

4.0 REGIONWIDE ACTIVITIES

The Santa Ana Regional Board directly regulates through the following eight priority programs including: TMDLs, NPS, Watershed Management, Monitoring & Assessment, Core Regulatory, Water Quality Standards/Basin Planning, Wetlands, and Groundwater Resources/Cleanup. These programs are discussed in context of their application on a region-wide basis in this section of the WMI chapter.

4.1 TOTAL MAXIMUM DAILY LOADS (TMDLS)

Section 303(d) of the Clean Water Act requires that every two years the State update the list of waterbodies for which water quality standards (beneficial uses and water quality objectives) are not attained, or are not expected to be attained, with the implementation of technology-based controls. The list includes a description of the pollutants causing impairment and a schedule for developing a Total Maximum Daily Load (TMDL) for each pollutant. The TMDL is the maximum load of a pollutant that can be discharged from point and nonpoint sources without impairing water quality standards. A TMDL must include waste load allocations for point source discharges, load allocations for nonpoint source discharges, and a margin of safety.

The Regional Board last updated the 303(d) list and TMDL development schedules in March, 1998. Regional Board staff review and update of the 303(d) list are expected to occur during SFY01-02 (the change from the requisite biennial schedule is being made to accommodate new TMDL regulations promulgated by the USEPA.). The Region's current 303(d) list includes 26 waterbodies and 62 pollutants or stressors (some waterbodies have multiple stressors). Appendix C Table 1 includes the 303(d) listed waterbodies and schedule of TMDL activities. Appendix C, Table 2 is a 5-year schedule of TMDL activities in the Region.

An increasingly resource intensive task is the annual development of the federal and state TMDL workplans. In addition to workplan development, Regional Board staff also prepares periodic status reports to the State Board and USEPA on the regional TMDL activities. State Board management recently developed and approved the TMDL Initiatives document that outlined a number of steps to be taken by the State Board and Regional Boards to develop TMDLs. One of the provisions of the Initiatives document is the formation of TMDL pollutant specific workgroups (e.g., pathogens, nutrient). These workgroups are charged with developing protocols that can be used statewide by Regional Board staff to develop TMDLs. The intent is to streamline TMDL development protocols and methods. Approximately 6 of the current 8 TMDL Regional Board staff will be involved in these TMDL workgroups.

TMDL Development:

In 1995, the Regional Board identified the development of TMDLs for a number of constituents in the Newport Bay watershed as a high priority. The Regional Board has developed TMDLs for nutrients, pathogens, and sediment. Technical TMDLs for specific toxic constituents are currently being developed (see the Newport Bay Watershed section) by both Regional Board staff and USEPA staff. Over the next 2-year period, staff anticipates incorporation of these technical TMDLs into the Basin Plan.

In addition to the Newport Bay TMDLs, Regional Board staff is developing TMDLs for waterbodies in Chino Basin, Big Bear Lake, and Lake Elsinore. Staff resources, monitoring resources, and modeling resources are key needs in the all watersheds (see Big Bear Lake Watershed section, and Lake Elsinore/San Jacinto River Watershed section).

One aspect of the TMDL program that needs to be emphasized is that it does not stop with TMDL development. TMDLs need to be incorporated into the Basin Plan through adoption by the Regional

Board and State Board, and approval by the Office of Administrative Law and USEPA. These have been, and likely will continue to be, time consuming and staff resource intensive steps. Once fully approved, the TMDLs must be implemented.

TMDL Implementation:

TMDL development and implementation are integrated with other Regional Board programs. Strategies such as the management measures developed for the Plan for California’s Nonpoint Source Pollution Control Program and the Nonpoint Source Management Plan’s three tier approach (voluntary compliance, regulatory encouragement, issuance of waste discharge requirements), are and will be utilized to develop effective TMDL implementation programs for nonpoint source discharges. Modification of NPDES permits, either urban stormwater permits or permits for individual facilities, watershed planning, and the involvement of stakeholders are also important parts of effective TMDL development and implementation.

Point source discharges are controlled effectively through implementation of the Regional Board’s core regulatory program. Nonpoint source discharges remain the most significant source of pollutants in many of the Region’s waters. TMDLs are an important part of the Regional Board’s regulatory program for assessing and controlling nonpoint source contributions to pollutant loads.

Once a TMDL has been incorporated into the Basin Plan, the Regional Board is responsible for ensuring TMDL implementation and effectiveness. The implementation and monitoring phase requires just as many staff resources (if not more) as were used to develop the TMDL itself. Even if local agencies or private interests are responsible for implementing components of the TMDL, Regional Board resources are required for: reviewing and negotiating specific implementation strategies; providing oversight of the implementation program (which could include enforcement); monitoring and assessment of the TMDL effectiveness; and revision of the TMDL, if necessary. TMDL implementation resource needs for the next two fiscal years are identified in the appropriate watershed section in Section 2.

Short and Long Term Goals and Resource Needs

The following table identifies the short and long term TMDL program goals and resource needs.

TMDL Short/Long Term Goals

Time Frame	TMDL Program Goals	Resource Needs	
		PYs	Contract Dollars
Short Term (FY 02-03)	<ul style="list-style-type: none"> • Develop and implement TMDLs in Newport Bay, Chino Basin, Big Bear Lake, and Lake Elsinore watersheds (see Appendix C3). • Contract dollars would be used for reviewing water quality objectives in the Newport Bay watershed and monitoring or modeling in the Big Bear Lake and Lake Elsinore watersheds. • Participate in the statewide TMDL workgroup • Participate in the TMDL Pollutant Workgroups • Report to State Board and US EPA on status of TMDL activities (pursuant to 104/106 grants) and state funding requirements • Miscellaneous training 	10.25	\$800,000
Long Term (FY 03-04 to 06-07)	<ul style="list-style-type: none"> • Complete all 41 TMDLs in four priority WMAs and gradually shift majority of resources to next set of WMAs/TMDLs in FY 05-06 	11.25 to 12.75	\$200,000 to \$300,000

4.2 NON-POINT SOURCE (NPS) PROGRAM

Revised May 2004

Nonpoint Source (NPS) pollution is the leading cause of water quality impairment in California, and nationwide. Unlike pollution from discrete discharge points, NPS pollution comes from many diffuse sources that may be difficult to identify. Typical non-point sources include a variety of land uses and human activities, e.g., agriculture, urban development, marinas and recreational boating and hydromodification, the alteration of water courses. NPS pollutants degrade and impair ground and surface waters.

