mg NH ₃ -N/L 30-day average
	Chlorophyll <i>a</i>	≤20 µg/L summer average (May – September) and annual average
	Dissolved Oxygen	≥7 mg/L minimum mean annual ≥5 mg/L single sample minimum
	Total Nitrogen	≤1.13 mg N/L summer average (May – September) and annual average
	Total Phosphorous	≤0.113 mg P/L summer average (May – September) and annual average
	MUNZ LAKE	
	Parameter	Numeric Target
	Chlorophyll <i>a</i>	≤20 µg/L summer average (May – September) and annual average
	Total Nitrogen	≤1.13 mg N/L summer average (May – September) and annual average
	Total Phosphorous	≤0.113 mg P/L summer average (May – September) and annual average

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TMDL Element	Regulatory Provisions																								
Source Analysis	<p>The major nonpoint source of nutrients to Elizabeth Lake and Lake Hughes is internal nutrient loading (nutrient flux from sediments). This source constitutes over 99% of the total phosphorus and total nitrogen loading in Elizabeth Lake and Lake Hughes. Another nonpoint source of nutrients to Elizabeth Lake and Lake Hughes is onsite wastewater treatment systems (OWTS). The Lake Hughes Community Wastewater Treatment Facility is a nonpoint source of nutrients to Lake Hughes. Runoff from surrounding areas is a nonpoint source of nutrients to all of the Santa Clara River Lakes. Direct atmospheric deposition is also a nonpoint source of nitrogen to all of the Santa Clara River Lakes.</p> <p>The point sources of nutrients into the Santa Clara River Lakes are discharges from storm drains, including discharges from the municipal separate storm sewer system (MS4).</p>																								
Linkage Analysis	<p>The linkage analysis focuses on the relationship between the nutrient loading to the Santa Clara River Lakes and the numeric targets established to meet water quality objectives. The NNE BATHTUB model was used to establish the linkage between nutrient loading to the Santa Clara River Lakes and the predicted water quality response. BATHTUB is a steady-state model that calculates nutrient concentrations, chlorophyll <i>a</i> concentration, turbidity, and hypolimnetic oxygen depletion based on nutrient loading, hydrology, lake morphometry, and internal nutrient cycling processes. The linkage analysis demonstrates that assigning waste load allocations and load allocations for total nitrogen and total phosphorus will address the eutrophication-related water quality impairments in the Santa Clara Lakes.</p>																								
Waste Load Allocations	<p>The table below presents the waste load allocations (WLAs) for total phosphorus and total nitrogen assigned to storm drain discharges to the Santa Clara River Lakes.</p> <table border="1" data-bbox="412 1444 1455 1640"> <thead> <tr> <th rowspan="2">Lake</th> <th colspan="2">Total Phosphorus (lb-P/yr)</th> <th colspan="2">Total Nitrogen (lb-N/yr)</th> </tr> <tr> <th>Allocation</th> <th>% Reduction</th> <th>Allocation</th> <th>% Reduction</th> </tr> </thead> <tbody> <tr> <td>Munz Lake</td> <td>29.1</td> <td>11.7%</td> <td>142.1</td> <td>22.8%</td> </tr> <tr> <td>Elizabeth Lake</td> <td>436.7</td> <td>18.7%</td> <td>2536.8</td> <td>19.8%</td> </tr> <tr> <td>Lake Hughes</td> <td>106.6</td> <td>3.2%</td> <td>520.8</td> <td>20.7%</td> </tr> </tbody> </table>	Lake	Total Phosphorus (lb-P/yr)		Total Nitrogen (lb-N/yr)		Allocation	% Reduction	Allocation	% Reduction	Munz Lake	29.1	11.7%	142.1	22.8%	Elizabeth Lake	436.7	18.7%	2536.8	19.8%	Lake Hughes	106.6	3.2%	520.8	20.7%
Lake	Total Phosphorus (lb-P/yr)		Total Nitrogen (lb-N/yr)																						
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Elizabeth Lake	436.7	18.7%	2536.8	19.8%																					
Lake Hughes	106.6	3.2%	520.8	20.7%																					
Load Allocations	<p>The following tables present the load allocations (LAs) assigned to nonpoint source discharges to the Santa Clara River Lakes. Load allocations are assigned to internal loads (in Elizabeth Lake and Lake Hughes), nonpoint source runoff, onsite wastewater treatment systems, the Lake Hughes Community Wastewater Treatment Facility, and direct atmospheric deposition to the lakes' surface.</p>																								

