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# **TOTAL MAXIMUM DAILY LOAD (TMDL) PROGRAM WATER QUALITY ATTAINMENT BUDGET STRATEGY**

**Report to the Legislature  
Supplemental Report of the 2001 Budget Act  
Item 3940-001-0001**

**January 2002**

**STATE WATER RESOURCES CONTROL BOARD  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY**



**SUPPLEMENTAL REPORT OF THE 2001 BUDGET ACT  
ITEM 3940-001-0001  
TOTAL MAXIMUM DAILY LOAD (TMDL) PROGRAM  
WATER QUALITY ATTAINMENT BUDGET STRATEGY**

**January 2002**

The Supplemental Report of the 2001 Budget Act requires that the State Water Resources Control Board (SWRCB) submit to the Legislature, on or before January 10, 2002, a long-term strategy to develop TMDLs for all impaired water bodies, consistent with the requirements of the federal Clean Water Act (CWA) section 303(d). The strategy must include the following:

- (i) A five-year schedule that identifies specific TMDLs to be completed and their expected completion dates, and major activities to be completed.
- (ii) A long-term schedule, not to extend beyond 2013, for the completion of all TMDLs on the 1998 impaired waters list [303(d) list].
- (iii) A description of the existing resources used to address TMDL requirements organized by fund source and department.
- (iv) An estimate of the resources needed to adhere to the long-term schedule and achieve the 2013 date for completion.
- (v) Identification of any shortfalls between existing resources and estimated resource needs to achieve the 2013 date for completion.
- (vi) Proposed fund sources to address identified shortfalls.
- (vii) Identification of technical assistance needs of the Regional Water Quality Control Boards (RWQCBs) and a strategy for addressing those needs.
- (viii) A schedule to develop policies to guide the RWQCBs in developing and implementing TMDLs including, but not limited to, cost estimates to develop the policies.

The following report presents a five-year schedule and a 12-year schedule, beginning in Fiscal Year (FY) 2002-03, for the completion of TMDLs based on the 1998 303(d) list and an analysis of the resources needed to support the TMDL activities. In summary, we estimate that a total of 383 TMDL projects will be completed in the 12-year planning period that addresses over 1,400 water body/pollutant combinations on the 1998 303(d) list. The total cost for the development and implementation of TMDLs over the 12-year period is estimated at \$467 million. The projected annual funding shortfall ranges from \$18 million to \$32 million. The average cost for TMDL development is \$667,164 per TMDL project.

## **INTRODUCTION**

CWA section 303(d) requires that the SWRCB compile, and periodically revise, a list of waters that do not attain water quality standards. The law also requires that a calculation of the maximum allowable pollution be developed for any water on this list, if such a calculation is determined to be appropriate by the Administrator of the U.S. Environmental Protection Agency (USEPA). These calculations are called Total Maximum Daily Loads or TMDLs. Although the words “daily load” appear in the name of the calculations, the calculations can be cast in other terms. Federal regulations provide for these calculations to be expressed in terms of “mass per unit time,” toxicity, or other appropriate measures (40 CFR 130.2(i)). This is a critical detail in that it allows the State to develop water quality attainment strategies tailored to the specific circumstances of the pollution problem without addressing the daily event issue. TMDLs can be specified in any number of ways to allow for appropriate definition of the problem. The essential characteristic of a TMDL is that it provides a measurable feature that describes when water quality standards are attained.

Developing TMDLs is not sufficient to provide for improved water quality management. A means of implementing the TMDL must also be developed and followed through to ensure that implementation is taking place as needed. In most cases, undertaking these steps will bring waters into conformity with water quality standards. However, in some cases, the uncertainty surrounding the initial assessments of impairment and other factors could lead to actions that do not in fact result in desired water quality attainment. Therefore, all TMDLs should undergo regular evaluation and be revised when necessary.

The SWRCB strategy for attaining water quality standards in impaired waters encompasses all of these features. The strategy is designed to attain water quality first and foremost. It relies on developing TMDLs, unless a more expedient and effective method can be designed and implemented. It assumes a very broad definition for a TMDL and does not consider “mass per unit time” as the only credible measurable feature that describes attainment of standards.

TMDLs in the SWRCB approach serve both to define the desired condition of specific waters and as an integrating tool that provides guidance and definition to various water quality programs. Recently, the SWRCB developed a TMDL Initiative Action Plan (Action Plan) that provides strategic guidance in the short-term timeframe for the TMDL program (Appendix A). This Water Quality Attainment Budget Strategy (Budget Strategy) provides the fiscal planning for contract and staff resources to carry out the Action Plan.

## **THE TMDL ADMINISTRATIVE PROCESS**

In California, the formal TMDL process requires that each of the nine RWQCBs adopt TMDLs as amendments to its Water Quality Control Plan (Basin Plan) using a public hearing process that is governed by the Porter Cologne Water Quality Control Act, California Environmental Quality Act, and the Administrative Procedures Act. During this process, the RWQCBs consider policy and technical implications of a TMDL. If approved by a RWQCB, the TMDL is submitted to the SWRCB for review and approval. The SWRCB reviews policy, technical, and administrative

issues. The TMDL is first considered at an SWRCB workshop, and final consideration is undertaken at a board meeting. If approved by the SWRCB, the TMDL is submitted to the Office of Administrative Law (OAL) for approval. OAL reviews the TMDL for regulatory sufficiency, clarity, and authority. Upon approval of OAL, the TMDL is submitted to the USEPA for approval. USEPA reviews the TMDL for policy, technical, and administrative issues related to federal law. Once approved by USEPA, the TMDL is complete. This multi-step, formal process is resource-intensive.

## **THE TWELVE-YEAR SCHEDULE**

The CWA requires the states to develop a list of impaired waters and to revise the list periodically. Current practice is to revise the list every two years. However, because USEPA has been in the process of revising the regulations governing listing and TMDL development, there was a four-year interval between the latest list developed in 1998 and the next list to be established by October 2002. This Budget Strategy is based on the 1998 303(d) list. As part of the listing process, USEPA has requested that a long-term schedule for developing TMDLs be included in the 303(d) list. In California, a schedule was provided with the 1998 list, but not all waters listed were assigned a TMDL completion date. While a complete TMDL must include the entire process summarized above, the schedules developed for 303(d) listing purposes extended only to the dates the TMDLs would be considered by the RWQCBs. This is because of the uncertainty associated with the timelines in the TMDL review and approval process after adoption by the RWQCB. The 1998 303(d) list identified the year and month that a RWQCB was expected to consider the TMDL. The criteria used to set priorities for TMDL development was discussed in SWRCB's previous report to the Legislature pursuant to the requirement of the FY 2000-01 Budget Act, titled *State's Effort to Comply with the Federal Clean Water Act Section 303(d)* (January 2001).

The long-term schedule included in the 1998 303(d) list contained dates extending to FY 2010-11. This timeframe is consistent with a USEPA requirement that all TMDLs be scheduled for completion within an eight to 13-year timeframe. The 13-year schedule included in the 1998 303(d) list served as the initial prioritization of efforts to fully attain water quality standards. The Supplemental Report language requires that the SWRCB develop a long-term schedule not to extend beyond 2013. This 12-year schedule (Appendix B) begins in FY 2002-03; it does not include the TMDLs that have been completed to date. A list of TMDLs completed as of December 2001 is presented in Appendix C of this report.

## **THE FIVE-YEAR SCHEDULE**

In order to better define priorities, the SWRCB has initiated a regular strategic planning and priority setting exercise that is captured in the Watershed Management Initiative (WMI) annual chapters. The WMI includes a rolling five-year planning horizon that is updated annually. In the attached five-year schedule for TMDL development (Appendix D), the priorities established in the 12-year schedule serve as a starting point. The five-year schedule either affirms the 12-year priorities or modifies them to reflect new information or opportunities for expediting corrective actions. The five-year schedule also considers resources available for the immediate upcoming year and various restrictions on funding that may limit allocation of staff or contract resources.

For example, federal grant funds constitute a major portion of the dedicated TMDL support. These funds come with certain restrictions or constraints that are designed to focus the money on the highest priority issues nationally or on the most important features of the program under which the funds are authorized. Currently, USEPA Region 9 provides TMDL support from grants authorized by the CWA sections 104, 106, and 319. Each of these grants come with limitations on how the funds can be spent. The SWRCB must therefore design work that meets the demands of the grants in order to take full advantage of these resources. The five-year schedule is developed to achieve a mix of projects that reflect immediate priorities and allows full access to federal grants or other funds.

A number of other SWRCB/RWQCB water quality control programs, such as nonpoint source and monitoring and assessment programs, also provide support for the TMDL program in one aspect or another. In many cases, TMDL development is affected by the resources available for these other programs. For example, increases in monitoring and assessment information generated by other programs reduce the demand for assessments conducted under the TMDL program. The five-year schedule includes consideration of the impact of innovations and improvements (or declines) in these programs.

## **CURRENT BASELINE RESOURCES AND PRODUCTION**

### **SWRCB/RWQCB Resources**

Currently, \$11.4 million (\$8.4 million for staff and \$3 million for contracts) in annual State and federal funding are provided for TMDL development. An additional \$2.97 million in State funds are provided for implementing established TMDLs. A number of other water quality programs also provide support for the TMDLs in one aspect or another but do not directly fund TMDL development or implementation. The workload associated with these efforts has not been estimated.

Baseline funds are dependable resources that are dedicated to TMDL activities. In addition to baseline funding, other funds may also be made available to the TMDL efforts. For example, in FY 2001-02 the TMDL program received a one-time federal grant of \$1.45 million in contract resources. This funding is not included in the baseline TMDL budget because allocation of these federal grant funds is based on competing regulatory priorities (e.g., storm water) and is subject to USEPA approval each year. Current funding for TMDL development is summarized in Table 1. Other programs funded by federal grants, such as the National Pollutant Discharge Elimination System (NPDES) Program, the NPDES Storm Water Program, and the Nonpoint Source Program, also contribute to TMDL development and implementation, but their contributions are not included in TMDL baseline funding identified in this report.

Baseline resources for the implementation of established TMDLs are presented in Table 2. The resources for TMDL implementation have been minimal due to the fact that the program has been in an early phase and only a limited number of TMDLs have been established and are being implemented.

**Table 1. SWRCB TMDL Development Resources  
Annual Augmentations and Total for FY 2001-02**

<b>Fiscal Year</b>	<b>Fund Source</b>	<b>Total Dollars</b>	<b>PYs*</b>	<b>Staff Dollars</b>	<b>Contract Dollars</b>
1999-00					
	Federal	\$3,000,000	28.5	\$3,000,000	0
	General Fund	\$3,923,000	31.5	\$2,323,000	\$1,600,000
2000-01					
	General Fund	\$4,500,000	34.5	\$3,100,000	\$1,400,000
2001-02					
	Federal	\$1,450,000			\$1,450,000
	Totals	\$12,873,000	94.5	\$8,423,000	\$4,450,000

\*Personnel Years

**Table 2. SWRCB TMDL Implementation Resources  
Annual Augmentations and Total for FY 2001-02**

<b>Fiscal Year</b>	<b>Fund Source</b>	<b>Total Dollars</b>	<b>PYs</b>	<b>Staff Dollars</b>	<b>Contract Dollars</b>
2000-01					
	General Fund	\$2,970,000	21	\$1,970,000	\$1,000,000
2001-02	Totals	\$2,970,000	21	\$1,970,000	\$1,000,000

The federal fund contribution is comprised of three separate grants: the CWA section 104, section 106, and section 319 grants. Only portions of these grants are dedicated to TMDL development. The mix of grants and the amount of each grant vary from year to year. The SWRCB and USEPA currently have an agreement to fund TMDLs at a rate of \$3 million per year in grant funds, provided the funds remain available. USEPA will provide additional grant funds when such funds become available in USEPA's budget. In FY 2001-02, the following grant amounts comprise the baseline federal TMDL resources: section 104 grant - \$750,000, section 106 grant - \$895,488, and section 319 grant - \$1,355,000.

**Department of Pesticide Regulation (DPR) Resources**

The Department of Pesticide Regulation (DPR) received three permanent budget augmentations in FY 1999-00 and FY 2000-01, which provided a total of \$3,480,000 for assisting in the development of pesticide-related TMDLs. These resources were provided to enhance DPR's

Surface Waters Program (\$2,086,000 in DPR Fund and \$894,000 in General Fund), and for work in the San Joaquin Valley (\$500,000 in General Fund). The work of the Surface Waters Program addresses six areas: (1) surface water monitoring, (2) source assessment, (3) evaluation and validation of the effectiveness of management practices in reducing pesticide runoff, (4) database management, (5) interagency coordination, and (6) outreach and education. The program has allocated \$820,000 annually for contracts to assist the RWQCBs in TMDL development .

## **ANTICIPATED NEEDS**

### **TMDL Development and Implementation Needs**

Additional resources must be provided in order for the SWRCB and RWQCBs to adhere to the proposed five-year and 12-year schedules for completion of TMDLs. For the purpose of this needs analysis, the definition of a complete TMDL includes a technical TMDL report and an implementation plan, and adoption of the TMDL with implementation plan as a Basin Plan amendment. To ensure meaningful implementation of TMDLs, this analysis includes resources needed to coordinate implementation following TMDL development and to stimulate early implementation of corrective actions. Early implementation is a process of identifying and taking steps to implement corrective actions that are identified while the TMDL assessment is underway. As staff assessed the causes and dynamics of how impairments occurred, they often found relatively easy solutions to parts of the problems. Early implementation staff is dedicated to seeking and carrying out these simple, straightforward actions. These corrective actions may involve SWRCB/RWQCB authorities or authorities of other entities. Early implementation also involves pilot testing of certain management practices. In some cases it is necessary to evaluate the potential efficacy or suitability of a management practice before the TMDL implementation plan can be developed.

It is important to effectively manage the interplay of development and implementation resources. If the implementation staff is not provided, TMDL development work would not be able to benefit from the coordination and application of defined implementation approaches. TMDL development resources would then need to be increased to generate the information needed for TMDL development that could have been generated by implementing already established TMDLs. For example, information regarding dredging and sediment trap costs and volumes generated by implementing the Newport Bay TMDLs has been used to develop other nutrient TMDLs. Without that information, a considerably larger effort would have been required in developing other nutrient TMDLs. Additional support for TMDL implementation is anticipated to be provided by various programs both within the SWRCB/RWQCBs and by programs of other agencies. The full cost of implementation, which includes support from other programs, is not analyzed in this report. This analysis also assumes that a certain portion of the costs of assessments and public outreach will be covered through collaborations and the participation of stakeholders in the development of the TMDLs.

Table 3 presents an estimated schedule for developing TMDLs, the staffing needs for the development and implementation of TMDLs, and the assumptions used to achieve these



**Table 3. Estimated TMDL Completion Schedule and Staff Resource Needs**

	FY 02-03	FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12
A # of TMDLs to be completed each year	26	23	40	60	31	46	23	24	30	40	13	27
B # of TMDLs in progress each year	149	154	177	160	124	123	117	107	110	80	40	27
C Staff needed for development	149	154	177	160	124	123	117	107	110	80	40	27
D Staff needed for implementation	21	31.4	40.6	56.6	80.6	93	111.4	120.6	130.2	142.2	158.2	163.4
E Staff needed for early implementation	4	10	9.1	7.7	6.9	4.7	5.4	7	5.3	4	2.7	0
F Staff needed for phased review	0	0	0	5.2	9.8	12.6	20	18.2	15.4	13.8	9.4	10.8
G Staff needed for modeling, GIS* and Web support	0	4	8	12	12	12	12	12	12	12	12	12
H Total # of staff needed each year	174	199.4	234.7	241.5	233.3	245.3	265.8	264.8	272.9	252	222.3	213.2
I Current baseline staff	115.5	115.5	115.5	115.5	115.5	115.5	115.5	115.5	115.5	115.5	115.5	115.5
J Annual staff shortfall	-58.5	-83.9	-119.2	-126	-117.8	-129.8	-150.3	-149.3	-157.4	-136.5	-106.8	-97.7

- A Based on the 12-year completion schedule provided by RWQCBs.  
 On an average, it would take four years to complete a TMDL project. The number of TMDLs in progress each year equals the total of TMDL projects to be completed that year and the following three years.
- C. One PY is needed per TMDL project for four years.
- D. Implementation staff needs are based on the number of TMDL projects completed in the previous year @ 0.4 PY per project. Staff needs within this 12-year time frame are cumulative because implementation efforts are continuous to ensure that water quality standards are sustained.
- E. Early implementation needs are based on the number of TMDL projects to be completed two years later @ 0.1 PY per project. Once a TMDL project is completed, early implementation PYs are eliminated.
- F. Phased review will begin three years after completion of a TMDL project. Staff needs are based on the assumption that 40 percent of the completed TMDL projects will need phased review and 0.5 PY will be needed to review each project for two years. At the completion of each phased review, the PYs are eliminated. The number of staff for phased review does not zero out at the end of the 12-year planning period because staff will be needed to review TMDLs scheduled to be completed in Year 10, Year 11, and Year 12.
- G. Work of the modeling teams, GIS, and Web support is continuous.

\*Geographic Information System

estimates. This needs analysis contemplates a total of 383 TMDL projects being completed that addresses all listed waters (1,471 water body/pollutant combinations) on the 1998 303(d) list. A TMDL project may include a combination of impaired waters and pollutants causing impairment and ranges from one pollutant in one water body to multiple pollutants in multiple water bodies. This number does not include the TMDLs completed prior to 2002. The SWRCB previously estimated that approximately 800 TMDL projects needed completion. The new, lower number reflects new perspectives on how listed waters and pollutants might be grouped to reduce administrative burdens. However, future changes in the 303(d) list, beginning in 2002, will increase the number of TMDLs to be completed. While the total estimated number of TMDL projects to be completed is lower than previously projected, the work associated with developing these TMDLs is not reduced proportionally. The average cost of a TMDL project will increase due to the need for technically sound assessments and implementation planning for more pollutants and water bodies included in each TMDL project. Costs are saved in reduced administrative processing and in some consolidation of assessments.

Staffing needs for TMDL development decrease each year after Year 4 to a total of 27 PYs in Year 12, while the number of staff for implementation increases each year as more TMDLs are completed. At the end of the 12-year planning period, the estimated total number of implementation staff is 163. Staffing needs for TMDL implementation will continue for some time after the 12-year planning period in order to ensure that water quality standards are sustained. In addition to the TMDL development and implementation staff, we also need staff for early implementation, phased TMDL reviews, modeling, GIS, and Web support. The need for early implementation diminishes at the end of the 12-year period when all TMDLs for the 1998 303(d) list are developed, but the work of modeling, GIS and Web support continues. This analysis also assumes that approximately 40 percent of the TMDLs will be developed in phases, which requires continued evaluation of progress and making necessary changes to the requirements in the TMDL. Phased review begins three years after the completion of a TMDL; therefore, staff for phased review will not diminish until three years after the 12-year period.

Cost of TMDL development includes \$200,000 per TMDL project for contracts. Contract resources will support needs such as water quality monitoring, laboratory services, aerial photography, land use analysis, hiring of technical experts such as geomorphologists to assist with complex technical issues, and public outreach needs.

The estimated annual costs for staff and contracts and the funding gap between baseline resources and anticipated needs are presented in Table 4. Annual costs fluctuate depending on the number of TMDL projects in progress each year and the number of TMDLs completed each year.

These estimates will change with the new 2002 303(d) list which is currently being developed. The 303(d) list is revised every two years. It is anticipated that more water bodies and pollutants will be listed and more TMDLs will need to be developed. This is because approximately 90 percent of the water bodies in the State have not been assessed, and because the water bodies on the existing 303(d) list may be relisted for new pollutants. Until water quality standards are

**Table 4. Estimated TMDL Development and Implementation Resource Needs and Annual Shortfall**

	<b>FY 02-03</b>	<b>FY 03-04</b>	<b>FY 04-05</b>	<b>FY 05-06</b>	<b>FY 06-07</b>	<b>FY 07-08</b>
	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>
Annual staff need	\$20,497,200	\$23,489,320	\$27,647,660	\$28,448,700	\$27,482,740	\$28,896,340
Annual contract need	\$19,886,667	\$8,850,000	\$11,425,000	\$7,825,000	\$9,525,000	\$11,500,000
Total annual need	\$40,363,867	\$32,339,320	\$39,072,660	\$36,273,700	\$37,007,740	\$40,396,340
Current baseline	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332
Projected shortfall	-\$25,945,535	-\$17,920,988	-\$24,654,328	-\$21,855,638	-\$22,589,407	-\$25,978,008
	<b>FY 08-09</b>	<b>FY 09-10</b>	<b>FY 10-11</b>	<b>FY 11-12</b>	<b>FY 12-13</b>	<b>FY 13-14</b>
	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>	<b>Yr 11</b>	<b>Yr 12</b>
Annual staff need	\$31,311,240	\$31,193,440	\$32,147,620	\$29,685,600	\$26,186,940	\$25,114,960
Annual contract need	\$14,650,000	\$9,825,000	\$13,225,000	\$8,575,000	\$9,575,000	\$9,900,000
Total annual need	\$45,961,240	\$41,018,440	\$45,372,620	\$38,260,600	\$35,761,940	\$35,014,960
Current baseline	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332	\$14,418,332
Projected shortfall	-\$31,542,908	-\$26,600,108	-\$30,954,288	-\$23,842,268	-\$21,343,608	-\$20,596,628

- Staff cost is estimated at \$117,800 per PY. All staff performing TMDL development and implementation tasks are technical staff (engineers and scientists). Because of the knowledge, skills, and experience that are required for these tasks, staff is employed at a higher-than-entry level in those classifications.
- Contract support for TMDL development is estimated at \$200,000 per TMDL project. Contract resources are needed in the year a project begins (three years prior to the year of project completion), and are expended in the first three years.
- Development contract resources for Year 1 include prorated contract costs for Year 2, Year 3, and Year 4 because resources are needed three years prior to the year the project is complete.
- Implementation contract resources are based on the number of TMDL projects completed in the previous year @ \$25,000 per project. Implementation staff and contract resource needs are cumulative within the 12-year planning period and will continue after the 12-year period to ensure that water quality standards are sustained. Contract resources will support activities such as water quality monitoring, laboratory analysis, public outreach/education, and management practices.
- Implementation staff and contract resources for Year 1 reflect current baseline resources for implementation.

attained in all waters of the State, TMDL development and implementation efforts will continue, which will require continued resources.

### **Technical Assistance Needs**

This analysis includes a ramping up of resources to support modeling of various aspects of pollutant dynamics and implementation measures, the application of GIS, and support for Web-based information posting and utilization. The computer models are necessary to ensure accurate TMDLs that allow for smaller margins of safety and, therefore, more precise allocations of pollutant load. This in turn will allow those responsible for managing pollutant loads to better respond to the TMDL limitations at a lower cost. Additionally, the modeling support will expedite future TMDL work by allowing the transfer of technical information from one TMDL to another. A total of 12 PYs and \$1 million in contract support are estimated for modeling, GIS, and Web support. Other technical assistance will be addressed in part through the contract resources provided and in part through workgroups of the TMDL Roundtable.<sup>1</sup>

### **Policy Development Needs**

SWRCB staff is currently developing two statewide policies to provide guidance to RWQCBs for TMDL development and implementation and 303(d) listing and delisting activities. Staff will work closely with the PAG in developing these policies. These statewide policies will be developed with existing resources.

