

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906**

RESOLUTION NO. R3-2014-0009

**AMENDING THE WATER QUALITY CONTROL PLAN FOR THE CENTRAL COASTAL
BASIN TO ADOPT TOTAL MAXIMUM DAILY LOADS FOR TOXICITY AND PESTICIDES IN
THE SANTA MARIA WATERSHED IN SANTA BARBARA, SAN LUIS OBISPO, AND
VENTURA COUNTIES, CALIFORNIA**

The Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board) finds:

1. The Central Coast Water Board adopted the second edition of the *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan), on September 8, 1994. The Basin Plan designates beneficial uses and water quality objectives, sets forth implementation plans to achieve water quality objectives addressing point source and nonpoint source discharges, establishes prohibitions, and incorporates statewide plans and policies.
2. The Central Coast Water Board periodically revises and amends the Basin Plan. The Central Coast Water Board has determined the Basin Plan requires further revision and amendment to incorporate Total Maximum Daily Loads (TMDLs) and an implementation plan for toxicity and pesticides in the Santa Maria watershed in Santa Barbara, San Luis Obispo and Ventura counties.
3. The geographic scope of this TMDL encompasses the Santa Maria River watershed, which corresponds to Santa Maria Hydrologic Unit 312 in the Basin Plan and is composed of the Cuyama, Sisquoc, and Guadalupe hydrologic areas. The impairments addressed in the TMDL are within the Guadalupe Hydrologic Area (312.10), which is referred to as the Santa Maria valley. The Santa Maria valley is transected by the Santa Maria River, which receives flow from the Cuyama River upstream to the northeast, with flows regulated by the Twitchell Dam. The Santa Maria River also receives flow from the Sisquoc River to the southeast and various smaller tributaries in the lower watershed before discharging through the Santa Maria River Estuary and into the Pacific Ocean. Oso Flaco Lake is a separate, small subwatershed in the northwest corner of the Santa Maria valley with flows originating from Oso Flaco Creek and Little Oso Flaco Creek.
4. Multiple waterbodies within the Santa Maria River watershed are listed on the Clean Water Act section 303(d) list for water quality impairments due to unknown toxicity, sediment toxicity, and the presence of the pesticides chlorpyrifos, diazinon, DDTs, dieldrin, and toxaphene. Additionally, multiple impairments not identified on the current Clean Water Act section 303(d) list were identified during development of the TMDL; the additional impairments are due to the presence of pyrethroid pesticides, chlorpyrifos, diazinon, malathion, chlordane, and DDT. Current Clean Water Act section 303(d) listings and the additional impairments, all of which are addressed in the TMDL, are summarized in the table below. Due to the Clean Water Act section 303(d) listings, the Central Coast Water Board is required to adopt TMDLs and an associated implementation plan (40 CFR 130.6(c)(1), 130.7, California Water Code section 13242).

Waterbody	Clean Water Act Section 303(d) Listed Pollutant	Additional Impairments ²
Blosser Channel	Unknown Toxicity	Chlorpyrifos, Diazinon, pyrethroids
Bradley Canyon Creek	Unknown Toxicity	--
Bradley Channel	Chlorpyrifos, Sediment Toxicity, Unknown Toxicity	Diazinon, Pyrethroids, DDT
Greene Valley Creek	Chlorpyrifos, Unknown Toxicity	--
Little Oso Flaco Creek	Sediment Toxicity, Unknown Toxicity	--
Main Street Canal	Chlorpyrifos, Diazinon Unknown Toxicity	Pyrethroids, DDT
Orcutt Creek	Chlorpyrifos, DDT, Diazinon, Dieldrin, Sediment Toxicity, Unknown Toxicity	Pyrethroids
Oso Flaco Creek	Sediment Toxicity, Unknown Toxicity	Malathion, DDT
Oso Flaco Lake	Dieldrin	Chlordane, DDT
Santa Maria River	Chlorpyrifos, DDT, Dieldrin, Endrin, Sediment Toxicity, Toxaphene, Unknown Toxicity	Diazinon, Pyrethroids

¹ State Water Resource Control Board Waterbody ID

² Additional impairments are exceedances of water quality objectives in waterbodies identified during TMDL development and subsequent to the current 303(d) list.

5. Waters described as additional impairments in Finding 4 are impaired due to the pollutants described in Finding 4. However, the additional impairments are not waters listed as impaired on the Clean Water Act section 303(d) list until established as such as described in the *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (State Water Board Resolution No. 2004-0063).
6. The Central Coast Water Board's goal for establishing TMDLs as described in the Basin Plan is to protect and restore beneficial uses of surface waters, which rely on established water quality objectives. There are two general narrative water quality objectives that pertain to the pesticide TMDL. One is the general objective for toxicity and the other is the general objective for pesticides. They are described as follows:

General Objective for 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 the 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.

General Objective for Pesticides: No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.
7. The Central Coast Water Board proposes to amend Chapter Four, section IX (Total Maximum Daily Loads) of the Basin Plan.
8. On May 20, 2004, the State Water Resources Control Board (State Water Board) adopted the *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program* (NPS Policy). The NPS Policy requires the regional water quality control boards to regulate all nonpoint sources of pollution using the administrative permitting authorities provided by the Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Div. 7). Consistent

with the NPS Policy and the Porter-Cologne Act, regional water quality control boards regulate nonpoint source discharges with waste discharge requirements, waivers of waste discharge requirements, and/or Basin Plan prohibitions.