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TMDL Element	Regulatory Provisions				
	ELIZABETH LAKE				
		Total Phosphorus (lb-P/yr)		Total Nitrogen (lb-N/yr)	
	Input	Allocation	% Reduction	Allocation	% Reduction
	Nonpoint source runoff from drainage area encompassed by Angeles National Forest	22.1	18.7%	191.4	19.8%
	Nonpoint source runoff from drainage area within County of Los Angeles	39.4	18.7%	359.0	19.8%
	Onsite wastewater treatment systems	130.1	18.7%	770.3	19.8%
	Internal loading (in-lake sediments)	2,166.0	99.7%	11,042.2	99.97%
	Atmospheric deposition (to the lake surface)	NA	NA	28.9	19.8%
	Total	2,357.6	99.7%	12,391.8	99.97%
	LAKE HUGHES				
		Total Phosphorus (lb-P/yr)		Total Nitrogen (lb-N/yr)	
	Input	Allocation	% Reduction	Allocation	% Reduction
	Nonpoint source runoff from drainage area encompassed by Angeles National Forest	3.6	3.2%	27.6	20.7%
	Lake Hughes Community Wastewater Treatment Facility	1.4	3.2%	138.2	20.7%
	Onsite wastewater treatment systems	1.9	3.2%	11.1	20.7%
	Internal loading (in-lake sediments)	197.3	99.6%	956.4	99.99%
	Atmospheric deposition (to the lake surface)	NA	NA	5.0	20.7%
	Total	204.3	99.6%	1,138.4	99.99%

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TMDL Element	Regulatory Provisions																																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="5" style="text-align: center; background-color: #e0e0e0;">MUNZ LAKE</th> </tr> <tr> <th rowspan="2" style="text-align: center; background-color: #e0e0e0;">Input</th> <th colspan="2" style="text-align: center; background-color: #e0e0e0;">Total Phosphorus (lb-P/yr)</th> <th colspan="2" style="text-align: center; background-color: #e0e0e0;">Total Nitrogen (lb-N/yr)</th> </tr> <tr> <th style="text-align: center; background-color: #e0e0e0;">Allocation</th> <th style="text-align: center; background-color: #e0e0e0;">% Reduction</th> <th style="text-align: center; background-color: #e0e0e0;">Allocation</th> <th style="text-align: center; background-color: #e0e0e0;">% Reduction</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e0e0e0;">Nonpoint source runoff from drainage area encompassed by Angeles National Forest</td> <td style="text-align: center;">33.96</td> <td style="text-align: center;">11.7%</td> <td style="text-align: center;">247.2</td> <td style="text-align: center;">22.8%</td> </tr> <tr> <td style="background-color: #e0e0e0;">Onsite wastewater treatment systems</td> <td style="text-align: center;">0.88</td> <td style="text-align: center;">11.7%</td> <td style="text-align: center;">4.6</td> <td style="text-align: center;">22.8</td> </tr> <tr> <td style="background-color: #e0e0e0;">Atmospheric deposition (to the lake surface)</td> <td style="text-align: center;">NA</td> <td style="text-align: center;">NA</td> <td style="text-align: center;">1.5</td> <td style="text-align: center;">22.8%</td> </tr> <tr> <td style="background-color: #e0e0e0;">Total</td> <td style="text-align: center;">34.8</td> <td style="text-align: center;">11.7%</td> <td style="text-align: center;">253.3</td> <td style="text-align: center;">22.8%</td> </tr> </tbody> </table>	MUNZ LAKE					Input	Total Phosphorus (lb-P/yr)		Total Nitrogen (lb-N/yr)		Allocation	% Reduction	Allocation	% Reduction	Nonpoint source runoff from drainage area encompassed by Angeles National Forest	33.96	11.7%	247.2	22.8%	Onsite wastewater treatment systems	0.88	11.7%	4.6	22.8	Atmospheric deposition (to the lake surface)	NA	NA	1.5	22.8%	Total	34.8	11.7%	253.3	22.8%
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<p>Margin of Safety</p>	<p>The sources of uncertainty in this TMDL are related to the relationship between nutrient loading and the resultant in-lake chlorophyll <i>a</i> concentration, the estimate of watershed-based nutrient loading, and the model-predicted water quality conditions in the lakes. These uncertainties are addressed with an implicit margin of safety based on conservative assumptions, including:</p> <ol style="list-style-type: none"> (1) overestimating the load from the Lake Hughes Community Wastewater Treatment Facility by using data from groundwater wells closer to the facility than Lake Hughes; (2) overestimating the load from onsite wastewater treatment systems by applying default values for per capita vegetation uptake; (3) slightly overestimating wet-weather loading by including very wet years in the modeling period (1996-2005); (4) slightly overestimating dry-weather storm drain loading by applying flow rates from more urbanized areas; and (5) basing the required phosphorus reductions on a simulated in-lake phosphorus concentration that is greater than the currently measured average phosphorus concentration, which provides a conservative estimate of the amount of phosphorus loading that needs to be reduced to meet the TMDL. 																																		
<p>Seasonal Variations and Critical Conditions</p>	<p>The majority of the external nutrient loading to the Santa Clara River Lakes generally occurs during winter and spring months, in conjunction with storm events. During the dry season (May-September) the lakes receive minimal external loading, but there is the release of nutrients from the sediments. The critical conditions for the attainment of beneficial uses in the Santa Clara River Lakes occur during the hot dry season (May-September). Elevated temperatures during the hot dry season reduce saturation levels of dissolved oxygen, increase toxicity of ammonia, and contribute to excessive algal growth. The Santa Clara River Lakes nutrient TMDL accounts for seasonality and critical conditions by</p>																																		