The policy for TMDL development and implementation will be developed by workgroups of SWRCB and RWQCB staff, and with support from USEPA. Outside experts will be acquired as needed to support the effort. The workgroups will formulate the basic technical and policy issues; the SWRCB staff will conduct public review and the SWRCB will formally adopt the policy following the State's rule-making process. The workgroups are expected to first formulate technical and policy issues for TMDLs associated with classes of pollutants, e.g., nutrients, pesticides, pathogens, sediments, and bioaccumulative substances. In addition, they will formulate technical and policy issues for TMDLs in general, e.g., numeric targets, use of models, pollutant load allocations, and implementation requirements. The estimated cost for developing the statewide TMDL policy is \$1.4 million (two PYs for 2.5 years and \$800,000 in contract support).

The timeline for developing the statewide TMDL policy is presented in Table 6. The formal process of adopting a policy begins with the "initiate approval process" step. This process requires public hearings by the SWRCB. The adoption of the policy is expected to take between six and 12 months to complete.

The 303(d) listing/delisting policy will outline the factors for listing and delisting, acceptable data quality, the criteria for assigning priority to section 303(d)-listed water bodies, the need for a watch list, public notice procedures, data solicitation procedures, and other pertinent factors.

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<sup>1</sup> The TMDL Roundtable is a group of RWQCB, SWRCB, and USEPA staff that meets quarterly to discuss and manage collective issues and problems associated with TMDLs. Workgroups are formed to address pressing issues. Workgroups are supported with contract resources where needed and may include participation of outside experts.

Table 7 summarizes the timeline for the development and adoption of the 303(d) listing/delisting policy.

**Table 6. Timeline for TMDL Development and Implementation**

<b>Product/Deliverable</b>	<b>Due Date</b>
Establish Workgroups	April 2002
Compile tools and guidelines and formulate technical and policy issues for TMDLs associated with classes of pollutants	October 2002
Compile tools and guidelines and formulate technical and policy issues for TMDLs in general	April 2003
Initiate approval process	July 2003
SWRCB adoption	July 2004

**Table 7. Timeline for 303(d) Listing Policy**

<b>Activity</b>	<b>Completion Date</b>
Collect Background Information	January 2002
Consultation with PAG	February 2002
2002 List (pre-policy-related) Activities	March 2002
Prepare Draft Policy/Functional Equivalent Document (FED)	July 2002
Public Hearing	August 2002
Prepare Final Draft Policy and FED	October 2002
SWRCB Workshop Item	November 2002
SWRCB Meeting Item (adoption)	November 2002
Prepare Administrative Record	January 2003
OAL Review	February 2003
Transmit Final Guidance	April 2003

## **FUNDING OPTIONS**

To fully fund the TMDL program will require looking at resources within the SWRCB and at new, outside resources. Legislative options also must be considered. Some resources may be made available through collaborations with other agencies and stakeholders or through increases in federal grants. Below is a summary of potential funding options.

The following funding options would require legislative action:

## **General Fund Augmentation**

Currently, the General Fund provides \$8.4 million for TMDL development and \$2.97 million for TMDL implementation annually. Given the State's immediate fiscal condition, it is unlikely that more General Fund will be made available for the TMDL effort in the near term. However, in later years the General Fund is a valid option for supporting TMDL work.

## **Permit Fees**

Water Code sections 13260 and 13274 provide for the collection of fees associated with Waste Discharge Requirements (WDR). Currently, the law limits the total amount of fees and the maximum fee allowable. The fees collected are dedicated to developing WDRs. The Legislature could amend the existing WDR fee requirements to allow for the collection of fees to support TMDL development. Special fees could be levied on discharges to 303(d) listed waters for this purpose.

## **Bonds**

Recent bond measures contained provisions for supporting watershed planning and for implementing practices that are designed to improve aquatic habitat and support full attainment of water quality standards. To date, these funds have not been made available for TMDL development, although in some cases the watershed planning efforts funded by the bond funds could address TMDLs. To cover the funding shortfall identified for TMDLs, a new bond could be authorized that specifically allows for support of RWQCB staff activities for developing and implementing TMDLs. The bond measure could also provide funding for implementation of corrective actions. In many cases, municipalities and private businesses need to make changes to their methods of conducting business to meet the requirements of a TMDL. Many municipalities do not have funds to pay for these changes.

## **Special Funds**

A number of special funds exist, such as the Environmental License Plate Fund, that could be used to support TMDL work. All of these funds are currently dedicated to programs of various agencies. Redirecting the revenues from these funds to TMDLs would diminish the support these funds provide to other environmental programs. In many cases, successful implementation of the TMDL may rely on the programs currently supported by special funds. Therefore, before special funds are redirected to TMDLs the potential impact on implementing corrective management actions should be considered.

## **Other Options**

### **Federal Grants**

USEPA has increased the support for TMDL development to the current level of \$3 million per year as a baseline budget and has made available another \$1.45 million in one-time grant funds

for FY 2001-02. Significantly increasing federal support for TMDLs in California would require federal budget action.

Securing an increase in baseline federal support for TMDLs would provide a significant improvement in the TMDL program. In addition to grants now considered baseline support, USEPA provides some grant funds on an as-available basis. These funds are considered one-year funding which must be encumbered in the year they are offered, and USEPA makes no commitment to continue the grant in subsequent years. Making money available year-by-year without a commitment to a baseline level of support diminishes the ability to efficiently use the funds. For example, it is impossible to use the one-year funding to hire new staff because of the time involved in hiring and training. Therefore, federal grant funds made available without commitment to subsequent years can only be expended as contract funds. The TMDL effort currently operates on a three-year planning timeframe that includes identification of contract needs. This allows one-year federal grant money to be integrated into the effort. However, to allow more efficient use of funds and more effective long-term planning, it is preferred that funds are provided as baseline instead of one-time funding.

### **Collaborations**

As previously noted in this report, the SWRCB is actively seeking collaboration with local, State, and federal government agencies, and in some cases with nongovernmental agencies, to develop and implement TMDLs. In some instances, local agencies are better placed to complete needed work than are the RWQCBs. In other cases, local agencies see tangible benefits of expediting the work of the RWQCBs. Successful collaborations have already taken place in the San Francisco Bay Area and in Southern California. Others are currently underway. It is anticipated that these collaborations will offset some of the needed resources at the state level. Collaborations can expedite the TMDL work and improve the quality of technical analyses and implementation programs.

### **Supplemental Environmental Projects (SEPs)**

SEPs are projects funded directly by a violator of a water quality control permit in lieu of paying penalties into the Cleanup and Abatement Account. SEPs are currently projected to provide approximately \$3 million to \$5 million per year in project support. There are certain aspects of TMDL development that could be pursued as a SEP. The RWQCBs would need to develop partnerships with community entities that are eligible for SEP funds to carry out the desired project, since the RWQCBs do not have direct access to SEP resources.





## **Appendix A**

### **TOTAL MAXIMUM DAILY LOADS (TMDL) INITIATIVE ACTION PLAN**



**TOTAL MAXIMUM DAILY LOADS  
(TMDL) INITIATIVE  
ACTION PLAN**

Edition 1.0

Revised December 2001

**STATE WATER RESOURCES  
CONTROL BOARD**  
California Environmental Protection Agency



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# TMDL INITIATIVE ACTION PLAN

Edition 1.0 (Revised December 2001)

## I. PURPOSE/GOALS

The Total Maximum Daily Load (TMDL) Initiative has been established to ensure that the TMDL effort in California results in tangible water quality improvements in the shortest possible time with the ultimate objective of restoring and maintaining the water quality standards of these waters. The purpose of the TMDL Initiative Action Plan is to identify strategies and specific actions to be taken to meet the three goals of the TMDL Initiative: (1) improve TMDL program performance; (2) enhance communication among the State Water Resources Control Board (State Board), Regional Water Quality Control Boards (Regional Boards), and stakeholders; and (3) enhance collaboration and support among all stakeholders, including the State and Regional Boards, other regulatory and resource agencies, the regulated community, and the public. Because the strategies and actions needed to support these goals are expected to change to some degree over time, this Action Plan is a dynamic planning document that will be revised in subsequent editions. Edition 1.0 focuses on strategies and actions identified to promote statewide TMDL efforts in the near-term. We will review, update, and revise the strategies and actions semiannually to reflect progress, new information, and unforeseen circumstances. Most importantly, we will evaluate the strategies and actions relative to effective and timely attainment of the goals of the TMDL Initiative and the ultimate objective to attain water quality standards.

## II. TMDL DEFINED

A TMDL has essentially two meanings (*Guidance for Water-Quality-based Decisions: The TMDL Process*, US EPA, 1991, EPA440-4-91-001):

- The TMDL process is used for implementing state water quality standards – that is, it is a planning process that will lead to the goal of meeting the water quality standards; and
- The TMDL is a numerical quantity determining the present and near future maximum load of pollutants from point and nonpoint sources as well as from background sources, to receiving water bodies that will not violate the state water quality standards with an adequate margin of safety. The permissible load is then allocated among point and nonpoint sources.

The former is essentially the means by which the latter is accomplished. As used in this Action Plan, the term TMDL means the TMDL process to design and implement programs, policies, and actions that result in correcting water quality impairments and sustaining water quality improvements. A complete TMDL includes documentation that satisfies the Clean Water Act Section 303(d) requirements and State law pertaining to water quality management, amendments to Basin Plans, California Environmental Quality Act (CEQA), and administrative requirements. As such, a TMDL includes measurable features that describe attainment of the applicable water quality standard including the maximum allowable pollutant load, and an allocation of the responsibility to take corrective and preventive actions, including an implementation plan.

The timelines and documentation associated with a complete TMDL, as used in this Action Plan, are more extensive than those associated with merely calculating the maximum pollutant load. More importantly, the complexity of designing and implementing integrated efforts to achieve water quality improvements is far greater than calculating loads. Therefore, the workload and time requirements associated with this Action Plan envision time frames that often extend several years into the future.

This Action Plan also envisions involvement of stakeholders in the TMDL process, and therefore contains many features designed to communicate with and engage stakeholders in the process. These more expansive characteristics of a TMDL are implicit in the definition of a TMDL as used in this Action Plan. A TMDL may also address more than one pollutant/water body combination listed on the 303(d) list of impaired waters. Currently 1472 pollutant/water body combinations are listed and it is estimated that 400 to 800 TMDL projects will be needed to address all of these listings.

### **III. CURRENT PROGRAM DESCRIPTION**

Currently, 94.5 Personnel Years (PYs) are dedicated to TMDL development; 28.5 PYs are supported through federal grants and the balance is funded through the State General Fund. Total direct support for TMDL work amounts to \$11.4 million per year, of which \$8.4 million is for staff and \$3 million is for contract support. An additional 21 PYs are dedicated to implementation of TMDLs addressing nonpoint source problems. In FY 2001-02 the TMDL program also received a one-time federal grant of \$1.45 million in contract resources. Executive management oversight and program direction is provided by statewide coordination through the Management Coordinating Committee (MCC), comprised of State Board Executive management and Regional Board Executive Officers. Direct program management is provided by the Statewide TMDL Program Manager along with the TMDL Roundtable comprised of managers directly responsible for TMDL efforts at the State and Regional Boards.

TMDL work is planned and scheduled on an annual, three-year, and five-year basis. In addition, at each revision of the impaired waters list a long-term schedule and priorities for TMDL development are established. The one-, three-, and five-year schedules are consistent with the long-term priorities but we may modify the schedule to take advantage of opportunities that arise. Work is being conducted in all regions and at the State Board. In some cases, court supervised consent decrees have established schedules for development of technical work leading to the federally required total load calculation. In the North Coast Region (Region 1), this schedule precludes the ability to develop Basin Plan amendments and a complete TMDL as described above, given the current level of support. In the Los Angeles Region (Region 4), the consent decree schedule has allowed for developing TMDLs as Basin Plan amendments to date, but the pace accelerates in coming years and under the current staffing level most, if not all, future work may be truncated to load calculations and allocations without implementation plans and Basin Plan amendments. In the Santa Ana Region (Region 8), all consent decree schedule dates have been met. In these consent decree cases, the U.S. Environmental Protection Agency (USEPA) is required to establish the technical load calculations as TMDLs that meet federal requirements. These USEPA-established TMDLs do not include the management and implementation features included in State-adopted TMDLs.

### **IV. CURRENT TMDL PROGRAM COMMITMENT**

Commitments to complete TMDL work are established annually in the TMDL workplan which reflects allocated resources. The three-year, five-year, and long-term schedules are planning tools and are contingent on availability of resources. Currently the State Board estimates that adhering to the long-term schedule would require more than doubling the current level of support. The workplan for FY 2001-02 identifies work to be undertaken to continue development of 144 TMDLs (this number includes the technical support documents used by USEPA for establishing TMDLs). Thirty-two of these are scheduled for Regional Board consideration by December 2002 (see Attachment 1). This Action Plan describes activities above and beyond these existing commitments. To carry out these new activities



staff will need to be redirected from existing work. In some cases this may lead to temporarily slowing the pace of TMDL development in the regions and may require adjusting this year's workplan commitments. However, it is believed that all the activities described in this Action Plan will quickly result in enhancements to the overall effort and expedite the pace of TMDLs in the near future.

## **V. TMDL INITIATIVE TEAM**

This TMDL Initiative Action Plan was developed by a team led by the Statewide TMDL Program Manager, Tom Mumley (San Francisco Bay Regional Board). The team also included: Tom Howard (State Board Deputy for Water Quality and Policy Development), Stefan Lorenzato (TMDL Coordinator, State Board Division of Water Quality), Gail Linck (State Board Office of Statewide Initiatives), and Greg Gearheart (State Board Office of Statewide Initiatives).

## **VI. STRATEGIES**

In this edition of the Action Plan, we present nine strategies for meeting the goals of the TMDL Initiative and the Strategic Plan. These strategies are interrelated and dynamic, and may be integrated, deleted, or augmented in subsequent editions of the Action Plan. Brief descriptions of the nine strategies are presented below. The actions, tasks, products, and due dates for each strategy are presented in Section VII.

### **A. TMDL Program Structure and Management**

We will assess the current program structure related to TMDL efforts, identify and establish improvements, and establish organizational modifications to address them. We will identify the interrelationship of TMDL efforts with other water quality programs and establish mechanisms to ensure effective program collaboration and integration. The role of management advocates with responsibility for TMDL efforts and integration of TMDL efforts with other water quality programs will be defined, and individuals will be assigned to these new roles. We will establish communication procedures and expectations within the TMDL program and related programs.

### **B. Information Management**

We will establish a user-friendly information management system as part of the existing System for Water Information Management (SWIM) and enhancements to SWIM. This system will include data on all TMDL projects, with more detail for TMDL projects within a 3-year planning horizon, and even more detail associated with tasks in the active fiscal year. The latter will be part of an effort to produce electronic workplans (e-workplans). The information and data in the system will also be used to produce fact sheets, workplans, and other reports for specific TMDL projects. Intranet and Internet web sites will be established for access to the information and relevant products. Contract mechanisms such as master contracts and tracking mechanisms will also be built into the system.

### **C. TMDL Toolbox and Guidelines**

We will produce tools and guidelines for listing and delisting impaired water bodies, developing TMDLs, and implementing the TMDL program. These products will include technical tools, methods and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.

Tools and guidelines will be produced for 303(d) listings, categorical TMDLs (pathogens, pesticides, metals, etc.), and TMDL process elements (numeric targets, source analysis, linkage analysis, allocations, implementation plan, etc.).

#### **D. Outreach, Communication, and Participation**

We will develop tools, mechanisms, and procedures to enhance external (other agencies, stakeholders, and public) outreach, communication, and participation. Successful development of TMDLs will require participation and support of various stakeholders. Inherent to this participation and support is the need to ensure that stakeholders are informed of and understand the issues associated with developing the TMDLs. These efforts will include creating and identifying opportunities to enhance collaboration and cooperation with other agencies and stakeholders, more effectively describing and reporting on TMDL activities, and providing forums for information exchange. Actions will include general and specific outreach and communication efforts, stakeholder participation and collaboration, and coordination and collaboration with other agencies.

#### **E. Early Implementation**

Early Implementation refers to actions that may be implemented prior to completion of a TMDL. We will pursue opportunities for early actions that promote or possibly eliminate the need for TMDLs using existing authorities, program integration, process improvements, and stakeholder assistance and collaboration. Such opportunities may include: evaluating actions already taking place that may be recognized in the implementation plan for a TMDL; groundtruthing or pilot testing potential actions that may or are being considered for an implementation plan; and identifying and evaluating actions that if implemented may negate the need for a TMDL, such as implementation of existing technology-based requirements or enhancements of them, or clean-up and abatement of hotspots or illicit discharges. Early Implementation will not be early implementation of TMDLs that do not exist, nor will it be used in lieu of TMDLs where TMDLs are needed.

#### **F. Monitoring and Assessment**

We will continue to design and implement a comprehensive statewide Surface Water Ambient Monitoring Program (SWAMP) to improve identification of impaired or threatened waters. We will augment SWAMP, where appropriate, with monitoring required by or associated with other water quality programs (NPDES, Storm Water, Nonpoint Source programs, etc.) and with monitoring conducted by other agencies (U.S. Geological Survey, Department of Water Resources, Department of Pesticide Regulation [DPR], etc.).

#### **G. Basin Planning**

We will streamline and improve the existing basin planning process based on the new Administrative Procedures Manual chapter on basin planning through training, enhanced coordination and communication, and resourcefulness. We will also pursue options to revise or modify the existing process.

## **H. TMDL Implementation**

We will establish procedures and requirements to implement TMDLs in general and to implement specific TMDLs. We will establish procedures to track and enforce TMDL implementation actions and to monitor effectiveness of actions. We will also establish adaptive management procedures to ensure that implementation actions result in attainment of water quality standards. We will use and enhance existing regulatory mechanisms, and where necessary, establish new ones or seek collaboration with other agencies with applicable authorities.

## **I. Budget Development and Management**

We will address budget issues relevant to TMDL efforts. They include: assessment and management of existing budget allocations; use or redirection of funds associated with other programs; development of initiatives to seek additional resources through the State budget process; and development of initiatives to seek resources through external sources such as dischargers or other collaborators.

## **VII. ACTIONS TO IMPLEMENT THE STRATEGIES**

Described below for each strategy are actions, tasks, products/deliverables, and due dates. With each edition of the Action Plan, these elements will be updated and expanded. Attachment 2 provides a compilation of all the actions and products and the timeline for them.

### **A. TMDL Program Structure and Management**

We will articulate and solidify expectations for TMDL development, products, and timelines, and communicate these expectations to all staff involved in TMDL development. The current program structure related to TMDL efforts will be assessed, and improvements and organizational options to address them will be identified and established. We will identify the interrelationship of TMDL efforts with other water quality programs and establish mechanisms to ensure effective program collaboration and integration. Roles and responsibilities of management and staff within the TMDL program and other water quality programs will be articulated. The role of management advocates with responsibility for TMDL efforts and integration of TMDL efforts with other water quality programs will be defined, and individuals will be assigned to these new roles. We will establish communication procedures and expectations within the TMDL program and related programs.

#### ***Action 1: Program Structure Assessment and Improvement***

Description: The expectations of the TMDL Program at the State Board and the Regional Boards will be articulated. Expectations for products, timelines, tracking and documentation, and legal commitments will be communicated to all staff. Integral to this effort will be the identification and truncation of non-essential activities that impede the pace of TMDL production. The TMDL program structure will be reviewed and evaluated accordingly. Improvements and options will be identified and established.

Tasks:

- Articulate expectations regarding TMDL program objectives and products.
- Assess current program structure, including roles and responsibilities of State and Regional Board TMDL Team members and staff of related programs.
- Identify needed improvements in program structure and present organizational options to address them to MCC.
- Implement program improvements approved by MCC.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Program Structure Improvement Plan	February 2002
MCC review and approval of plan	March 2002
Implement structural improvements	Ongoing (beginning February 2002)

***Action 2: Program Integration***

Description: TMDL efforts encompass activities associated with nearly all other water quality programs. We will establish a clear understanding of these interrelationships (particularly the NPDES and Nonpoint Source Programs) and establish mechanisms to ensure effective collaboration and integration of program efforts, and to prevent conflicts or redundancies between these programs and TMDL efforts.

Tasks:

- Identify programs (e.g., NPDES Wastewater, NPDES Storm Water, and Nonpoint Source programs) associated with TMDLs in general and with specific TMDL projects.
- Describe interrelationships between TMDLs and these programs.
- Identify roles and responsibilities of these programs and program staff, and establish management advocates or other mechanisms to ensure effective collaboration and integration, and to prevent conflicts or redundancies between these programs and TMDL efforts.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Matrix of TMDL projects and affected programs	February 2002
Program interrelationship report with opportunities for improvement	March 2002
Identify key roles and responsibilities to maintain and improve integration	March 2002
Assign staff or functions as necessary to ensure integration	Ongoing (beginning March 2002)

### ***Action 3: Program Management***

Description: We will review the roles and responsibilities of management and staff within the TMDL program at the State Board and Regional Boards. This effort will include executive management and division management at the State Board, the Management Coordinating Committee (State Board management and Regional Board Executive Officers), the Assistant Executive Officers, the Statewide TMDL Program Manager, the TMDL Program Coordinator, the TMDL Roundtable, and others as necessary. The role of TMDL management advocates will be defined. We will identify key individuals to serve as management advocates with responsibility for TMDL efforts (including the TMDL Initiative and this Action Plan), and integration and coordination of TMDL efforts with other water quality programs and the Strategic Plan. We will establish communication procedures and expectations with the TMDL program and interrelated programs.

#### Tasks:

- Review management roles and responsibilities.
- Define the role and responsibilities for management advocates.
- Identify management advocates.
- Establish management advocates expectations for TMDL efforts and products (including the TMDL Initiative and this Action Plan) and integration and coordination of TMDL efforts with other water quality programs and the Strategic Plan.

#### Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Roles and responsibilities of management advocates	January 2002
TMDL program management description	January 2002
Report on expectations of management advocates	February 2002
Memorandum announcing the State and Regional Board management advocates for TMDLs.	February 2002

### ***Action 4: Internal Communication***

Description: The importance and complexity of the TMDL program and its interrelationship with other water quality programs calls for effective internal communication. Communication expectations and procedures within the TMDL program and interrelated programs will be established.