9. On May 20, 2004, the State Water Board adopted the *Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List* (State Water Board Resolution No. 2004-0063), hereafter referred to as the *California 303(d) Listing Policy*. The *California 303(d) Listing Policy* describes the process by which the State Water Board and the regional water quality control boards will comply with the listing requirements of the federal Clean Water Act (CWA). The objective of the *California 303(d) Listing Policy* is to establish a standardized approach for developing California's CWA section 303(d) list and to provide guidance for interpreting data and information to make decisions regarding water quality standards attainment.
10. On June 16, 2005, the State Water Board adopted the *Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options* (State Water Board Resolution 2005-0050), hereafter referred to as the *Impaired Waters Policy*. The *Impaired Waters Policy* provides policy and procedures for adopting Total Maximum Daily Loads and addressing impaired waters in California. The *Impaired Waters Policy* states that the regional water quality control boards have independent discretion, broad flexibility, numerous options, and some legal constraints that apply when determining how to address impaired waters.
11. The U.S. Environmental Protection Agency's (USEPA) published TMDL guidance (*Guidance for Water Quality-Based Decisions: The TMDL Process – Chapter 1, Policies and Principles*, USEPA 404/4-91-001, April 1991) explicitly states that implementation of TMDLs and water quality-based controls should not be delayed because of lack of information and uncertainties about pollution problems, particularly with respect to nonpoint sources. More information about the spatial extent and nature of water quality impairments can be collected during TMDL implementation.
12. The elements of a TMDL are described in 40 CFR 130.2 and 130.7, section 303(d) of the Clean Water Act, and USEPA guidance documents. A TMDL is defined as “the sum of individual waste load allocations for point sources and load allocations for nonpoint sources and natural background” (40 CFR 130.2). The Central Coast Water Board has determined that the TMDLs for unknown toxicity; sediment toxicity; the pesticides chlorpyrifos, diazinon, DDTs, dieldrin, and toxaphene; and pyrethroid pesticides in the Santa Maria watershed are set at levels necessary to attain and maintain the applicable narrative water quality objectives, taking into account seasonal variations and any lack of knowledge concerning the relationship between effluent limitations and water quality (40 CFR 130.7 (c) (1)). The regulations in 40 CFR 130.7 also state that TMDLs shall take into account critical conditions for stream flow, loading, and water quality parameters. TMDLs are often expressed as a mass load of the pollutant but can be expressed as a unit of concentration or toxicity, if appropriate (40 CFR 130.2(i)).
13. Upon establishment of TMDLs by the State or USEPA, the State is required to incorporate the TMDLs, along with appropriate implementation measures, into the state water quality management plan (40 CFR 130.6(c)(1) and 130.7 and California Water Code sections 13050(j) and 13242). The Basin Plan and applicable statewide plans serve as the state water quality management plan governing the watersheds under the jurisdiction of the Central Coast Water Board.
14. The TMDLs are based on sound scientific knowledge, methods, and practices. Health and Safety Code section 57004 requires external scientific peer review for certain water quality control policies. Central Coast Water Board staff submitted the Final Project Report for the

TMDLs to three external scientific reviewers in September 2012. Water Board staff received comments from the reviewers. Central Coast Water Board staff either modified the Final Project Report in accordance with the comments, provided a written response that explained the basis for not incorporating the comments, or made no modifications because the commenter suggested none was needed.

15. Central Coast Water Board staff will conduct a review of implementation activities when monitoring and reporting data are submitted as required by the Agricultural Order and existing or future NPDES storm water permits, or when other monitoring data and/or reporting data are submitted outside the requirements of existing permits and orders. Central Coast Water Board staff will pursue modification of Agricultural Order conditions, NPDES storm water permit conditions, or other regulatory means, as necessary, to address remaining impairments resulting from pesticides during the TMDL implementation phase.
16. The Central Coast Water Board implemented a process to inform interested persons about the TMDLs. Central Coast Water Board efforts to inform the public and solicit comment included public meetings with interested persons and a public notice and a written comment period. Public notice of the proposed Basin Plan amendment provided the public a 60-day public comment period preceding the Central Coast Water Board hearing. Notice of public hearing was given by advertising in newspapers of general circulation within the Region and by emailing a copy of the notice to all persons requesting such notice and applicable government agencies. Relevant documents and notices were also made available on the Central Coast Water Board website. The Central Coast Water Board responded to oral and written comments received from the public. All public comments were considered.
17. Adoption of these TMDLs and Basin Plan amendments will not result in any degradation of water quality; in fact, they are designed to improve water quality. As such, these TMDLs and Basin Plan amendments comply with all State and federal anti-degradation requirements (State Board Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" and 40CFR 131.12).
18. Pursuant to Public Resources Code section 21080.5, the Resources Agency has approved the Regional Water Boards' basin planning process as a "certified regulatory program" that adequately satisfies the California Environmental Quality Act (CEQA) (Public Resources Code, Section 21000 et seq.) requirements for preparing environmental documents (14 Cal. Code Regs. §15251(g); 23 Cal. Code Regs. § 3782.). Central Coast Water Board staff has prepared "substitute environmental documents" for this project that contain the required environmental documentation as set forth in the State Water Board's CEQA regulations (23 Cal. Code Regs. § 3777.). The substitute environmental documents include the TMDL Staff Report and its attachments, including 1) this resolution and the Basin Plan amendment language (Attachment 1 of the Staff Report), 2) *Final Project Report for Total Maximum Daily Loads For Toxicity and Pesticides in the Santa Maria Watershed in Santa Barbara, San Luis Obispo and Ventura Counties, California* (Attachment 2 of the Staff Report), 3) the CEQA Checklist and Analysis (Attachment 3 of the Staff Report), and 4) the comments and responses to comments (Attachment 6 of the Staff Report). The Staff Report also includes the Notice of Public Hearing/Notice of Filing (Attachment 4) and the Scientific Peer Review Comment (Attachment 5). The project itself is the establishment of TMDLs for toxicity and pesticides in the Santa Maria watershed. The Central Coast Water Board exercises discretion in assigning waste load allocations and load allocations, determining the program of implementation, and setting various milestones in achieving the water quality standards. The CEQA checklist and other portions of the substitute environmental documents contain significant analysis and findings related to impacts and mitigation measures.