Considerable improvement in water quality in the Santa Ana Region has been achieved through the control of point source discharges through traditional regulatory processes. Management of NPS inputs is more difficult to achieve, since it requires various control techniques tailored to local watershed conditions. Furthermore, until recently, there was little funding available to address NPS discharges.

4.2.1 NPS PROBLEMS

Significant NPS problems within RWQCB 8 that have been, or are being, addressed include:

- Urban/agricultural runoff
- Confined animal feeding operations (CAFOs)
- On-site disposal systems
- Construction related erosion and sedimentation
- Excessive nutrient loading and eutrophication

In the following watersheds, water quality impairment due to NPS pollution is being addressed through the application of TMDLs and watershed-wide monitoring and implementation programs:

- Newport Bay, Big Bear Lake, Lake Elsinore and Anaheim Bay/Huntington Harbour/Bolsa Chica (toxic substances)
- Chino Basin and San Jacinto (confined animal feeding operations (CAFOs))
- Big Bear Lake, Lake Elsinore and San Jacinto (nutrients and sediment)
- Chino Basin and the Lower Santa Ana River (pathogens)

Changes in land use typically contribute to an increase in NPS pollution. Discharges of wastes and pollutants from new uses of land, particularly when land is developed for agricultural, residential or commercial use, threaten or degrade nearby water bodies, including critical coastal areas. New development also increases impermeable areas, which decreases groundwater recharge and increases the volume and velocity of runoff. NPS discharges from developed areas carry a wide range of pollutants, including herbicides, pesticides, pathogens, metals, other chemicals, and oil and grease to storm drains that flow directly into surface waters, and eventually, the ocean. This includes discharges from discrete and focused activities, such as mobile operators providing motor vehicle detailing and fleet-washing, building and carpet cleaning, and pressure washing services.

Outreach efforts to educate the public about NPS issues are an important element of the NPS program. Regional Board staff outreach efforts are limited by available staff and supporting resources. More public outreach is needed to educate: 1) the general public; 2) educators and students; 3) business owners and their employees (especially those in restaurant, automobile

mechanical repair/body shop, and mobile business sectors); and 4) public officials who issue and enforce a variety of land-use related permits.

Pollutants impairing waters in RWQCB 8 include metals, nutrients, pathogens, pesticides, and sediment. Other impairments are due to low dissolved oxygen, toxicity of unknown source, exotic terrestrial plants and noxious aquatic plants. These are summarized by watershed in **Table 4-1**, and shown in detail in Appendix E, Table 1. High quality waters and waters of special significance, including Critical Coastal Areas (CCAs), are also shown in Table 1 of Appendix E.

Table 4-1: Summary of NPS pollutants by watershed and Management Measure (MM) Category

Watershed or Surface Water	Pollutant / Impairment	MM Category
Anaheim Bay, Huntington Harbour, Bolsa Chica	Metals, pesticides, pathogens, noxious aquatic plants	urban, marinas/boating
Big Bear Lake	Metals, nutrients, sediment, pathogens, low dissolved oxygen	urban, marinas/boating
Lake Elsinore	Nutrients, sediment, pathogens, unknown toxicity, low dissolved oxygen	agriculture, urban
Newport Coast	Sediment, nutrients, pesticides	urban, hydromodification
Newport Bay	Metals, priority pollutants, nutrients, pesticides, pathogens, sediment, unknown toxicity	agriculture, urban, marinas/boating, hydromodification
Chino Basin	Nutrients, pathogens, high coliform, suspended solids	agriculture, urban
Upper Santa Ana River	Pathogens	urban
Middle Santa Ana River	Nutrients, pathogens, sediment, TDS/salinity/chloride	agriculture, urban, hydromodification
Lower Santa Ana River	TDS/salinity/chloride, pathogens	urban
Groundwater Basins:		
Upper Santa Ana River	Nitrogen, TDS/salinity/chloride, organic chemicals	agriculture, urban
Orange County	Organic chemicals	urban

Notes:

- 1) Management Measure Categories taken from, "Plan for California's Nonpoint Source Pollution Control Plan," SWRCB and California Coastal Commission, January 2000.
- 2) A problem statement identifying the specific toxic pollutants of concern in the Newport Bay watershed was drafted in December, 2000. The USEPA is conducting additional review to refine the list of toxic pollutants for which TMDLs are required.

4.2.2 NPS STRATEGY

The Plan for California's Nonpoint Source Pollution Control, SWRCB and California Coastal Commission, January, 2000 (NPS Plan) outlines the statewide approach for managing NPS pollution. The NPS Plan's long-term goal is to, "...improve water quality by implementing the management measures identified in the California Management Measures for Polluted Runoff Report (CAMMPR) by 2013." A key element of the Plan is implementing these management measures using a "three-tiered approach," in which the first tier, self-determined implementation, is favored. The second and third tier of implementation incorporate escalating regulatory involvement to achieve program objectives.

Objective/Goals:

The objective of the RWQCB 8's NPS program is to identify, reduce, and prevent impacts to water quality standards from pollutant sources within the Region, by attaining these goals:

Goal 1 – Implement, track and monitor priority¹ Management Measures (MMs) to identify, prevent, and reduce NPS pollution

Goal 2 – Develop new TMDLs

Goal 3 – Implement and track effectiveness of TMDLs

Goal 4 – Increase education/outreach programs, including volunteer monitoring and outreach for CWA 319(h) and Proposition 13 grants

Goal 5 – Bring awareness of NPS issues into the initial phases of development project planning (through the CEQA and 401 water quality standards certification application review process), thereby encouraging NPS prevention and reduction measures in new projects.

¹priority refers to those MMs listed in the NPS Plan

Short-term objectives include implementation of priority MMs listed in the NPS Plan. These are detailed in Table 2a of Appendix E, and are correlated with the long-term goals listed above. (Implementation of all MMs is funding dependent.)

Tiered Strategy Approach:

The NPS Plan and RWQCB 8 encourage the Tier One approach of "self-determined" implementation of MMs. This is accomplished through public education/outreach to promote voluntary compliance with MMs and best management practices (BMPs), and by soliciting, advocating and managing CWA 319(h) and state Proposition 13 grants to fund NPS control projects. Tier Two (participation in regulatory-based programs) and Tier Three (regulation through waste discharge requirements & enforcement) are also used. The RWQCB 8 programs that currently apply the Tier I, II, and III approach are listed below.

Tier I Programs

- Public education/outreach programs to local agencies, such as resource conservation districts, and stakeholder groups (county and city watershed councils and committees, environmental groups, schools, youth groups, etc.)
- CWA 319(h) grant proposal solicitation and support and grant contract management
- Implementation and tracking of MMs, including establishment of a region-wide monitoring program (for water quality assessment, TMDLs, and tracking MM effectiveness).