#### Tasks:

- Convene quarterly TMDL Roundtable of State and Regional Board program coordinators.
- Convene annual, two-day TMDL symposiums (Day 1 – discussion sessions; Day 2 – training).
- Identify key communication expectations (management to staff, program to program, State Board to Regional Boards, etc.) and pathways.
- Establish communication procedures.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
TMDL symposium	October 2001
Key communication pathways and expectations pathways	February 2002
Communication procedures	March 2002
TMDL symposium	October 2002

**B. Information Management**

We will establish a user-friendly information management system as part of the existing System for Water Information Management (SWIM) and enhancements to SWIM. This system will include data on all TMDL projects, with more detail for TMDL projects within a 3-year planning horizon, and even more detail associated with tasks in the active fiscal year. The latter will be part of an effort to produce electronic workplans (e-workplans). The information and data in the system will also be used to produce fact sheets, workplans, and other reports for specific TMDL projects. Intranet and Internet web sites will be established for access to the information and relevant products. Contract mechanisms such as master contracts and tracking mechanisms will also be built into the system.

*Action 1a: Database Enhancement - Phase One*

Description: An existing database in MS Access will be converted to Oracle as part of development of SWIM and e-workplans. The database will include relevant information for TMDL projects underway. This will include specific tasks/products that will be conducted/produced during the current fiscal year, and associated personnel and contract resources. Projected tasks/products and associated personnel and contract resources for the next two fiscal years will also be entered into the database.

Tasks:

- Convert database to Oracle with enhanced (early) milestones/tasks fields and prepare user guide.
- Enter data for FY 2001/02.
- Define reporting needs, incorporate appropriate formats for reports into database, and revise user guide.
- Produce report(s) based on FY 2001/02 data.
- Enter data for FYs 2002/03 and 2003/04.
- Produce report(s) based on FY 2001/02 data.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Complete database conversion and user guide	January 2002
Complete FY 2001/02 data entry	February 2002
Reports formats and revised user guide	February 2002
FY 2001/02 report(s)	February 2002
Complete data entry for FYs 2002/03 and 2003/04	March 2002

***Action 1b: Database Enhancement - Phase Two***

Description: The database will be enhanced for planning, reporting, contract tracking, and implementation purposes. Additional information/data fields will include:

- TMDL project problem definition, approach description, major work focus, and weak link(s) or obstacle(s).
- Water quality programs affected.
- Type/extent of stakeholder participation (e.g., mail list, staff workshops, watershed stewardship group with Regional Board lead, Watershed Group with Regional Board participant, TAC, PAG, etc.)
- Interagency coordination required/desired.
- Early implementation focus -- status, opportunities, projects, regulatory options
- Contract tracking information field (e.g., contract #, amount, scope, contractor)
- Implementation milestones (e.g., projects, contacts, lead, duration, Nonpoint Source Management Measures, PYs, contracts, fund source).

The additional information and data associated with these enhancements will be used to produce workplans and fact sheets for TMDL projects and improved justification for project tasks, costs, and timing.

Tasks:

- Define and create enhanced information/data fields and revise user guide.
- Enter additional information/data.
- Define/design enhanced reports/products, incorporate appropriate formats into database, and revise user guide.
- Produce TMDL project workplans/fact sheets.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Complete enhanced fields and user guide	April 2002
Complete additional information/data entry	May 2002
Enhanced report formats and revised user guide	June 2002
TMDL project workplans/fact sheets	July 2002

### ***Action 2: E-Workplan***

Description: An important application of the database will be production of electronic workp' (e-workplans). The information/data in the database associated with TMDL phase (TMDL development, implementation planning, basin planning, and implementation), milestones, tasks, costs, and timelines will be used to generate reports that will serve as the annual fiscal year workplans for the TMDL program.

#### Tasks:

- Generate e-workplan for FY 2001/02 based on database and data entered via Action 1a.
- Generate draft e-workplan for FY 2002/03.
- Revise FY 2002/03 data to reflect FY 2002/03 budget.
- Produce final e-workplan for FY 2002/03.

#### Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
FY 2001/02 e-workplan	February 2002
Draft FY 2002/03 e-workplan	April 2002
Revise FY 2002/03 data	June 2002
FY 2002/03 e-workplan	July 2002

### ***Action 3: Intranet/Internet Web Pages***

Description: Produce appropriate Intranet/Internet access to database, e-workplans, and other products.

*Tasks, products, and due dates, etc. to be determined.*

### ***Action 4: Tracking Reports***

Description: TMDL program workplans will be regularly developed to describe the intended work in the upcoming one- and three-year periods. Reports on the progress of this work will be produced and reviewed on a regular basis.

*Tasks, products, and due dates, etc. to be determined by April 2002.*

### ***Action 5: Legislature Reports***

Description: Annual reports to the legislature required by Section 13191 of the California Water Code on the structure and effectiveness of the water quality program as it relates to Section 303(d) of the Clean Water Act. Additional reports are often required by budget control language.

*Tasks, products, and due dates, etc. to be determined by April 2002.*



### ***Action 6: Contract Development and Management***

Description: Regional Boards rely heavily on their ability to contract for special services needed to complete specific TMDLs. To improve the efficiency of the contracting process, master contracts can be established with the University systems and private consultants to provide TMDL support through a task order mechanism. Initially a master contract with the University systems will be developed. A companion master contract for private sector consultants will follow. The University master contract will be limited to TMDL tasks that match the teaching and research mission of the universities. The private sector contract will be designed to provide broad TMDL support, including technical, administrative, and public process work.

*Tasks, products, and due dates, etc. to be determined by April 2002.*

### **C. TMDL Toolbox and Guidelines**

We will produce tools and guidelines for listing and delisting impaired water bodies, developing TMDLs, and implementing the TMDL program. These products will include technical tools, methods and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use. Tools and guidelines will be produced for 303(d) listings, categorical TMDLs (pathogens, pesticides, metals, etc.), and TMDL process elements (numeric targets, source analysis, linkage analysis, allocations, implementation plan, etc.).

#### ***Action 1: Impaired Water Bodies Listing/Delisting Tools and Guidelines***

Description: The State Board has stated its intent to develop a policy to guide those involved in the listing and delisting of impaired waters (pursuant to Clean Water Act Section 303(d)). The 2002 listing process is currently underway and an official policy cannot be developed in time to apply to the current list process. The 2002 listing effort will instead be used as a scoping mechanism to develop an official policy. The policy will seek to provide consistency among the regions and DWQ in the assessment of data, and in the prioritization of listed waters. The State Board also will address aspects of data quality and sufficiency. The policy will be developed with public participation, including the AB 982 Public Advisory Group (PAG).

#### Tasks:

- Summarize key points in Regional Board workshops and meetings related to 303(d) listing.
- Summarize key public comments on 2002 list.
- Develop working draft listing policy.
- Conduct public workshops on working draft.
- Develop draft policy.
- Conduct State Board public hearing process (hearing, workshop, response to comments, and adoption).
- Provide Regional Board training and technical support for new policy.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Preliminary summary of key issues	January 2002
Review and feedback by PAG	February 2002
Revised summary of key issues	March 2002
Working draft policy	May 2002
Draft policy	October 2002
State Board consideration	January 2003

***Action 2: Categorical TMDL Tools and Guidelines***

Description: Tools and guidelines for developing and implementing categorical TMDLs (pathogens, pesticides, metals, etc.) will be produced by forming workgroups of State and Regional Board staff with experience and/or expertise in categorical TMDLs. These will include: how to address the programmatic and technical aspects of TMDL development, including criteria for level of effort (how much is enough); identification of the TMDL elements that are significant and/or pose particular problems (coordinate with Action 3); stakeholder involvement opportunities and issues; interagency issues (collaboration/conflict); and early implementation opportunities. Key to the success of these workgroups will be provision for meeting management, facilitation, and product production support (contract).

Tasks:

- Form categorical TMDL workgroups.
- Compile relevant literature, existing products, and existing tools.
- Identify additional tools, needs, and issues, and schedule for their production, evaluation, and/or resolution.
- Complete compilation of technical tools, methods, and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.
- Initiate appropriate approval mechanisms for tools and guidelines.
- Establish standing workgroups or “strike teams” to aid the use of tools and guidelines and to update/revise them as necessary.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Form workgroups	November 2001
Compilation of existing tools	February 2002
Identification of additional tools, needs, and issues	April 2002
Complete compilation of tools and guidelines	October 2002
Initiate approval process	October 2002
Establish standing workgroup or “strike teams”	October 2002

### ***Action 3: TMDL Elements Tools and Guidelines***

Description: Complete TMDLs consist of several elements: problem statement, numeric targets, source analysis, linkage analysis, allocations, margin of safety, implementation plan, and monitoring/re-evaluation plan. Tools and guidelines for each of these elements will be produced by workgroups of State and Regional Board staff with experience and/or expertise in these elements. This action area will be coordinated closely with and segue from Action 2.

#### Tasks:

- Form TMDL element workgroups.
- Compile relevant literature, existing products, and existing tools.
- Identify additional tools, needs, and issues, and schedule for their production, evaluation, and/or resolution.
- Complete compilation of technical tools, methods, and procedures for their use, and regulatory and policy tools, guidelines, and procedures for their use.
- Initiate appropriate approval mechanisms for tools and guidelines.
- Establish standing workgroups or “strike teams” to aid the use of tools and guidelines and to update/revise them as necessary.

#### Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Form workgroups	June 2002
Compilation of existing tools	October 2002
Identification of additional tools, needs, and issues	November 2002
Complete compilation of tools and guidelines	March 2003
Initiate approval process	March 2003
Establish standing workgroup or “strike teams”	March 2003

### ***Action 4: TMDL Program Guidelines***

Description: The products of the workgroups dedicated to categorical TMDL tools and TMDL elements will be coalesced into consolidated guidelines for developing TMDLs. This effort will require coordinating the efforts of these workgroups, compiling their recommendations, and developing the consolidated guidelines. Products of the workgroups will be implemented as soon as possible and in some cases will precede establishment of the consolidated guidelines. Attachment 3 contains a schedule for producing TMDL guidelines via the combination of Actions 2, 3, and 4.

#### Tasks:

- Coordinate efforts of categorical and TMDL element workgroups.
- Develop consolidated TMDL development guidelines.
- Conduct approval mechanism for guidelines.

Products/Deliverables and Due Dates:

<b>PRODUCT/DELIVERABLE</b>	<b>DUE DATE</b>
Develop consolidated TMDL development guidelines	July 2003
Establish final TMDL development guidelines	January 2004

**D. Outreach, Communication, and Participation**

We will develop tools, mechanisms, and procedures to enhance external (other agencies, stakeholders, and public) outreach, communication, and participation. Successful development of TMDLs will require participation and support of various stakeholders. Inherent to this participation and support is the need to ensure that stakeholders are informed of and understand the issues associated with developing the TMDLs. These efforts will include creating and identifying opportunities to enhance collaboration and cooperation with other agencies and stakeholders, more effectively describing and reporting on TMDL activities, and providing forums for information exchange. Actions will include general and specific outreach and communication efforts, stakeholder participation and collaboration, and coordination and collaboration with other agencies.

***Action 1: Public Advisory Group (PAG) Involvement and Collaboration***

Description: We will seek advise on the TMDL Initiative and this Action Plan from the Public Advisory Group (PAG) that has been established pursuant to AB 982 to assist in the evaluation of TMDL program structure and effectiveness. We have cross-referenced this Action Plan to the PAG consensus recommendations received to date. In the spirit of enhancing collaboration between the PAG and the State Board, we requested and received PAG comments on developing and implementing the strategies and actions of this first edition Action Plan, and will continue this process in subsequent editions. Areas where we seek assistance from the PAG include, but are not limited to, implementing opportunities to improve the basin planning process, developing legislative reports, pursuing needed legislative changes to support or improve TMDLs or the TMDL process (e.g., budget initiatives, basin planning), and engaging other agencies in TMDL development and early implementation.

Tasks:

- Cross-reference Action Plan strategies and actions with PAG consensus recommendations.
- Solicit input from PAG on developing, evaluating, and implementing existing and additional Action Plan strategies and actions.
- Establish tasks for the PAG as part of the Action Plan strategies and actions.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Table of strategies/actions versus consensus recommendations	October 2001
Distribute Action Plan for PAG review.	October and April each year
Receive and consider comments from PAG in revising future additions of the Action Plan.	November and May each year
Establish tasks for the PAG	November and May each year

***Action 2: Stakeholder Involvement and Collaboration***

Description: Identify and create opportunities to enhance involvement and collaboration with stakeholders. These efforts will include improved outreach and communication associated with Action 3 and improved descriptions and use of stakeholder involvement and collaboration opportunities and mechanisms. Integral to this effort will be the recognition that stakeholders may bring information and expertise to the table. For each TMDL project, we will strive for the most focused and efficient process that allows all stakeholders to effectively participate and ensures balanced representation on any recognized “watershed” or stakeholder forum. Mechanisms will range from compilation and maintenance of interested parties lists to formally recognized and facilitated stakeholder forums.

Tasks:

- Prepare compendium of stakeholder involvement opportunities and mechanisms, with recommendations.
- Provide training in public process facilitation and negotiation/conflict resolution for staff and stakeholders.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Compendium of stakeholder mechanisms	April 2002
Training	Ongoing (beginning April 2002)

***Action 3: Outreach and Communication***

Description: Methods that Regional Boards are using for outreach and communication will be surveyed and described. Key stakeholders will be identified. Other approaches to outreach and public process will be evaluated and training in outreach and public process will be provided. Methods for documenting and tracking public involvement in TMDL development will be evaluated and established where feasible. We will develop informational items that can be used to communicate current activities in TMDL development. Web based bulletin boards will be evaluated and developed where feasible. Lists of interested parties (other agencies, stakeholders,

and public) will be established and mechanisms to communicate with them (e.g., reports, web site) will be evaluated and established. We will compile relevant information on the TMDL program and TMDL projects. This action area will be coordinated with the information management actions described under Strategy B above.

Tasks:

- Report on Regional Board outreach methods and other available public process techniques.
- Develop and offer outreach training.
- Develop and distribute informational materials, in coordination with OLPA, including TMDL fact sheets for each TMDL unit.
- Enhance TMDL web site.
- Convene biennial or triennial TMDL conferences with State and Regional Board staff and stakeholders.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Methods report	April 2002
Outreach materials	Ongoing
Training module	July 2002
TMDL project fact sheets	July 2002
Enhanced TMDL web site	July 2002
TMDL conference schedule	July 2002

***Action 4: Interagency Coordination and Collaboration***

Description: Opportunities to enhance coordination and collaboration with other agencies will be pursued. Our TMDL efforts overlap authorities and programs of other agencies. Certain TMDLs are dependent on efforts by these other agencies (e.g., pesticide TMDLs and the USEPA and DPR). In some cases, actions by other agencies may even conflict with or create barriers to TMDL efforts. These opportunities, overlaps, conflicts, and barriers will be identified and appropriate resolutions, agreements, etc. will be pursued.

*Tasks, products, due dates, etc. to be determined by April 2002.*

**E. Early Implementation**

Early Implementation refers to actions that may be implemented prior to completion of a TMDL. We will pursue opportunities for early actions that promote or possibly eliminate the need for TMDLs using existing authorities, program integration, process improvements, and stakeholder assistance and collaboration. Such opportunities may include: evaluating existing actions that may be recognized in the implementation plan for a TMDL; groundtruthing or pilot testing potential actions that may or are being considered for an implementation plan; and identifying and evaluating actions that if implemented may negate the need for a TMDL, such as implementation of existing technology-based requirements or enhancements of them, or clean-up and abatement of

hotspots or illicit discharges. Early Implementation will not be early implementation of TMDLs that do not exist, nor will it be used in lieu of TMDLs where TMDLs are needed.

***Action 1: Implement Existing Authorities***

Description: Pursue opportunities for early action through existing authorities and program integration including implementation and evaluation of existing requirements.

Tasks:

- Review and clarify technology-based requirements for wastewater and stormwater discharges subject to NPDES permits for control of pollutants causing impairment.
- Review and clarify best management practices for nonpoint source discharges for control of pollutants causing impairment.
- Identify toxic hot spots and/or illicit discharges (particularly those currently subject to regulatory action by a Regional Board) that are causing or may be contributing to water quality impairment.
- Assimilate regulatory requirements/pollutant control information into a matrix or other suitable framework that provides access to such information.
- Pursue stakeholder participation (e.g., Stormwater Quality Task Force) in this process.
- Develop “early alarm system” to notify non-TMDL staff when an activity (e.g., issuing a landfill WDR) is relevant to a scheduled or ongoing TMDL effort, and to alert staff to opportunities to implement actions relevant to TMDLs.
- Apply and track existing requirements on a TMDL pollutant category or project-specific basis.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
Matrix of regulatory requirements/pollutant control information	Six-month updates starting April 2002
Stakeholder participation	Six-month updates starting April 2002
Use of existing authorities/requirements	Six-month updates starting April 2002
Establish “early implementation alarm”	September 2002

***Action 2: Evaluate Potential Actions***

Description: Evaluate (groundtruth or pilot test) potential actions for consideration in TMDL implementation plans.

Tasks:

- Identify potential actions for consideration in TMDL implementation plans on a TMDL pollutant category or project-specific basis (clean-up of PCBs within a storm drain).
- Implement and track special studies or pilot projects to evaluate such potential actions.

- Solicit stakeholder participation/assistance including creation of incentives/rewards.
- Assimilate potential action information into accessible framework.

Products/Deliverables and Due Dates:

<b>Product/Deliverable</b>	<b>Due Date</b>
List of potential actions	Six-month updates starting April 2002
List/status of special studies or pilot projects	Six-month updates starting April 2002
Compilation of potential action information	Six-month updates starting April 2002

**F. Monitoring and Assessment**

We will continue to design and implement a comprehensive statewide Surface Water Ambient Monitoring Program (SWAMP) to improve identification of impaired or threatened waters. We will augment SWAMP, where appropriate, with monitoring required by or associated with other water quality programs (NPDES, Storm Water, Nonpoint Source programs, etc.) and with monitoring conducted by other agencies (U.S. Geological Survey, Department of Water Resources, Department of Pesticide Regulation [DPR], etc.). We will also improve assessment methods and refine environmental indicators. Decision support tools to identify when sufficient information exists for TMDL activities will be developed.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*

**G. Basin Planning**

We will streamline and improve the existing basin planning process based on the new Administrative Procedures Manual chapter on basin planning using the through training, enhanced coordination and communication, and resourcefulness. We will also pursue options to revise or modify the existing process.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*

**H. TMDL Implementation**

We will establish procedures and requirements to implement TMDLs in general and to implement specific TMDLs. We will establish procedures to track and enforce TMDL implementation actions and to monitor effectiveness of actions. We will also establish adaptive management procedures to ensure that implementation actions result in attainment of water quality standards. We will use and enhance existing regulatory mechanisms, and where necessary, establish new ones or seek collaboration with other agencies with applicable authorities.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*



## I. **Budget Development and Management**

We will address budget issues relevant to TMDL efforts. They include: assessment and management of existing budget allocations; use or redirection of funds associated with other programs; development of initiatives to seek additional resources through the State budget process; and development of initiatives to seek resources through external sources such as dischargers or other collaborators.

### ***Action 1: TMDL Budget Management***

Description: We will document allocation and use of existing TMDL funds and revise the Budget Development and Administration System (BDAS) to reflect allocated resources and to conform to the TMDL program workplan. We will also establish procedures and provide training for TMDL budget management.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*

### ***Action 2: Program Fund Integration***

Description: TMDL efforts encompass activities associated with nearly all other water quality programs (e.g., NPDES, Storm Water, and Nonpoint Source programs). We will identify tasks associated with these programs that are part of or affect TMDLs (e.g., pollutant source identification, evaluation of pollution prevention or control actions). Where appropriate, we will use or redirect funds associated with these other programs for these tasks.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*

### ***Action 3: State Budget Initiatives***

Description: We will continue to use the Budget Change Proposal procedures to seek additional state resources to enhance development and implementation of TMDLs.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*

### ***Action 4: External Source Support***

Description: We will pursue and implement agreements with other agencies and dischargers to use and share their resources for development and implementation of TMDLs.

*Actions, tasks, products, due dates, etc. to be determined by April 2002.*



**TMDL INITIATIVE ACTION PLAN**  
Edition 1.0

**ATTACHMENT 1**

***TMDL Regional Board Actions***  
***By December 2002***

## ***TMDL Regional Board Actions By December 2002***

### ***Region 1***

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
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Region1 expects Regional Board consideration of at least one TMDL by December 2002.