19. A CEQA scoping meeting was conducted on November 9, 2012, at the Central Coast Water Board office; a notice of the CEQA scoping meeting was sent to interested persons on October 29, 2012. The notice included a background of the project, the project purpose, a meeting schedule, and directions for obtaining more detailed information through the Central Coast Water Board website; the notice and project summary were available at the website or by requesting hard copies via telephone.
20. Public Resources Code section 21159 provides that an agency shall perform, at the time of the adoption of a rule or regulation requiring the installation of pollution control equipment or a performance standard or treatment requirement, an environmental analysis of the reasonably foreseeable methods of compliance, and an analysis of the reasonably foreseeable environmental impacts of the methods of compliance, an analysis of reasonably foreseeable mitigation measures to lessen the adverse environmental impacts, and an analysis of reasonably foreseeable alternative means of compliance with the rule or regulation that would have less significant adverse impacts. Section 21159(c) requires that the environmental analysis take into account a reasonable range of environmental, economic, and technical factors; population and geographic areas; and specific sites. The Staff Report and its attachments prepared for this Basin Plan amendment, in particular the CEQA Checklist and Analysis (Attachment 3 of the Staff Report), provides the environmental analysis required by Public Resources Code section 21159 and are hereby incorporated as findings in this Resolution.
21. In preparing the substitute environmental documents, the Central Coast Water Board considered the requirements of Public Resources Code section 21159 and California Code of Regulations, title 14, section 15187, and intends those documents to serve as a Tier 1 environmental review. This analysis is not intended to be an exhaustive analysis of every conceivable impact, but an analysis of the reasonably foreseeable consequences of the adoption of this regulation, from a programmatic perspective. Compliance obligations will be undertaken directly by public agencies that may have their own obligations under CEQA. Project level impacts may need to be considered in any subsequent environmental analysis performed by other public agencies, pursuant to Public Resources Code section 21159.2. To the extent applicable, this Tier 1 substitute environmental document may be used to satisfy subsequent CEQA obligations of those agencies.
22. Consistent with the Central Coast Water Board's substantive obligations under CEQA, the substitute environmental documents do not engage in speculation or conjecture, and only consider the reasonably foreseeable environmental impacts, including those relating to the methods of compliance, reasonably foreseeable feasible mitigation measures to reduce those impacts, and the reasonably foreseeable alternative means of compliance, that would avoid or reduce the identified impacts.
23. The substitute environmental documents, including the the CEQA Checklist and Analysis (Attachment 3 to the Staff Report) provide the necessary information pursuant to state law to conclude that the proposed TMDL, implementation plan, and the associated reasonably foreseeable methods of compliance could potentially have a significant adverse effect on the environment. Potentially significant adverse impacts include impacts to agricultural resources, air quality, biological resources, hydrology, landuse planning, and noise. This determination is based on best available information in an effort to fully inform the interested public and the decision makers of potential environmental impacts. Significant effects on the environment are defined as *"a substantial, or potentially substantial, adverse change within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance"* (14 Cal. Code Regs. § 1538). The Central Coast Water Board may not specify the manner of compliance (California Water code § 13360) so it has insufficient information to evaluate the extent to which dischargers might choose, for example, to use water

conservation to comply. Water conservation, and therefore reduction in toxic runoff, may offset impacts due to the reduced flows that could occur. In addition, reduction in water use could result in increased groundwater levels that would also result in more clean water to surface water. Given the uncertainty associated with evaluating the available information, it is possible that any adverse changes on aquatic habitat associated with the basin plan amendment will be less than substantial. When the agencies and responsible parties responsible for implementing these TMDLs determine how they will proceed, the agencies responsible for those parts of the project can and should incorporate such alternatives and mitigation into any subsequent projects or project approvals so as to minimize adverse environmental impacts. Feasible alternatives and mitigation measures are described in more detail in the substitute environmental documents (14 Cal. Code Regs. § 15091(a)(2)).

24. The substitute environmental documents, including the CEQA Checklist and Analysis (Attachment 3 to the Staff Report), identify mitigation approaches that should be considered at the project level.
25. Pursuant to CEQA Guidelines section 15093 (14 Cal. Code. Regs. § 15093), the Central Coast Water Board hereby finds that the project's benefits override and outweigh its potential significant adverse impacts, for the reasons more fully set forth in the Staff Report and attachments thereto, including the CEQA Checklist and Analysis. Specific economic, social, and environmental benefits justify the adoption of this TMDL despite the project's potential significant adverse environmental impacts. The Central Coast Water Board has the authority and responsibility to regulate discharges of waste associated with the sources of pollution causing impairment to water quality. Many of those discharges have caused significant widespread degradation and/or pollution of waters of the state as described in the Final Project Report for Total Maximum Daily Loads for Toxicity and Pesticides in the Santa Maria Watershed in Santa Barbara, San Luis Obispo and Ventura Counties, California and associated reference materials. This TMDL would result in actions to restore the quality of the waters of the state and protect their beneficial uses. While some impacts could occur due to reduced flows, earth-moving, or from implementing other actions to comply with the TMDL as described in the CEQA Checklist and Analysis, the benefits, which include contributing to the present and future restoration of beneficial water uses, and reducing or eliminating pollution and contamination, warrant approval of the TMDL, despite each and every unavoidable impact. Upon review of the environmental information generated for this TMDL, including the CEQA Checklist and Analysis (Attachment 3 of the Staff Report) and in view of the entire record supporting the need for the TMDL, the Central Coast Water Board determines that specific economic, legal, social, technological, environmental, and other benefits of this TMDL outweigh the unavoidable adverse environmental effects, and that such adverse environmental effects are acceptable under the circumstances.
26. The Central Coast Water Board will request that the State Water Board approve the basin plan amendments incorporating TMDLs for toxicity and pesticides in the Santa Maria watershed. The TMDLs and implementation program for the TMDLs will become effective upon approval by the California Office of Administrative Law. The TMDLs must also be approved by the USEPA.
27. The amendments to the basin plan may have an effect on fish and wildlife. The Central Coast Water Board will, therefore, forward fee payments to the Department of Fish and Wildlife under the California Fish and Game Code section 711.4.
28. Based on relevant future information, data, and research, the Central Coast Water Board has the discretion to conduct a water quality standards review which may potentially include one or more of the following: (1) The Central Coast Water Board may designate critical low-flow conditions below which numerical water quality criteria do not apply, as consistent with federal regulations and policy; (2) The Central Coast Water Board may authorize lowering of water quality to some