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	<p>assigning a LA to the in-lake sediments and by assigning LAs and WLAs to external loading sources year-round. Further, the model was developed primarily based on observations in 2014, which was a very hot dry year. For example, while lake depths could not be collected in 2014, and average depths were used as model inputs, other model parameters were collected during this hot dry year, including pH, nutrients and chlorophyll <i>a</i>.</p>
<p>Monitoring</p>	<p>The Santa Clara River Lakes monitoring shall consist of receiving water monitoring and discharge monitoring. Monitoring is required to measure the progress of pollutant load reductions and improvements in water quality. The monitoring plan has several goals.</p> <ul style="list-style-type: none"> • Determine attainment of total phosphorus, total nitrogen, ammonia, dissolved oxygen, pH, and chlorophyll <i>a</i> numeric targets. • Determine compliance with the waste load and load allocations for total phosphorus and total nitrogen. • Monitor the effect of implementation actions on lake water quality <p><u>Receiving Water Monitoring</u></p> <p>A Monitoring and Reporting Program (MRP) Plan for Elizabeth Lake and Lake Hughes shall be included as part of the Lake Work Plans for internal loading discussed in the implementation section. The MRP for Munz Lake shall be submitted separately for Executive Officer approval within five years of the effective date of the TMDL.</p> <p>Water samples shall be collected quarterly in each lake, on a year-round basis unless otherwise approved by the Executive Officer. The sampling sites shall be located at two sampling sites in Elizabeth Lake and one site each in Munz Lake and Lake Hughes, in the open water portion of the lakes unless otherwise approved by the Executive Officer.</p> <p><i>In situ</i> measurements of water quality and lake characteristics shall be made at each sampling site. These shall include dissolved oxygen, pH, temperature, electrical conductivity, transparency, and changes in lake elevation using a staff gauge. Water samples shall be analyzed for the following constituents unless otherwise approved by the Executive Officer:</p> <ul style="list-style-type: none"> • Total nitrogen • Total phosphorus • Nitrate (NO₃-N) • Total ammonia (NH₃-N) • Ortho-phosphorus (PO₄)