### ***Region 2***

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
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#### ***San Francisco Bay - Mercury***

Basin Planning	Prepare Amendment	08/2001		
	Regional Board Hearing Date	11/2001		

#### ***South San Francisco Bay - Copper***

Basin Planning	Prepare Amendment	01/2002		
	Regional Board Hearing Date	06/2002		

#### ***South San Francisco Bay - Nickel***

Basin Planning	Prepare Amendment	01/2002		
	Regional Board Hearing Date	06/2002		

## *TMDL Regional Board Actions By December 2002*

### *Region 3*

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Chorro Creek - Metals</i></u>				
Basin Planning	Prepare Amendment	06/2001		
	Regional Board Hearing Date	12/2001		
<u><i>Las Tablas Creek- Nacimiento Reservoir - Mercury</i></u>				
Basin Planning	Prepare Amendment	12/2001		
	Regional Board Hearing Date	06/2002		
<u><i>Morro Bay - Nutrients</i></u>				
Basin Planning	Prepare Amendment	12/2001		
	Regional Board Hearing Date	06/2002		
<u><i>Morro Bay - Pathogens</i></u>				
Basin Planning	Prepare Amendment	06/2002		
	Regional Board Hearing Date	12/2002		
<u><i>Morro Bay - Siltation</i></u>				
Basin Planning	Prepare Amendment	06/2001		
	Regional Board Hearing Date	12/2001		
<u><i>San Lorenzo River - Siltation</i></u>				
Basin Planning	Prepare Amendment	06/2002		
	Regional Board Hearing Date	06/2002		
<u><i>San Luis Obispo Creek - Nutrients</i></u>				
Basin Planning	Prepare Amendment	06/2002		

## TMDL Regional Board Actions By December 2002

### Region 4

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Ballona Creek - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	10/2001	7/1/02	
<u><i>Ballona Creek - Trash</i></u>				
Basin Planning	Regional Board Hearing Date	04/2001	8/1/01	
<u><i>Calleguas Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	01/2002		
<u><i>Dominguez Channel - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	02/2002	4/1/02	
<u><i>Los Angeles River - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	07/2001	12/1/01	
<u><i>Los Angeles River - Metals</i></u>				
Basin Planning	Regional Board Hearing Date	07/2002	6/1/02	
<u><i>Los Angeles River - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	07/2001	12/1/01	
<u><i>Malibu Creek - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	06/2001	1/1/02	
<u><i>Malibu Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	06/2001	1/1/02	
<u><i>Marina del Rey Harbor - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	12/2002		
<u><i>McGarath Beach - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	10/2002		
<u><i>San Gabriel River - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	11/2002		
<u><i>Santa Clara River - Chloride</i></u>				
Basin Planning	Regional Board Hearing Date	08/2001	11/1/01	12/1/00
<u><i>Santa Monica Bay Beaches - Coliform</i></u>				
Basin Planning	Regional Board Hearing Date	01/2002		

## ***TMDL Regional Board Actions By December 2002***

### ***Region 5***

<b>TMDL Planning Unit</b>	<b>Milestones</b>	<b>Date of Action</b>	<b>Revised Completion Date</b>	<b>Actual Completion Date</b>
<b><i>Clear Lake - Mercury</i></b>				
Basin Planning	Regional Board Hearing Date	12/2002		
<b><i>Sacramento and Feather Rivers - Diazinon</i></b>				
Basin Planning	Prepare Amendment	09/2002		
<b><i>Sacramento River - Cadmium, Copper, Zinc</i></b>				
Basin Planning	Regional Board Hearing Date	08/2001		
<b><i>San Joaquin River - Electrical Conductivity and Boron</i></b>				
Basin Planning	Prepare Amendment	09/2002		

### ***Region 6***

<b>TMDL Planning Unit</b>	<b>Milestones</b>	<b>Date of Action</b>	<b>Revised Completion Date</b>	<b>Actual Completion Date</b>
<b><i>Indian Creek Reservoir - Nutrients</i></b>				
Basin Planning	Regional Board Hearing Date	06/2002		

### ***Region 7***

<b>TMDL Planning Unit</b>	<b>Milestones</b>	<b>Date of Action</b>	<b>Revised Completion Date</b>	<b>Actual Completion Date</b>
<b><i>New River - Sediment</i></b>				
Basin Planning	Regional Board Hearing Date	12/2001		

## *TMDL Regional Board Actions By December 2002*

### *Region 8*

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Newport Bay - diazinon, chlopyrifos</i></u>				
Basin Planning	Regional Board Hearing Date	06/2002		

### *Region 9*

TMDL Planning Unit	Milestones	Date of Action	Revised Completion Date	Actual Completion Date
<u><i>Chollas Creek - Diazinon</i></u>				
Basin Planning	Prepare Amendment	07/2002	7/1/02	
	Regional Board Hearing Date	04/2002		
<u><i>Chollas Creek - Metals</i></u>				
Basin Planning	Prepare Amendment	01/2002	12/1/02	
	Regional Board Hearing Date	08/2002		
<u><i>Rainbow Creek - Nutrients</i></u>				
Basin Planning	Regional Board Hearing Date	04/2002		
Implementation	Prepare Amendment	07/2001	7/1/02	
<u><i>San Diego Bay - Shelter Island Yacht Basin - Dissolved Copper</i></u>				
Basin Planning	Prepare Amendment	07/2002	10/1/02	
	Regional Board Hearing Date	08/2002		



### TMDL Initiative Action Plan Timeline

Strategy-Action-Product	October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
<b>A. Program Structure and Management</b>											
Action 1: Structure Assessment											
Structure Improvement Plan											
MCC review and approval of plan											
Implementation of structural improvements											
Action 2: Program Integration											
Matrix of TMDL proj. and affected programs											
Program interrelationship report											
Identify key roles and responsibilities											
Assign staff & functions											
Action 3: Program Management											
Roles of Management Advocates											
Program management description											
Report on expectations											
Memo announcing Advocates											
Action 4: Internal Communication											
TMDL symposium											
Communication pathways and expectations											
Communication procedures											
TMDL symposium											
<b>B. Information Management</b>											
Action 1a: Database - Phase 1											
Database conversion & user guide											
FY 2001/02 data entry											
Report formats & revised user guide											
FY 2001/02 report											
Data entry FY 02-03, FY 03-04 data											
Action 1b: Database - Phase 2											
Enhanced data fields											
Added data entry											
Enhanced reports/revised user guide											
TMDL project workplans/ fact sheets											
Action 2: E-Workplan											
FY 01/02 e-workplan											
Draft 02/03 e-workplan data entry											
Revise 02/03 data											
Final FY 02/03 e-workplan											

Attachment 2

Strategy-Action-Product	October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
Action 3: Intranet/Internet Web Pages TBD (To be determined)											
Action 4: Tracking reports TBD											
Action 5: Legislative Reports TBD											
Action 6: Contract Development & Management TBD											
<b>C. TMDL Toolbox and Guidelines</b>											
Action 1: Listing guidelines											
Preliminary summary of key issues											
Review and feedback from PAG											
Revised summary of issues											
Working draft policy											
Draft policy											
State Board consideration											
OAL approval											
<b>Action 2: Categorical TMDL Tools</b>											
Form workgroups											
Compile existing tools											
Identify additional tools and guidelines											
Complete compilation of tools and guidelines											
Initiate approval process											
Establish strike teams											
<b>Action 3: TMDL Elements Tools</b>											
Form workgroups											
Compile existing tools											
Identify additional tools, needs and issues											
Complete compilations of tools and guidelines											
Initiate approval process											
Establish strike teams											
<b>Action 4: TMDL Program Guidelines</b>											
Consolidate TMDL development guidelines											
Establish Final TMDL development guidelines											
<b>D. Outreach, Communication, and Participation</b>											
Action 1: PAG Involvement and collaboration											
Tbl. strategies/actions x recommendations											
Initiative and Action Plan, PAG review											
PAG comments/ revised Action Plan											
PAG Tasks											

Strategic Action-Product	October	November	December	January	February	March	Spring 02	Summer 02	Fall 02	Winter 03	Other
<b>Action 2: Stakeholder Involvement and Collaboration</b>											
Compendium of stakeholder mechanisms											
Training							ongoing beginning April 2002				
<b>Action 3: Outreach and Communication</b>											
Methods report											
Outreach materials	ongoing										
Training module											
TMDL project fact sheets											
Enhanced TMDL web site											
TMDL conference schedule											
<b>Action 4: Interagency Coordination &amp; Collaboration</b>											
TBD											
<b>E. Early Implementation</b>											
Action 1: Implement Existing Authorities											
Matrix of regulatory requirements/controls							6 month updates beginning April 2002				
Stakeholder participation							6 month updates beginning April 2002				
Use of existing authorities/requirements							6 month updates beginning April 2002				
Early implementation "alarm"											
<b>Action 2: Evaluate Potential Actions</b>											
List of potential actions							6 month updates beginning April 2002				
List/status of special studies or pilots							6 month updates beginning April 2002				
Compendium of potential actions							6 month updates beginning April 2002				
<b>F. Monitoring</b>											
Actions TBD											
<b>G. Basin Planning</b>											
Actions TBD											
<b>H. TMDL Implementation</b>											
Actions TBD											
<b>I. Budget Development and Management</b>											
Action 1: Budget Management											
TBD											
Action 2: Program Fund Integration											
TBD											
Action 3: State Budget Initiatives											
TBD											
Action 4: External Source Support											
TBD											

Attachment 3

Proposed TMDL Guideline Schedule

December-01

Task	Fall 01	Winter 02	Spring 02	Summer 02	Fall 02	Winter 03	Spring 03	Summer 03	Fall 03	Winter 04
Review and finalize schedule										
Workgroup assistance contract										
Form <b>Categorical</b> Workgroups										
Compile existing <b>Categorical</b> tools										
Identify <b>Categorical</b> tools, needs, issues										
Form TMDL <b>Elements</b> workgroup										
Complete draft <b>Categorical</b> guidelines										
Compile existing <b>Element</b> tools										
Identify <b>Elements</b> tools, needs, issues										
Complete draft <b>Elements</b> guidelines										
DWQ Consolidate draft elements and category guidelines										
Workgroup and Public review of draft consolidated guidelines										
Approval process for guidelines										

Production of guidelines for developing TMDLs will be coordinated by DWQ and rely on workgroups on categorical TMDL tools and TMDL element tools. DWQ will consolidate products from the workgroups to form the draft guidelines. Workgroups will be supported by facilitators and administrative support provided through contract services.

## **Appendix B**

### **TWELVE-YEAR TMDL COMPLETION SCHEDULE (1998 - 303(d) LIST)**



Twelve-Year TMDL Co. . . . . Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
1	Americano Creek TMDL Project	Bodega HU, Estero Americano Bodega HU, Estero Americano Bodega HU, Americano Creek	Nutrients Sedimentation/Siltation Nutrients	2008
1	Lake Pillsbury Mercury TMDL Project	Lake Pillsbury, HSA 11163	Mercury	2013
1	Albion River Sediment TMDL Project	Albion River	Sedimentation/Siltation	2003
1	Big River Sediment TMDL Project	Big River	Sedimentation/Siltation	2003
1	Stemple Creek Nutrient TMDL Project	Bodega HU, Estero De San Antonio/Stemple Creek	Nutrients	2005
1	Eel River Delta TMDL Project	Eel River Delta	Sedimentation/Siltation Temperature	2007
1	Middle Fork Eel River TMDL Project	Eel River, Middle Fork	Sedimentation/Siltation Temperature	2006
1	Middle Main Eel River TMDL Project	Eel River, Middle Main	Sedimentation/Siltation Temperature	2007
1	North Fork Eel River TMDL Project	Eel River, North Fork	Sedimentation/Siltation Temperature	2006
1	South Fork Eel River TMDL Project	Eel River, South Fork	Sedimentation/Siltation Temperature	2006
1	Upper Main Eel River TMDL Project	Eel River, Upper Main (Includes Tomki Creek)	Sedimentation/Siltation Temperature	2006
1	Elk River Sediment TMDL Project	Eel River, Upper Main, Tomki Creek Elk River	Sedimentation/Siltation	2011
1	Freshwater Creek Sediment TMDL Project	Freshwater Creek	Sedimentation/Siltation	2012
1	Garcia River Sediment TMDL Project	Garcia River	Sedimentation/Siltation	2002
1	Garcia River Temperature TMDL Project	Garcia River	Temperature	2011
1	Gualala River Sediment TMDL Project	Gualala River	Sedimentation/Siltation	2004
1	Upper Lost River TMDL Project	Klamath River HU, Lost River HA, Clear Lake HSA, Boles HSA	Nutrients Temperature	2007
1	Lower Lost River TMDL Project	Klamath River HU, Lost River HA, Tule Lake HSA, Mt. Dome HSA	Nutrients Temperature	2007
1	Klamath River TMDL Project	Klamath River HU, Lower HA, Klamath Glen HSA	Nutrients Temperature	2007

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Klamath River HU, Middle HA, Beaver Creek HSA, Hornbrook HSA	Org. enrichment/Low D.O. Nutrients Temperature Org. enrichment/Low D.O. Nutrients Temperature	
		Klamath River HU, Middle HA, Iron Gate HSA, Copco HSA	Nutrients Temperature	
		Klamath River HU, Middle and Lower HAs, Orleans HSA, Ukonom HSA, Happy Camp HSA, Selad HSA	Nutrients Temperature Org. enrichment/Low D.O.	2007
1	Salmon River TMDL Project	Klamath River HU, Salmon River HA	Nutrients Temperature	2007
1	Mad River Sediment TMDL Project	Mad River	Sedimentation/Siltation Turbidity	2008
1	Mattole River Sediment TMDL Project	Mattole River	Sedimentation/Siltation	2004
1	Mattole River Temperature TMDL Project	Mattole River	Temperature	2004
1	Navarro River Sediment TMDL Project	Navarro River	Sedimentation/Siltation	2004
1	Navarro River Temperature TMDL Project	Navarro River Delta	Sedimentation/Siltation	2004
1	Novo River Sediment TMDL Project	Navarro River	Temperature	2004
1	Novo River Temperature TMDL Project	Novo River	Sedimentation/Siltation	2003
1	Redwood Creek Sediment TMDL Project	Redwood Creek (Above Redwood National Park Boundary) Redwood Creek (Below Redwood National Park Boundary)	Sedimentation/Siltation Sedimentation/Siltation	2005
1	Russian River Sediment TMDL Project	Russian River HU, E Fk, Upper Russian River HA, Coyote Valley H	Sedimentation/Siltation	2013
		Russian River HU, Lower Russian River HA, Austin Creek HSA	Sedimentation/Siltation	
		Russian River HU, Lower Russian River HA, Guerneville HSA	Sedimentation/Siltation	
		Russian River HU, Middle Russian River HA, Big Sulphur Creek HS	Sedimentation/Siltation	
		Russian River HU, Middle Russian River HA, Dry Creek HSA	Sedimentation/Siltation	
		Russian River HU, Middle Russian River HA, Geyserville HSA	Sedimentation/Siltation	
		Russian River HU, Middle Russian River HA, Mark West Creek HSA	Sedimentation/Siltation	
		Russian River HU, Middle Russian River HA, Santa Rosa Creek HSA	Sedimentation/Siltation	
		Russian River HU, Upper Russian River HA, Forsythe Creek HSA	Sedimentation/Siltation	
1	Scott River Sediment TMDL Project	Russian River HU, Upper Russian River HA, Ukiah HSA	Sedimentation/Siltation	2007
1	Scott River Temperature TMDL Project	Scott River	Sedimentation/Siltation	2007
		Scott River	Temperature	



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REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
1	Shasta River TMDL Project	Shasta River	Org. enrichment/Low D.O. Temperature	2007
1	Ten Mile River Sediment TMDL Project	Ten Mile River	Sedimentation/Siltation	2003
1	Trinity River Sediment TMDL Project	Trinity River, Lower Trinity River, Upper Trinity River, Middle	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2005
1	South Fork Trinity River TMDL Project	Trinity River, South Fork	Sedimentation/Siltation Temperature	2005 2010 2006
1	Van Duzen Sediment TMDL Project	Van Duzen River (tributary to Eel River)	Sedimentation/Siltation	2002
2	San Francisco Bay Mercury	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Mercury Mercury Mercury Mercury Mercury Mercury Mercury	
2	San Francisco Bay PCBs	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like)	2004
2	San Francisco Bay Exotic Species	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Exotic Species Exotic Species Exotic Species Exotic Species Exotic Species Exotic Species Exotic Species	2006
2	South San Francisco Bay Copper	South San Francisco Bay	Copper	2002
2	South San Francisco Bay Nickel	South San Francisco Bay	Nickel	2002
2	San Francisco Bay Urban Creeks Diazinon	Alameda Creek Arroyo Corte Madera Del Presidio Arroyo De La Laguna Arroyo Del Valle Arroyo Hondo Calabazas Creek	Diazinon Diazinon Diazinon Diazinon Diazinon	2004



Twelve-Year TMDL Compliance Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
2	Napa River Watershed	Napa River	Nutrients Pathogens Sedimentation/Siltation	2005
2	San Francisco Creek Watershed	San Francisco Creek	Sedimentation/Siltation	2005
2	Walker Creek/Tomales Bay Mercury	Walker Creek Tomales Bay	Mercury (Metals) Mercury (Metals)	2005
2	Sonoma Creek Watershed	Sonoma Creek	Sedimentation/Siltation Nutrients Pathogens	2006
2	Pescadero / Butano Creeks Watershed	Pescadero Creek Butano Creek	Sedimentation/Siltation Sedimentation/Siltation	2006
2	Petaluma River Watershed	Petaluma River	Sedimentation/Siltation Nutrients Pathogens	2007
2	San Gregorio Creek Watershed	San Gregorio Creek	Sedimentation/Siltation	2007
2	San Francisco Bay Diazinon	SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Diazinon Diazinon Diazinon Diazinon Diazinon Diazinon	2007
2	Tomales Bay Watershed	Tomales Bay	Sedimentation/Siltation Nutrients	2007
2	Walker Creek Watershed	Walker Creek	Sedimentation/Siltation Nutrients	2007
2	Laqunitas Creek Watershed	Laqunitas Creek	Sedimentation/Siltation Nutrients Pathogens	2007
2	San Francisco Bay Legacy Pesticides	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin	2007
2	Richardson Bay Pathogens	Richardson Bay	Pathogens (High Coliform Count)	2008

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
2	Suisun Marsh Wetlands	Suisun Marsh	Metals Nutrients Low Dissolved Oxygen Organic Enrichment Salinity / TDS/ Chlorides	2008
2	Lake Herman Mercury	Lake Herman	Mercury	2010
2	San Francisco Bay Selenium	SF Bay Central SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Selenium Selenium Selenium Selenium Selenium	2010
2	Lake Merritt Trash	Lake Merritt	Floating Material Low Dissolved Oxygen Organic Enrichment	2010
2	San Francisco Bay Furans	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Furan Compounds Furan Compounds Furan Compounds Furan Compounds Furan Compounds Furan Compounds Furan Compounds	2013
2	San Francisco Bay Dioxins	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Dioxins Dioxins Dioxins Dioxins Dioxins Dioxins Dioxins	2013
3	Salinas River Nutrients	Old Salinas River Estuary Salinas River Lagoon (North) Salinas River Refuge Lagoon (South) Salinas River	Nutrients Nutrients Nutrients Nutrients	2007
3	Salinas River Pesticides	Old Salinas River Estuary Salinas River Lagoon (North) Salinas River Refuge Lagoon (South) Salinas River Tembladero Slough Blanco Drain Salinas Reclamation Canal Espinoso Slough Moro Cojo Slough	Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides	2007

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
3	Salinas River Salinity	Salinas River Salinas River Refuge Lagoon (South)	Salinity/TDS/Chlorides Salinity/TDS/Chlorides	2011
3	Salinas River Siltation	Salinas River Salinas River Lagoon (North)	Sedimentation/Siltation Sedimentation/Siltation	2005
3	San Lorenzo River Nutrients	Carbonera Creek Lompico Creek San Lorenzo River Shingle Mill Creek	Nutrients Nutrients Nutrients Nutrients	2000
3	San Lorenzo River Pathogens	Carbonera Creek Lompico Creek San Lorenzo River San Lorenzo River Estuary	Pathogens Pathogens Pathogens Pathogens	2005
3	San Lorenzo Siltation	Carbonera Creek Lompico Creek San Lorenzo River San Lorenzo River Estuary Shingle Mill Creek	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2003
3	Santa Cruz County Pathogens	Soquel Lagoon Valencia Creek Aptos Creek Schwan Lake	Pathogens Pathogens Pathogens Pathogens	2005
3	San Luis Obispo Creek Nutrients	San Luis Obispo Creek (Below W. Marsh Street)	Nutrients	2004
3	San Luis Obispo Creek Pathogens	San Luis Obispo Creek (Below W. Marsh Street)	Pathogens	2004
3	San Luis Obispo Creek Priority Pollutants	San Luis Obispo Creek (Below W. Marsh Street)	Priority Organics	2002
3	Santa Ynez Nutrients	Santa Ynez River	Nutrients	2013
3	Santa Ynez Salinity/TDS/Chlorides	Santa Ynez River	Salinity/TDS/Chlorides	2013
3	Santa Ynez Siltation	Santa Ynez River	Sedimentation/Siltation	2013
3	Schwan Lake Nutrients	Schwan Lake	Nutrients	2013
3	Schwan Lake Pathogens	Schwan Lake	Pathogens	2011
3	Soquel Lagoon Nutrients	Soquel Lagoon	Nutrients	2013
3	Soquel Lagoon Pathogens	Soquel Lagoon	Pathogens	2005
3	Soquel Lagoon Siltation	Soquel Lagoon	Sedimentation/Siltation	2011
3	Valencia Creek and Aptos Creek Siltation	Aptos Creek Valencia Creek	Sedimentation/Siltation Sedimentation/Siltation	2011

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
3	Valencia Creek and Aptos Creek Pathogens	Aptos Creek Valencia Creek	Pathogens Pathogens	2005
3	Waddell Creek Nutrients	Waddell Creek, East Branch	Nutrients	2011
3	Watsonville Slough Metals	Watsonville Slough	Metals	2005
3	Watsonville Slough Oil and Grease	Watsonville Slough	Oil and grease	2005
3	Watsonville Slough Pathogens	Watsonville Slough	Pathogens	2005
3	Watsonville Slough Pesticides	Watsonville Slough	Pesticides	2011
3	Bolsa Nueva Pathogens	Watsonville Slough	Pathogens	2013
3	Bolsa Nueva Pesticides	Elkhorn Slough	Pathogens	2013
3	Bolsa Nueva Siltation	Elkhorn Slough	Pesticides	2013
3	Chorro Creek Metals	Elkhorn Slough	Sedimentation/Siltation	2013
3	Clear Creek/Hernandez Reservoir Metals	Chorro Creek	Metals	2002
3	Las Tablas Creek/Nacimiento Reservoir Mercury	Clear Creek Hernandez Reservoir	Mercury Mercury	2005
3	Monterey Bay South Metals	Las Tablas Creek Las Tablas Creek, North Fork Las Tablas Creek, South Fork Nacimiento Reservoir	Metals Metals Metals Metals	2003
3	Monterey Bay South Pesticides	Monterey Bay	Metals	2013
3	Monterey Harbor Metals	Monterey Bay	Pesticides	2007
3	Morro Bay Metals	Monterey Harbor	Metals	2005
3	Morro Bay Nutrients	Morro Bay	Metals	2003
3	Morro Bay Pathogens	Chorro Creek	Nutrients	2003
3	Morro Bay Priority Pollutants	Los Osos Creek	Nutrients	2004
3	Morro Bay Siltation	Morro Bay	Pathogens	2002
3	Pajaro River Nutrients	Los Osos Creek	Priority Organics	2003
3		Chorro Creek Los Osos Creek Morro Bay	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2003
3		Llajas Creek Pajaro River	Nutrients Nutrients	2005

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
3	Pajaro River Siltation	Llagas Creek Pajaro River San Benito River Watsonville Slough Rider Gluch Creek	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2005
3	Salinas River Priority Pollutants	Espinosa Slough Salinas Reclamation Canal	Priority Organics Priority Organics Priority Organics	2007
4	Calleguas Creek Nutrient TMDL	Mugu Lagoon Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2 (Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.) Conejo Creek/Arroyo Conejo North Fork Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2 Fox Barranca Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Nitrogen Ammonia Nitrate and Nitrite Ammonia Nitrate and Nitrite Ammonia Algae Nitrogen Ammonia Nitrogen Nitrate and Nitrite Algae Ammonia Org. enrichment/Low D.O. Algae Ammonia Org. enrichment/Low D.O. Algae Ammonia Org. enrichment/Low D.O. Algae Org. enrichment/Low D.O. Algae Org. enrichment/Low D.O. Ammonia Ammonia Nitrogen Nitrate and Nitrite Algae Nitrogen Nitrogen	2002
4	Calleguas Creek Toxicity TMDL	Rio De Santa Clara/Oxnard Drain No. 3 Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.)	Chlorpyrifos Toxicity Toxicity Toxicity	2003

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Calleguas Creek Chloride	Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit) Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.) Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2 Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Toxicity Toxicity Toxicity Toxicity Chlorpyrifos Toxicity	2002
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Fwy (23) to Brea Cyn) and 2 (Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit) Conejo Creek Reach 4 (Above Lynn Rd.) Tapo Canyon Reach 1	Chloride Chloride Chloride Chloride Chloride Chloride Chloride	2003
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Fwy (23) to Brea Cyn) and 2 (Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 1 (Confil Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit) Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.) Conejo Creek/Arroyo Conejo North Fork Fox Barranca Tapo Canyon Reach 1	Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids	2003



Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Legacy Chlorinated Pesticides, Sediment Toxicity	<p>Mugu Lagoon</p> <p>Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca)</p> <p>Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23))</p> <p>Beardsley Channel (Above Central Avenue)</p> <p>Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.)</p> <p>Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit)</p> <p>Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.)</p> <p>Conejo Creek Reach 4 (Above Lynn Rd.)</p> <p>Conejo Creek/Arroyo Conejo North Fork</p> <p>Duck Pond Agricultural Drains/Mugu Drain/Oxmard Drain No. 2</p> <p>Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)</p>	<p>Chlordane Dacthal DDT Endosulfan Sediment Toxicity Sedimentation/Siltation DDT DDT Chema Chlordane Dacthal DDT Dieldrin Endosulfan Toxaphene Chema Chlordane DDT Endosulfan Sediment Toxicity Toxaphene Chema Dacthal DDT Endosulfan Toxaphene Chlordane DDT Chema Chlordane DDT Sediment Toxicity Toxaphene Chema Chlordane Dacthal DDT Dieldrin Endosulfan Toxaphene</p>	2004

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Calleguas Creek Metals	Mugu Lagoon Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2 (Conejo Creek Reach 1 (Conf'l Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Copper Mercury Nickel Zinc Chromium Nickel Selenium Silver Zinc Cadmium Chromium Nickel Silver Cadmium Chromium Nickel Silver Cadmium Chromium Nickel Silver Selenium	2005
4	Calleguas Creek PCBs	Mugu Lagoon Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	PCBs PCBs PCBs PCBs	2004
4	Calleguas Creek Legacy chlorinated pesticides, PCBs, sediment toxicity	Rio De Santa Clara/Oxnard Drain No. 3	ChemA Chlordane DDT PCBs Sediment Toxicity Toxaphene	2005
4	Revolon Slough Trash	Beardsley Channel (Above Central Avenue) Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Trash Trash	2008
4	Los Angeles River Nutrient	Arroyo Seco Reach 1 (LA River to West Holly Ave.) Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.) Burbank Western Channel	Algae Algae Algae Ammonia Odors Scum/Foam-unnatural	2002

Twelve-Year TMDL Collocation Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Compton Creek Los Angeles River Reach 1 (Estuary to Carson Street)	pH Ammonia Nutrients (Algae)	
		Los Angeles River Reach 2 (Carson to Figueroa Street)	pH Scum/Foam-unnatural Ammonia Nutrients (Algae) Odors	
		Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.)	Scum/Foam-unnatural Ammonia Nutrients (Algae) Odors	
		Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	Scum/Foam-unnatural Ammonia Nutrients (Algae) Odors	
		Los Angeles River Reach 5 ( at Sepulveda Basin)	Scum/Foam-unnatural Ammonia Nutrients (Algae) Odors	
		Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)	Scum/Foam-unnatural Ammonia	
		Rio Hondo Reach 2 (At Spreading Grounds) Tujunga Wash (LA River to Hansen Dam)	pH Ammonia Ammonia Odors	
		Verduago Wash Reach 1 (LA River to Verduago Rd.) Verduago Wash Reach 2 (Above Verduago Road)	Scum/Foam-unnatural Algae Algae	2001
4	Los Angeles River Trash	Arroyo Seco Reach 1 (LA River to West Holly Ave.) Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.) Burbank Western Channel Los Angeles River Reach 1 (Estuary to Carson Street) Los Angeles River Reach 2 (Carson to Figueroa Street) Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.) Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	Trash Trash Trash Trash Trash Trash Trash Trash	
		Los Angeles River Reach 5 ( at Sepulveda Basin) Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy) Tujunga Wash (LA River to Hansen Dam) Verduago Wash Reach 1 (LA River to Verduago Rd.) Verduago Wash Reach 2 (Above Verduago Road)	Trash Trash Trash Trash Trash	
4	Los Angeles River Metals	Aliso Canyon Wash Burbank Western Channel Compton Creek Los Angeles River Reach 1 (Estuary to Carson Street) Los Angeles River Reach 2 (Carson to Figueroa Street)	Selenium Cadmium Copper Lead Lead Lead	2003

\* Proposed to be delisted in 2002



Twelve-Year TMDL Construction Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Peck Road Park Lake	Chlordane DDT	
4	Los Angeles River Metals	Peck Road Park Lake Echo Park Lake	Lead Copper Lead	2010
4	Los Angeles River Oil	Los Angeles River Reach 2 (Carson to Figueroa Street) Los Angeles River Reach 5 ( at Sepulveda Basin)	Oil Oil	2010
4	Los Angeles River VOCs	Los Angeles River Reach 6 (Above Sepulveda Fld Cntrl Basin)	Dichloroethylene/1,1-DCE Tetrachloroethylene/PCE Trichloroethylene/TCE	2010
4	Ventura Beaches Pathogen	Mandalay Beach McGrath Beach	Beach Closures Beach Closures	2002
4	Ventura Harbor Pathogen	Santa Clara River Estuary, Beach-Surfers Knoll Ventura Harbor: Ventura Keys	High Coliform Count High Coliform Count	2006
4	McGrath Lake Legacy Chlorinated Pesticides, Sediment Toxicity	McGrath Lake (Estuary)	Chlordane DDT Pesticides Sediment Toxicity	2006
4	Port Hueneme Harbor DDT and PCRs	Port Hueneme Harbor (Back Basins)	DDT PCBs	2006
4	Port Hueneme Harbor PAHs	Port Hueneme Harbor (Back Basins)	PAHs	2006
4	Port Hueneme Harbor Zinc	Port Hueneme Harbor (Back Basins)	Zinc	2006
4	Channel Islands Harbor Metals	Channel Islands Harbor	Lead Zinc	2010
4	Port Hueneme Harbor Tributyltin	Port Hueneme Harbor (Back Basins)	Tributyltin	2010
4	Santa Clara River Chloride	Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.)	Chloride Chloride Chloride	2002
4	Santa Clara River Nutrients	Brown Barranca/Longo Canyon Mint Canyon Creek Reach 1 (Confl to Rowler Cyn) Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99)	Nitrate and Nitrite Nitrate and Nitrite Ammonia Ammonia Nitrate and Nitrite	2002

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Santa Clara Estuary Chema Toxaphene	Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.) Torrey Canyon Creek Wheeler Canyon/Todd Barranca	Ammonia Nitrate and Nitrite Org. enrichment/Low D.O. Nitrate and Nitrite Nitrate and Nitrite	2006
4	Santa Clara River Pathogen	Santa Clara River Estuary Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.) Santa Clara River Reach 9 (Bouquet Cyn Rd. to abv Lang Gagi)	High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2005
4	Santa Clara River Lakes Pathogen	Elizabeth Lake Lake Hughes Munz Lake	Eutrophic Org. enrichment/Low D.O. pH Algae Eutrophic Fish Kills Odors Eutrophic	2004
4	Santa Clara River Lakes Trash	Elizabeth Lake Lake Hughes Munz Lake	Trash Trash Trash	2004
4	San Gabriel River Nutrients	Coyote Creek San Gabriel River Reach 1 (Estuary to Firestone) San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) San Gabriel River Reach 3 (Whittier Narrows to Ramona) San Gabriel River, East Fork San Jose Creek Reach 2 (Temple to I-10 at White Ave.) Walnut Creek Wash (Drains from Puddingstone Res)	Algae Ammonia Algae Ammonia Toxicity Ammonia Toxicity Algae Ammonia Ammonia pH Toxicity	2004
4	San Gabriel River Trash	San Gabriel River, East Fork	Trash	2000
4	San Gabriel River Metals	Coyote Creek San Gabriel River Estuary San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam)	Silver Arsenic Lead	2004

Twelve-Year TMDL Compliance Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	San Gabriel River Lakes Trash	Leqq Lake	Trash	2008
4	San Gabriel Lakes Legacy Chlorinated Pesticides and PCBs	Puddingstone Reservoir	Chlordane DDT PCBs	2005
4	San Gabriel River Lakes Metals	Fmoorpark Fwy El Dorado Lakes	Copper Lead Mercury Copper Lead Mercury Copper Lead	2005
4	San Gabriel River Abnormal Fish Histology	Leqq Lake Puddingstone Reservoir Santa Fe Dam Park Lake	Abnormal Fish Histology Abnormal Fish Histology Abnormal Fish Histology	2005
4	San Gabriel River Lakes Nutrients	Coyote Creek San Gabriel River Estuary San Gabriel River Reach 1 (Estuary to Firestone)	Org. enrichment/Low D.O. Algae Ammonia Eutrophic pH Ammonia Odors pH Org. enrichment/Low D.O. pH	2003
4	San Gabriel River Pathogens	Crystal Lake El Dorado Lakes	High Coliform Count High Coliform Count	2002
4	San Gabriel River Pathogens	Leqq Lake	High Coliform Count High Coliform Count	2002
4	San Gabriel River Pathogens	Fmoorpark Fwy Santa Fe Dam Park Lake	High Coliform Count High Coliform Count	2002
4	San Gabriel River Pathogens	Coyote Creek San Gabriel River Reach 1 (Estuary to Firestone) San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam)	High Coliform Count High Coliform Count High Coliform Count	2002
4	Marina del Rey Pathogens	San Gabriel River, East Fork San Jose Creek Reach 2 (Temple to I-10 at White Ave.)	High Coliform Count High Coliform Count	2003
4	Malibu Creek Pathogens	Marina del Rey Harbor - Back Basins Marina del Rey Harbor Beach	High Coliform Count Beach Closures High Coliform Count	2002
4	Malibu Creek Pathogens	Malibu Lagoon	Enteric Viruses High Coliform Count Shellfish Harvesting Adv. Swimming Restrictions	2002
4	Malibu Creek Pathogens	Las Virgenes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (Above Lake) Malibu Creek Medea Creek Reach 1 (Lake to Confl. with Lindero)	High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2002

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Santa Monica Bay Beaches Pathogen	Medea Creek Reach 2 (Abv Confl. with Lindero) Palo Comado Creek Stokes Creek  ASHLAND AVENUE DRAIN PICO KENTER DRAIN  Santa Monica Canyon Sepulveda Canyon Abalone Cove Beach Blq Rock Beach  Bluff Cove Beach Cabrillo Beach (Outer)  Carbon Beach Castlerock Beach Dan Blocker Memorial (Coral) Beach Dockweiler Beach  Escondido Beach Fiat Rock Point Beach Area Hermosa Beach Inspiration Point Beach La Costa Beach Las Flores Beach Las Tunas Beach Leo Carrillo Beach (South of County Line)  Long Point Beach  Malaga Cove Beach Malibu Beach Malibu Lagoon Beach (Surfrider)  Manhattan Beach Nicholas Canyon Beach Palo Verde Shoreline Park Beach Paradise Cove Beach  Point Dume Beach Point Fermin Park Beach Point Vicente Beach Portuguese Bend Beach Puerco Beach Redondo Beach  Resort Point Beach Robert H. Meyer Memorial Beach Rocky Point Beach Royal Palms Beach Santa Monica Beach	High Coliform Count High Coliform Count High Coliform Count  High Coliform Count Enteric Viruses High Coliform Count High Coliform Count High Coliform Count Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures Pathogens Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures High Coliform Count Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures Beach Closures	2002



Twelve-Year TMDL Contamination Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4		Sea Level Beach	High Coliform Count Beach Closures Beach Closures High Coliform Count Beach Closures High Coliform Count Beach Closures High Coliform Count Beach Closures High Coliform Count Beach Closures Beach Closures High Coliform Count Beach Closures	2003
		Topanga Beach		
		Torrance Beach		
		Trancas Beach (Broad Beach)		
		Venice Beach		
		Whites Point Beach		
		Will Rogers Beach		
		Zuma Beach (Westward Beach)		
		Ballona Creek		
		Ballona Creek Estuary		
4		Malibu Laqoon	Eutrophic Algae Eutrophic Odors Algae Ammonia Eutrophic Org. enrichment/Low D.O. Algae Eutrophic Org. enrichment/Low D.O. Algae Ammonia Eutrophic Org. enrichment/Low D.O. Nutrients (Algae) Org. enrichment/Low D.O. Scum/Foam-unnatural Algae Scum/Foam-unnatural Algae Scum/Foam-unnatural Nutrients (Algae) Scum/Foam-unnatural Algae Algae	2002
		Lake Lindero		
		Lake Sherwood		
		Malibu Lake		
		Westlake Lake		
		Las Virgenes Creek		
		Lindero Creek Reach 1		
		Lindero Creek Reach 2 (Above Lake)		
		Malibu Creek		
		Medea Creek Reach 1 (Lake to Confl. with Lindero)		
Medea Creek Reach 2 (Aby. Confl. with Lindero)				
4	Ballona Creek Trash	Ballona Creek	Trash Trash	2001
		Ballona Creek Wetlands		
4	Santa Monica Bay Metals	Santa Monica Bay Offshore/Nearshore	Cadmium Copper	2004

\* Proposed to be delisted in 2002

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Santa Monica Bay Chlordane	Santa Monica Bay Offshore/Nearshore	Lead Mercury Nickel Silver Zinc Chlordane	2005
4	Marina del Rey Legacy Chlorinated Pesticides and PCBs, Fish Tissue, Sediment Toxicity	Marina del Rey Harbor - Back Basins	Benthic Comm. Effects Chlordane DDT Dieldrin Fish Consumption Advisory PCBs Sediment Toxicity	2003
4	Ballona Creek Legacy Chlorinated Pesticides, PCBs, Sediment Toxicity	Ballona Creek  Ballona Creek Estuary	ChloroA Chlordane DDT Dieldrin PCBs Sediment Toxicity Arochlor Chlordane DDT PCBs Sediment Toxicity	2004
4	Marina del Rey Metals	Marina del Rey Harbor - Back Basins	Copper Lead Zinc	2004
4	Ballona Creek Metals	Ballona Creek  Ballona Creek Estuary Ballona Creek Wetlands	Arsenic Cadmium Copper Lead Silver Toxicity Lead Zinc Arsenic	2003
4	Santa Monica Bay DDT, PCBs, Sediment Toxicity	Santa Monica Bay Offshore/Nearshore  Abalone Cove Beach Amarillo Beach	DDT Fish Consumption Advisory PCBs Sediment Toxicity DDT PCBs DDT PCBs	2009

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Blig Rock Beach	DDT PCBs	
		Bluff Cove Beach	DDT PCBs	
		Cabrillo Beach (Outer)	DDT PCBs	
		Carbon Beach	DDT PCBs	
		Castlerock Beach	DDT PCBs	
		Escondido Beach	DDT PCBs	
		Flat Rock Point Beach Area	DDT PCBs	
		Inspiration Point Beach	DDT PCBs	
		La Costa Beach	DDT PCBs	
		Las Flores Beach	DDT PCBs	
		Las Tunas Beach	DDT PCBs	
		Long Point Beach	DDT PCBs	
		Malaga Cove Beach	DDT PCBs	
		Malibu Beach	DDT PCBs	
		Malibu Laqoon Beach (Surfrider)	DDT PCBs	
		Nicholas Canyon Beach	DDT PCBs	
		Palo Verde Shoreline Park Beach	Pesticides DDT	
		Paradise Cove Beach	DDT	
		Point Dume Beach	DDT PCBs	
		Point Fermin Park Beach	DDT PCBs	
		Portuguese Bend Beach	DDT PCBs	
		Puerto Beach	DDT PCBs	
		Redondo Beach	DDT PCBs	
		Robert H. Meyer Memorial Beach	DDT PCBs	
		Royal Palms Beach	DDT PCBs	
		Sea Level Beach	DDT PCBs	
		Topanga Beach	DDT PCBs	
		Trancas Beach (Broad Beach)	DDT PCBs	

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Pico Kenter Ammonia	Whites Point Beach Zuma Beach (Westward Beach)	PCBs DDT PCBs DDT PCBs	2009
4	Pico Kenter Metals	PICO KENTER DRAIN Sepulveda Canyon	Ammonia Ammonia	2006
4	Malibu Creek Lakes Chlordane, PCBs	PICO KENTER DRAIN  Santa Monica Canyon Sepulveda Canyon Topanga Canyon Creek	Copper Lead Toxicity Lead Lead Lead	2009
4	Ashland Ave Drain Nutrients	Malibu Lake Westlake Lake	Chlordane PCBs Chlordane	2008
4	Malibu Creek Trash	ASHLAND AVENUE DRAIN	Org. enrichment/Low D.O.	2006
4	Pico Kenter Drain Trash	Lake Lindero Las Virgenes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (Above Lake) Malibu Creek Medea Creek Reach 1 (Lake to Confl. with Lindero) Medea Creek Reach 2 (Abv Confl. with Lindero)	Trash Trash Trash Trash Trash Trash Trash	2009
4	Ballona Creek Wetlands Exotic Vegetation	PICO KENTER DRAIN  Ballona Creek Wetlands	Trash  Exotic Vegetation Habitat alterations Hydromodification Reduced Tidal Flushing	2009
4	Santa Monica Bay Trash	Santa Monica Bay Offshore/Nearshore	Debris	2009
4	Lake Lindero Chloride, Salinity	Lake Lindero	Chloride Specific conductivity	2009
4	Malibu Creek Lakes Metals	Lake Calabasas Lake Lindero Lake Sherwood Malibu Lake Westlake Lake Las Virgenes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (Above 1 - 1/2 mi)	Copper Zinc Selenium Mercury Copper Copper Lead Selenium Selenium	2007

Twelve-Year TMDL Concentration Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Medea Creek Reach 1 (Lake to Confl. with Lindero) Medea Creek Reach 2 (Abv Confl. with Lindero) Triunfo Canyon Creek Reach 1 Triunfo Canyon Creek Reach 2	Selenium Selenium Lead Mercury Lead Mercury	2009
4	Ashland Ave Drain Toxicity	ASHLAND AVENUE DRAIN	Toxicity	2009
4	Marina del Rey Tributyltin	Marina del Rey Harbor - Back Basins Ballona Creek	Tributyltin	2009
4	Malibu Lagoon Benthic Effects	Malibu Lagoon	Benthic Comm. Effects	2009
4	Los Angeles Harbor Pathogens	LA Harbor Main Channel Cabrillo Beach (Inner) LA Harbor Area	Beach Closures Beach Closures (Coliform)	2002
4	Los Angeles Harbor Pathogens	LA Fish Harbor	DDT	2007
4	Los Angeles Harbor/Dominguez Channel Legacy Chlorinated Pesticides. PCBs. Sediment Toxicity	LA Fish Harbor LA Harbor Consolidated Slip LA Harbor Inner Breakwater LA Harbor Main Channel LA Harbor Southwest Slip Long Beach Harbor Main Channel, SE, W Basin, Pier J, Breakwa	PCBs Benthic Comm. Effects Chlordane DDT PCBs Sediment Toxicity DDT PCBs DDT PCBs Sediment Toxicity DDT PCBs Sediment Toxicity Benthic Comm. Effects	2007
		San Pedro Bay Near/Off Shore Zones - Cabrillo Pier Area Machado Lake (Harbor Park Lake) Port Hueneme Harf	DDT PCBs Sediment Toxicity DDT PCBs Sediment Toxicity Chlordane DDT Dieldrin PCBs Aldrin Chlordane	
		Dominiquez Channel (above Vermont)	Chlordane	

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Los Angeles Harbor/Dominquez Channel PAHs	Dominquez Channel (Estuary to Vermont)  Cabrillo Beach (Inner) LA Harbor Area	DDT Dieldrin PCBs Aldrin Benthic Comm. Effects Chema Chlordane DDT Dieldrin PCBs DDT PCBs	2007
4	Los Angeles Harbor/Dominquez Channel Metals	LA Fish Harbor LA Harbor Consolidated Slip LA Harbor Inner Breakwater LA Harbor Main Channel Long Beach Harbor Main Channel, SE, W Basin, Pier J, Breakwa San Pedro Bay Near/Off Shore Zones - Cabrillo Pier Area Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont)	PAHs PAHs PAHs PAHs PAHs PAHs PAHs Chromium Lead Zinc Copper Zinc Zinc Copper Lead Chromium Copper Lead Zinc Copper Lead Copper Lead	2006
4	Machado Lake Nutrients	Torrance Carson Channel WILMINGTON DRAIN  Machado Lake (Harbor Park Lake)	Algae Ammonia Odors	2010
4	Dominquez Channel Nutrients	Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont) WILMINGTON DRAIN	Ammonia Ammonia Ammonia	2007
4	San Pedro Bay Metals	San Pedro Bay Near/Off Shore Zones - Cabrillo Pier Area	Chromium Copper Zinc	2010
4	Los Angeles Harbor Tributyltin	LA Fish Harbor	Tributyltin	2010

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		LA Harbor Consolidated Slip LA Harbor Inner Breakwater LA Harbor Main Channel	Tributyltin Tributyltin Tributyltin	2002
4	Dominquez Channel Pathogens	Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont) Torrance Carson Channel WILMINGTON DRAIN	High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2002
4	Machado Lake Trash	Machado Lake (Harbor Park Lake)	Trash	2007
4	Colorado Lagoon Legacy Chlorinated Pesticides and Sediment Toxicity	Colorado Lagoon	Chlordane DDT Dieldrin PCBs Sediment Toxicity	2004
4	Colorado Lagoon Lead PAHs and Zinc	Colorado Lagoon	Lead PAHs Zinc	2004
4	Los Cerritos Channel Metals	Los Cerritos Channel	Copper Lead Zinc	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Channel	Ammonia High Coliform Count	2004
4	Ventura River Estuary DDT	Ventura River Estuary	DDT	2005
4	Ventura River Estuary Algae	Ventura River Estuary	Algae Eutrophic Algae	2005
4	Ventura River Hydromodification	Ventura River Reach 1 and 2 (Estuary to Weldon Canyon) Ventura River Reach 3 (Weldon Canyon to Confl. w/ Coyote Cr)	Pumping Water Diversion Pumping Water Diversion	2005
4	Ventura River Metals	Ventura River Reach 4 (Coyote Creek to Camino Cielo Rd) Ventura River Reach 1 and 2 (Estuary to Weldon Canyon)	Copper Silver Zinc	2005
4	Ventura River Trash	Ventura River Estuary	Trash	2005
4	Ventura River Selenium	Ventura River Reach 1 and 2 (Estuary to Weldon Canyon)	Selenium	2005
5	Sacramento Delta Waterways - OP Pesticides	Sacramento Delta Waterways	Chlorpyrifos Diazinon	2005

