

Water Quality Control Plan for the Central Coastal Basin



September 2017 June 2019 Edition

Regional Water Quality Control Board, Central Coast Region
State Water Resources Control Board
California Environmental Protection Agency

State of California

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1001 I St., Sacramento, CA 95814
Phone (916) 341-5254
<http://www.waterboards.ca.gov>

California Regional Water Quality Control Board Central Coast Region

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895 Aerovista Place, Suite 101
San Luis Obispo, CA. 93401-7906
Phone (805) 549-3147
Fax (805) 543-0397
<http://www.waterboards.ca.gov/centralcoast>

Water Quality Control Plan
for the
Central Coastal Basin

September 27, 2017~~June 14, 2019~~ Edition

*(Incorporating amendments approved by the California Office of
Administrative Law from ~~October 30, 2014~~March 17, 2017 to March ~~16, 2017~~14, 2019)*

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Suggested Citation:

Central Coast Regional Water Quality Control Board. ~~2017~~2019. *Water Quality Control Plan for the Central Coastal Basin, ~~September 2017~~June 2019 Edition*. California Environmental Protection Agency.

Internet Link:

http://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/index.shtml

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Suspended Material

Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Settleable Material

Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses.

Oil and Grease

Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

Biostimulatory Substances

Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Sediment

The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Turbidity

Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Increase in turbidity attributable to controllable water quality factors shall not exceed the following limits:

1. Where natural turbidity is between 0 and 50 ~~JTU~~Nephelometric Turbidity Units (~~JTU~~NTU), increases shall not exceed 20 percent.
2. Where natural turbidity is between 50 and 100 ~~JTU~~NTU, increases shall not exceed 10 ~~JTU~~NTU.
3. Where natural turbidity is greater than 100 ~~JTU~~NTU, increases shall not exceed 10 percent.

Allowable zones of dilution within which higher concentrations will be tolerated will be defined for each discharge in discharge permits.

pH

For waters not mentioned by a specific beneficial use, the pH value shall not be depressed below 7.0 or raised above 8.5.

Dissolved Oxygen

For waters not mentioned by a specific beneficial use, dissolved oxygen concentration shall not be reduced below 5.0 mg/L at any time. Median values should not fall below 85 percent saturation as a result of controllable water quality conditions.

Temperature

Temperature objectives for Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" including any revisions thereto. A copy of this plan is included in Appendix A-3.

Natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

Toxicity

All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, toxicity bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.

Survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality conditions, shall not be less than that for the same waterbody in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, latest edition. As a minimum, compliance with this objective shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as

4.9.19 TMDL for Sediment Toxicity and Pyrethroid Pesticides in Sediment in the Lower Salinas River Watershed

Total Maximum Daily Loads for Sediment Toxicity and Pyrethroid Pesticides in sediment in the Lower Salinas River Watershed

The Regional Water Quality Control Board adopted these TMDLs on July 14, 2017. These TMDLs were approved by:

- The State Water Resources Control Board on March 6, 2018
- The California Office of Administrative Law on June 29, 2018
- The U.S. Environmental Protection Agency on August 9, 2018

Problem Statement

Surface waters in the lower Salinas River watershed are impaired for sediment toxicity to the aquatic invertebrate (*Hyalella azteca*) and pyrethroid pesticides in sediment. These surface waters do not meet the Basin Plan general narrative objectives for toxicity and pesticides and aquatic life beneficial uses are not protected. The aquatic habitat beneficial uses currently being degraded include the following: cold fresh water habitat (COLD), warm fresh water habitat (WARM), wildlife habitat (WILD), rare threatened or endangered species (RARE), estuarine habitat (EST), migration of aquatic organisms (MIGR), and spawning, and reproduction and/or early development (SPWN). The sediment toxicity has been linked in several studies and in the TMDL analysis predominantly to pyrethroid pesticides in sediment. Pyrethroid pesticides are used extensively for agricultural and urban insect pest control.

The following impairments are addressed with these TMDLs:

- Alisal Creek: sediment toxicity, pyrethroids
- Alisal Slough: sediment toxicity
- Blanco Drain: sediment toxicity
- Chualar Creek, sediment toxicity
- Espinosa Slough: sediment toxicity
- Gabilan Creek: sediment toxicity
- Merrit Ditch: sediment toxicity
- Natividad Creek: sediment toxicity, pyrethroids
- Old Salinas River: sediment toxicity
- Quail Creek: sediment toxicity
- Reclamation Canal: sediment toxicity, pyrethroids
- Salinas River (lower): sediment toxicity, pyrethroids
- Tembladero Slough: sediment toxicity, pyrethroids

Numeric Targets

Numeric targets are water quality thresholds developed and used to ascertain when and where water quality objectives are achieved, and hence, when beneficial uses are protected.

Sediment Toxicity Numeric Target

Species and method identified in Table 4.9.19-1 shall be used to assess whether the sediment toxicity numeric target is achieved. Assessments will be conducted with receiving water(s) sampled at key indicator sites, which will be defined in proper sampling plans with quality assurance and quality controls consistent with SWAMP protocols.

Table 4.9.19-1. Standard aquatic toxicity tests (sediment toxicity numeric target).

<u>Parameter</u>	<u>Test</u>	<u>Biological Endpoint Assessed</u>
<u>Sediment Toxicity</u>	<u><i>Hyalella azteca</i> (10-day chronic)</u>	<u>Survival</u>

Toxicity to invertebrates shall be tested using chronic toxicity test, 10-day sediment exposure with *Hyaella azteca* (USEPA, 2000). It is recommended (not required) that toxicity determinations be based on a comparison of the test organisms' response to the receiving water sample compared to the control using the Test of Significant Toxicity, also referred to as the TST statistical approach (USEPA 2010; Denton et al., 2011). If a sample is declared "fail" (i.e., toxic), then the target is not met and additional receiving water sample(s) should be collected and evaluated for this specific receiving water to determine the pattern of toxicity and whether a toxicity identification evaluation, also referred to as a TIE, needs to be conducted to determine the causative toxicant(s). If the causative toxicant(s) is already known (e.g., based on land use patterns and similar responses in sub-watersheds) then implementation of management practices, management plans etc. should be examined for effectiveness if already in place, or implemented to reduce the toxicant(s).