Tier II Programs

- Encouraging and facilitating participation of agricultural and urban dischargers, including nurseries, to develop and implement nutrient monitoring programs in Newport Bay watershed (Nutrient TMDL).
- Encouraging and facilitating participation of agricultural and urban dischargers to develop and implement control measures to reduce fecal coliform levels in Newport Bay and to track the effectiveness of those measures (Fecal Coliform TMDL).
- Encouraging land developers to design and implement long term plans to control sediment loadings that affect beneficial uses of water bodies (Sediment TMDL)
- Encouraging land developers to design and implement long term monitoring programs to assess the impact of projects on Critical Coastal Areas and/or critical inland wetlands.
- Facilitating developers' participation in *Arundo donax* removal programs as mitigation for stream and wetland impacts, when appropriate.
- Encouraging and facilitating Orange County area urban dischargers to develop monitoring programs to evaluate sources of fecal coliform affecting REC1 beneficial uses of Orange County beaches.
- Through comments on draft CEQA documents, and conditions in CWA Section 401 water quality standards certifications, encouraging developers to address potential NPS impacts of new development projects while projects are still in planning stages.

Tier III Programs

- Urban runoff – *NPDES municipal separate storm sewer (MS4) permit program*
- CAFOs – *NPDES dairy general permit and Dairy Regulatory Strategy; OCSD's manure management strategy*
- On-site disposal systems – *Basin Plan waste discharge prohibitions and Minimum Lot-Size Criteria*
- Wholesale plant nurseries – *waste discharge requirements for nutrients*
- Construction sites – *SWRCB's NPDES Construction Activities Storm Water General Permit and RWQCB 8's Construction Activities Storm Water General Permit for the San Jacinto Watershed*
- Sanitary Sewer System Overflows – *draft General Waste Discharge Requirements for Sewage Collection Agencies in Orange County, within the Santa Ana Region*

Critical Coastal Areas Program

The Plan for California's Nonpoint Source Pollution Control Program includes requirements for the special designation of Critical Coastal Areas (CCAs). These are coastal land areas where state, federal, and local government agencies and other stakeholders have agreed to coordinate expertise and resources for the purpose of improving degraded water quality and protecting exceptional coastal water quality from the impact or threat of nonpoint source pollution. CCAs in Region 8 are selected from coastal areas adjacent to State Water Quality Protection Areas (formerly Areas of Special Biological Significance) or adjacent to Clean Water Act Section 303(d) impaired waters that flow into nearshore Marine Managed Areas.

The Critical Coastal Program was established in order to coordinate actions within identified CCAs through an interagency committee (CCA Committee) led by the California Coastal Commission (CCC). The CCA Committee includes the State Coastal Conservancy, the State Water Resources Control Board and six coastal Regional Boards, and the public. The CCA Committee identifies CCAs and develops additional Management Measures (MMs) necessary to protect these areas. To date, three CCAs in Region 8 have been selected: Upper Newport Bay,

Newport Beach Marine Life Refuge SWater Quality Protection Area (SWQPA), and the Irvine Coast Marine Life Refuge SWQPA (**Figure 4-1**). These sites have high priority for funding from a variety of sources targeting NPS projects, including Proposition 50 funds. The CCA Program allocates 0.1 PYs for implementation.

The goals of the CCA program are:

- To ensure that the Management Measures (MMs) and Management Practices (MPs) of the NPS Plan are fully implemented;
- To provide a mechanism to develop and apply additional MMs as needed to achieve or maintain high quality water in CCAs; and
- To develop Action Plans for each CCA to improve degraded water quality to protect exceptional water quality.

A copy of the CCA Draft Strategic Plan, including maps of the listed CCAs, is available on the State Board's website at: <http://www.coastal.ca.gov/nps/cca-nps.html>.

4.2.3 NPS ACTIVITIES

RWQCB 8 staff participates in NPS implementation in a variety of ways:

- As NPS program manager, involved in NPS program activities statewide, including the overall implementation of the NPS Plan and coordination of Proposition 13 and 319(h) grants;
- As NPS coordinators, engaged in NPS public education and outreach within the Region, and implementation of MM activities;
- As monitoring coordinator, developing monitoring programs to assess the Region's water quality, helping to identify and quantify NPS inputs to those waters, and coordinating the volunteer monitoring program;
- Planning staff involved in development and implementation of TMDLs, with review of CEQA documents and 401 water quality standards certification applications, and with selection and contract management of 319(h) and Proposition 13 grants;
- Storm water staff involved with oversight of storm water quality education programs and NPDES storm water permit compliance;
- Dairy program staff implementing RWQCB 8's general dairy permit.
- Coordination with the Critical Coastal Areas Committee.

NPS Activities Program – Identified by Goals and Tiers.

Implementation of Management Measures and Effectiveness Tracking (Goals 1,2,5 – Tier I, II)

- Identify priority MMs and implement pending funding (Appendix E: Table 2a).
- Identify priority areas for MM implementation, such as Critical Coastal Areas,
- Develop and implement programs that monitor NPS discharges (in lieu of WDRs)
- Water quality assessment activities.
- Coordinate NPS/CZARA activities to address NPS issues at the project planning stage.

RWQCB 8 staff continues to coordinate with the SWRCB, Coastal Commission, and other RWQCBs to implement the NPS Plan and Implementation Program. A primary focus is to implement and track the effectiveness of MMs utilized in RWQCB 8's various programs.

Toward this end, RWQCB 8 staff has created data management tools for use within the Region, and continues to participate in statewide efforts to development elements within the System for Water Information Management, Phase II (SWIM II) to capture, utilize and manage NPS program-related data.

TMDL Development and Implementation (Goals 2,3 – Tier II)

Development

- Continue work on TMDLs for toxic substances in the Newport Bay watershed
- Continue work on multiple TMDLs for Big Bear Lake and Lake Elsinore/San Jacinto watersheds.
- Initiate multiple TMDLs for Chino Basin
- Initiate multiple TMDLs for Anaheim Bay/Huntington Harbour, which is a Critical Coastal Area.

Implementation

- Implement TMDLs for nutrients, sediment, fecal coliform in the Newport Bay watershed.