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	Sacramento Delta Waterways - OC Pesticides	Sacramento Delta Waterways	DDT Group A Pesticides	2011
5	Sacramento Delta Waterways - EC	Sacramento Delta Waterways	Electrical Conductivity	2011
5	Sacramento Delta Waterways - Mercury	Sacramento Delta Waterways	Mercury	2005
5	Sacramento Delta Waterways - DO	Sacramento Delta Waterways	Org. enrichment/ Low D.O.	2011
5	Sacramento Delta Waterways - Unknown Toxicity	Sacramento Delta Waterways	Unknown Toxicity	2011
5	Berrvessa, Lake - Mercury	Berrvessa, Lake	Mercury	2011
5	Clear Lake - Mercury	Clear Lake	Mercury	2005
5	Clear Lake - Nutrients	Clear Lake	Nutrients	2011
5	Davis Creek Reservoir - Mercury	Davis Creek Reservoir	Mercury	2011
5	Marsh Creek - Mercury	Marsh Creek Reservoir Marsh Creek	Mercury Mercury	2011
5	Shasta Lake - Metals	Shasta Lake	Cadmium Copper Zinc	2011
5	Whiskeytown Reservoir - High Coliform	Whiskeytown Reservoir	High Coliform Count	2011
5	American River, Lower - Group A Pesticides	American River, Lower	Group A Pesticides	2011
5	American River, Lower - Mercury	American River, Lower	Mercury	2011
5	American River, Lower - Unknown Toxicity	American River, Lower	Unknown Toxicity	2011
5	Sacramento Area Urban Creeks - OP Pesticides	Arcade Creek Chicken Ranch Slough Elder Creek Elk Grove Creek Morrison Creek Strong Ranch Slough	Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon	2011
5	Cache Creek, Lower - Mercury	Cache Creek, Lower	Mercury	2005
5	Cache Creek, Lower - Unknown Toxicity	Cache Creek, Lower	Unknown Toxicity	2011
5	Colusa Basin Drainage Canal - Rice Pesticides	Colusa Basin Drainage Canal	Carbofuran/Furadan, Malathion, Methyl Parathion	2011
5	Colusa Basin Drainage Canal - Group A Pesticides	Colusa Basin Drainage Canal	Group A Pesticides	2011
5	Colusa Basin Drainage Canal - Unknown Toxicity	Colusa Basin Drainage Canal	Unknown Toxicity	2011



Twelve-Year TMDL Compliance Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	Dolly Creek/Little Grizzly Creek - Metals	Dolly Creek Little Grizzly Creek	Copper/Zinc Copper/Zinc	2011
5	Dunn Creek - Mercury	Dunn Creek	Mercury	2011
5	Dunn Creek - Metals	Dunn Creek	Metals	2011
5	Fall River (Pit)	Fall River (Pit)	Sedimentation/Silt	2011
5	Sacramento/Feather - Diazinon	Feather River, Lower Sacramento River, Red Bluff to Delta	Diazinon Diazinon	2005
5	Feather River, Lower - Group A Pesticides	Feather River, Lower	Group A Pesticides	2011
5	Feather River, Lower - Mercury	Feather River, Lower	Mercury	2011
5	Feather River, Lower - Unknown Toxicity	Feather River, Lower	Unknown Toxicity	2011
5	Stockton Area Sloughs - OP Pesticides	Five Mile Slough Moshier Slough	Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon	2011
5	French Ravine	French Ravine	Bacteria	2011
5	Harding Drain - Ammonia	Harding Drain	Ammonia	2011
5	Harding Drain - OP Pesticides	Harding Drain	Chlorpyrifos Diazinon	2011
5	Harding Drain - Unknown Toxicity	Harding Drain	Unknown Toxicity	2011
5	Harley Gulch - Mercury	Harley Gulch	Mercury	2011
5	Horse Creek - Metals	Horse Creek	Cadmium Copper Lead Zinc	2011
5	Humbug Creek - Metals	Humbug Creek	Copper Zinc	2011
5	Humbug Creek - Mercury	Humbug Creek	Mercury	2011
5	Humbug Creek - Sediment	Humbug Creek	Sedimentation/Siltation	2011
5	James Creek - Mercury	James Creek	Mercury	2011
5	James Creek - Nickel	James Creek	Nickel	2011
5	Kanaka Creek	Kanaka Creek	Arsenic	2011

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	Kings River (Lower) - EC, Moly	Kings River (Lower)	Electrical Conductivity Molybdenum	2011
5	Kings River (Lower) - Toxaphene	Kings River (Lower)	Toxaphene	2011
5	Little Backbone Creek, Lower - Metals	Little Backbone Creek, Lower	Cadmium Copper Zinc	2011
5	Little Cow Creek - Metals	Little Cow Creek	Cadmium Copper Zinc	2011
5	Lone Tree/ Temple Creek - Dairies	Lone Tree Creek Temple Creek	Ammonia/EC/Low DO Ammonia/EC/Low DO Ammonia/EC/Low DO	2011
5	Marsh Creek - Metals	Marsh Creek	Metals	2011
5	SJR Tributaries - OPs	Merced River Stanislaus River Tuolumne River	Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon	2005
5	SJR Tributaries - Group A Pesticides	Merced River Stanislaus River Tuolumne River	Group A Pesticides Group A Pesticides Group A Pesticides	2011
5	SJR Tributaries - Unknown Toxicity	Stanislaus River Tuolumne River	Unknown Toxicity Unknown Toxicity	2011
5	Mokelumne River, Lower - Metals	Mokelumne River, Lower	Copper Zinc	2011
5	Mud/Salt Sloughs - Salts	Mud Slough Salt Slough	Boron Electrical Conductivity	2011
5	Mud/Salt Sloughs - Pesticides	Mud Slough Salt Slough	Pesticides/Chlorpyrifos/Diazinon Pesticides/Chlorpyrifos/Diazinon Pesticides/Chlorpyrifos/Diazinon	2011
5	Mud/Salt Sloughs - Unknown Toxicity	Mud Slough Salt Slough	Unknown Toxicity Unknown Toxicity	2011
5	Mud Slough - Selenium	Mud Slough	Selenium	2011
5	Natomas East Main Drainage Canal - Diazinon	Natomas East Main Drainage Canal	Diazinon	2011
5	Natomas East Main Drainage Canal - PCBs	Natomas East Main Drainage Canal	PCBs	2011

Twelve-Year TMDL Construction Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	Orestimba Creek - OP Pesticides	Orestimba Creek	Chlorpyrifos Diazinon	2011
5	Orestimba Creek - Unknown Toxicity	Orestimba Creek	Unknown Toxicity	2011
5	Panoche Creek Watershed - Mercury	Panoche Creek San Carlos Creek	Mercury Mercury	2011
5	Panoche Creek - Sediment	Panoche Creek	Sedimentation/Siltation	2011
5	Panoche Creek - Selenium	Panoche Creek	Selenium	2011
5	Pit River	Pit River	Nutrients Org. Enrichment/ Low D.O. Temperature	2011
5	Sacramento River - Mercury	Sacramento River (Red Bluff to Delta)	Mercury	2006
5	Sacramento River - Unknown Toxicity	Sacramento River (Red Bluff to Delta) Sacramento River (Shasta Dam to Red Bluff)	Unknown Toxicity Unknown Toxicity	2011
5	Sacramento River - Metals	Sacramento River (Shasta Dam to Red Bluff)	Cadmium Copper Zinc	2001
5	Sacramento Slough - Diazinon	Sacramento Slough	Diazinon	2011
5	Sacramento Slough - Mercury	Sacramento Slough	Mercury	2011
5	Salt Slough - Selenium	Salt Slough	Selenium	1998
5	San Joaquin River - Salts	San Joaquin River	Boron Electrical Conductivity	2003
5	San Joaquin River - OP Pesticides	San Joaquin River	Chlorpyrifos Diazinon	2005
5	San Joaquin River - OC Pesticides	San Joaquin River	DDT Group A Pesticides	2011
5	San Joaquin River - Selenium	San Joaquin River	Selenium	2000
5	San Joaquin River - Unknown Toxicity	San Joaquin River	Unknown Toxicity	2011
5	Spring Creek Upper - Metals	Spring Creek, Upper	Cadmium Copper Zinc	2011
5	Stockton Deep Water Channel, Upper (Port Turning Basin) - OCS	Stockton Deep Water Channel, Upper (Port Turning Basin)	Dioxin PCBs	2011

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	Sulphur Creek - Mercury	Sulphur Creek	Mercury	2005
5	Town Creek - Metals	Town Creek	Cadmium Copper Lead Zinc	2011
5	West Squaw Creek - Metals	West Squaw Creek, Upper	Cadmium Copper Lead Zinc	2011
5	Willow Creek- Metals	Willow Creek (Whiskeytown)	Copper Zinc	2011
5	Grassland - Salts	Grassland Marshes	Electrical Conductivity	2011
5	Grassland - Selenium	Grassland Marshes	Selenium	1998
6	Bridgeport Reservoir Nutrients and Sedimentation/Siltation TMDL Project	Bridgeport Reservoir	Nutrients Sedimentation/Siltation	2005
6	Crowley Lake Nutrients TMDL Project	Crowley Lake	Nutrients Arsenic	2005 *
6	Donner Lake	Donner Lake	Priority Organics	*
6	Eagle Lake(2) Org. Enrichment/Low D.O. TMDL Project	Eagle Lake(2)	Org. enrichment/Low D.O.	2008
6	Grant Lake	Grant Lake	Arsenic	*
6	Haiwee Reservoir Copper TMDL Project	Haiwee Reservoir	Copper	2003
6	Horseshoe Lake(2) Sedimentation/Siltation TMDL Project	Horseshoe Lake(2)	Sedimentation/Siltation	2007
6	Indian Creek Reservoir Nutrients TMDL Project	Indian Creek Reservoir	Nutrients	2002
6	Lake Tahoe Nutrients and Sedimentation/Siltation TMDL Project	Lake Tahoe	Nutrients Sedimentation/Siltation	2007
6	Mono Lake	Mono Lake	Salinity/TDS/Chlorides	*
6	Pleasant Valley Reservoir Org. Enrichment/Low D.O. TMDL Project	Pleasant Valley Reservoir	Org. enrichment/Low D.O.	2006

Twelve-Year TMDL Collection Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
6	Stampede Reservoir	Stampede Reservoir	Pesticides	*
6	Tinemaha Reservoir Metals TMDL Project	Tinemaha Reservoir	Metals Arsenic	2004 *
6	Topaz Lake Sedimentation/Siltation TMDL Project	Topaz Lake	Sedimentation/Siltation	2007
6	Twin Lakes Nutrients TMDL Project	Twin Lakes	Nutrients	2008
6	Amarogosa River	Amarogosa River	Salinity/TDS/Chlorides	*
6	Aspen Creek Metals TMDL Project	Aspen Creek	Metals	2011
6	Aurora Canyon Creek	Aurora Canyon Creek	Habitat alterations	n/a
6	Bear Creek Sedimentation/Siltation TMDL Project	Bear Creek	Sedimentation/Siltation	2005
6	Blackwood Creek Sedimentation/Siltation TMDL Project	Blackwood Creek	Sedimentation/Siltation	2007
6	Bodie Creek Metals TMDL Project	Bodie Creek	Metals	2004
6	Bronco Creek Sedimentation/Siltation TMDL Project	Bronco Creek	Sedimentation/Siltation	2005
6	Bryant Creek Metals TMDL Project	Bryant Creek	Metals	2011
6	Carson River, East Fork	Carson River, East Fork	Nutrients	*
6	Clark Canyon Creek	Clark Canyon Creek	Habitat alterations	n/a
6	Cleanwater Creek Sedimentation/Siltation TMDL Project	Cleanwater Creek	Sedimentation/Siltation	2005
6	Cottonwood Creek	Cottonwood Creek	Water/Flow Variability	n/a
6	East Walker River Sedimentation/Siltation TMDL Project	East Walker River	Sedimentation/Siltation Metals	2009 *
6	Goodale Creek Sedimentation/Siltation TMDL Project	Goodale Creek	Sedimentation/Siltation	2009
6	Gray Creek Sedimentation/Siltation TMDL Project	Gray Creek	Sedimentation/Siltation	2004
6	Green Creek	Green Creek	Habitat alterations	n/a
6	Green Valley Lake Creek Priority Organics TMDL Project	Green Valley Lake Creek	Priority Organics	2006

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
6	Heavenly Valley Creek Sedimentation/Siltation TMDL Project	Heavenly Valley Creek	Sedimentation/Siltation	2001
6	Hot Creek (1)	Hot Creek (1)	Metals	*
6	Hot Creek (2) (Mono County)	Hot Creek (2) (Mono County)	Metals	*
6	Hot Springs Canyon Sedimentation/Siltation TMDL Project	Hot Springs Canyon	Sedimentation/Siltation	2005
6	Indian Creek	Indian Creek	Habitat alterations	n/a
6	Lassen Creek	Lassen Creek	Flow alterations	n/a
6	Lee Vining Creek	Lee Vining Creek	Flow alterations	n/a
6	Leviathan Creek Metals TMDL Project	Leviathan Creek	Metals	2011
6	Little Hot Creek	Little Hot Creek	Arsenic	*
6	Mammoth Creek Metals TMDL Project	Mammoth Creek	Metals	2008
6	Mill Creek(1)	Mill Creek(1)	Flow alterations	n/a
6	Mill Creek(3) Sedimentation/Siltation TMDL Project	Mill Creek(3)	Sedimentation/Siltation	2011
6	Mojave River	Mojave River	Priority Organics	*
6	Monitor Creek Metals TMDL Project	Monitor Creek	Metals	2011
6	Owens River	Owens River	Arsenic Habitat alterations	n/a
6	Pine Creek(2)	Pine Creek(2)	Habitat alterations	n/a
6	Rough Creek	Rough Creek	Habitat alterations	n/a
6	Skedaddle Creek Pathogens TMDL Project	Skedaddle Creek	High Coliform Count	2006
6	Snow Creek (Placer County)	Snow Creek (Placer County)	Habitat alterations	*
6	Squaw Creek Sedimentation/Siltation TMDL Project	Squaw Creek	Sedimentation/Siltation	2003
6	Susan River Toxicity TMDL Project	Susan River	Unknown Toxicity	2007
6	Truckee River Sedimentation/Siltation TMDL Project	Truckee River	Sedimentation/Siltation	2005
6	Tuttle Creek	Tuttle Creek	Habitat alterations	n/a

Twelve-Year TMDL Correlation Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
6	Ward Creek Sedimentation/Siltation TMDL Project	Ward Creek	Sedimentation/Siltation	2007
6	West Walker River Sedimentation/Siltation TMDL Project	West Walker River	Sedimentation/Siltation	2009
6	Wolf Creek(1) Sedimentation/Siltation TMDL Project	Wolf Creek(1)	Sedimentation/Siltation	2011
6	Alkali Lake, Lower	Alkali Lake, Lower	Salinity/TDS/Chlorides	*
6	Alkali Lake, Middle	Alkali Lake, Middle	Salinity/TDS/Chlorides	*
6	Alkali Lake, Upper	Alkali Lake, Upper	Salinity/TDS/Chlorides	*
6	Deep Springs Lake	Deep Springs Lake	Salinity/TDS/Chlorides	*
6	Honey Lake	Honey Lake	Arsenic Salinity/TDS/Chlorides	*
6	Honey Lake Wildfowl Management Ponds	Honey Lake Wildfowl Management Ponds	Flow alterations Metals Salinity/TDS/Chlorides Trace Elements	*
6	Little Alkali Lake	Little Alkali Lake	Arsenic	*
6	Owens Lake	Owens Lake	Salinity/TDS/Chlorides	*
6	Searles Lake	Searles Lake	Salinity/TDS/Chlorides	*
6	Amedee Hot Springs	Amedee Hot Springs	Metals	*
6	Big Springs	Big Springs	Arsenic	*
6	Cinder Cone Springs Nutrients and Salinity/TDS/Chlorides TMDL Project	Cinder Cone Springs	Nutrients Salinity/TDS/Chlorides	2007
6	Fales Hot Springs	Fales Hot Springs	Metals	*
6	Honey Lake Area Wetlands	Honey Lake Area Wetlands	Metals	*
6	Keough Hot Springs	Keough Hot Springs	Metals	*
6	Top Spring	Top Spring	Radiation	*
6	Wendel Hot Springs	Wendel Hot Springs	Metals	*
7	Alamo River Pesticides TMDL Project	Alamo River	Pesticides	2011

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
7	Alamo River Sedimentation TMDL Project	Alamo River	Sedimentation/Siltation	2001
7	Alamo River Selenium TMDL Project	Alamo River	Selenium	2010
7	Coachella Valley Storm Channel Pathogens TMDL Project	Coachella Valley Storm Channel	Pathogens	2005
7	Imperial Valley Drains Pesticides TMDL Project	Imperial Valley Drains	Pesticides	2012
7	Imperial Valley Drains Sedimentation TMDL Project	Imperial Valley Drains	Sedimentation/Siltation	2004
7	Imperial Valley Drains Selenium TMDL Project	Imperial Valley Drains	Selenium	2010
7	New River Pathogens TMDL Project	New River	Pathogens	2001
7	New River Silt TMDL Project	New River	Silt	2002
7	New River Pesticides TMDL Project	New River	Pesticides	2011
7	New River DO TMDL Project	New River	Dissolved Organic Matter/DO	2006
7	New River Trash TMDL Project	New River	Trash	2007
7	New River Chloroform TMDL Project	New River	Chloroform	2011
7	New River Toluene TMDL Project	New River	Toluene	2011
7	New River p-Cymene TMDL Project	New River	p-Cymene	2009
7	New River 1,2,4-trimethylbenzene TMDL Project	New River	1,2,4-trimethylbenzene	2009
7	New River m,p-Xylene TMDL Project	New River	m,p-Xylene	2008
7	New River o-Xylene TMDL Project	New River	o-Xylene	2008
7	New River p-DCB TMDL Project	New River	p-DCB	2010
7	Palo Verde outfall Drain pathogens TMDL Project	Palo Verde Outfall Drain	Pathogens	2006
7	Salton Sea Nutrients TMDL Project	Salton Sea	Nutrients	2004
7	Salton Sea Salinity TMDL Project	Salton Sea	Salinity	2013
7	Salton Sea Selenium TMDL Project	Salton Sea	Selenium	2010
8	Anaheim Bay/Huntington Harbour Pesticide TMDL Project	Anaheim Bay Huntington Harbour	Pesticides Pesticides	2011



Twelve-Year TMDL Co. . . . . Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
8	Anaheim Bay/Huntington Harbour Metals TMDL Project	Anaheim Bay Huntington Harbour	Metals Metals	2011
8	Anaheim Bay/Huntington Harbour Pathogen TMDL Project	Huntington Harbour	Pathogens	2011
8	Chino Basin Watershed Pathogens TMDL Project	Mill Creek (Prado area) Chino Creek, Reach 1 Chino Creek, Reach 2 Prado Park Lake Cucamonga Creek, Valley Reach Santa Ana River, Reach 3	Pathogens Pathogens Pathogens Pathogens Pathogens	2005
8	Chino Basin Watershed Nitrogen TMDL Project	Mill Creek (Prado area) Chino Creek, Reach 1 Prado Park Lake Santa Ana River, Reach 3	nitrogen nitrogen nitrogen nitrogen	2005 2005 2011 *
8	Chino Basin Watershed TDS TMDL Project	Santa Ana River, Reach 3	TDS	*
8	Chino Basin Watershed Suspended Solids TMDL Project	Mill Creek (Prado area)	Suspended Solids	2005
8	Lake Elsinore/San Jacinto River Nutrient TMDL Project	Lake Elsinore Canyon Lake	nutrients org. enrichment/low D.O.	2004
8	Lake Elsinore/San Jacinto River Toxics TMDL Project	Lake Elsinore	unknown toxicity	2004
8	Lake Elsinore/San Jacinto River Pathogen TMDL Project	Canyon Lake	Pathogens	2004
8	Lake Elsinore/San Jacinto River Sediment TMDL Project	Lake Elsinore	sediment/siltation	2004
8	Big Bear Lake Watershed Nutrient TMDL Project	Big Bear Lake Rathbone Creek Summit Creek Grout Creek	nutrients/noxious aquatic plants nutrients/noxious aquatic plants nutrients/noxious aquatic plants nutrients/noxious aquatic plants	2005
8	Big Bear Lake Watershed Metals TMDL Project	Big Bear Lake Knickerbocker Creek Grout Creek	metals (copper, mercury and others) metals (copper, mercury and others) metals (copper, mercury and others)	2005
8	Big Bear Lake Watershed Sediment TMDL Project	Big Bear Lake Rathbone Creek	sediment/siltation sediment/siltation	2005
8	Big Bear Lake Watershed Pathogen TMDL Project	Knickerbocker Creek	pathogens	2005

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
8	Mill Creek Pathogen TMDL Project	Mill Creek, Reach 1 Mill Creek, Reach 2 Mt. Home Creek Mt. Home Creek, East Fork	pathogens pathogens pathogens pathogens	2011
8	Lytile Creek Pathogen TMDL Project	Lytile Creek	pathogens	2011
8	Santiago Creek Area pathogen TMDL Project	Silverado Creek	pathogens	2011
8	Santiago Creek Area TDS TMDL Project	Santiago Creek, Reach 4 Silverado Creek	TDS TDS	2011
8	Lake Fulmor Pathogen TMDL	Lake Fulmor	pathogens	2011
8	Upper Newport Bay Watershed Pesticide TMDL Project	Upper Newport Bay San Diego Creek, Reach 1 San Diego Creek, Reach 2	chlorpyrifos/diazinon chlorpyrifos/diazinon chlorpyrifos/diazinon	2002
8	Newport Bay Watershed Selenium TMDL Project	Upper Newport Bay Lower Newport Bay -- Rhine Channel San Diego Creek, Reach 1 San Diego Creek, Reach 2	selenium selenium selenium selenium	2003
8	Newport Bay Watershed Toxics TMDL Project	Upper Newport Bay Lower Newport Bay -- Rhine Channel San Diego Creek, Reach 1 San Diego Creek, Reach 2	other toxics as identified by USEPA other toxics as identified by USEPA other toxics as identified by USEPA other toxics as identified by USEPA	2007
8	Santa Ana River, Reach 4 Pathogen TMDL Project	Santa Ana River, Reach 4	pathogens	2011
9	Chollas Creek Diazinon	Chollas Creek 908.22	Toxicity (Diazinon)	2002
9	Rainbow Creek Eutrophication	Rainbow Creek	Eutrophic (Nutrients)	2002
9	Chollas Creek Metals	Chollas Creek 908.22*	Metals (Cd, Cu, PbS, Zn)	2003
9	San Diego Bay, Shelter Island Copper	San Diego Bay, Shelter Island Yacht Basin	Metals (dissolved Cu)	2002
9	San Diego Bay, near Chollas Creek Sediment Toxicity	San Diego Bay, near Chollas Creek	Degraded Benthic Community & Sediment Toxicity	2005
9	San Diego Bay, 7th Street Channel Sediment Toxicity	San Diego Bay, Seventh Street Channel	Degraded Benthic Community & Sediment Toxicity	2005
9	Mission Bay Bacteria	Mission Bay Tecolote Creek, 906.50	Coliform Coliform	2005 2007
9	San Diego Bay, Multiple Locations Sediment Toxicity	San Diego Bay; Downtown Piers* San Diego Bay, near Grape Street*	Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity	2007