Pyrethroid Sediment Concentration Toxicity Unit Numeric Target

The pyrethroid sediment concentration toxicity unit (TU) numeric targets are a comparison of toxic levels of pyrethroids in sediment to published criteria (refer to Table 4.9.19-2). Samples and criteria are for organic carbon normalized concentrations (oc). The pyrethroid TU formula is as follows:

$$\text{Pyrethroid TU} = \frac{\text{sample concentration (oc)}}{\text{known LC50 concentrations values (oc)}}$$

Pyrethroid TUs for the pyrethroid concentrations measured in sediment are summarized using the following formula. The summary is for two toxicity unit formulas but it could be applied to additional pyrethroids in found in Table 4.9.19-2:

$$\text{Sum Pyrethroid TUs} = \text{Pyrethroid TU (1)} + \text{Pyrethroid TU (2)}$$

The numeric target for the sum pyrethroid TUs is where:

$$\text{Sum Pyrethroid TUs} < 1.0$$

Table 4.9.19-2. Pyrethroid sediment criteria.

<u>Chemical</u>	<u>LC 50¹ ng/g² (ppb³)</u>	<u>LC50 ug/g⁴ oc⁵(ppm⁶)</u>	<u>Reference</u>
<u>Bifenthrin</u>	<u>12.9</u>	<u>0.52</u>	<u>(Amweg et al., 2005)</u>
<u>Cyfluthrin</u>	<u>13.7</u>	<u>1.08</u>	<u>(Amweg et al., 2005)</u>
<u>Cypermethrin</u>	<u>14.87</u>	<u>0.38</u>	<u>(Maund et al., 2002) mean value</u>
<u>Esfenvalerate</u>	<u>41.8</u>	<u>1.54</u>	<u>(Amweg et al., 2005)</u>
<u>Lambda-Cyhalothrin</u>	<u>5.6</u>	<u>0.45</u>	<u>(Amweg et al., 2005)</u>
<u>Permethrin</u>	<u>200.7</u>	<u>10.83</u>	<u>(Amweg et al., 2005)</u>

¹ Median lethal concentration (LC50) for amphipods (*Hyaella azteca*).

² nano grams per gram (ng/g).

³ parts per billion,

⁴ microgram per gram (ug/g).

⁵ organic carbon normalized concentrations (oc).

⁶ parts per million (ppm)

Numeric Targets for Pyrethroid Concentrations in Water

UC Davis developed the water criteria (UC Davis Criteria) that are the basis of the water concentration targets for the pyrethroids addressed in the TMDL: bifenthrin, cyfluthrin and lambda-cyhalothrin; refer to Table 4.9.19-3 (Palumbo et al., 2010 and Fojut et al., 2010). The UC Davis Criteria represents a concentration of pyrethroids in

water that should not affect aquatic life in the lower Salinas River watershed, or in other words, when a waterbody is protected.

The UC Davis Criteria were developed as criteria protective of aquatic life using a transparent and scientific methodology of statistically evaluating toxicity data for multiple species. The criteria were established for freely dissolved concentrations of the pyrethroids and not concentrations bound to suspended solids and dissolved organic material. For assessment, staff recommends the numeric targets for pyrethroid concentrations in water be compared to the freely dissolved (bioavailable) concentrations of pyrethroids in water and not whole water samples. However, staff supports environmental managers' choosing the appropriate assessment method and recognizes there are situations in which whole water samples may be an appropriate assessment method.

The UC Davis researchers noted that pyrethroid toxicity is inversely proportional to temperature, lower temperatures increase the sensitivity of organisms to pyrethroids, but it was infeasible for them to incorporate temperature into the criteria.

Table 4.9.19-3. Pyrethroid water numeric targets.

<u>Chemical</u>	<u>Acute Target – CMC¹ ug/L³ (ppb⁴)</u>	<u>Chronic Target – CCC² ug/L (ppb)</u>	<u>Reference</u>
<u>Bifenthrin</u>	<u>0.004</u>	<u>0.0006</u>	<u>(Palumbo et al., 2010)</u>
<u>Cyfluthrin</u>	<u>0.0003</u>	<u>0.00005</u>	<u>(Fojut et al., 2010)</u>
<u>Lambda-cyhalothrin</u>	<u>0.001</u>	<u>0.0005</u>	<u>(Fojut et al., 2010)</u>

¹ CMC – Criterion Maximum Concentration (Acute: 1- hour average). Not to be exceeded more than once in a three-year period.

² CCC – Criterion Continuous Concentration (Chronic: 4-day [96-hour] average). Not to be exceeded more than once in a three-year period.

³ microgram per liter (ug/L),

⁴ parts per billion

Source Analysis

Sediment toxicity was detected in stream sediments throughout the lower Salinas River watershed. Several special sediment monitoring studies in the watershed link the sediment toxicity to pyrethroid pesticides in both agricultural and municipal runoff. Watershed land use analysis indicates that the lower Salinas River watershed is comprised of 30% cropland and 17% developed urban areas. Pyrethroid pesticide use data was analyzed for detected pyrethroids and associated crop sources, which are as follows:

- Bifenthrin – strawberries, artichokes
- Cypermethrin – lettuce, spinach, broccoli, peas, other crops
- Esfenvalerate – artichoke, broccoli, lettuce
- Lambda-cyhalothrin – lettuce

Statewide urban pesticide studies indicate that pyrethroids are commonly detected in urban runoff and the primary sources are outdoor applications by pest control professionals and to a lesser extent consumer use.

TMDLs

The sediment toxicity and pyrethroid in sediment loading capacities or TMDLs are the amount of pollutants that can be received in surface waters without exceeding the Basin Plan's pesticide and toxicity water quality objectives. TMDLs are calculated as the sum of waste load allocations and load allocation along with a margin of safety. A wasteload allocation is a TMDL allocated to point source dischargers in the watershed and load allocation is a TMDL allocated to nonpoint sources of pollution. According to the Code of Federal Regulations, Title 40, §130.2[i], TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

The TMDLs for sediment toxicity are equal to the sediment toxicity numeric targets, refer to Table 4.9.19-4, and the TMDLs for pyrethroid pesticides are equal to the pyrethroid sediment concentration toxicity unit numeric targets (see above section on Numeric Targets).

Table 4.9.19-4. TMDLs.