Enforcement of Regulatory Programs related to CAFOs, urban runoff and Onsite Subsurface Disposal Systems (OSDS) (Goal 1 – Tier III)

RWQCB 8 staff continues to implement the NPDES general dairy permit, three MS4 permits, and the Basin Plan prohibitions and requirements concerning use of OSDS. Ongoing implementation activities include conducting inspections, reviewing management measures, reviewing and updating monitoring program requirements, water quality monitoring, and enforcement activities. The Board's criteria for waiving waste discharge requirements (Resolution No. 96-09) are being reconsidered; staff is contemplating whether to drop the waiver criteria in favor of general waste discharge requirements for minor discharges now eligible for waivers under the current criteria. The current waiver criteria are listed in Table 3 of Appendix E.

Public education/outreach (Goals 1,2,3,4,5 – Tier I)

Consistent with all MMs, Regional Board staff will continue an education/outreach program, and provide assistance to potential NPS grant applicants and manage 319(h) grant contracts. Regional Board staff will also continue to review CEQA documents and 401 water quality standards certification applications and provide NPS-specific comments to project proponents. Specific education/outreach activities are listed in Table 2b of Appendix E. Projects targeted for 319(h) and state revolving funds in FY02-03 are listed in Tables 5 and 6 of Appendix E, respectively.

4.2.4 Monitoring, Assessment and Tracking of Management Measure Implementation

The development of a statewide system for monitoring and tracking NPS MM implementation continues to be a long-term program goal. The NPS Interagency Coordinating Committee (SWRCB, RWQCBs, other state and federal agencies with responsibilities outlined in the NPS Plan) has investigated development of such a system. SWRCB and RWQCB staffs advocate including NPS MM tracking in SWIM II. It is expected that a SWIM II- based NPS MM tracking will be deployed within the next two fiscal years.

4.2.5 Federal Clean Water Act Section 319(h) funding for Projects to Address NPS Pollution

Annually, U.S. EPA makes approximately \$5.5 million to California for grants to implement projects that address non-point source pollution. U.S. EPA strongly believes that to ensure that Section 319 projects make progress towards restoring waters impaired by nonpoint source pollution, watershed-based plans that are implemented with Section 319 funds to address 303(d)-listed waters must include at least the elements listed below. The watershed planning process should be dynamic and iterative to assure that projects whose plans address each of these nine elements may proceed even though some of the information in the plan is imperfect and may need to be modified over time as information improves. Existing plans may be used as building blocks for plans that meet these nine elements. U.S. EPA believes that these nine elements are critical to assure that public funds to address nonpoint source water pollution are used effectively.

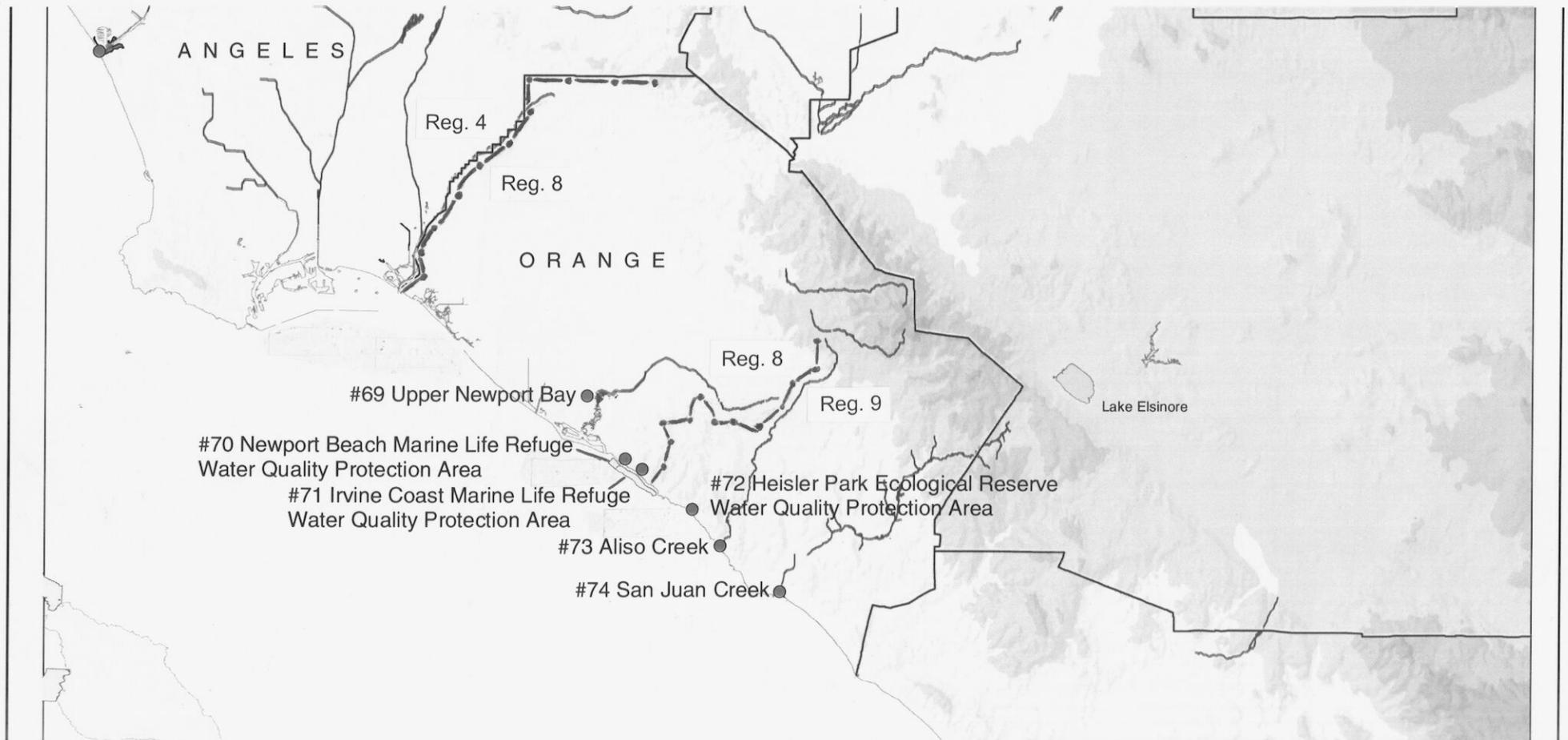
Description of Required (9) Elements of a Watershed-Based Plan:

- a. An identification of the causes and sources or groups of similar sources that will need to be controlled to achieve the load reductions estimated in this watershed-based plan.
- b. An estimate of the load reductions expected for the management measures described under paragraph (c) below.
- c. A description of the NPS management measures that will need to be implemented to achieve the load reductions estimated under paragraph (b) above and an identification (using a map or a description) of the critical areas in which those measures will be needed to implement this plan.
- d. An estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon, to implement this plan.
- e. An information/education component that will be used to enhance public understanding of the project and encourage their early and continued participation in selecting, designing, and implementing the NPS management measures that will be implemented.
- f. A schedule for implementing the NPS management measures identified in this plan that is reasonably expeditious.
- g. A description of interim, measurable milestones for determining whether NPS management measures or other control actions are being implemented.
- h. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards and, if not, the criteria for determining whether this watershed-based plan needs to be revised or, if a NPS TMDL has been established, whether the NPS TMDL needs to be revised.
- i. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under item (h) immediately above.