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TMDL Element	Regulatory Provisions
	<ul style="list-style-type: none"> • Total Dissolved Solids • Total Suspended Solids • Chlorophyll <i>a</i> • Turbidity • pH <p>Detection limits shall be less than the numeric targets in this TMDL. A monitoring report shall be prepared and submitted to the Los Angeles Water Board annually within six months after the completion of the final sampling event of the year.</p> <p><u>Discharge Monitoring</u></p> <p>Discharge monitoring shall be required through the regulatory mechanisms used to implement the waste load and load allocations. The monitoring procedures/methods, analysis, and quality assurance shall be SWAMP comparable.</p>
Implementation	<p>I. Implementation and Determination of Compliance with WLAs</p> <p>The regulatory mechanism used to implement the WLAs for storm drain discharges within the Santa Clara River Lakes watershed is the Los Angeles County MS4 Permit; or for additional responsible entities in the future, MS4 permits under Phase II of the US EPA Stormwater Permitting Program; or the residual designation authority of the state under Clean Water Action section 402(p)(2)(E), and other applicable regulatory programs. WLAs shall be incorporated into MS4 permits as water quality-based effluent limitations (WQBELs). 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 lake downstream of the Permittee’s outfalls; or (3) there is no direct or indirect discharge from the Permittee’s MS4 to the lake.</p> <p>The WLAs for storm drain discharges shall be achieved seven years from the effective date of the TMDL.</p> <p>II. Implementation and Determination of Compliance with LAs</p> <p><u>Internal Loading</u></p> <p>Compliance with the internal loading LAs will be measured in the lake and will be achieved through implementation of lake management projects to reduce internal nutrient loading to the lake. Cooperative parties for the lake sediment LAs are identified, not as responsible parties or as dischargers, but as landowners who have an interest in lake restoration. Cooperative parties for the lake sediment</p>

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TMDL Element	Regulatory Provisions
	<p>LAs include the owners of Elizabeth Lake and Lake Hughes. Load allocations for internal loading will be implemented through the following:</p> <ul style="list-style-type: none"> (1) Memorandum of Agreement (MOA), or (2) Clean Up and Abatement Order or Other Regulatory Order <p>If chosen as the implementation strategy, cooperative parties shall develop and enter an MOA with the Regional Water Board to implement LAs within three years from the effective date of the TMDL. The MOA shall detail the voluntary efforts that will be undertaken to attain the load allocations for Elizabeth Lake and Lake Hughes within 15 years of the effective date of the TMDL. The MOA shall comply with the <u>Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options</u> (“Policy”), including part II, section 2 c ii and related provisions, and shall be consistent the requirements of this TMDL. If the MOA is timely adopted in accordance with the implementation schedule in Table 7-41.2, and so long as it is implemented, the program described in the MOA shall be deemed “certified”, pursuant to the Policy, subject to the conditions of Policy section 2 e.</p> <p>To be a valid non-regulatory implementation program adopted by the Los Angeles Water Board, the MOA shall include the following requirements and conditions:</p> <ul style="list-style-type: none"> • The MOA shall contain conditions that require trackable progress on attaining load allocations and numeric targets. A timeline shall be included that identifies the point or points at which Los Angeles Water Board regulatory intervention and oversight will be triggered if the pace of work lags or fails. • The MOA shall contain a provision that it shall be revoked based upon findings by the Executive Officer that the program has not been adequately implemented, is not achieving its goals, or is no longer adequate to restore water quality. • The MOA shall be consistent with the California Policy for Implementation and Enforcement of the Non-point Source Pollution Control Program, including but not limited to the “Key Elements of a Non-point Source Pollution Control Implementation Program”. <p>The MOA shall include development of Lake Work Plans, which must be approved by the Executive Officer, and may be amended with Executive Officer approval, as necessary. To the satisfaction of the Executive Officer the Lake Work Plans shall meet the following criteria:</p>