degree if and where appropriate, if the Central Coast Water Board finds water quality lowering to be necessary to accommodate important economic or social development. In authorizing water quality lowering the Central Coast Water Board shall make any such authorizations consistent with the provisions and requirements of federal and state anti-degradation policies; and (3) The Central Coast Water Board may authorize revision of water quality standards, if appropriate and consistent with federal and state regulations, to remove a designated beneficial use, establishing subcategories of uses, establishing site specific water quality objectives, or other modification of the water quality standard. When a standards action is deemed appropriate, the Central Coast Water Board shall follow all applicable requirements, including but not limited to those set forth in part 131 of Title 40 of the Code of Federal Regulations and Article 3 of Division 7, Chapter 4 of the California Water Code.

29. The proposed amendments meet the "Necessity" standard of the Administrative Procedures Act, Government Code, section 11353, subdivision (b). As specified in Finding 21, federal regulations require that TMDLs be incorporated into the state's water quality management plan. The Central Coast Water Board's Basin Plan is the Central Coast Water Board's component of California's water quality management plan, and the Basin Plan is how the Central Coast Water Board takes quasi-legislative planning actions. Moreover, the TMDL is a program of implementation for existing water quality objectives, and is, therefore, appropriately a component of the Basin Plan under the California Water Code, section 13242. The necessity of developing TMDLs is established in the TMDL staff report (including attachments), the Clean Water Act section 303(d) list, and the data contained in the administrative record documenting the pesticide and toxicity impairments of the Lower Santa Maria River and Oso Flaco Lake Watersheds.
30. Consistent with Water Code section 13141, the amendment includes an estimate of the total cost of implementation of the agricultural related portions of this TMDL and identifies potential sources of financing.
31. On January 30, 2014, in Watsonville, the Central Coast Water Board held a public hearing and heard and considered all public comments and evidence in the record.

THEREFORE, be it resolved that:

1. Pursuant to sections 13240, 13242, 13243, and 13244 of the California Water Code, the Central Coast Water Board, after considering the entire record, including the oral testimony at the hearing, hereby adopts the amendment in "Attachment-Proposed Basin Plan Amendments."
2. The Executive Officer is directed to forward copies of the Basin Plan amendment to the State Board in accordance with the requirements of section 13245 of the California Water Code.
3. The Central Coast Water Board requests that the State Water Board approve the Basin Plan amendments in accordance with the requirements of sections 13245 and 13246 of the California Water Code and forward them to the California Office of Administrative Law and the USEPA for approval.
4. The Executive Officer is authorized to sign a Certificate of Fee Exemption or transmit payment of the applicable fee as may be required to the Resources Agency.
5. If, during the approval process, Central Coast Water Board staff, State Water Board staff, the State Water Board, or the California Office of Administrative Law determines that minor, non-substantive corrections to the language of the amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Central Coast Water Board of any such changes.

6. The environmental documents prepared by the Central Coast Water Board staff pursuant to Public Resources Code 21080.5 are hereby certified.

I, Kenneth A. Harris Jr., Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Coast Region on January 30, 2014.

Kenneth A. Harris Jr.
Executive Officer

RESOLUTION NO. R3-2014-0009

ATTACHMENT - PROPOSED BASIN PLAN AMENDMENTS

Revise the September 8, 1994 Basin Plan as follows:

AMENDMENT NO. 1. TOTAL MAXIMUM DAILY LOADS FOR TOXICITY AND PESTICIDES IN THE SANTA MARIA WATERSHED INCLUDING BLOSSER CHANNEL, BRADLEY CANYON CREEK, BRADLEY CHANNEL, GREENE VALLEY CREEK, LITTLE OSO FLACO CREEK, MAIN STREET CANAL, ORCUTT CREEK, OSO FLACO CREEK, OSO FLACO LAKE, AND SANTA MARIA RIVER.

Add the following to Chapter 4 after IX. Q.:

IX. R. TOTAL MAXIMUM DAILY LOADS FOR TOXICITY AND PESTICIDES IN THE SANTA MARIA WATERSHED (INCLUDING BLOSSER CHANNEL, BRADLEY CANYON CREEK, BRADLEY CHANNEL, GREENE VALLEY CREEK, LITTLE OSO FLACO CREEK, MAIN STREET CANAL, ORCUTT CREEK, OSO FLACO CREEK, OSO FLACO LAKE, AND SANTA MARIA RIVER).

The Regional Water Quality Control Board adopted these TMDLs on January 30, 2014. These TMDLs were approved by:

The State Water Resources Control Board on: _____ (date).

The California Office of Administrative Law on: _____ (date).

The U.S. Environmental Protection Agency on: _____ (date).

Problem Statement

Surface waters in the Santa Maria River watershed are polluted with pesticides that are toxic to aquatic life. This is in violation of the Basin Plan general narrative objectives for toxicity and pesticides. Aquatic life-related beneficial uses are not being protected, including but not limited to the following: cold fresh water habitat, warm fresh water habitat, estuarine habitat, wildlife habitat, rare threatened or endangered species-migration, spawning, reproduction and/or early development, commercial and sport fishing, and shellfish harvesting.