<u>TMDL</u>	<u>Criteria</u>
<u>Sediment toxicity</u>	<u>Sediment toxicity numeric target</u>
<u>Pyrethroids in sediment</u>	<u>Pyrethroid sediment concentration toxicity unit numeric target</u>

Allocations and Responsible Parties

The allocations and parties responsible for the allocations are listed in the following table.

Table 4.9.19-5. Wasteload and load allocations.

<u>Waste Load Allocations</u>		
<u>Responsible Party</u>	<u>Source</u>	<u>Allocation</u>
<u>City of Salinas - NPDES No. CA00049981</u>	<u>Municipal Stormwater</u>	<u>1 & 2</u>
<u>County of Monterey - NPDES No. CAS000004</u>	<u>Municipal Stormwater</u>	<u>1 & 2</u>
<u>Load Allocations</u>		
<u>Responsible Party</u>	<u>Source</u>	<u>Allocation</u>
<u>Owners/operators of irrigated agricultural lands in the lower Salinas River watershed</u>	<u>Discharges from irrigated lands</u>	<u>1 & 2</u>
<u>Allocation-1: Equal to Sediment Toxicity TMDLs</u>		
<u>Allocation-2: Equal to Pyrethroids in Sediment TMDLs</u>		

Controllable Water Quality Conditions

In accordance with the Basin Plan, controllable water quality shall be managed to conform or to achieve the water quality objectives and load allocations contained in these TMDLs. The Basin Plan defines controllable water quality conditions as follows: *“Controllable water quality conditions are those actions or circumstances resulting from man’s activities that may influence the quality of the waters of the State and that may be reasonably controlled.”* – Basin Plan Chapter 3, Water Quality Objectives, page III-2.

Compliance with Anti-degradation Requirements

State and federal anti-degradation policies require, in part, that where surface waters are of higher quality than necessary to protect beneficial uses, the high quality of those waters must be maintained unless otherwise provided by the policies. The federal anti-degradation policy, 40 CFR 131.12(a), states in part, *“Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State’s continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located...”*

Compliance with anti-degradation requirements may be determined on the basis of trends in declining water quality in applicable waterbodies, consistent with the methodologies and criteria provided in Section 3.10 of the California 303(d) Listing Policy (adopted, September 20, 2004, SWRCB Resolution No. 2004-0063). Section 3.10 of the California 303(d) Listing Policy explicitly addresses the anti-degradation component of water quality standards as defined in 40 CFR 130.2(j), and provides for identifying trends of declining water quality as a metric for assessing compliance with anti-degradation requirements.

Section 3.10 of the California 303(d) Listing Policy states that pollutant-specific water quality objectives need not be exceeded to be considered non-compliant with anti-degradation requirements: “if the water segment exhibits concentrations of pollutants or water body conditions for any listing factor that shows a trend of declining water quality standards attainment”.

Margin of Safety

A margin of safety is incorporated in these TMDLs implicitly through conservative assumptions. The desired water quality is achieved through allocations and targets equal to desired water quality; hence an implicit conservative approach. If, during the TMDL implementation phase, staff develops numeric targets and TMDLs that better reflect the desired water quality, the allocations will be set equal to these modified targets and TMDLs.

Implementation

Discharges from Irrigated Agricultural Lands:

Implementing parties will comply with the Conditional Waiver of Waste Discharge Requirements for Irrigated Lands, Order R3-2017-0002, (Agricultural Order) and the Monitoring and Reporting Programs in accordance with Orders R3-2017-0002-01, R3-2017-0002-02, and R3-2017-0002-03 to meet load allocations and achieve the TMDL.

Current requirements in the Agricultural Order that will achieve the load allocations include:

1. Implement, and update as necessary, management practices to reduce pesticide loading.
2. Develop and update and implement Farm Plans. The Farm Plans need to incorporate measures designed to achieve load allocations assigned in this TMDL.
3. Implement monitoring and reporting requirements described in the Agricultural Order.

The purpose of the Agricultural Order requirements, in part, is for growers to implement management practices to achieve water quality standards, along with these TMDL allocations and numeric targets. The grower then assesses whether those implemented management practices are effective and will ultimately achieve water quality standards. If the grower determines through the assessment that the management practices will not achieve water quality standards, then the grower tries other, improved, management practices. The grower implements this trial-assessment, or iterative process, until he or she finds and implements practices that will achieve water quality standards, TMDL allocations, and numeric targets. The Agricultural Order contains reporting requirements that Water Board staff uses to verify that the iterative process is being implemented.

The TMDL implementation plan also recommends that grower utilize an interagency approach among the California Department of Pesticide Regulation (DPR), the State Water Resources Control Board, and the Central Coast Water Board to address impairments. The approach is described in the California Pesticide Management Plan for Water Quality (California Pesticide Plan), which is an implementation plan of the Management Agency Agreement (MAA) between DPR and the Water Boards.

Monitoring

Owners and operators of irrigated agricultural lands will perform monitoring and reporting in accordance with Monitoring and Reporting Program Orders R3-2017-0002-01, R3-2017-0002-02, and R3-2017-0002-03 (agricultural monitoring program), or succeeding monitoring and reporting program orders as applicable to the operation.

Due to the present complexities in monitoring and evaluating freely dissolved concentrations of pyrethroids in water, staff recommends that the monitoring and evaluation of numeric targets for pyrethroid concentrations in water be conducted by state and/or regional monitoring programs such as SWAMP/CCAMP and the DPR surface water monitoring program. Staff recommends these programs and agricultural and municipal stormwater monitoring

programs share monitoring results with each other. Staff recommends that the agricultural monitoring program continues to focus monitoring efforts on sediment toxicity and adds annual monitoring concentrations of pyrethroids in sediment.

Determination of Progress and Attainment of Load Allocations

Demonstration of compliance with the load allocations is consistent with compliance with the Agricultural Order. Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce pesticide loading and water quality monitoring.