Twelve-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
9	San Diego Bay Bacteria	San Diego Bay; north of 24th Street Marine Terminal* San Diego Bay; San Diego Naval Station* San Diego Bay; near Coronado Bridge* San Diego Bay, near Sub Base*	Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity	2006
9	San Diego and Scripps Bacteria	Chollas Creek 908.22 San Diego Bay Shoreline, Lindbergh HSA 908.21 San Diego Bay Shoreline, Telegraph HSA 909.11 Pacific Ocean Shoreline, Coronado HA 910.10	Coliform Coliform Coliform Coliform	2007
9	San Juan HU Bacteria	Pacific Ocean Shoreline, San Diego HU 907.00 Pacific Ocean Shoreline, Scripps HA 906.30 Aliso Creek 901.13 Aliso Creek (mouth) Pacific Ocean Shoreline, Aliso Beach HSA 901.13 Pacific Ocean Shoreline, Dana Point HSA 901.14 Pacific Ocean Shoreline, Laguna Beach HSA 901.12 Pacific Ocean Shoreline, San Clemente HA 901.30 San Juan Creek, lower Pacific Ocean Shoreline, Lower San Juan HSA 901.27 San Juan Creek (mouth) 901.20	Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform	2007
9	Carlsbad & San Dieguito HUs Bacteria	Aqua Hedionda Lagoon Pacific Ocean Shoreline, Buena Vista (Lagoon) HA 904.20 Buena Vista Lagoon (lower, middle and upper) Pacific Ocean Shoreline, Escondido Creek HA 904.60 Pacific Ocean Shoreline, Loma Alta HSA 904.10 Loma Alta Slough Pacific Ocean Shoreline, San Dieguito HU 905.00 San Elijo Lagoon Pacific Ocean Shoreline, San Marcos HA 904.50	Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform	2008
9	San Luis Rey Bacteria	Pacific Ocean Shoreline, San Luis Rey HU 903.00	Coliform	2008
9	Santa Margarita and Carlsbad Eutrophication	Buena Vista Lagoon (upper) Loma Alta Slough San Elijo Lagoon Santa Margarita Lagoon	Eutrophication &/or Nutrients Eutrophication &/or Nutrients Eutrophication &/or Nutrients Eutrophication &/or Nutrients	2010 2010 2010 2009
9	Penasquitos HU, Multiple Pollutants	Famosa Slough and Channel 906.40 Mission Bay Tecolote Creek 906.50	Eutrophic Eutrophic Metal (PbS) Metals (Cd, Cu, Pb, Zn) Toxicity	2010
9	Lake Guatome Eutrophication	Guatome Lake 908.22	Eutrophic	2009
9	Carlsbad & Penasquitos Sedimentation	Aqua Hedionda Lagoon Buena Vista Lagoon (lower, middle and upper) Los Penasquitos Lagoon San Elijo Lagoon	Sedimentation / Siltation Sedimentation / Siltation Sedimentation / Siltation Sedimentation / Siltation	2011 2011 2010 2011



## **Appendix C**

**TMDLS COMPLETED AS OF DECEMBER 2001**



## **TMDLs Completed or Developed as of December 2001**

A complete TMDL includes a technical TMDL report and an implementation plan, has been adopted by the RWQCBs, and has been approved by the SWRCB, the Office of Administrative Law (OAL) and the USEPA. The following is a list of TMDLs that either have been completed, are going through the approval process, or are being considered by the RWQCBs:

### TMDLs Completed:

Laguna de Santa Rosa	nitrate
Newport Bay/San Diego Creek	nitrogen
Newport Bay/San Diego Creek	phosphorus
Newport Bay/San Diego Creek	sediment
Newport Bay/San Diego Creek	fecal coliform
Santa Ana River	nutrients
Salt Slough	selenium
Grasslands	selenium
Upper San Gabriel River	trash

### TMDLs Adopted by the RWQCB and Pending Approval:

Garcia River	sediment (pending OAL approval)
San Lorenzo River	nitrate (returned to RWQCB for clarification)
Los Angeles River	trash (pending SWRCB approval)
Ballona Creek	trash (pending SWRCB approval)
Heavenly Valley	sediment (pending OAL approval)
Alamo River	sediment (pending SWRCB approval)
New River	pathogen (pending SWRCB approval)
San Joaquin River	selenium (pending USEPA approval)

### TMDLs Pending RWQCB Adoption:

Indian Creek	phosphorus
Calleguas Creek	chloride
Morro Bay	sediment
Santa Monica Beaches	pathogen
Santa Clara River	chloride
Los Angeles River	nutrients
Clear Lake	mercury

### TMDLs Established by USEPA Under Consent Decrees\*:

Gualala River	sediment
Navarro River	sediment & temperature
Ten Mile River	sediment

South Fork Eel River	sediment & temperature
Noyo River	sediment
Van Duzen River/Yager Creek	sediment
South Fork Trinity River/Hayfork Creek	sediment
Redwood Creek	sediment

\*This list does not include the TMDLs established by USEPA that are superseded by the TMDLs adopted by the RWQCBs for the same waterbody/pollutant.



## **Appendix D**

### **FIVE-YEAR TMDL COMPLETION SCHEDULE (1998 - 303(d) LIST)**



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
1	Albion River Sediment TMDL Project	Albion River	Sedimentation/Siltation	2001	2003
1	Big River Sediment TMDL Project	Big River	Sedimentation/Siltation	2001	2003
1	Stemple Creek Nutrient TMDL Project	Bodega HU, Estero De San Antonio/Stemple Creek	Nutrients	1998	2005
1	Eel River Delta TMDL Project	Eel River Delta	Sedimentation/Siltation Temperature	2006	2007
1	Middle Fork Eel River TMDL Project	Eel River, Middle Fork	Sedimentation/Siltation Temperature	2003	2006
1	Middle Main Eel River TMDL Project	Eel River, Middle Main	Sedimentation/Siltation Temperature	2005	2007
1	North Fork Eel River TMDL Project	Eel River, North Fork	Sedimentation/Siltation Temperature	2002	2006
1	South Fork Eel River TMDL Project	Eel River, South Fork	Sedimentation/Siltation Temperature	1999	2006
1	Upper Main Eel River TMDL Project	Eel River, Upper Main (Includes Tomki Creek)	Sedimentation/Siltation Temperature	2004	2006
1	Garcia River Sediment TMDL Project	Eel River, Upper Main, Tomki Creek	Sedimentation/Siltation Temperature	1997	2002
1	Gualala River Sediment TMDL Project	Garcia River	Sedimentation/Siltation	2001	2004
1	Upper Lost River TMDL Project	Gualala River	Sedimentation/Siltation	2003	2007
1	Lower Lost River TMDL Project	Klamath River HU, Lost River HA, Clear Lake HSA, Boles HSA	Nutrients Temperature	2004	2007
1	Klamath River TMDL Project	Klamath River HU, Lower HA, Klamath Glen HSA Klamath River HU, Middle HA, Beaver Creek HSA, Hornbrook HSA Klamath River HU, Middle HA, Iron Gate HSA, Copco HSA Klamath River HU, Middle and Lower HAs, Orleans HSA, Ukonom HSA, Happy Camp HSA, Seiad HSA	Nutrients Temperature Org. enrichment/Low D.O. Nutrients Temperature Org. enrichment/Low D.O. Nutrients Temperature Nutrients Temperature Org. enrichment/Low D.O.	2006	2007

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
1	Salmon River TMDL Project	Klamath River HU, Salmon River HA	Nutrients Temperature	2003	2007
1	Mattole River Sediment TMDL Project	Mattole River	Sedimentation/Siltation	2002	2004
1	Mattole River Temperature TMDL Project	Mattole River	Temperature	2002	2004
1	Navarro River Sediment TMDL Project	Navarro River Navarro River Delta	Sedimentation/Siltation Sedimentation/Siltation	2000	2004
1	Navarro River Temperature TMDL Project	Navarro River	Temperature	2000	2004
1	Novo River Sediment TMDL Project	Novo River	Sedimentation/Siltation	1999	2003
1	Redwood Creek Sediment TMDL Project	Redwood Creek (Above Redwood National Park Boundary) Redwood Creek (Below Redwood National Park Boundary)	Sedimentation/Siltation Sedimentation/Siltation	1998	2005
1	Scott River Sediment TMDL Project	Scott River	Sedimentation/Siltation	2005	2007
1	Scott River Temperature TMDL Project	Scott River	Temperature	2005	2007
1	Shasta River TMDL Project	Shasta River	Org. enrichment/Low D.O. Temperature	2005	2007
1	Ten Mile River Sediment TMDL Project	Ten Mile River	Sedimentation/Siltation	2000	2003
1	Trinity River Sediment TMDL Project	Trinity River, Lower Trinity River, Upper Trinity River, Middle	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2001	2005
1	South Fork Trinity River TMDL Project	Trinity River, South Fork	Sedimentation/Siltation	1998 1999	2005 2006
1	Van Duzen Sediment TMDL Project	Van Duzen River (tributary to Eel River)	Sedimentation/Siltation	2000	2002
2	San Francisco Bay Mercury	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Mercury Mercury Mercury Mercury Mercury Mercury Mercury		
2	San Francisco Bay PCBs	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait	PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like) PCBs/PCBs (dioxin-like)	2002	2004



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
2	Tomales Bay Pathogens	Tomales Bay	Pathogens	2002	2004
2	San Francisco Bay Copper	SF Bay Central SF Bay Lower San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Copper Copper Copper Copper Copper Copper	2002	2004
2	San Francisco Bay Nickel	SF Bay Lower San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Nickel Nickel Nickel Nickel Nickel	2002	2004
2	Guadalupe River Watershed Mercury	Calero Reservoir Guadalupe Reservoir Alamitos Creek Guadalupe Creek Guadalupe River	Mercury Mercury Mercury Mercury Mercury	2003	2005
2	Napa River Watershed	Napa River	Nutrients Pathogens Sedimentation/Siltation	2003	2005
2	San Francisco Creek Watershed	San Francisco Creek	Sedimentation/Siltation	2003	2005
2	Walker Creek/Tomales Bay Mercury	Walker Creek Tomales Bay	Mercury (Metals) Mercury (Metals)	2003	2005
2	Sonoma Creek Watershed	Sonoma Creek	Sedimentation/Siltation Nutrients Pathogens	2004	2006
2	Pescadero / Butano Creeks Watershed	Pescadero Creek Butano Creek	Sedimentation/Siltation Sedimentation/Siltation	2004	2006
2	Petaluma River Watershed	Petaluma River	Sedimentation/Siltation Nutrients Pathogens	2005	2007
2	San Gregorio Creek Watershed	San Gregorio Creek	Sedimentation/Siltation	2005	2007
2	San Francisco Bay Diazinon	SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Diazinon Diazinon Diazinon Diazinon Diazinon Diazinon Diazinon	2005	2007

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
2	Tomales Bay Watershed	Tomales Bay	Sedimentation/Siltation Nutrients	2005	2007
2	Walker Creek Watershed	Walker Creek	Sedimentation/Siltation Nutrients	2005	2007
2	Laquintas Creek Watershed	Laquintas Creek	Sedimentation/Siltation Nutrients Pathogens	2005	2007
2	San Francisco Bay Legacy Pesticides	Richardson Bay SF Bay Central SF Bay Lower SF Bay South San Pablo Bay Carquinez Strait Sacramento San Joaquin Delta Suisun Bay	Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin Chlordane/DDT/Dieldrin	2005	2007
3	Salinas River Nutrients	Old Salinas River Estuary Salinas River Lagoon (North) Salinas River Refuge Lagoon (South) Salinas River	Nutrients Nutrients Nutrients	2003	2007
3	Salinas River Pesticides	Old Salinas River Estuary Salinas River Lagoon (North) Salinas River Refuge Lagoon (South) Salinas River Tembladero Slough Blanco Drain Salinas Reclamation Canal Espinoza Slough Moro Coto Slough	Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides Pesticides	2004	2007
3	Salinas River Siltation	Salinas River Salinas River Lagoon (North)	Sedimentation/Siltation Sedimentation/Siltation	2002	2005
3	San Lorenzo River Pathogens	Carbonera Creek Lompico Creek San Lorenzo River San Lorenzo River Estuary	Pathogens Pathogens Pathogens	2003	2005
3	San Lorenzo Siltation	Carbonera Creek Lompico Creek San Lorenzo River San Lorenzo River Estuary Shingle Mill Creek	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2001	2003
3	Santa Cruz County Pathogens	Soquel Lagoon Valencia Creek Antons Creek Schwan Lake	Pathogens Pathogens Pathogens	2003	2005

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
3	San Luis Obispo Creek Nutrients	San Luis Obispo Creek (Below W. Marsh Street)	Nutrients	2002	2004
3	San Luis Obispo Creek Pathogens	San Luis Obispo Creek (Below W. Marsh Street)	Pathogens	2003	2004
3	San Luis Obispo Creek Priority Pollutants	San Luis Obispo Creek (Below W. Marsh Street)	Priority Organics	2001	2002
3	Soquel Lagoon Pathogens	Soquel Lagoon	Pathogens	2003	2005
3	Valencia Creek and Aptos Creek Pathogens	Aptos Creek Valencia Creek	Pathogens Pathogens	2003	2005
3	Watsonville Slough Metals	Watsonville Slough	Metals	2003	2005
3	Watsonville Slough Oil and Grease	Watsonville Slough	Oil and grease	2003	2005
3	Watsonville Slough Pathogens	Watsonville Slough	Pathogens	2003	2005
3	Chorro Creek Metals	Chorro Creek	Metals	2001	2002
3	Clear Creek/Hernandez Reservoir Metals	Clear Creek Hernandez Reservoir	Mercury Mercury	2003	2005
3	Las Tablas Creek/Nacimiento Reservoir Mercury	Las Tablas Creek	Metals	2001	2003
		Las Tablas Creek, North Fork	Metals		
		Las Tablas Creek, South Fork	Metals		
		Nacimiento Reservoir	Metals		
3	Monterey Harbor Metals	Monterey Harbor	Metals	2004	2007
3	Morro Bay Metals	Morro Bay	Metals	2003	2005
3	Morro Bay Nutrients	Chorro Creek	Nutrients	2001	2003
		Los Osos Creek	Nutrients	2001	2003
3	Morro Bay Pathogens	Morro Bay	Pathogens	2002	2004
3	Morro Bay Priority Pollutants	Los Osos Creek	Priority Organics	2001	2002
3	Morro Bay Siltation	Chorro Creek Los Osos Creek Morro Bay	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2001	2003
3	Pajaro River Nutrients	Llajas Creek Pajaro River	Nutrients Nutrients	2003	2005
3	Pajaro River Siltation	Llajas Creek Pajaro River San Benito River Watsonville Slough Rider Gluch Creek	Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation Sedimentation/Siltation	2003	2005



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
3	Salinas River Priority Pollutants	Espinosa Slough Salinas Reclamation Canal	Priority Organics Priority Organics Priority Organics	2004	2007
4	Calleguas Creek Nutrient TMDL	Mugu Lagoon Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Fwy (23) to Brea Cyn) and 2 (Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.) Conejo Creek/Arroyo Conejo North Fork Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2 Fox Barranca Revolon Slough Main Branch (Mugu Lagoon to Central Avenue) Rio De Santa Clara/Oxnard Drain No. 3	Nitrogen Ammonia Nitrate and Nitrite Ammonia Nitrate and Nitrite Ammonia Algae Nitrogen Ammonia Nitrogen Nitrate and Nitrite Algae Ammonia Org. enrichment/Low D.O. Algae Ammonia Org. enrichment/Low D.O. Algae Ammonia Org. enrichment/Low D.O. Algae Ammonia Org. enrichment/Low D.O. Ammonia Nitrogen Nitrate and Nitrite Algae Nitrogen Nitrogen	2002	2002
4	Calleguas Creek Toxicity TMDL	Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Conejo Creek Reach 1 (Confl Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.)	Chlorpyrifos Toxicity Toxicity Toxicity Toxicity Toxicity Toxicity	2003	2003

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Calleguas Creek Chloride	Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2 Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Toxicity Chlorpyrifos Toxicity	2002	2002
4	Calleguas Creek Chloride	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Fwy (23) to Brea Cyn) and 2 (Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit) Conejo Creek Reach 4 (Above Lynn Rd.) Tapo Canyon Reach 1	Chloride Chloride Chloride Chloride Chloride Chloride Chloride	2002	2002
4	Calleguas Creek Salinity	Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca) Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (23)) Arroyo Simi Reach 1 (Moorpark Fwy (23) to Brea Cyn) and 2 (Calleguas Creek Reach 3 (Potrero to Somis Rd.) Conejo Creek Reach 1 (Confil Call to Santa Rosa Rd.) Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit) Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.) Conejo Creek Reach 4 (Above Lynn Rd.) Conejo Creek/Arroyo Conejo North Fork Fox Barranca Tapo Canyon Reach 1	Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids Boron Sulfates Total Dissolved Solids	2003	2003
4	Legacy Chlorinated Pesticides, Sediment Toxicity	Mugu Lagoon	Chlordane Dacthal DDT Endosulfan	2004	2004

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Arroyo Las Posas Reach 1 (Lewis Somis Rd to Fox Barranca)	Sediment Toxicity		
		Arroyo Las Posas Reach 2 (Fox Barranca to Moorpark Fwy (231))	Sedimentation/Siltation		
		Beardsley Channel (Above Central Avenue)	DDT		
			DDT		
			Chema		
			Chlordane		
			Dachal		
			DDT		
			Dieldrin		
			Endosulfan		
			Toxaphene		
		Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.)	Chema		
			Chlordane		
			DDT		
			Endosulfan		
			Sediment Toxicity		
		Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit)	Sediment Toxicity		
		Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.)	Toxaphene		
			Chema		
			Dachal		
			DDT		
			Endosulfan		
			Toxaphene		
		Conejo Creek Reach 4 (Above Lynn Rd.)	Chema		
			Dachal		
			DDT		
			Endosulfan		
			Toxaphene		
		Conejo Creek/Arroyo Conejo North Fork	Chlordane		
			DDT		
		Duck Pond Agricultural Drains/Mugu Drain/Oxnard Drain No. 2	Chema		
			Chlordane		
			DDT		
			Sediment Toxicity		
			Toxaphene		
		Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Chema		
			Chlordane		
			Dachal		
			DDT		
			Dieldrin		
			Endosulfan		
			Toxaphene		
4	Calleguas Creek Metals	Mugu Lagoon	Copper Mercury Nickel Zinc	2005	2005

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Arroyo Simi Reach 1 (Moorpark Frwy (23) to Brea Cyn) and 2 (	Chromium Nickel Selenium Silver Zinc Cadmium Chromium Nickel Silver		
		Conejo Creek Reach 1 (Confi Call to Santa Rosa Rd.)			
		Conejo Creek Reach 2 (Santa Rosa Rd. to Tho. Oaks City Limit	Cadmium Chromium Nickel Silver		
		Conejo Creek Reach 3 (Thousand Oaks City Limit to Lynn Rd.)	Cadmium Chromium Nickel Silver		
		Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	Selenium	2004	2004
4	Calleguas Creek PCBs	Mugu Lagoon Beardsley Channel (Above Central Avenue) Calleguas Creek Reach 1 and 2 (Estuary to Potrero Rd.) Revolon Slough Main Branch (Mugu Lagoon to Central Avenue)	PCBs PCBs PCBs PCBs		
4	Calleguas Creek Legacy chlorinated pesticides, PCBs, sediment toxicity	Rio De Santa Clara/Oxnard Drain No. 3	ChemA Chlordane DDT PCBs Sediment Toxicity Toxaphene	2005	2005
4	Los Angeles River Nutrient	Arroyo Seco Reach 1 (LA River to West Holly Ave.) Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.) Burbank Western Channel  Compton Creek Los Angeles River Reach 1 (Estuary to Carson Street)  Los Angeles River Reach 2 (Carson to Figueroa Street)	Algae Algae Algae Ammonia Odors Scum/Foam-unnatural pH Ammonia Nutrients (Algae) pH Scum/Foam-unnatural Ammonia Nutrients (Algae) Odors Scum/Foam-unnatural	2002	2002

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4		Los Angeles River Reach 3 (Figueroa St. to Riverside Dr.)	Ammonia Nutrients (Algae) Odors Scum/Foam-unnatural		2003
		Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	Ammonia Nutrients (Algae) Odors Scum/Foam-unnatural		
		Los Angeles River Reach 5 ( at Sepulveda Basin)	Ammonia Nutrients (Algae) Odors Scum/Foam-unnatural		
		Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)	Ammonia pH		
		Rio Hondo Reach 2 (At Spreading Grounds)	Ammonia		
		Tujunga Wash (LA River to Hansen Dam)	Ammonia Odors Scum/Foam-unnatural		
		Verdugo Wash Reach 1 (LA River to Verdugo Rd.)	Algae		
		Verdugo Wash Reach 2 (Above Verdugo Road)	Algae		
		Aliso Canyon Wash	Selenium		
		Burbank Western Channel	Cadmium		
Compton Creek	Copper				
Los Angeles River Reach 1 (Estuary to Carson Street)	Lead				
Los Angeles River Reach 2 (Carson to Figueroa Street)	Lead				
Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	Lead				
Monrovia Canyon Creek	Lead				
Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)	Lead				
	Copper				
	Lead				
	Zinc				
	Copper				
4	Los Angeles River Pathogen	Tujunga Wash (LA River to Hansen Dam)	High Coliform Count	2002	2002
		Arroyo Seco Reach 1 (LA River to West Holly Ave.)	High Coliform Count		
		Arroyo Seco Reach 2 (Figueroa St. to Riverside Dr.)	High Coliform Count		
		Bell Creek	High Coliform Count		
		Compton Creek	High Coliform Count		
		Los Angeles River Reach 1 (Estuary to Carson Street)	High Coliform Count		
		Los Angeles River Reach 2 (Carson to Figueroa Street)	High Coliform Count		
		Los Angeles River Reach 4 (Sepulveda Dr. to Sepulveda Dam)	High Coliform Count		
		Los Angeles River Reach 6 (Above Sepulveda Fld Cntrl Basin)	High Coliform Count		
		Rio Hondo Reach 1 (Confl. LA River to Snt Ana Fwy)	High Coliform Count		
Rio Hondo Reach 2 (At Spreading Grounds)	High Coliform Count				
Tujunga Wash (LA River to Hansen Dam)	High Coliform Count				
Verdugo Wash Reach 1 (LA River to Verdugo Rd.)	High Coliform Count				
Verdugo Wash Reach 2 (Above Verdugo Road)	High Coliform Count				