There are three classes of pesticides and several pesticide active ingredients causing impairment in Santa Maria River watershed, including organophosphate (chlorpyrifos, diazinon, and malathion), synthetic pyrethroids (bifenthrin, cyfluthrin, cypermethrin, esfenvalerate, lambda-cyhalothrin, and permethrin), and organochlorine (DDTs, dieldrin, and toxaphene). Additionally, surface waters in the project area are on the Clean Water Act section 303(d) list as impaired for unknown water column toxicity and sediment toxicity to invertebrate test organisms. Organophosphate and pyrethroids concentrations in the surface waters and sediments are at levels associated with toxicity. Surface waters are impaired for organochlorine pesticides due to the levels in fish tissue that exceeded fish consumption criteria.

The following impairments are addressed with these TMDLs:

Blosser Channel: unknown toxicity, chlorpyrifos, diazinon
 Bradley Canyon Creek: unknown toxicity
 Bradley Channel: chlorpyrifos, sediment toxicity, unknown toxicity, diazinon, pyrethroids, DDT
 Greene Valley Creek: chlorpyrifos, unknown toxicity
 Little Oso Flaco Creek: sediment toxicity, unknown toxicity
 Main Street Canal: chlorpyrifos, diazinon, unknown toxicity, pyrethroids, DDT
 Orcutt Creek: chlorpyrifos, DDT, diazinon, dieldrin, sediment toxicity, unknown toxicity, pyrethroids
 Oso Flaco Creek: sediment toxicity, unknown toxicity, malathion, DDT
 Oso Flaco Lake: dieldrin, chlordane, DDT
 Santa Maria River: chlorpyrifos, DDT, dieldrin, endrin, sediment toxicity, toxaphene,
 unknown toxicity, diazinon, pyrethroids

Numeric Targets

The following numeric targets are used to ascertain if water quality objectives are achieved and if beneficial uses are protected.

Water Column Numeric Targets

Table 1 Water Column Numeric Targets

Chemical	Concentration µg/L (ppb)	Target Type
Chlorpyrifos	0.025	CMC ¹
Chlorpyrifos	0.015	CCC ²
Diazinon	0.16	CMC
Diazinon	0.10	CCC
Malathion	0.17	CMC
Malathion	0.028	CCC
Bifenthrin	0.004	CMC
Bifenthrin	0.0006	CCC
Cyfluthrin	0.0003	CMC
Cyfluthrin	0.00005	CCC
Lambda-Cyhalothrin	0.001	CMC
Lambda-Cyhalothrin	0.0005	CCC
Chlordane	0.00057	Human Health Consumption
DDD, 4,4- (p,p-DDD)	0.00083	Human Health Consumption
DDE, 4,4- (p,p-DDE)	0.00059	Human Health Consumption
DDT, 4,4-(p,p-DDT)	0.00059	Human Health Consumption
Dieldrin	0.00014	Human Health Consumption
Toxaphene	0.00073	Human Health Consumption

¹ CMC – Criterion Maximum Concentration (Acute: 1- hour average). Not to be exceeded more than once in a three-year period². CCC - Criterion Continuous Concentration (Chronic: 4-day (96-hour) average). Not to be exceeded more than once in a three-year period.

Additive Toxicity Numeric Target for Organophosphate Pesticides

The organophosphate pesticides chlorpyrifos and diazinon have additive toxicity in the water column. Since the TMDL is linked to toxicity and concentrations, additive toxicity must be considered in the TMDL as a numeric target.

The numeric target for additive toxicity for organophosphate pesticides is:

$$\frac{C(\text{diazinon})}{NT(\text{diazinon})} + \frac{C(\text{chlorpyrifos})}{NT(\text{chlorpyrifos})} = S; \text{ where } S \leq 1$$

Where:

C = the concentration of a pesticide measured in the receiving water.

NT = the numeric target for each pesticide present.

S = the sum; a sum exceeding one (1.0) indicates that beneficial uses may be adversely affected.

The additive toxicity numeric target formula shall be applied when both diazinon and chlorpyrifos are present in the water column.

Sediment Numeric Targets

Table 2 Sediment Numeric Targets

Chemical Group	Chemical	Concentration µg/kg o.c. (ppb)	Target Type
Organochlorine	Chlordane	1.7	Human Health-Based
Organochlorine	DDD, 4,4-(p,p-DDD)	9.1	Human Health-Based
Organochlorine	DDE, 4,4-(p,p-DDE)	5.5	Human Health-Based
Organochlorine	DDT, 4,4-(p,p-DDT)	6.5	Human Health-Based
Organochlorine	Total DDT	10	Human Health-Based
Organochlorine	Dieldrin	0.14	Human Health-Based
Organochlorine	Endrin	550	Human Health-Based
Organochlorine	Toxaphene	20	Human Health-Based

Additive Toxicity Numeric Target for Pyrethroid Pesticides

The pyrethroid pesticides have additive toxicity in aquatic sediments. Since the TMDL is linked to toxicity and concentrations, additive toxicity must be considered in the TMDL as a numeric target.

The numeric target for additive toxicity for pyrethroid pesticides is:

$$\frac{C(\text{Pyrethroid 1})}{NLC(\text{Pyrethroid 1})} + \frac{C(\text{Pyrethroid 2})}{NLC(\text{Pyrethroid 2})} = S; \text{ where } S \leq 1$$

Where:

C = the concentration of a pesticide measured in sediment.

NLC = the numeric LC50 for each pesticide present (Table 3).

S = the sum; a sum exceeding one (1.0) indicates that beneficial uses may be adversely affected.

The additive toxicity numeric target formula shall be applied when pyrethroid pesticides are present in the sediment.