To allow for flexibility, Central Coast Water Board staff will assess progress towards and attainment of load allocations using one or a combination of the following:

1. Attaining the load allocations in receiving waters.
2. Attaining toxicity numeric targets attributable to pesticides in receiving water.
3. Implementing management practices that are capable of achieving load allocations identified in this TMDL.
4. Providing sufficient evidence to demonstrate that they are and will continue to be in compliance with the load allocations; such evidence could include documentation submitted by the owner or operator to the Executive Officer that the owner or operator is not causing waste to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

Municipal Stormwater Discharge:

The Central Coast Water Board will require MS4 entities, the City of Salinas and Monterey County, to each develop and submit for Executive Officer approval a Wasteload Allocation Attainment Program (WAAP). The WAAP will be submitted within one year of approval of the TMDL by the Office of Administrative Law, or within one year of a stormwater permit renewal, whichever occurs first. The WAAP will include descriptions of the actions that will be taken by the MS4 entity to attain the TMDL waste load allocations.

Urban stormwater pesticide problems are not unique to the MS4s in the Salinas River watershed, but are problems faced by MS4s throughout the state. Staff recognizes that attainment of water quality goals in the TMDL will rely on the effectiveness of statewide pesticide programs and regulations by California Department of Pesticide Regulation (DPR) to control pesticides. The MS4s are encouraged to participate in statewide programs and regulations to help attain the TMDL and describe in the WAAP how the MS4s plan to support and engage in the statewide efforts. MS4s are encouraged to include in the WAAP mitigation measures developed in the DPR surface water regulations as stormwater Best Management Practices (BMPs). The statewide program is described in the California Pesticide Management Plan for Water Quality (California Pesticide Plan), which is an implementation plan of the Management Agency Agreement (MAA) between DPR and the Water Boards.

Waste load allocations will be achieved through implementation of management practices and strategies to reduce pesticide loading, and wasteload allocation attainment will be demonstrated through water quality monitoring. Implementation can be conducted by MS4s specifically and/or through statewide programs addressing urban pesticide water pollution. The WAAP may include participation in statewide efforts, by organizations such as California Stormwater Quality Association (CASQA), that coordinate with DPR and other organizations taking actions to protect water quality from the use of pesticides in the urban environment.

MS4 Stormwater Monitoring

The MS4s are required to develop and submit monitoring programs as part of their WAAP. The goals of the monitoring programs are described in the requirements of the WAAP.

The MS4s must prepare a detailed description, including a schedule, of a monitoring program the MS4 will implement to assess discharge and receiving water quality, BMP effectiveness, and progress towards any interim targets and ultimate attainment of the MS4s' wasteload allocations. The monitoring program shall be designed to validate BMP implementation efforts and quantitatively demonstrate attainment of interim and final wasteload allocations. The Central Coast Water Board may approve participation in statewide or regional monitoring programs as meeting all, or a portion of monitoring requirements.

Staff encourages the implementing parties to develop and submit creative and meaningful monitoring programs. Monitoring strategies can use a phased approach, for example, whereby outfall or receiving water monitoring is

phased in after best management practices have been implemented and assessed for effectiveness. Pilot projects where best management practices are implemented in well-defined areas covering a fraction of the MS4 that facilitate accurate assessment of how well the best management practices control pollution sources are acceptable, with the intent of successful practices then being implemented in other or larger parts of the MS4.

Determination of Progress and Attainment of Waste Load Allocations

Waste load allocations will be achieved through a combination of implementation of management practices and strategies to reduce pesticide loading, and water quality monitoring. To allow for flexibility, Water Board staff will assess progress towards and attainment of waste load allocations using one or a combination of the following: Attaining the waste load allocations in the receiving water.

Demonstrating compliance by measuring pesticide concentrations and sediment toxicity at stormwater outfalls. Any other effluent limitations and conditions that are consistent with the assumptions and requirements of the waste load allocations.

MS4 entities may be deemed in compliance with waste load allocations through implementation and assessment of pollutant loading reduction projects, capable of achieving interim and final waste load allocations identified in this TMDL in combination with water quality monitoring for a balanced approach to determining program effectiveness. Actions can also be demonstrated through participation in statewide efforts, through organizations such as California Stormwater Quality Association that coordinate with DPR and other organizations to protect water quality from the use of pesticides.

Timelines

The estimated date to achieve the allocations from municipal sources is five years after approval of the TMDL by the Office of Administrative Law. This estimate is based on the utilization of the existing DPR urban pyrethroid regulations to achieve municipal TMDLs. The estimated timeframe to achieve Agricultural allocations is 10 years after Office of Administrative Law approval. The agricultural timeline accounts for the need to develop agricultural pyrethroid implementation efforts.

Table 4.9.19-6. TMDL time schedule.

<u>Year After Approval</u>	<u>Milestone</u>
<u>Current</u>	<u>Existing DPR urban pyrethroid regulations that were adopted in 2012.</u>
<u>3 Years</u>	<u>Agricultural program developed to address sediment toxicity and pyrethroids in sediment</u>
<u>5 Years</u>	<u>Municipal allocations achieved to meet TMDLs</u>
<u>10 years</u>	<u>Agricultural allocations achieved to meet TMDLs</u>
<u>15 Years</u>	<u>Targets achieved in receiving waters as indicators of meeting TMDLs</u>

Tracking and Evaluation

After the TMDLs are approved by Office of Administrative Law, the Central Coast Water Board periodically will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress toward achieving their allocations, dependent upon staff availability and priorities. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and the numeric goal.

4.9.20 TMDL for Nitrogen and Phosphorus Compounds in Streams of the Franklin Creek Watershed.

Total Maximum Daily Load for Nitrogen and Phosphorus Compounds in Streams of the Franklin Creek Watershed

The Regional Water Quality Control Board adopted these TMDLs on March 22-23, 2018.
These TMDLs were approved by:

The State Water Resources Control Board on November 6, 2018
The California Office of Administrative Law on March 4, 2019
The U.S. Environmental Protection Agency on May 9, 2019

Problem Statement

The discharge of nitrogen and phosphorus compounds are occurring in surface waters at levels which are impairing a spectrum of beneficial uses and, therefore, constitute a serious water quality problem. The municipal and domestic drinking water supply (MUN) beneficial use, groundwater recharge (GWR) beneficial use, and the range of aquatic habitat beneficial uses are not protected. The pollutants addressed in these TMDLs are nitrate, total nitrogen, and total phosphorus.