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Los Angeles River Chem A	Los Angeles River Reach 5 ( at Sepulveda Basin)	ChemA	2005	2005
4	Ventura Beaches Pathogen	Mandalay Beach McGrath Beach	Beach Closures Beach Closures High Coliform Count High Coliform Count	2002	2002
4	Ventura Harbor Pathogen	Santa Clara River Estuary Beach-Surfers Knoll Ventura Harbor: Ventura Keys	High Coliform Count	2006	2006
4	McGrath Lake Legacy Chlorinated Pesticides, Sediment Toxicity	McGrath Lake (Estuary)	Chlordane DDT Pesticides Sediment Toxicity	2006	2006
4	Port Hueneme Harbor DDT and PCBs	Port Hueneme Harbor (Back Basins)	DDT PCBs	2006	2006
4	Port Hueneme Harbor PAHs	Port Hueneme Harbor (Back Basins)	PAHs	2006	2006
4	Port Hueneme Harbor Zinc	Port Hueneme Harbor (Back Basins)	Zinc	2006	2006
4	Channel Islands Harbor Metals	Channel Islands Harbor	Lead Zinc	2010	2010
4	Port Hueneme Harbor Tributyltin	Port Hueneme Harbor (Back Basins)	Tributyltin	2010	2010
4	Santa Clara River Chloride	Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.)	Chloride Chloride Chloride	2002	2002
4	Santa Clara River Nutrients	Brown Barranca/Long Canyon Mint Canyon Creek Reach 1 (Confl to Rowler Cyn) Santa Clara River Reach 3 (Dam to Abv Sp Crk/Blw Timber Cyn) Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn n.d.)	Nitrate and Nitrite Nitrate and Nitrite Ammonia Ammonia Nitrate and Nitrite Ammonia Nitrate and Nitrite Org. enrichment/Low D.O. Nitrate and Nitrite Nitrate and Nitrite	2002	2002
4	Santa Clara Estuary ChemA Toxaphene	Torrey Canyon Creek Wheeler Canyon/Todd Barranca Santa Clara River Estuary	ChemA Toxaphene	2006	2006

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Santa Clara River Pathogen	Santa Clara River Estuary Santa Clara River Reach 7 (Blue Cut to West Pier Hwy 99) Santa Clara River Reach 8 (W Pier Hwy 99 to Bouquet Cyn Rd.) Santa Clara River Reach 9 ( Bouquet Cyn Rd. to abv Lang Goad)	High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2005	2005
4	Santa Clara River Lakes Pathogen	Elizabeth Lake Lake Hughes Munz Lake	Eutrophic Org. enrichment/Low D.O. pH Algae Eutrophic Fish Kills Odors Eutrophic	2004	2004
4	Santa Clara River Lakes Trash	Elizabeth Lake Lake Hughes Munz Lake	Trash Trash Trash	2004	2004
4	San Gabriel River Nutrients	Coyote Creek San Gabriel River Reach 1 (Estuary to Firestone) San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) San Gabriel River Reach 3 (Whittier Narrows to Ramona) San Gabriel River, East Fork San Jose Creek Reach 2 (Temple to I-10 at White Ave.) Walnut Creek Wash (Drains from Puddingstone Res)	Algae Ammonia Algae Ammonia Toxicity Ammonia Toxicity Algae Ammonia Ammonia pH Toxicity	2004	2004
4	San Gabriel River Metals	Coyote Creek San Gabriel River Estuary San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam)	Silver Arsenic Lead	2004	2004
4	San Gabriel Lakes Legacy Chlorinated Pesticides and PCBs	Puddingstone Reservoir Fmoorpark Fwy	Chlordane DDT PCBs	2005	2005
4	San Gabriel River Lakes Metals	El Dorado Lakes Legg Lake	Copper Lead Mercury Copper Lead	2005	2005

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REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Puddingstone Reservoir Santa Fe Dam Park Lake	Mercury Copper Lead		
4	San Gabriel River Abnormal Fish Histology	Coyote Creek San Gabriel River Estuary San Gabriel River Reach 1 (Estuary to Firestone)	Abnormal Fish Histology Abnormal Fish Histology Abnormal Fish Histology	2005	2005
4	San Gabriel River Lakes Nutrients	Crystal Lake El Dorado Lakes  Leqq Lake  Fmoorpark Fwy Santa Fe Dam Park Lake	Org. enrichment/Low D.O. Algae Ammonia Eutrophic pH Ammonia Odors pH Org. enrichment/Low D.O. pH	2003	2003
4	San Gabriel River Pathogens	Coyote Creek San Gabriel River Reach 1 (Estuary to Firestone) San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam) San Gabriel River, East Fork San Jose Creek Reach 2 (Temple to I-10 at White Ave.)	High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2002	2002
4	Marina del Rey Pathogens	Marina del Rey Harbor - Back Basins Marina del Rey Harbor Beach	High Coliform Count Beach Closures High Coliform Count	2003	2003
4	Malibu Creek Pathogens	Malibu Lagoon  Las Virgenes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (Above Lake) Malibu Creek Medea Creek Reach 1 (Lake to Confl. with Lindero) Medea Creek Reach 2 (Abv Confl. with Lindero) Palo Comado Creek Stokes Creek	Enteric Viruses High Coliform Count Shellfish Harvesting Adv. Swimming Restrictions High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2002	2002
4	Santa Monica Bay Beaches Pathogen	ASHLAND AVENUE DRAIN PICO KENTER DRAIN Santa Monica Canyon Sepulveda Canyon Abalone Cove Beach Big Rock Beach Bluff Cove Beach	High Coliform Count Enteric Viruses High Coliform Count High Coliform Count High Coliform Count Beach Closures High Coliform Count Beach Closures	2002	2002



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
		Cabrillo Beach (Outer)	Beach Closures		
		Carbon Beach	High Coliform Count		
		Castro Rock Beach	Beach Closures		
		Dan Blocker Memorial (Coral) Beach	Beach Closures		
		Dockweiler Beach	High Coliform Count		
		Escondido Beach	Beach Closures		
		Flat Rock Point Beach Area	Beach Closures		
		Hermosa Beach	Beach Closures		
		Inspiration Point Beach	Beach Closures		
		La Costa Beach	Beach Closures		
		Las Flores Beach	High Coliform Count		
		Las Tunas Beach	Beach Closures		
		Leo Carrillo Beach (South of County Line)	Beach Closures		
		Long Point Beach	High Coliform Count		
		Malaqa Cove Beach	Beach Closures		
		Malibu Beach	Beach Closures		
		Malibu Laqoon Beach (Surfrider)	Beach Closures		
		Manhattan Beach	High Coliform Count		
		Nicholas Canyon Beach	Beach Closures		
		Palo Verde Shoreline Park Beach	Beach Closures		
		Paradise Cove Beach	Pathogens		
		Point Dume Beach	Beach Closures		
		Point Fermin Park Beach	High Coliform Count		
		Point Vicente Beach	Beach Closures		
		Portugese Bend Beach	Beach Closures		
		Puerto Beach	Beach Closures		
		Redondo Beach	Beach Closures		
		Resort Point Beach	High Coliform Count		
		Robert H. Meyer Memorial Beach	Beach Closures		
		Rocky Point Beach	Beach Closures		
		Royal Palms Beach	Beach Closures		
		Santa Monica Beach	Beach Closures		
		Sea Level Beach	High Coliform Count		
		Tobago Beach	Beach Closures		
		Torrance Beach	High Coliform Count		
		Trancas Beach (Broad Beach)	Beach Closures		
		Venire Beach	High Coliform Count		
		Whites Point Beach	Beach Closures		
		Will Rogers Beach	High Coliform Count		
		Zuma Beach (Westward Beach)	Beach Closures		

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Ballona Creek Pathogen	Ballona Creek Ballona Creek Estuary	Enteric Viruses High Coliform Count High Coliform Count Shellfish Harvesting Adv.	2003	2003
4	Malibu Creek Nutrients	Malibu Lagoon Lake Lindero  Lake Sherwood  Malibu Lake  Westlake Lake  Las Virgenes Creek  Lindero Creek Reach 1 Lindero Creek Reach 2 (Above Lake) Malibu Creek Medea Creek Reach 1 (Lake to Confl. with Lindero) Medea Creek Reach 2 (Abv Confl. with Lindero)	Eutrophic Algae Eutrophic Odors Algae Ammonia Eutrophic Org. enrichment/Low D.O. Algae Eutrophic Org. enrichment/Low D.O. Algae Ammonia Eutrophic Org. enrichment/Low D.O. Nutrients (Algae) Org. enrichment/Low D.O. Scum/Foam-unnatural Algae Scum/Foam-unnatural Algae Scum/Foam-unnatural Nutrients (Algae) Scum/Foam-unnatural Algae Algae	2002	2002
4	Santa Monica Bay Metals	Santa Monica Bay Offshore/Nearshore	Cadmium Copper Lead Mercury Nickel Silver Zinc	2004	2004
4	Santa Monica Bay Chlordane	Santa Monica Bay Offshore/Nearshore	Chlordane	2005	2005
4	Marina del Rey Legacy Chlorinated Pesticides and PCBs, Fish Tissue, Sediment Toxicity	Marina del Rey Harbor - Back Basins	Benthic Comm. Effects Chlordane DDT Dieldrin Fish Consumption Advisory PCBs Sediment Toxicity	2003	2003

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Ballona Creek Legacy Chlorinated Pesticides, PCBs, Sediment Toxicity	Ballona Creek	Chema Chlordane DDT Dieldrin PCBs Sediment Toxicity Arochlor Chlordane DDT PCBs Sediment Toxicity	2004	2004
4	Marina del Rey Metals	Marina del Rey Harbor - Back Basins	Copper Lead Zinc	2004	2004
4	Ballona Creek Metals	Ballona Creek	Arsenic Cadmium Copper Lead Silver Toxicity Lead Zinc Arsenic	2003	2003
4	Pico Kenter Metals	Ballona Creek Estuary Ballona Creek Wetlands	Copper Lead Toxicity Lead Lead Lead	2006	2006
4	Malibu Creek Trash	PICO KENTER DRAIN Santa Monica Canyon Sepulveda Canyon Topanga Canyon Creek Lake Lindero Las Virgenes Creek Lindero Creek Reach 1 Lindero Creek Reach 2 (Above Lake) Malibu Creek Medea Creek Reach 1 (Lake to Confl. with Lindero) Medea Creek Reach 2 (Abv. Confl. with Lindero)	Trash Trash Trash Trash Trash Trash Trash	2006	2006
4	Malibu Creek Lakes Metals	Lake Calabasas Lake Lindero Lake Sherwood Malibu Lake Westlake Lake Las Virgenes Creek Lindero Creek Reach 1	Copper Zinc Selenium Mercury Copper Copper Lead Selenium Selenium	2007	2007



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Los Angeles Harbor/Dominquez Channel PAHs	Cabrillo Beach (Inner) LA Harbor Area  LA Fish Harbor LA Harbor Consolidated Slip LA Harbor Inner Breakwater LA Harbor Main Channel Long Beach Harbor Main Channel, SE, W Basin, Pier J, Breakwa San Pedro Bay Near/Off Shore Zones - Cabrillo Pier Area  Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont)	DDT Dieldrin PCBs DDT PCBs  PAHs PAHs PAHs PAHs  PAHs PAHs PAHs PAHs	2007	2007
4	Los Angeles Harbor/Dominquez Channel Metals	LA Harbor Consolidated Slip  LA Harbor Main Channel Dominquez Channel (above Vermont)  Dominquez Channel (Estuary to Vermont)  Torrance Carson Channel WILMINGTON DRAIN	Chromium Lead Zinc Copper Zinc Chromium Copper Lead Chromium Copper Lead Zinc Copper Lead Copper Lead	2006	2006
4	Dominquez Channel Nutrients	Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont) WILMINGTON DRAIN	Ammonia Ammonia Ammonia	2007	2007
4	Dominquez Channel Pathogens	Dominquez Channel (above Vermont) Dominquez Channel (Estuary to Vermont) Torrance Carson Channel WILMINGTON DRAIN	High Coliform Count High Coliform Count High Coliform Count High Coliform Count	2002	2002
4	Machado Lake Trash	Machado Lake (Harbor Park Lake)	Trash	2007	2007
4	Colorado Lagoon Legacy Chlorinated Pesticides and Sediment Toxicity	Colorado Lagoon	Chlordane DDT Dieldrin PCBs Sediment Toxicity	2004	2004

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REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
4	Colorado Lagoon - Lead PAHs and Zinc	Colorado Lagoon	Lead PAHs Zinc	2004	2004
4	Los Cerritos Channel Metals	Los Cerritos Channel	Copper Lead Zinc	2004	2004
4	Los Cerritos Channel Ammonia	Los Cerritos Channel	Ammonia High Colliform Count	2004	2004
4	Ventura River Estuary DDT	Ventura River Estuary	DDT	2005	2005
4	Ventura River Estuary Algae	Ventura River Estuary	Algae Eutrophic Algae	2005	2005
4	Ventura River Hydromodification	Ventura River Reach 1 and 2 (Estuary to Weldon Canyon) Ventura River Reach 3 (Weldon Canyon to Confl. w/ Coyote Cr.) Ventura River Reach 4 (Coyote Creek to Camino Cielo Rd)	Pumping Water Diversion Pumping Water Diversion	2005	2005
4	Ventura River Metals	Ventura River Reach 1 and 2 (Estuary to Weldon Canyon)	Copper Silver Zinc	2005	2005
4	Ventura River Trash	Ventura River Estuary	Trash	2005	2005
4	Ventura River Selenium	Ventura River Reach 1 and 2 (Estuary to Weldon Canyon)	Selenium	2005	2005
5	Sacramento Delta Waterways - OP Pesticides	Sacramento Delta Waterways	Chlorpyrifos Diazinon	2004	2005
5	Sacramento Delta Waterways - Mercury	Sacramento Delta Waterways	Mercury	2003	2005
5	Clear Lake - Mercury	Clear Lake	Mercury	2002	2005
5	Cache Creek, Lower - Mercury	Cache Creek, Lower	Mercury	2003	2005
5	Sacramento/Feather - Diazinon	Feather River, Lower Sacramento River, Red Bluff to Delta	Diazinon Diazinon	2002	2005
5	SJR Tributaries - OPS	Merced River Stanislaus River Tuolumne River	Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon Chlorpyrifos/Diazinon	2003	2005
5	Sacramento River - Mercury	Sacramento River (Red Bluff to Delta)	Mercury	2005	2006

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REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
5	San Joaquin River - Salts	San Joaquin River	Boron Electrical Conductivity	2002	2003
5	San Joaquin River - OP Pesticides	San Joaquin River	Chlorpyrifos Diazinon	2002	2005
5	Sulphur Creek - Mercury	Sulphur Creek	Mercury	2003	2005
6	Bridgeport Reservoir Nutrients and Sedimentation/Siltation TMDL Project	Bridgeport Reservoir	Nutrients Sedimentation/Siltation	2004	2005
6	Crowley Lake Nutrients TMDL Project	Crowley Lake	Nutrients Arsenic	2004	2005 *
6	Haiwee Reservoir Copper TMDL Project	Haiwee Reservoir	Copper	2002	2003
6	Horseshoe Lake(2) Sedimentation/Siltation TMDL Project	Horseshoe Lake(2)	Sedimentation/Siltation	2006	2007
6	Indian Creek Reservoir Nutrients TMDL Project	Indian Creek Reservoir	Nutrients	2000	2002
6	Lake Tahoe Nutrients and Sedimentation/Siltation TMDL Project	Lake Tahoe	Nutrients Sedimentation/Siltation	2005	2007
6	Pleasant Valley Reservoir Org. Enrichment/Low D.O. TMDL Project	Pleasant Valley Reservoir	Org. enrichment/Low D.O.	2005	2006
6	Tinemaha Reservoir Metals TMDL Project	Tinemaha Reservoir	Metals Arsenic	2003	2004 *
6	Topaz Lake Sedimentation/Siltation TMDL Project	Topaz Lake	Sedimentation/Siltation	2006	2007
6	Bear Creek Sedimentation/Siltation TMDL Project	Bear Creek	Sedimentation/Siltation	2004	2005
6	Blackwood Creek Sedimentation/Siltation TMDL Project	Blackwood Creek	Sedimentation/Siltation	2006	2007
6	Bodie Creek Metals TMDL Project	Bodie Creek	Metals	2003	2004
6	Bronco Creek Sedimentation/Siltation TMDL Project	Bronco Creek	Sedimentation/Siltation	2004	2005
6	Clearwater Creek Sedimentation/Siltation TMDL Project	Clearwater Creek	Sedimentation/Siltation	2004	2005
6	Gray Creek Sedimentation/Siltation TMDL Project	Gray Creek	Sedimentation/Siltation	2003	2004

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REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
6	Green Valley Lake Creek Priority Organics TMDL Project	Green Valley Lake Creek	Priority Organics	2005	2006
6	Hot Springs Canyon Sedimentation/Siltation TMDL Project	Hot Springs Canyon	Sedimentation/Siltation	2004	2005
6	Skeddadle Creek Pathogens TMDL Project	Skeddadle Creek	High Coliform Count	2005	2006
6	Squaw Creek Sedimentation/Siltation TMDL Project	Squaw Creek	Sedimentation/Siltation	2002	2003
6	Susan River Toxicity TMDL Project	Susan River	Unknown Toxicity	2006	2007
6	Truckee River Sedimentation/Siltation TMDL Project	Truckee River	Sedimentation/Siltation	2004	2005
6	Ward Creek Sedimentation/Siltation TMDL Project	Ward Creek	Sedimentation/Siltation	2006	2007
6	Cinder Cone Springs Nutrients and Salinity/TDS/Chlorides TMDL Project	Cinder Cone Springs	Nutrients Salinity/TDS/Chlorides	2006	2007
7	Coachella Valley Storm Channel Pathogens TMDL Project	Coachella Valley Storm Channel	Pathogens	2004	2005
7	Imperial Valley Drains Sedimentation TMDL Project	Imperial Valley Drains	Sedimentation/Siltation	2003	2004
7	New River Silt TMDL Project	New River	Silt	2001	2002
7	New River DO TMDL Project	New River	Dissolved Organic Matter/DO	2005	2006
7	New River Trash TMDL Project	New River	Trash	2006	2007
7	Palo Verde outfall Drain pathogens TMDL Project	Palo Verde Outfall Drain	Pathogens	2005	2006
7	Salton Sea Nutrients TMDL Project	Salton Sea	Nutrients	2003	2004
8	Chino Basin Watershed Pathogens TMDL Project	Mill Creek (Prado area) Chino Creek, Reach 1 Chino Creek, Reach 2 Prado Park Lake Cucamonga Creek, Valley Reach Santa Ana River, Reach 3	Pathogens Pathogens Pathogens Pathogens Pathogens	2003	2005
8	Chino Basin Watershed Nitrogen TMDL Project	Mill Creek (Prado area) Chino Creek, Reach 1	nitrogen nitrogen	2003	2005
8	Chino Basin Watershed Suspended Solids TMDL Project	Mill Creek (Prado area)	Suspended Solids	2003	2005



Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
8	Lake Elsinore/San Jacinto River Nutrient TMDL Project	Lake Elsinore Canyon Lake	nutrients org. enrichment/low D.O.	2003	2004
8	Lake Elsinore/San Jacinto River Toxics TMDL Project	Lake Elsinore	unknown toxicity	2003	2004
8	Lake Elsinore/San Jacinto River Pathogen TMDL Project	Canyon Lake	Pathogens	2003	2004
8	Lake Elsinore/San Jacinto River Sediment TMDL Project	Lake Elsinore	sediment/siltation	2003	2004
8	Big Bear Lake Watershed Nutrient TMDL Project	Big Bear Lake Rathbone Creek Summit Creek Groat Creek	nutrients/noxious aquatic plants nutrients/noxious aquatic plants nutrients/noxious aquatic plants nutrients/noxious aquatic plants	2003	2005
8	Big Bear Lake Watershed Metals TMDL Project	Big Bear Lake Knickerbocker Creek Groat Creek	metals (copper, mercury and others) metals (copper, mercury and others) metals (copper, mercury and others)	2003	2005
8	Big Bear Lake Watershed Sediment TMDL Project	Big Bear Lake Rathbone Creek	sediment/siltation sediment/siltation	2003	2005
8	Big Bear Lake Watershed Pathogen TMDL Project	Knickerbocker Creek	pathogens	2003	2005
8	Upper Newport Bay Watershed Pesticide TMDL Project	Upper Newport Bay San Diego Creek, Reach 1 San Diego Creek, Reach 2	chlorpyrifos/diazinon chlorpyrifos/diazinon chlorpyrifos/diazinon	2002	2002
8	Newport Bay Watershed Selenium TMDL Project	Upper Newport Bay Lower Newport Bay -- Rhine Channel San Diego Creek, Reach 1 San Diego Creek, Reach 2	selenium selenium selenium selenium	2002	2003
8	Newport Bay Watershed Toxics TMDL Project	Upper Newport Bay Lower Newport Bay -- Rhine Channel San Diego Creek, Reach 1 San Diego Creek, Reach 2	other toxics as identified by USEPA other toxics as identified by USEPA other toxics as identified by USEPA other toxics as identified by USEPA	2002	2007
9	Chollas Creek Diazinon	Chollas Creek 908.22	Toxicity (Diazinon)	2001	2002
9	Rainbow Creek Eutrophication	Rainbow Creek	Eutrophic (Nutrients)	2001	2002
9	Chollas Creek Metals	Chollas Creek 908.22*	Metals (Cd, Cu, Pb, Zn)	2002	2003
9	San Diego Bay, Shelter Island Copper	San Diego Bay; Shelter Island Yacht Basin	Metals (dissolved Cu)	2001	2002

Five-Year TMDL Completion Schedule [1998 - 303(d) List]

REGION	TMDL PROJECTS	WATER BODY NAME	POLLUTANT/STRESSOR	TECHNICAL TMDL DATE	TMDL COMPLETION DATE (REGIONAL BOARD APPROVAL)
9	San Diego Bay, near Chollas Creek Sediment Toxicity	San Diego Bay; near Chollas Creek	Degraded Benthic Community & Sediment Toxicity	2004	2005
9	San Diego Bay, 7th Street Channel Sediment Toxicity	San Diego Bay; Seventh Street Channel	Degraded Benthic Community & Sediment Toxicity	2004	2005
9	Mission Bay Bacteria	Mission Bay Tecolote Creek, 906.50	Coliform Coliform	2004 2006	2005 2007
9	San Diego Bay, Multiple Locations Sediment Toxicity	San Diego Bay; Downtown Piers* San Diego Bay; near Grape Street* San Diego Bay; north of 24th Street Marine Terminal* San Diego Bay; San Diego Naval Station* San Diego Bay; near Coronado Bridge* San Diego Bay, near Sub Base*	Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity Degraded Benthic Community & Sediment Toxicity	2006	2007
9	San Diego Bay Bacteria	Chollas Creek 908.22 San Diego Bay Shoreline, Lindbergh HSA 908.21 San Diego Bay Shoreline, Telegraph HSA 909.11 Pacific Ocean Shoreline, Coronado HA 910.10	Coliform Coliform Coliform Coliform	2005	2006
9	San Diego and Scripps Bacteria	Pacific Ocean Shoreline, San Diego HU 907.00 Pacific Ocean Shoreline, Scripps HA 906.30	Coliform Coliform	2006	2007
9	San Juan HU Bacteria	Aliso Creek 901.13 Aliso Creek (mouth) Pacific Ocean Shoreline, Aliso Beach HSA 901.13 Pacific Ocean Shoreline, Dana Point HSA 901.14 Pacific Ocean Shoreline, Laguna Beach HSA 901.12 Pacific Ocean Shoreline, San Clemente HA 901.30 San Juan Creek, lower Pacific Ocean Shoreline, Lower San Juan HSA 901.27 San Juan Creek (mouth) 901.20	Coliform Coliform Coliform Coliform Coliform Coliform Coliform Coliform	2006	2007