Table 3 Pyrethroid Sediment LC50s

Chemical	LC50 ng/g ppb)	LC50 µg/g OC*(ppm)
Bifenthrin	12.9	0.52
Cyfluthrin	13.7	1.08
Cypermethrin	14.87	0.38
Esfenvalerate	41.8	1.54
Lambda-Cyhalothrin	5.6	0.45
Permethrin	200.7	10.83

*Median lethal concentration (LC50) for amphipods (*Hyalella azteca*) organic carbon normalized concentrations (ug/g OC)

Fish Tissue Numeric Targets

Table 4 Fish Tissue Numeric Targets

Chemical Group	Chemical	Concentration ng/g (ppb)	Target Type
Organochlorine	Chlordanes	5.6	Fish Contaminant Goal
Organochlorine	DDTs	21	Fish Contaminant Goal
Organochlorine	Dieldrin	0.46	Fish Contaminant Goal
Organochlorine	Toxaphene	6.1	Fish Contaminant Goal

Aquatic Toxicity Numeric Target:

The aquatic toxicity numeric target is the evaluation of the Basin Plan general objective for toxicity using standard aquatic toxicity tests to determine toxicity in the water column and sediment. The toxic determination is based on a comparison of the test organism's response to the sample and a control. The general objective for toxicity is:

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 the 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.

The following standard aquatic toxicity tests will be used to determine compliance with the aquatic toxicity numeric target:

Table 5 Standard Aquatic Toxicity Tests

Parameter	Test	Biological Endpoint Assessed
Water Column Toxicity	Water Flea – <i>Ceriodaphnia</i> (6-8 day chronic)	Survival and reproduction
Sediment Toxicity	<i>Hyalella azteca</i> (10-day chronic)	Survival

Source Analysis

Toxicity in the water column and the sediment toxicity are associated with currently applied organophosphate and pyrethroid pesticides. Organophosphate, pyrethroid, and organochlorine pesticides are all man-made pesticides with human activities as sources of pollution. Therefore, there are no natural sources of these pesticides.

Organophosphate pesticides

Impairments from organophosphate pesticides are the result of applications of these pesticides to agricultural crops. For chlorpyrifos, the specific use causing impairments is pre-plant granular applications to cole crops (broccoli, cauliflower, cabbage). Diazinon is primarily applied on lettuce and cole crops, and malathion is applied on a wide range of crops, including broccoli, celery, lettuce and strawberries.

Synthetic Pyrethroid Pesticides

Impairments from pyrethroid pesticides are resulting from agricultural and urban pesticide applications. Pyrethroids are commonly applied urban pesticides and the highest levels of pollution are in drainages with urban stormwater runoff. Pyrethroids are used by both residential consumers and by professional commercial and residential pest control applicators.

Table 6 Source of Pyrethroid Pesticide Pollution

Chemical	Sources
Bifenthrin	Urban structural and consumer home applications and agricultural applications to strawberries
Cypermethrin	Urban structural and consumer home applications and agricultural applications to cole crops and lettuce.
Cyfluthrin	Urban structural and consumer home applications
Esfenvalerate	Irrigated agricultural applications to broccoli and cauliflower
Lambda-Cyhalothrin	Urban structural and consumer home applications and agricultural applications to lettuce and broccoli
Permethrin	Urban structural and consumer home applications along with

irrigated agricultural applications to lettuce and celery

Organochlorine Pesticides

The organochlorine pesticides included in the TMDL are no longer applied in the watershed but are persistent in the environment. Historic use was widespread in the Santa Maria River watershed and included urban, agricultural, and vector mosquito control uses.

The breakdown products of DDT (DDD, DDE) are broadly present in the Santa Maria River watershed surface waters. Sediments from urban lands and irrigated agricultural lands are sources of DDTs to surface waters. Additionally, contaminated stream and channel sediments are stores of DDT and are sources of DDT to downstream fisheries, such as Oso Flaco Lake, the Santa Maria Estuary, and the coastal confluences. Data from 2008-2009 suggest sediment discharged to Oso Flaco Lake contains DDT in excess of numeric targets.

In addition to DDTs, there are organochlorine pesticide impairments in the watershed for chlordane, dieldrin, endrin and toxaphene. These chemicals were historically broadly used in the watershed and continue to persist in sediment delivered to surface waters throughout the watershed. More recent data showed fewer laboratory detections of dieldrin and toxaphene relative to vintage data prompting Clean Water Act section 303(d) listings. More data will be obtained during the TMDL implementation phase to better understand remaining impairments and source areas. Data from 2007 suggest sediment discharged to Oso Flaco Lake contains chlordane in excess of numeric targets. Additional monitoring of organochlorine pesticides in and to Oso Flaco Lake will be obtained during the TMDL implementation phase.

TMDLs

Organophosphate pesticide TMDLS

TMDLs for chlorpyrifos, diazinon, and malathion are water column concentrations as shown in Table 7.

Table 7 Organophosphate Pesticide Water Column TMDLs

Waterbodies assigned TMDLs ¹	TMDL					
	Chlorpyrifos		Diazinon		Malathion	
	CMC ³ µg/L (ppb)	CCC ⁴ µg/L (ppb)	CMC µg/L (ppb)	CCC µg/L (ppb)	CMC µg/L (ppb)	CCC µg/L (ppb)
Blosser Channel	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Bradley Canyon Creek	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Bradley Channel	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Greene Valley Creek	0.025	0.015	0.16 ²	0.10 ²	0.17 ²	0.028 ²

Waterbodies assigned TMDLs ¹	TMDL					
	Chlorpyrifos		Diazinon		Malathion	
	CMC ³ µg/L (ppb)	CCC ⁴ µg/L (ppb)	CMC µg/L (ppb)	CCC µg/L (ppb)	CMC µg/L (ppb)	CCC µg/L (ppb)
Main Street Canal	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Orcutt Creek	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Oso Flaco Creek	0.025 ²	0.015 ²	0.16 ²	0.10 ²	0.17	0.028
Santa Maria River	0.025	0.015	0.16	0.10	0.17 ²	0.028 ²
Little Oso Flaco Creek	0.025	0.015	0.16	0.10	0.17	0.028

¹ All reaches of all surface waters in the Santa Maria River watershed, including those listed.