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TMDL Element	Regulatory Provisions
	<ul style="list-style-type: none"> • Within five years from the effective date of the TMDL, cooperative parties shall submit Lake Work Plans, including MRP plans, for approval by the Executive Officer. • The Lake Work Plans shall present a comprehensive management plan and strategy for achieving the LAs in the Santa Clara River Lakes and attaining numeric targets. The Lake Work Plans shall include a schedule for implementation actions. • The Lake Work Plans shall achieve compliance with the load allocations through the implementation of lake management strategies to reduce and manage internal nutrient sources. The lake management implementation actions may include, but are not limited, to the following: <ul style="list-style-type: none"> ○ Hydraulic/traditional lake dredging ○ Hydroponic islands (may not be appropriate for all lakes) ○ Maintain lake level – Supplemental water • Since the Santa Clara River Lakes cycle through dry periods, the Lake Work Plans may consider aligning lake management activities when the lake beds are dry to minimize impacts and reduce costs. • The MOA and Lake Work Plans programs shall include assurances that they will be implemented by the cooperative parties. <p>If an MOA is not established within three years of the effective date of the TMDL, or the cooperative parties do not comply with the terms of the MOA, or if the MOA and Lake Work Plans are not implemented or otherwise do not result in attainment of load allocations consistent with the provisions and schedule of the TMDL, a cleanup and abatement order pursuant to Water Code section 13304, or another appropriate regulatory order, shall be issued to implement the load allocations.</p> <p><u>Nonpoint Source Runoff</u></p> <p>Nonpoint source runoff from the drainage area encompassed by the Angeles National Forest and from the drainage within the County of Los Angeles unincorporated area are assigned load allocations for the runoff from areas surrounding the Santa Clara River Lakes not served by storm drains. The LAs shall be implemented through WDRs, waivers of WDRs, or other regulatory mechanisms in accordance with the Nonpoint Source Implementation and Enforcement Policy (NPS Policy). The Los Angeles Water Board may choose to implement the LAs for runoff through the same mechanism as the LAs for internal loading in order to increase efficiency. Compliance with the TMDLs for Elizabeth Lake and Lake Hughes may be based on coordinated MRPs and lake</p>

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TMDL Element	Regulatory Provisions
	<p>work plans for both the internal loading LAs and nonpoint source runoff LAs that set forth responsibilities for each cooperative party.</p> <p>The LAs for runoff shall be attained 15 years after the effective date of the TMDL.</p> <p><u>OWTS</u></p> <p>The LAs for OWTS shall be implemented through WDRs or waivers of WDRs. Commercial and multifamily OWTS are currently regulated by the Regional Water Board through WDRs. Single family residential OWTS are currently regulated by the County of Los Angeles. 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 OWTS Policy became effective on May 13, 2013. The policy emphasizes local management of OWTS. The policy requires an Advanced Protection Management Program (APMP) and local agencies are authorized to implement APMPs in conjunction with their existing programs and in collaboration with the Regional Water Board.</p> <p>This TMDL assigns load allocations generally to all OWTS in the watershed, but does not specify which, if any, specific OWTS must reduce discharges to meet the load allocations. The County will conduct a study to refine the area subject to the load allocations and determine which OWTS are contributing to nutrient loading to the lakes. Those systems shall then be included in the APMP of the County’s Local Agency Management Program (LAMP). Existing OWTS included in an APMP are required to be upgraded or modified to enhance their nitrogen removal or meet other requirements of the APMP. The LAMP shall include a schedule for upgrades or modifications based on the results of the County’s study. If the study determines that the total phosphorus load allocations are not being met and reductions are required, which cannot be achieved by phosphorus source reduction, the TMDL may be reconsidered to adjust the allocations scenario or otherwise revise elements of the TMDL. Existing OWTS shall remain regulated by the existing MOU between the County of Los Angeles and the Regional Water Board and the existing County LAMP until the above determination is made, the LAMP is revised, and subsequent upgrades are required.</p> <p>New or replacement OWTS installations, as defined by the OWTS Policy, that are within the APMP area, shall meet the supplemental treatment requirements for nitrogen per Tier 3 of the OWTS Policy.</p> <p>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</p>