The TMDLs protect and restore the MUN and GWR beneficial uses, as well as several aquatic habitat beneficial uses that are currently being degraded by violations of the biostimulatory substances objective. The aquatic habitat beneficial uses currently being degraded include the following: wildlife habitat (WILD), cold fresh water habitat (COLD), warm fresh water habitat (WARM), migration of aquatic organisms (MIGR), spawning, reproduction, and/or early development (SPWN), preservation of biological habitats of special significance (BIOL), and rare, threatened, or endangered species (RARE). In addition, current or potential future beneficial uses of the agricultural water supply beneficial use (AGR) are not being supported. Nitrate can create problems not only for water supplies and aquatic habitat, but also potentially for nitrogen sensitive crops (grapes, avocado, citrus) by detrimentally impacting crop yield or quality.

The following impairments are addressed with these TMDLs:

- Franklin Creek: nitrate, nutrients (biostimulatory substances objective)

Numeric Targets

Numeric targets are water quality thresholds developed and used to ascertain when and where water quality objectives are achieved, and hence, when beneficial uses are protected.

Target for Nitrate (MUN and GWR standards)

To support MUN and GWR beneficial uses, the nitrate numeric target is 10 milligrams per liter (mg/L) as nitrogen. This numeric target is the same as the Basin Plan's numeric nitrate water quality objective protective of drinking water beneficial uses and groundwater recharge beneficial uses.

Targets for Biostimulatory Substances (total nitrogen and total phosphorus)

The Basin Plan contains the following narrative water quality objectives for biostimulatory substances:
"Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses."

To implement this narrative objective, staff developed scientifically peer reviewed numeric targets, based on established methodologies and approaches. The numeric targets for biostimulatory substances are presented in Table 4.9.20-1.

Table 4.9.20-1. Numeric targets for biostimulatory substances.

<u>Waterbody</u>	<u>Total Nitrogen (mg/L)</u>	<u>Total Phosphorus (mg/L)</u>
<u>Franklin Creek</u>	<u>1.1</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1 – October 31)</u>	<u>0.075</u> <u>Maximum</u> <u>Dry Season Samples</u> <u>(May 1 – October 31)</u>
	<u>8</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(November 1 - April 30)</u>	<u>0.3</u> <u>Maximum</u> <u>Wet Season Samples</u> <u>(November 1 - April 30)</u>

Targets for Nutrient-Response Indicators (dissolved oxygen, chlorophyll a, and microcystins)

Dissolved oxygen, chlorophyll a, and microcystin numeric targets are identified to assess biostimulatory conditions within Franklin Creek and to provide primary indicator metrics to assess biological responses to future nutrient reductions.

The dissolved oxygen numeric target for Franklin Creek is the same as the Basin Plan numeric water quality objective which states that dissolved oxygen concentrations shall not be reduced below 7.0 mg/L at any time.

Another dissolved oxygen numeric target for Franklin Creek is the same as the Basin Plan numeric water quality objective for all inland surface waters, enclosed bays and estuaries which states that median dissolved oxygen saturation should not fall below 85% saturation as a result of controllable water quality conditions.

To assess biostimulatory conditions and dissolved oxygen imbalances, the numeric water quality target indicative of excessive dissolved oxygen saturation is 13 mg/L (i.e., water column dissolved oxygen concentrations should not to exceed 13 mg/L).

For concentrations of chlorophyll a in Franklin Creek, the numeric water quality target for chlorophyll a is not to exceed 15 micrograms per liter (µg/L) in the water column.

For concentrations of microcystins in Franklin Creek, the numeric water quality target for microcystins is 0.8 micrograms per liter (µg/L) and includes microcystin congeners LA, LR, RR, and YR.

Table 4.9.20-2. Numeric targets for nutrient response indicators.

<u>Waterbody</u>	<u>Dissolved oxygen concentration (mg/L)</u>	<u>Dissolved oxygen saturation (%)</u>	<u>Dissolved oxygen super-saturation (mg/L)</u>	<u>Chlorophyll a (µg/L)</u>	<u>Microcystins (µg/L) ¹</u>
<u>Franklin Creek</u>	<u>7.0</u> <u>or greater</u>	<u>Median of</u> <u>85</u> <u>or greater</u>	<u>13</u> <u>Not to exceed</u>	<u>15</u> <u>Not to exceed</u>	<u>0.8</u> <u>Not to exceed</u>

¹ Includes microcystin congeners LA, LR, RR, and YR.

Source Analysis

Discharges of nitrogen and phosphorus compounds originating from irrigated agriculture, municipal NPDES-permitted stormwater system discharges, industrial and construction NPDES-permitted stormwater sources, and natural sources are contributing loads to receiving waters. Irrigated agriculture is the largest source of controllable water column nutrient loads in the Franklin Creek watershed and this source category is not currently meeting its proposed load allocation. Municipal NPDES-permitted stormwater sources are a relatively minor source of nitrogen and phosphorus compounds, but can be locally significant. Sources associated with industrial and construction NPDES-permitted facilities are currently meeting proposed load allocations.

TMDLs

The following TMDLs will result in attainment of water quality standards and will rectify impairments described in the Problem Statement.

The nitrate TMDL for all streams of Franklin Creek required to support MUN beneficial uses is:

- Nitrate concentration shall not exceed 10 mg/L as nitrogen in receiving waters.

The total nitrogen and total phosphorus TMDLs for all reaches of Franklin Creek are:

- For dry season (May 1 to October 31): Total nitrogen concentration shall not exceed 1.1 mg/L in receiving waters; total phosphorus concentration shall not exceed 0.075 mg/L in receiving waters, and
- For wet season (November 1 to April 30): Nitrate concentration shall not exceed 8.0 mg/L as nitrogen in receiving waters; total phosphorus concentration shall not exceed 0.3 mg/L in receiving waters.

The TMDLs are considered achieved when water quality conditions meet all regulatory and policy requirements necessary for removing the impaired waters from the Clean Water Act section 303(d) List of impaired waters.

Final Allocations and Interim Allocations

Owners and operators of irrigated lands, municipal NPDES-permitted stormwater entities, industrial and construction NPDES-permitted stormwater sources, and natural sources, are assigned nitrate, total nitrogen, and total phosphate allocations equal to the TMDL and numeric targets.

The final allocations to responsible parties are shown in Table 4.9.20-3. The final allocations are equal to the TMDLs and should be achieved 25-years after the TMDL effective date. Unlike the load-based TMDL method, the concentration-based allocations do not add up to the TMDL because concentrations of individual pollution sources are not additive.