You may also refer to the full text of the Section 319 guidelines that is available on EPA's NPS website at: <http://www.epa.gov/owow/nps/Section319/319guide03.html>

Time Frame	NPS Program Goals	Resource Needs	
		PYs	Contract Dollars
Short Term (FY 02-03)	<ul style="list-style-type: none"> • Implement, track and monitor priority MMs to identify, prevent, and reduce NPS pollution • Develop new TMDLs • Implement and track effectiveness of TMDLs developed to date • Increase education/outreach programs, including volunteer monitoring and outreach for 319(h) and Proposition 13 grants • Increase awareness of NPS issues in project planning stages (CEQA, 401 certifications) to incorporate methods for NPS prevention and reduction into new projects. 	1.0	0
		7.4	\$50,000
		1.0	\$75,000
		1.5	\$35,000
		1.0	0
Long Term (FY 03-04 to 06-07)	<ul style="list-style-type: none"> • Implement, track and monitor priority MMs to identify, prevent, and reduce NPS pollution • Develop new TMDLs • Implement and track effectiveness of TMDLs developed to date • Increase education/outreach programs, including volunteer monitoring and outreach for 319(h) grants • Increase awareness of NPS issues in project planning stages (CEQA, 401 certifications) to incorporate methods for NPS prevention and reduction into new projects. 	3.0	???
		22.2	???
		4.5	???
		4.5	???
		3.0	???

Figure 4-1. Critical Coastal Areas (CCA), Orange County (courtesy of Coastal Commission)



Critical Coastal Area #69, Upper Newport Bay, a Marine Managed Area, receives Clean Water Act Section 303(d) impaired flow from the San Diego Creek Watershed. CCA #70, Newport Beach Marine Life Refuge State Water Quality Protection Area, extends from Poppy Street in Corona del Mar southeast along the Irvine Coast to Pelican Point. CCA #71, the Irvine Coast Marine Life Refuge State Water Quality Protection Area, extends along the coast from Pelican Point into Region 9, which shares this CCA.

Watershed planning has been the normal practice for more than twenty years in the Santa Ana Region, as the Regional Board and various local agencies have cooperatively addressed TDS and nitrate water quality problems. While the watershed plans developed to date have accounted for nonpoint source inputs of TDS and/or nitrate, the focus of the implementation programs has been on controlling discharges from point sources.

We now recognize that our point source control programs are effective, but not our non-point source controls. This reflects the difficulty inherent in dealing with non-point sources, including inadequate funding and legal authority. Federal funding through EPA for water quality programs has traditionally been program-specific, with certain products or deliverables tied to each program. EPA is now interested in providing the states more flexibility in how they spend this money, which should greatly benefit the Regional Board's approach to water quality protection. From the Santa Ana Regional Board's perspective, this flexible approach to targeting funds would allow the various water quality problems that are not program-specific (primarily non-point source problems) to be addressed. Thus, a primary goal of watershed planning in this region will be to address the water quality impacts of non-point source discharges, as well as point source discharges, on a watershed basis.

To implement watershed planning, the Regional Board has integrated a number of federal, state, regional and local programs carried out by the Regional Board and other agencies to identify and prioritize water quality problems, and will develop implementation strategies to address those problems on a watershed basis. At the Regional Board, the functions of the water quality assessment, water quality standards, planning, non-point source control and where appropriate, the stormwater, surveillance, permit writing and SLIC (Spills, Leaks, Investigations and Cleanup) programs have been folded into watershed planning activities.

A successful watershed strategy cannot be developed or implemented without the involvement of local entities that have a major responsibility for regulation of non-point sources. For this reason, it is imperative that we have local participation and coordination in these watershed management activities.

In general, the regional approach for developing and implementing watershed planning (described in detail below) involves identifying Watershed Management Areas (WMAs) in the region and rotating focused watershed and water quality planning efforts through each of the identified WMAs in four to six year cycles. Once the majority of the effort is completed in a watershed and the need for resources is not as great, watershed planning in the next priority watershed can be initiated.

Short and Long Term Goals and Resource Needs

Staff resources will be used to coordinate watershed management activities both within the Regional office and with outside entities. The Region has a Watershed Management Coordinator whose duties will include participation in the WMI Workgroup, coordinating TMDL development and implementation in four watersheds, coordinating with the Critical Coastal Area Committee, coordinating watershed management activities with other programs, and outreach activities. The following table identifies the short and long-term watershed management program goals and resource needs.

Time Frame	Watershed Management Program Goals	Resource Needs	
		PYs	Contract Dollars
Short Term (FY 02-03)	<ul style="list-style-type: none"> • Participate in the WMI workgroup; includes monthly coordination meetings and various workgroup assignments • Prepare 104/106 or other grant proposals and applications • Coordination with local watershed stakeholder groups (see description under NPS program) • Update WMI chapter; in-house coordination of WMI training and issues 	1.0	\$0
Long Term (FY 03-04 to 06-07)	<ul style="list-style-type: none"> • Continuation of program duties with an emphasis on realigning programs to a watershed focus 	1.0	\$0

4.4 MONITORING AND ASSESSMENT

Assembly Bill (AB) 982 and subsequent Water Code Section 13192 requires the State Water Resources Control Board to prepare a proposal for a comprehensive surface water quality monitoring program for the state. Fiscal year (FY) 2001-02 will mark the first year of the coordinated implementation of the Surface Water Ambient Monitoring Program (SWAMP). A description of the site-specific monitoring effort that will be implemented through SWAMP is presented in Section V of the report to the Legislature titled “Proposal for a Comprehensive Ambient Surface Water Quality Monitoring Program”.