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TMDL Element	Regulatory Provisions
	<p>needed to implement the LAs. New or replacement OWTS dischargers, and existing OWTS dischargers within the APMP, shall achieve compliance with LAs as soon as possible, but no later than 12 years after the effective date of the TMDL. The owners of OWTS are ultimately responsible for achieving the LAs. The Regional Water Board and the County of Los Angeles will work to obtain funding for any necessary OWTS upgrades.</p> <p><u>Lake Hughes Community Wastewater Treatment Facility</u></p> <p>The Lake Hughes Community Wastewater Treatment Facility is assigned LAs for nutrient loading to Lake Hughes. The LAs will be implemented through the facility's WDRs. The LAs for the Lake Hughes Community Wastewater Treatment Facility (WWTF) are based on the facility's discharge to groundwater and the point of compliance is the groundwater downgradient of the spray field. Alternatively, permit writers may translate the LAs into mass-based or concentration-based numeric effluent limitations consistent with the assumptions and requirements of the LAs.</p> <p>The County of Los Angeles shall conduct a special study to investigate the elevated nutrient concentrations in groundwater downgradient from the spray irrigation field by examining background concentrations and possible contributions to the nutrient loading from the facility. Implementation will be completed over two phases: (1) completion of the special study and (2) possible upgrades to the facility. The special study shall be completed within five years of the effective date of the TMDL. If the results of the special study demonstrate that the WWTF is contributing to the nutrient loading in groundwater, the facility shall complete upgrades to achieve the assigned load allocations as soon as possible, but no later than 12 years after the effective date of the TMDL. If the results of the special study indicate that the WWTF is not contributing to the nutrient loading in groundwater, the facility may continue to operate as constructed, and the TMDL will be revised.</p>

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Table 7-41.2. Santa Clara River Lakes Nutrient TMDL: Implementation Schedule

Task	Date
The Los Angeles Water Board will reconsider this TMDL within six years of its effective date to revise the LAs, WLAs, implementation schedule, and any other element of the TMDL based on the results of any new information or data.	6 years from the effective date of the TMDL
Storm Drain Discharges	
Responsible entities shall meet assigned WLAs for total nitrogen and total phosphorus.	Within 15 years of the effective date of the TMDL
Onsite Wastewater Treatment Systems	
The County of Los Angeles shall submit a work plan for a study to determine which existing OWTS are contributing to the nutrient loading to the Santa Clara River Lakes for approval by the Executive Officer.	Within three years of the effective date of the TMDL
The County of Los Angeles shall complete the OWTS study and submit a final report to the Regional Water Board.	Within five years of the effective date of the TMDL
Complete OWTS upgrades (as necessary)	As soon as possible, but no later than 12 years after the effective date of the TMDL
Attain LAs for total nitrogen and total phosphorus for OWTS	As soon as possible, but no later than 12 years after the effective date of the TMDL
Internal Loading for Elizabeth Lake and Lake Hughes	
If chosen as the implementation strategy, cooperative parties shall develop and enter a Memorandum of Agreement (MOA) with the Regional Water Board to implement LAs.	Within 3 years of the effective date of the TMDL
The Regional Water Board shall begin development of a cleanup and abatement order or other regulatory order to implement the LAs if an MOA is not established with cooperative parties.	3 years from the effective date of the TMDL
Cooperative parties shall submit Lake Work Plans for each lake, including a MRP, for approval by the Executive Officer to comply with the MOA.	Within 5 years of the effective date of the TMDL
Cooperative parties shall submit annual monitoring reports on the progress of Lake Work Plan implementation.	Within 6 years of the effective date of the TMDL
Internal loading LAs for total nitrogen and total phosphorus shall be attained.	Within 15 years of the effective date of the TMDL
Nonpoint Source Runoff	
Nonpoint source runoff from the drainage area encompassed by the Angeles National Forest and from the drainage within the County of Los Angeles unincorporated area shall submit a MRP for Munz Lake	Within 5 years of effective date of the TMDL
Nonpoint source runoff from the drainage area encompassed by the Angeles National Forest and from the drainage within the County of Los Angeles unincorporated area shall attain LAs for total nitrogen and total phosphorus for runoff not served by storm drains.	Within 15 years of the effective date of the TMDL

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Task	Date
Lake Hughes Community Wastewater Treatment Facility	
The Lake Hughes Community Wastewater Treatment Facility shall complete the special study and submit the final report to the Regional Board	Within 5 years of the effective date of the TMDL
Complete WWTF upgrades (as necessary)	As soon as possible, but no later than 12 years after the effective date of the TMDL
The Lake Hughes Community Wastewater Treatment Facility shall achieve LAs for total nitrogen and total phosphorus.	As soon as possible, but no later than 12 years after the effective date of the TMDL