Recognizing that achievement of the more stringent final dry season biostimulatory allocations embedded in Table 4.9.20-3 may require a significant amount of time to achieve, interim allocations are identified. Interim allocations will be used as benchmarks in assessing progress towards the final allocations. Interim allocations are shown in Table 4.9.20-4.

Controllable Water Quality Conditions

In accordance with the Basin Plan, controllable water quality shall be managed to conform or to achieve the water quality objectives and load allocations contained in these TMDLs. The Basin Plan defines controllable water quality conditions as follows: “Controllable water quality conditions are those actions or circumstances resulting from man’s activities that may influence the quality of the waters of the State and that may be reasonably controlled.” – Basin Plan Chapter 3, Water Quality Objectives, page 29.

Compliance with Anti-degradation Requirements

State and federal anti-degradation policies require, in part, that where surface waters are of higher quality than necessary to protect beneficial uses, the high quality of those waters must be maintained unless otherwise provided by the policies. The federal anti-degradation policy, 40 CFR 131.12(a), states in part, “Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental

coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located..."

Compliance with anti-degradation requirements may be determined on the basis of trends in declining water quality in applicable waterbodies, consistent with the methodologies and criteria provided in section 3.10 of the California 303(d) Listing Policy (adopted, September 20, 2004, SWRCB Resolution No. 2004-0063). Section 3.10 of the California 303(d) Listing Policy explicitly addresses the anti-degradation component of water quality standards as defined in 40 CFR 130.2(j), and provides for identifying trends of declining water quality as a metric for assessing compliance with anti-degradation requirements.

Section 3.10 of the California 303(d) Listing Policy states that pollutant-specific water quality objectives need not be exceeded to be considered non-compliant with anti-degradation requirements: "if the water segment exhibits concentrations of pollutants or water body conditions for any listing factor that shows a trend of declining water quality standards attainment."

Practically speaking, this means that, for example, stream reaches or waterbodies that have a concentration-based TMDL allocation of 10 mg/L nitrate as nitrogen, and if current water quality or future water quality assessments in the stream reach indicates nitrate as nitrogen is well under 10 mg/L, the allocation does not give license for controllable nitrogen sources to degrade the water resource up to the maximum allocation (10 mg/L nitrate as nitrogen).

Table 4.9.20-3. Final allocations and responsible parties.

FINAL WASTELOAD ALLOCATIONS (WLAs)^{A,B}				
Waterbody^C	Party Responsible for Allocation & NPDES/WDR number	Receiving Water Nitrate as N WLA (mg/L)	Receiving Water Total Nitrogen as N WLA (mg/L)	Receiving Water Total Phosphorus as P WLA (mg/L)
Franklin Creek	<u>City of Carpinteria (Stormdrain discharges to MS4s)</u> <u>Stormwater Permit NPDES No. CAS000004</u>	10 Year-round	<u>1.1</u> <u>Dry season</u> <u>(May 1 – October 31)</u>	<u>0.075</u> <u>Dry season</u> <u>(May 1 – October 31)</u>
	<u>County of Santa Barbara (Stormdrain discharges to MS4s)</u> <u>Stormwater General Permit NPDES No. CAS000004</u>		<u>8</u> <u>Wet season</u> <u>(November 1 - April 30)</u>	<u>0.3</u> <u>Wet season</u> <u>(November 1 - April 30)</u>
	<u>Industrial stormwater general permit (stormdrain discharges from industrial facilities) NPDES No. CAS000001</u>			
	<u>Construction stormwater general permit (stormdrain discharges from construction operations) NPDES No. CAS000002</u>			
FINAL LOAD ALLOCATIONS (LAs)^{A,B}				
Waterbody^C	Party Responsible for Allocation (Source)	Receiving Water Nitrate as N LA (mg/L)	Receiving Water Total Nitrogen as N LA (mg/L)	Receiving Water Total Phosphorus as P LA (mg/L)
Franklin Creek	<u>Owners/operators of irrigated agricultural lands (Discharges from irrigated lands)</u>	10 Year-round	<u>1.1</u> <u>Dry season</u> <u>(May 1 – October 31)</u>	<u>0.075</u> <u>Dry season</u> <u>(May 1 – October 31)</u>
	<u>No responsible party (Natural sources)</u>		<u>8</u> <u>Wet season</u> <u>(November 1 - April 30)</u>	<u>0.3</u> <u>Wet season</u> <u>(November 1 - April 30)</u>

^A Federal and state anti-degradation requirements apply to all wasteload and load allocations.

^B Achievement of final wasteload and load allocations to be determined on the basis of the number of measured exceedances and/or other criteria set forth in Section 4 of the *Water Quality Control Policy for Developing California's Clean Water Act section 303(d) List*, September 2004, amended February 2015 (Listing Policy).

^C Waterbody name includes all reaches of named waterbody and waterbodies that are tributary to named waterbody.

The parties responsible for the allocation to controllable sources are not responsible for the allocation to natural sources.

Table 4.9.20-4. Interim Allocations.

INTERIM WASTELOAD ALLOCATIONS (WLAs)			
Waterbody	Party Responsible for Achieving Wasteload Allocation (Source)	First Interim WLA	Second Interim WLA
Franklin Creek	<p><u>City of Carpinteria</u> (Stormdrain discharges to MS4s) <u>Stormwater General Permit</u> <u>NPDES No. CAS000004</u></p> <p><u>County of Santa Barbara</u> (Stormdrain discharges to MS4s) <u>Stormwater General Permit</u> <u>NPDES No. CAS000004</u></p> <p><u>Industrial stormwater general permit</u> (stormdrain discharges from industrial facilities) <u>NPDES No. CAS000001</u></p> <p><u>Construction stormwater general permit</u> (stormdrain discharges from construction operations) <u>NPDES No. CAS000002</u></p>	<p><u>10 years after effective date of the TMDLs</u></p> <p><u>Achieve MUN standard-based allocations:</u></p> <p><u>10 mg/L</u> <u>Nitrate as Nitrogen</u></p>	<p><u>15 years after effective date of the TMDLs</u></p> <p><u>Achieve Wet Season (Nov. 1 to Apr. 30)</u> <u>Biostimulatory target-based TMDL allocations:</u></p> <p><u>8 mg/L</u> <u>Total Nitrogen</u></p> <p><u>0.3 mg/L</u> <u>Total Phosphorus</u></p>
INTERIM LOAD ALLOCATIONS (LAs)			
Waterbody	Party Responsible for Achieving Load Allocation (Source)	First Interim LA	Second Interim LA
Franklin Creek	<p><u>Owners/operators of irrigated agricultural lands</u> (Discharges from irrigated lands)</p>	<p><u>10 years after effective date of the TMDLs</u></p> <p><u>Achieve MUN standard-based allocations:</u></p> <p><u>10 mg/L</u> <u>Nitrate as Nitrogen</u></p>	<p><u>15 years after effective date of the TMDLs</u></p> <p><u>Achieve Wet Season (Nov. 1 to Apr. 30)</u> <u>Biostimulatory target-based TMDL allocations:</u></p> <p><u>8 mg/L</u> <u>Total Nitrogen</u></p> <p><u>0.3 mg/L</u> <u>Total Phosphorus</u></p>