² Waterbody is currently achieving the TMDL

³ CMC – Criterion Maximum Concentration (Acute: 1- hour average). Not to be exceeded more than once in a three-year period.

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

Additive Toxicity TMDL for Organophosphate Pesticides

The additive toxicity TMDL for organophosphate pesticides is based on the additive toxicity targets for organophosphate pesticides.

$$\frac{C(\text{diazinon})}{NT(\text{diazinon})} + \frac{C(\text{chlorpyrifos})}{NT(\text{chlorpyrifos})} = S; \text{ where } S \leq 1$$

Where:

C = the concentration of a pesticide measured in the receiving water.

NT = the numeric target for each pesticide present.

S = the sum; a sum exceeding one (1.0) indicates that beneficial uses may be adversely affected.

The additive toxicity numeric target formula shall be applied when both diazinon and chlorpyrifos are present in the water column and it applies to all surface waters in the Santa Maria River watershed.

Additive Toxicity TMDL for Pyrethroid Pesticide

The additive toxicity TMDL for pyrethroids pesticides is based on the additive toxicity numeric targets for pyrethroid pesticides.

$$\frac{C(\text{Pyrethroid 1})}{NLC(\text{Pyrethroid 1})} + \frac{C(\text{Pyrethroid 2})}{NLC(\text{Pyrethroid 2})} = S; \text{ where } S \leq 1$$

Where:

C = the concentration of a pesticide measured in sediment.

NLC = the numeric LC50 for each pesticide present (Table 3).

S = the sum; a sum exceeding one (1.0) indicates that beneficial uses may be adversely affected.

The additive toxicity numeric shall be applied to all surface waters in the Santa Maria River watershed.

Aquatic Toxicity TMDLs

The TMDLs for water column and sediment toxicity is the aquatic toxicity numeric target as found in Table 5.

Organochlorine pesticide TMDLs

The TMDLs for organochlorine pesticides are sediment and fish tissue concentrations outlined in the following tables. To account for short-term variations, concentrations should be averaged over a three year period.

Table 8 DDT Sediment Chemistry TMDLs

Waterbodies Assigned TMDLs ¹	TMDL			
	DDD, 4,4-(p,p-DDD) o.c. ²	DDE, 4,4-(p,p-DDE) o.c. ²	DDT, 4,4-(p,p-DDT) o.c. ²	Total DDT o.c. ²
	µg/kg	µg/kg	µg/kg	µg/kg
Blosser Channel	9.1	5.5	6.5	10
Bradley Channel	9.1	5.5	6.5	10
Greene Valley Creek	9.1	5.5	6.5	10
Little Oso Flaco Creek	9.1	5.5	6.5	10
Main Street Canal	9.1	5.5	6.5	10
Orcutt Creek	9.1	5.5	6.5	10
Oso Flaco Creek	9.1	5.5	6.5	10
Oso Flaco Lake	9.1	5.5	6.5	10
Santa Maria River	9.1	5.5	6.5	10

¹ All reaches of all surface waters in the Santa Maria River watershed, including those listed.

² o.c.: organic carbon normalized concentrations.

Table 9 Additional Organochlorine Pesticide Sediment Chemistry TMDLs

Waterbodies Assigned TMDLs ¹	TMDL			
	Chlordane o.c. ²	Dieldrin o.c. ²	Endrin o.c. ²	Toxaphene o.c. ²
	µg/kg	µg/kg	µg/kg	µg/kg
Oso Flaco Lake	1.7	0.14	550 ³	20 ³
Santa Maria River	1.7	0.14	550	20
Orcutt Creek	1.7 ³	0.14	550 ³	20 ³

¹ All reaches of all surface waters in the Santa Maria River watershed, including those listed.

² o.c.: organic carbon normalized concentrations.

³ Waterbody is currently achieving the TMDL.

Table 10 Fish Tissue TMDLs for Organochlorine Pesticides

Waterbodies Assigned TMDLs	Fish Tissue TMDL			
	Chlordane	DDTs	Dieldrin	Toxaphene
	ng/g* (ppb)	ng/g* (ppb)	ng/g* (ppb)	ng/g* (ppb)

Oso Flaco Lake	5.6	21	--	--
Oso Flaco Creek	5.6	21		
Santa Maria River	5.6	21	0.46	6.1
Orcutt Creek	5.6	21	0.46	6.1

*ng/g: i.e. nanograms of pollutant per grams of fish tissue (e.g. a fillet)

Allocations and Responsible Parties

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

Table 11 Load Allocations

Waste Load Allocations		
Responsible Party	Source	Allocation
City of Santa Maria – NPDES No. CAS000004	Urban Stormwater	3, 4 & 5
County of Santa Barbara – NPDES No. CAS000004	Urban Stormwater	3, 4 & 5
City of Guadalupe	Urban Stormwater	3, 4 & 5
Load Allocations		
Responsible Party	Source	Allocation
Owners/operators of irrigated agricultural lands in the Santa Maria Watershed	Discharges from irrigated lands	1, 2, 3, 4 & 5
San Luis Obispo County Public Works	Roadside drainages	5
Santa Barbara County Public Works	Roadside drainage	5
Santa Barbara County Flood Control District	Flood Control Channels and drainages	5
<u>Allocation-1</u> : Organophosphate Pesticide TMDLs (refer to Table 7)		
<u>Allocation-2</u> : Additive Toxicity TMDL for Organophosphate Pesticides		
<u>Allocation-3</u> : Additive Toxicity TMDL for Pyrethroid Pesticides		
<u>Allocation-4</u> : Aquatic Toxicity TMDLs (refer to Table 5)		
<u>Allocation-5</u> : Organochlorine Pesticide TMDLs (refer to Tables 8, 9, and 10)		

Controllable Water Quality Conditions

In accordance with the *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan), controllable water quality shall be managed to conform or to achieve the water quality objectives and load allocations contained in this TMDL. 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.*” - Chapter 3. Water Quality Objectives, page III-2.