Consistent with AB 982, a comprehensive monitoring program is needed to determine if the water quality objectives and / or beneficial uses are being met in the receiving water bodies in the Santa Ana Region. This effort is part of the statewide SWAMP and will be coordinated with the State Water Resources Control Board to ensure that it meets the goals of SWAMP. In the past, monitoring programs used to prepare the water quality assessments have used sampling and analytical protocols that did not address large-scale questions of the entire water body. Some of these questions involve defining the number of acres, or percent of acreage of that water body, that meets a water quality objective (regulatory threshold). An appropriate monitoring program design that defines the percent area meeting a threshold has been used in offshore and other bay/harbor regions of Southern California. This monitoring design is a stratified-random sampling design with a spatially systematic component. This design randomly allocates sample sites throughout the water body of interest resulting in an unbiased representation of water quality. Stratification within the water body enables us to compare one sub-region (sub-population or stratum) to another. Consequently, the study design was chosen for the assessment of ambient water quality in Anaheim Bay, Huntington Harbour, Lake Elsinore, Canyon Lake and Big Bear Lake. The overall goal of the study is to provide the information necessary to adequately assess the ambient water quality in these water bodies and to provide a baseline for future studies. The Southern California Coastal Water Research Project (SCCWRP) developed the study design.

Implementation of the Surface Water Ambient Monitoring program for the Santa Ana Regional Board for the fiscal years 2000 through 2005 involves sampling, using the sampling design described above, in Anaheim Bay, Huntington Harbor, Lake Elsinore, Canyon Lake, and Big Bear Lake. The sampling activities that will take place in these water bodies will enable Regional Board staff to determine whether the beneficial uses in these water bodies are being attained and the overall effectiveness of the various water quality control programs that have been implemented. The data will be used to prepare the Santa Ana Region’s 305 (b) report and for updating the region’s 303 (d) list and to determine the need to do focused studies in the future. For more specific information on the monitoring studies, please see the Workplan and Quality Assurance Project Plan (QAPP) prepared for each water body.

Section 305 (b) of the Clean Water Act requires the State to prepare and submit to EPA a report on the status of the state’s ambient water quality. Each regional board prepares a regional water quality assessment (WQA), which then becomes a chapter in the statewide 305(b) report. The WQA identifies a list of the water bodies assessed, the pollutants of concern, and the potential pollutant sources. Water bodies identified in the 305(b) report as not supporting one or more beneficial uses are considered “impaired” and are then placed on the Clean Water Act Section 303 (d) list of impaired water bodies. Once included on the 303(d) list, the Clean Water Act requires that total maximum daily loads (TMDL) be developed to address the parameters responsible for impairment. Regional Boards prioritize the water bodies included in the 303(d) list for development of a TMDL. Water bodies are prioritized based on the degree of impairment, the number and type of beneficial uses impaired. The 305(b) report aims to answer the percent of area of a water body that meets the given standard.

Table 4-5 includes the priority of the monitoring activities in the Santa Ana Region and the objectives associated with each monitoring study.

As stated, the first water bodies studied were Anaheim Bay and Huntington Harbor. Sampling at these water bodies are funded with SWAMP funds allocated to the Santa Ana Region for fiscal year 2001-2002. Lake Elsinore is the next water body to be studied. Sampling in Lake Elsinore will be funded with SWAMP funds allocated to the Santa Ana Region for fiscal year 2001-2002.

Specific Activities Planned for FY 2002-03:

On water bodies being studied, monitoring studies will be developed based on proper data review and analyses. In addition, data review on water bodies not being sampled will need to be done. Even though the next 305 (b) and 303 (d) List update is planned for 2004, this data review is necessary because it will enable Regional Board staff to detect early water quality standard exceedances in monitored and non-monitored water bodies. The data to be reviewed will be solicited from the various entities conducting water quality monitoring in the region. These data sources include ambient water quality data from state wide monitoring programs such as Coastal Fish Contamination Program, Toxic Substances Monitoring Program, State Mussel Watch Program; and regional and federal monitoring programs such as Coastal Bight Monitoring, National Ambient Water Quality Assessment, EMAP; and local monitoring programs headed by the various water districts, volunteer monitoring groups, and dischargers. **Table 4-7** includes a listing of those water bodies for which no sampling is planned, but data will be reviewed.

Long Term Activities Planned for FY 2003 and beyond:

The 2002 update of the 303 (d) List of Impaired Water Bodies yielded a list of several water bodies that need further monitoring data to properly assess their water quality (i.e. compliance with objectives and other regulatory thresholds). As a result, these water bodies will be monitored as funding becomes available and no later than the schedule listed on **Table 4-8**. A workplan and a QAPP will be prepared for each one of these studies detailing the question that needs to be answered and the associated sampling methodologies.

Table 4-2: Monitoring and Assessment Resource Needs

Fiscal Year	Monitoring and Assessment Activity	Contract dollars needed	Status
00-01	<ul style="list-style-type: none"> Anaheim Bay and Huntington Harbor dry season monitoring 	-----	Completed
01-02	<ul style="list-style-type: none"> Anaheim Bay and Huntington Harbor wet season monitoring; Lake Elsinore wet season monitoring; Data review for Anaheim Bay, Huntington Harbor, Lake Elsinore and Canyon Lake. Volunteer monitoring, TSMP, Mussel Watch and Coastal Fish Contamination data review and planning. Santa Ana River at Prado monitoring 	\$575,000	Planning stages; Funding needed
02-03	<ul style="list-style-type: none"> Lake Elsinore and Canyon Lake dry season monitoring; Data review for Big Bear Lake, Buck Gully Creek, Crystal Cove, Muddy Creek data review for fecal coliform; Data review and monitoring for Knickerbocker, Metcalf and Boulder Grout and Rathbun Creeks for nutrients; Volunteer monitoring, TSMP, Mussel Watch and Coastal Fish Contamination Data review and planning. Santa Ana River at Prado Monitoring 	\$500,000	Planning stages; Funding needed
03-04	<ul style="list-style-type: none"> Canyon Lake and Big Bear Lake wet season monitoring; Buck Gully Creek, Crystal Cove, Muddy Creek monitoring for fecal coliform. Data review for Santa Ana River and Cucamonga Creek for dibromochloromethane and bromodichloromethane; Update of 303 (d) List of Impaired Water Bodies; 	\$650,000	Planning stages; Funding needed

Table 4-2: Monitoring and Assessment Resource Needs

Fiscal Year	Monitoring and Assessment Activity	Contract dollars needed	Status
	<ul style="list-style-type: none"> Volunteer monitoring, TSMP, Mussel Watch and Coastal Fish Contamination data review and planning. Santa Ana River at Prado Monitoring 		
04-05	<ul style="list-style-type: none"> Big Bear Lake dry season monitoring; Santa Ana River and Cucamonga Creek data review and monitoring for dibromochloromethane and bromodichloromethane; Data review for San Timoteo Creek for general water quality indicators; Data review for San Jacinto River reaches 6 and 7 and Strawberry Creek for hardness, TDS, Chloride and Sodium; Volunteer monitoring, TSMP, Mussel Watch and Coastal Fish Contamination Data review and planning. Santa Ana River at Prado Monitoring 	\$650,000	Planning stages; Funding needed