Margin of Safety

A margin of safety is incorporated implicitly in the TMDLs through conservative model assumptions and statistical analysis. In addition, an explicit margin of safety is incorporated by reserving 20% of the load, calculated on a concentration basis, from wet season allocations.

Implementation

Discharges from Irrigated Agricultural Lands

Owners and operators of irrigated agricultural land must comply with the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order R3-2017-0002; the Agricultural Order), or their renewals or replacements, to meet load allocations and achieve the TMDLs. The requirements in these orders, and their

renewals or replacements in the future, will implement the TMDLs and rectify the impairments addressed in the TMDLs.

Current requirements in the Agricultural Order that will achieve the load allocations include:

- A. Implement, and update as necessary, management practices to reduce nutrient loading.
- B. Maintain existing, naturally occurring riparian vegetative cover in aquatic habitat areas.
- C. Develop/update and implement Farm Plans.
- D. Properly destroy abandoned groundwater wells.
- E. Develop and initiate implementation of an Irrigation and Nutrient Management Plan (INMP) or alternative certified by a Professional Soil Scientist, Professional Agronomist, or Crop Advisor certified by the American Society of Agronomy, or similarly qualified professional.

The current Agricultural Order provides the requirements necessary to implement this TMDL. Therefore, no new requirements are proposed as part of this TMDL.

Monitoring

Owners and operators of irrigated agricultural lands must perform monitoring and reporting in accordance with the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands, Monitoring and Reporting Program Orders R3-2017-0002-01, R3-2017-0002-02, and R3-2017-0002-03, as applicable, or their renewals or replacements.

Determining Progress Towards and Attainment of Load Allocations

Load allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen and phosphorus compound loading, and water quality monitoring. Flexibility to allow owners/operators of irrigated lands to demonstrate progress towards and attainment of load allocations is a consideration. Additionally, staff is aware that not all implementing parties are necessarily contributing to or causing a surface water impairment. However, it is important to recognize that impacting shallow groundwater with nutrient pollution may also impact surface water quality via baseflow loading contributions to the surface waterbodies.

To allow for flexibility, Central Coast Water Board staff will assess progress towards and attainment of load allocations using one or a combination of the following:

1. Owners/operators of irrigated lands may show progress towards attaining load allocations by implementing management practices that are capable of achieving interim and final load allocations identified in this TMDL;
2. Demonstrating quantifiable receiving water mass load reductions;
3. Attaining the nutrient load allocations in the receiving water;
4. Attaining receiving water TMDL numeric targets for nutrient-response indicators (i.e., dissolved oxygen water quality objectives, chlorophyll *a* targets and microcystin targets) and mitigation of downstream nutrient impacts to receiving waterbodies may constitute a demonstration of attainment of the nitrate, nitrogen and phosphorus-based seasonal biostimulatory load allocations. Note that implementing parties are strongly encouraged to maximize overhead riparian canopy, where and if appropriate, using riparian vegetation, because doing so could result in achieving nutrient-response indicator targets before allocations are achieved;
5. Owners/operators of irrigated lands may provide sufficient evidence to demonstrate that they are and will continue to attain the load allocations; such evidence could include documentation submitted by the owner/operator to the Executive Officer that the owner/operator is not causing waste to be discharged to impaired waterbodies resulting or contributing to violations of the load allocations.

Storm Drain Discharges to Municipal Separate Storm Sewer Systems

The Central Coast Water Board will address nitrogen and phosphate compounds discharged from municipal separate storm sewer systems (MS4s) by regulating the MS4 entities under the provisions of the State Water Resource Control Board's General Permit for the Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (General Permit, Water Quality Order No. 2013-0001-DWA, NPDES CAS000004), or subsequent General Permits. To address the MS4 wasteload allocations, the Central Coast Water Board will require MS4

enrollees that discharge to surface waterbodies impaired by excess nutrients or by biostimulation to address these impairments by developing and implementing a Wasteload Allocation Attainment Program.

The Central Coast Water Board will require MS4 entities to develop and submit for Executive Officer approval a Wasteload Allocation Attainment Program consistent with the requirements of the General Permit, or with any subsequent General Permits. The Wasteload Allocation Attainment Program shall include descriptions of the actions that will be taken by the MS4 entity to attain the TMDL wasteload allocations.

MS4 Stormwater Monitoring

The MS4s are required to develop and submit monitoring programs as part of their WAAP. The goals of the monitoring programs are described in the requirements of the WAAP.

The MS4s must prepare a detailed description, including a schedule, of a monitoring program the MS4 will implement to assess discharge and receiving water quality, BMP effectiveness, and progress towards any interim targets and ultimate attainment of the MS4s' wasteload allocations. The monitoring program shall be designed to validate BMP implementation efforts and quantitatively demonstrate attainment of interim and final wasteload allocations. The Central Coast Water Board may approve participation in statewide or regional monitoring programs as meeting all, or a portion of monitoring requirements.

Staff encourages the implementing parties to develop and submit creative and meaningful monitoring programs. Monitoring strategies can use a phased approach, for example, whereby outfall or receiving water monitoring is phased in after best management practices have been implemented and assessed for effectiveness. Pilot projects where best management practices are implemented in well-defined areas covering a fraction of the MS4 that facilitate accurate assessment of how well the best management practices control pollution sources are acceptable, with the intent of successful practices then being implemented in other or larger parts of the MS4.