Antidegradation Requirements

State and federal antidegradation 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 antidegradation policy, 40 C.F.R. 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...”* Practically speaking, this means that, for example, for stream reaches or waterbodies that have an concentration-based TMDL of 0.025 µg/L chlorpyrifos and where current or future water quality in the stream reach is in fact well under TMDL of 0.025 µg/L chlorpyrifos, the TMDL does not give license for controllable chlorpyrifos sources to degrade water quality all the way up to the maximum TMDL, i.e., 0.025 µg/L chlorpyrifos.

Margin of Safety

A margin of safety is incorporated in these TMDLs implicitly though 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 R3-2012-0011) and the Monitoring and Reporting Programs in accordance with Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03 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 TMDL implementation plan also utilizes 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. The agricultural commissioners of Santa Barbara and San Luis Obispo counties are also responsible for implementing the California Pesticide Plan.

The Department of Pesticide Regulation, the county agricultural commissioners, and USEPA are taking regulatory steps to address pesticide impairments. In accordance with the MAA, DPR has approved urban pesticide regulations to address pyrethroid pesticide water quality pollution. Also as part of the MAA, the Central Coast Water Board, DPR, and the commissioners are coordinating on county chlorpyrifos use permits. USEPA has recently implemented label restrictions and requirements on agricultural uses of diazinon and pyrethroids to address water quality problems.

The current regulatory programs in the watershed do not specifically address water quality impairments from organochlorine pesticides and the TMDL recommends that stakeholders develop a community-based watershed organochlorine pesticide implementation plan to meet TMDL goals.

Monitoring

Owners and operators of irrigated agricultural lands will perform monitoring and reporting in accordance with Monitoring and Reporting Program Orders R3-2012-0011-01, R3-2012-0011-02, and R3-2012-0011-03, as applicable to the operation.

Determination of Compliance with 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. Flexibility to allow owners and operators from irrigated lands to demonstrate compliance with load allocations is a consideration; additionally, staff is aware that not all implementing parties are necessarily contributing to or causing surface water impairments.

To allow for flexibility, Central Coast Water Board staff will assess compliance with load allocations using one or a combination of the following:

- A. Attaining the load allocations in receiving waters.
- B. Implementing management practices that are capable of achieving load allocations identified in this TMDL.
- C. 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.

STORM DRAIN DISCHARGES FROM MS4s:

The Central Coast Water Board will require municipal separate storm sewer systems (MS4) entities to develop, submit, and implement a Wasteload Allocation Attainment Program (WAAP). WAAP development, submittal and implementation will be required in the Phase II municipal stormwater permit. The WAAP will be required to include descriptions of the actions that will be taken by the MS4 entity to attain the TMDL waste load allocations, and specifically address:

1. Development of an implementation and assessment strategy.
2. Source identification and prioritization.
3. Best management practice identification, prioritization, implementation scheduling, analysis, and effectiveness assessment.
4. Monitoring and reporting. Monitoring program goals will be required to include:
 - a. assessment of stormwater discharge and/or receiving water quality,
 - b. assessment of best management practice effectiveness, and
 - c. demonstration of progress towards achieving interim goals and waste load allocations.
5. Coordination with stakeholders.
6. Other pertinent factors.

The WAAP will be allowed to 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, though sole reliance on such statewide efforts may not be adequate.

Monitoring

MS4 entities with operations and storm water conveyance systems in the TMDL project areas will be 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 should develop and submit creative and meaningful monitoring programs. Monitoring strategies may be able to 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 may be acceptable, with the intent of successful practices then being implemented in other or larger parts of the MS4 jurisdiction.

Determination of Compliance with Waste Load Allocations

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.

To allow for flexibility, Water Board staff will assess compliance with waste load allocations using one or a combination of the following:

- A. Attaining the waste load allocations in the receiving water.
- B. Demonstrating compliance by measuring pesticide concentrations and toxicity in stormwater outfalls.
- C. Implementation and assessment of pollutant loading reduction projects (BMPs) 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.
- D. Any other effluent limitations and conditions that are consistent with the assumptions and requirements of the waste load allocations.

Timelines

The target date to achieve the pesticide TMDLs for the organophosphates (chlorpyrifos, diazinon) is October 2016. This estimate is based on apparent decreased use, current implementation of management practices to mitigate loadings, and existing regulatory efforts to reduce loading.

The target date to achieve the TMDL for malathion is ten years after approval of the TMDL by the Office of Administrative Law. This estimate is based on the increase in current usage and current limited regulatory oversight.

The target date to achieve the TMDLs for pyrethroids is 15 years after approval of the TMDL by the Office of Administrative Law. This estimate is based on the widespread availability of pyrethroids, including consumer usage, and current limited regulatory oversight.

The target date to achieve the TMDLs for organochlorine pesticides (DDT, DDD, DDE, chlordane, eldrin, toxaphene, dieldrin) is 30 years after approval of the TMDL by the Office of Administrative

Law. This estimate is based on their persistence in the environment, widespread legacy usage and bioaccumulation in the food web

Tracking and Evaluation

Every three years, beginning three years after TMDLs are approved by the Office of Administrative Law, the Central Coast Water Board 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 targets.