Determining Progress Towards and Attainment of Load Allocations

Wasteload allocations will be achieved through a combination of implementation of management practices and strategies to reduce nitrogen and phosphorus compound loading, and water quality monitoring.

To allow for flexibility, Central Coast Water Board staff will assess progress towards and attainment of wasteload allocations using one or a combination of the following:

1. Demonstrate progress toward and attainment of wasteload allocations by measuring concentrations in stormdrain outfalls;
2. Demonstrate progress toward and attainment of wasteload allocations by measuring load reductions on mass basis at stormdrain outfalls;
3. Attaining the wasteload allocations in the receiving water;
4. Attaining receiving water TMDL numeric targets for nutrient-response indicators (i.e., dissolved oxygen water quality objectives, chlorophyll a targets and microcystin targets) and mitigation of downstream nutrient impacts to receiving waterbodies may constitute a demonstration of the attainment of the nitrate, nitrogen, and orthophosphate-based seasonal biostimulatory wasteload allocations. Note that implementing parties are strongly encouraged to maximize overhead riparian canopy using riparian vegetation, where and if appropriate, because doing so could result in achieving nutrient-response indicator targets before allocations are achieved (resulting in a less stringent allocation);
5. MS4s may demonstrate progress toward and attainment of wasteload allocations through implementation and assessment of pollutant loading reduction projects and assessment of BMPs capable of achieving interim and final wasteload allocations identified in this TMDL in combination with water quality monitoring for a balanced approach to determining program effectiveness; and
6. Any other effluent limitations and conditions which are consistent with the assumptions and requirements of the wasteload allocations.

Industrial and Construction Stormwater Discharges

Based on evidence and information provided in the TMDL report (attachment 2 to the staff report), NPDES stormwater-permitted industrial facilities and construction sites in the Franklin Creek watershed would not be expected to be a significant risk or cause of the observed nutrient water quality impairments, and these types of facilities are generally expected to be currently meeting proposed wasteload allocations. Therefore, at this time,

additional regulatory measures for this source category are not warranted. However, according to the U.S. Environmental Protection Agency and the State Water Resources Control Board, all NPDES-permitted point sources identified in a TMDL must be given a wasteload allocation, even if their current load to receiving waters is zero.

To maintain existing water quality and prevent any further water quality degradation, these permitted industrial facilities and construction operators shall continue to implement and comply with the requirements of the statewide Industrial General Permit (Order No. 2014-0057-DWQ, NPDES No. CAS000001) or the Construction General Permit (Order No. 2012-0006-DWQ, NPDES No. CAS000002), or any subsequent Industrial or Construction General Permits.

Available information does not conclusively demonstrate that stormwater from all industrial facilities and construction sites are meeting wasteload allocations. More information may be obtained during the implementation phase of these TMDLs to further assess the level of nutrient contributions to surface waters from these source categories, and to identify any actions needed to reduce nutrient loading.

Tracking and Evaluation

After the TMDLs are approved by OAL, the Central Coast Water Board periodically will perform a review of implementation actions, monitoring results, and evaluations submitted by responsible parties of their progress toward achieving their allocations, dependent upon staff availability and priorities. The Central Coast Water Board will use annual reports, nonpoint source pollution control implementation programs, evaluations submitted by responsible parties, and other available information to determine progress toward implementing required actions and achieving the allocations and numeric targets.

Responsible parties may also demonstrate that although water quality objectives are not being achieved in receiving waters, controllable sources of nitrogen and phosphorus compounds are not contributing to the exceedance. If this is the case, the Central Coast Water Board may re-evaluate numeric targets and allocations. For example, the Central Coast Water Board may pursue and approve a site-specific objective. The site-specific objective would be based on evidence that natural conditions or background sources alone were the cause of exceedances of the Basin Plan water quality objectives.

Periodic reviews will continue until the water quality objectives are achieved. The implementation schedule for achieving this TMDL is 25 years after the date of approval by OAL (the effective date).

Optional Special Studies and Reconsideration of the TMDLs

Additional monitoring and voluntary optional special studies would be useful to evaluate the uncertainties and assumptions made in the development of these TMDLs. The results of special studies may be used to re-evaluate wasteload allocations and load allocations in these TMDLs. Implementing parties may submit work plans for optional special studies (if implementing parties choose to conduct special studies) for approval by the Executive Officer. Special studies completed and final reports shall be submitted for Executive Officer approval. Additionally, eutrophication is an active area of research. Consequently, ongoing scientific research on eutrophication and biostimulation may further inform the Central Coast Water Board regarding wasteload or load allocations that are protective against biostimulatory impairments, and help assess implementation timelines, and/or downstream impacts. At this time, staff maintains there is sufficient information to begin to implement these TMDLs and make progress towards attainment of water quality standards and the proposed allocations. However, in recognition of the uncertainties regarding nutrient pollution and biostimulatory impairments, staff proposes that the Central Coast Water Board reconsider the wasteload and load allocations, if merited by optional special studies and new research, ten years after the effective date of the TMDLs, which is upon approval by the OAL. A time schedule for optional studies and Central Coast Water Board reconsideration of the TMDL is presented in Table 4.9.20-5.

Further, the Central Coast Water Board may also reconsider these TMDLs, the nutrient water quality criteria, or other TMDL elements on the basis of potential future promulgation of a statewide nutrient policy for inland surface waters in the State of California.

Table 4.9.20-5. Time schedule for optional studies and Central Coast Water Board reconsideration of wasteload allocations and load allocations.

<u>Proposed Actions</u>	<u>Description</u>	<u>Time Schedule-Milestones</u>
<u>Optional studies work plans</u>	<u>Implementing parties shall submit work plans for optional special studies (if implementing parties choose to conduct special studies) for approval by the Executive Officer.</u>	<u>By four years after the effective date of the TMDL</u>
<u>Final optional studies</u>	<u>Optional studies completed and final report submitted for Executive Officer approval.</u>	<u>By six years after the effective date of the TMDL</u>
<u>Reconsideration of TMDL</u>	<u>If merited by optional special studies or information from ongoing research into eutrophication issues, the Water Board will reconsider the wasteload allocations and load allocations and/or implementation timelines adopted pursuant to this TMDL.</u>	<u>By eight years after the effective date of the TMDL</u>