Table 4-3: Monitoring and Assessment: Five Year SWAMP Related Monitoring Priorities

Fiscal Year:	<i>A. Water Bodies to be Monitored:</i>	<i>B. Beneficial Uses:</i>	<i>C. Monitoring Objective:</i>
2000-01	Anaheim Bay and Huntington Harbor	<p><u>Anaheim Bay:</u> contact and non-contact recreation; navigation; biological habitat of special significance; wildlife habitat; rare, threatened or endangered species habitat; fish spawning; and marine habitat</p> <p><u>Huntington Harbor:</u> Navigation; contact and non contact recreation; wildlife habitat; rare, threatened or endangered species habitat; fish spawning; and marine habitat</p>	Are aquatic populations , communities protected? Does the water quality meet the non- body contact beneficial use? Does the water quality meet the body contact beneficial use?
2001-02	Completion of Anaheim Bay, and Huntington Harbour and beginning of sampling work for Lake Elsinore	<u>Lake Elsinore:</u> body contact and non-body contact recreation, warm fresh water habitat, and wildlife habitat	Does the water quality meet the body contact, non body contact , and habitat beneficial uses?
2002-03	Completion of Lake Elsinore and beginning of Canyon Lake sampling work	<u>Canyon Lake:</u> Municipal water supply, agricultural water supply, ground water recharge, body contact and non-body contact recreation, warm water habitat, and wild life habitat.	Does the water quality meet the body contact, non-body contact, and habitat beneficial uses? Does the water quality meet the municipal water supply beneficial use?
2003-04	Completion of Canyon Lake and beginning of Big Bear Lake sampling work	<u>Big Bear Lake:</u> Municipal water supply; agricultural water supply; ground water recharge; body contact and non-body contact recreation; warm water habitat; rare, threatened or endangered species habitat; and wild life habitat.	Does the water quality meet the body contact, non-body contact, and habitat beneficial uses? Does the water quality meet the municipal water supply beneficial use?
2004-05	Completion of Big Bear Lake sampling work	N/A	N/A

Table 4-4: Monitoring and Assessment: Water Bodies for Data Review – No sampling Activities Planned

Water Body	Activity	Fiscal Year	Possible Data Sources
Santa Ana River	Data review	04/05	NAWQA study, Orange County PFRD, San Bernardino County, Riverside County
Hemet Lake	Data review	04/05	Lake Hemet Municipal Water District
Perris Lake	Data review	04/05	Metropolitan Water District
Temescal Creek	Data review	04/05	Elsinore Valley Municipal Water District

Table 4-5: Monitoring and Assessment: Water Bodies Needing More Information to Assess Water Quality

Water Body	Water Quality Indicator of Concern	Schedule for Monitoring (years)
Buck Gully Creek	Fecal coliform	2003
Crystal Cove	Fecal coliform	2003
Muddy Creek	Fecal coliform	2003
Santa Ana River	dibromochloromethane	2004
Cucamonga Creek	bromodichloromethane	2004
Anaheim Bay	Mercury, and p, p DDE	2001
San Timoteo Creek	General water quality indicators	2005
San Jacinto River Reaches 6 & 7	Hardness, TDS, Chloride and Sodium	2005
Knickerbocker Creek	TIN	2002
Metcalf Creek	TIN	2002
Boulder Creek	TIN	2002
Grout Creek	TIN	2002
Rathbun Creek	TIN	2002
Strawberry Creek	Hardness, TDS, Chloride and Sodium	2005

4.5 CORE REGULATORY

One of the Regional Board's principal means of achieving water quality objectives, and thereby protecting beneficial uses, is through the development, issuance and enforcement of waste discharge permits. The Regional Board may issue Federal National Pollutant Discharge Elimination System (NPDES) permits for discharges to surface waters or Waste Discharge Requirements (WDRs) for discharges to land. Regional Board staff activities include issuance of new permits, updating existing permits, compliance inspections, review of self-monitoring reports, response to spills and complaints, and associated enforcement. Responding to appeals and/or litigation is also a resource intensive activity.

4.5.1 NPDES

The primary mechanisms for controlling discharges of pollutants to receiving waters are effluent limits. Under the NPDES program, effluent limits are developed based on applicable technology and water quality standards. After technology-based effluent limits are applied, if the permitting authority determines that a discharge has the reasonable potential to cause or contribute to the exceedance of a water quality standard, then a water quality based effluent limit (WQBEL) must be included in the permit.

NPDES permitting has been incorporated into the WMI where both individual and general permits are scheduled for re-issuance in accordance with a five-year plan (Appendix A).

As of November 2001, the Regional Board NPDES non-stormwater permit status was as follows:

<u>NPDES Permit Category</u>	<u>Number of Permits</u>
Major Individual Permits	18
Minor Individual Permits	24
General Permits:	
DeMinimus Discharges	106 permittees
Groundwater Cleanup	146 permittees
Dairies	316 permittees
Utility Vault Discharges	7 permittees

4.5.2 Storm Water

The stormwater unit at the Santa Ana Region is divided into a coastal and an inland section. The two stormwater sections are responsible for storm water permitting, compliance, inspections, and enforcement.

Storm water discharges are regulated under the following permits:

Individual Storm Water	15
Municipal Separate Storm Sewer Systems (MS4)	4

1. Orange County MS4, NPDES No. CAS618030: approximately 31 co-permittees
2. Riverside County MS4, NPDES No. CAS618033: approximately 10-15 co-permittees
3. San Bernardino County MS4, NPDES No. CAS618036: approximately 20 co-permittees
4. Cal Trans MS4, NPDES No. CA8000279
5. Individual storm water permittees: 15 permittees

6. General permit for storm water discharges from construction sites, NPDES No. CAS000001: 1,400 permittees
7. General permit for storm water discharges from construction sites, NPDES No. CAS000002: 1,200 permittees
8. San Jacinto Permit

Storm water compliance reviews include the review of annual reports submitted by each of the MS4 permittees and each of the facilities covered under the general permits for industrial facilities and construction sites. Annual compliance inspections are conducted for the MS4 permittees, while individual stormwater permittees are inspected twice annually. Standard stormwater inspections, reviews, and audits conducted in all the Watershed Management Areas include:

- Inspect 30% of General Construction Storm Water permittees
- Inspect all Construction Notice of Termination Requests (approx. 20% of permittees)
- Inspect 30% of General Industrial Storm Water permittees
- Inspect all Industrial Notice of Termination Requests (approx. 6% of permittees)
- Review all General Industrial Storm Water Permit annual reports
- Inspect Caltrans facilities and construction sites
- Audit/inspect MS4 permit compliance of municipal permittees
- Review MS4 Annual Reports from municipal permittees
- Issue informal and formal enforcement actions as necessary for violations of individual Storm Water NPDES permits, General Storm Water permits, and Municipal Storm Water permits

4.5.3 Waste Discharge Requirements (WDRs)

The Waste Discharge Requirements (WDR) program regulates discharges to land, other than those covered under the Land Disposal program. Discharges regulated under this program include those from wastewater treatment plants to percolation ponds and those from industrial/commercial facilities to septic tanks. The WDR program also oversees the production and use of recycled water. Waste discharge requirements are categorized by the potential threat to water quality that the discharge poses. Category 1 discharges pose the most threat, while Category 3 discharges pose the least threat. As of November 2001, the Regional Board's WDR status was:

<u>Permit Category</u>	<u>Number of Permits</u>
Category 1	1
Category 2	51
Category 3	46

4.5.4 Land Disposal

Waste discharge requirements are categorized by the potential threat to water quality that the discharge poses. Category 1 discharges pose the most threat, while Category 3 discharges pose the least threat. As of November 2001, the Regional Board's Land Disposal status was:

<u>Permit Category</u>	<u>Number of Permits</u>
Category 1	17
Category 2	12
Category 3	26

4.6 WATER QUALITY STANDARDS

As part of the State's Continuing Planning Process, the Santa Ana Region's Water Quality Control Plan (Basin Plan) is reviewed and updated as new data and information become available. California Water Code Section 13240 requires that Basin Plans be reviewed periodically and Clean Water Act Section 303(c) requires states to review water quality standards every three years (Triennial Review) and to revise them if necessary. In FY 98-99, the Regional Board conducted the Triennial Review and identified a number of priority Basin Planning issues to focus work for the next three years. In most cases, work on these issues was already in progress.

The FY 01-02 Triennial Review process began in earnest in January 2001 and will identify and prioritize Basin Planning issues to be undertaken during the next several years. The draft FY 01-02 Triennial Review list includes continuation of work on a number of issues identified in the FY 98-99 Triennial Review, as well as issues raised by USEPA and other agencies, and by Board staff. Board staff efforts will be revised to address priority issues, as determined by the Regional Board after work shops and public hearings.

FY 02-03 Standards/Basin Planning issues identified in the current triennial review list are tabulated in **Appendix D**. Resource intensive Basin Planning activities include:

- review of the chlorine residual water quality objective;
- based on finding of the seven year Nitrogen/TDS Study, update of the nitrogen/TDS water quality objectives and groundwater subbasin boundaries;
- review of nutrient water quality objectives for San Diego Creek; and,
- revising water quality objectives for REC-1 and REC-2 uses of surface waters, based on USEPA's national criteria and BEACH initiatives, requirements of AB 411, and Title 22 Reclamation Criteria regulations.

In addition to the specific tasks shown in Appendix D, where resources allow, Regional Board staff serves in an advisory capacity for a number of planning studies and efforts being conducted by other agencies, including the invasive species eradication program (Team Arundo), the Orange County Water District Santa Ana River Water Quality Study and the Lake Elsinore Reclaimed Water Task Force. These Standards/Basin Planning activities are briefly described in the respective watershed section or in the Regionwide section activities.

As with monitoring, the Regional Board's Standards/Basin Planning funding level has decreased in recent years, resulting in a decrease in basin planning and standards review activities in the region. As shown in Appendix D, the estimated total PYs needed to complete or participate in each activity during SFY02-03 (approximately 12 PYs), far exceeds the total available Basin Planning resources for the next fiscal year (approximately 1.6 PYs). This situation is not likely to improve with the development of a revised Triennial Review list. A number of programs that the Regional Board will be developing and implementing, including TMDL development, CZARA implementation and watershed plan development, will result in Basin Plan amendments -- either revision of water quality standards or amendments to the implementation plan. There are also a number of other agency studies and planning efforts that Regional Board staff are not involved in, because of resource constraints. Thus, there is a need for additional basin planning resources.

Un-funded and Under-funded Priority Activities (FY 02-03 and 03-04)

(see Appendix D)

- participation in standards development issues such as review of the ANPR and criteria development for effluent dominated streams
- (complete) total residual chlorine water quality objective review
- review / revise beneficial use designations for a number of water bodies in the region

- addition of wetlands to the Basin Plan
- addition of water bodies to the Basin Plan
- develop criteria for wetlands impact mitigation
- review ammonia objective (recommended by USEPA)
- withdraw site specific objectives for copper cadmium and lead for central reaches of the Santa Ana River, in favor of USEPA's California Toxics Rule
-

Time Frame	Standards/Basin Planning Program Goals	Resource Needs	
		PYs	Contract Dollars
Short Term (FY 02-03)	<ul style="list-style-type: none"> • Address high priority triennial review tasks with limited resources • Build program capacity in modeling and GIS capabilities 	12	\$175,000
Long Term (FY 03-04 to 06-07)	<ul style="list-style-type: none"> • Perform Basin Plan updates and triennial review tasks 	21	\$200,000

4.7 WETLANDS

The Region's waters include wetlands, as well as rivers, streams, lakes, estuaries and coastal waters. Generally, wetlands include swamps, marshes, bogs, sloughs, wet meadows, savannas, and vernal pools. Wetlands serve a number of important functions, including dampening floodwater peaks, shoreline erosion control, and water quality improvement through the removal of pollutants. They also provide habitat for many plant and animal species (including a large percentage of protected or endangered species) and have important aesthetic, recreation, scientific, and education values.

The 1995 Basin Plan lists some of the Region's wetlands and estuaries, and designates their beneficial uses. In addition, where numeric water quality objectives have been developed, they are specified. Additional wetland resources will be identified in the Basin Plan and specific numeric water quality objectives developed and implemented as part of the ongoing Basin Planning process.

Natural wetlands are valuable resources within the Region. Additional wetlands have been created, either incidentally, as the result of the construction of dams or levees, or purposefully, as mitigation for development projects located elsewhere. Examples of created wetlands include those in the Prado Basin, which resulted from the construction of Prado Dam, and the San Joaquin Freshwater Marsh, created for development mitigation purposes. A third type of wetlands, constructed wetlands, is also present in the Santa Ana Region. The Orange County Water District reconstructed approximately 500 acres of wetlands ponds in the Prado area and is operating these ponds to provide substantial nitrogen removal from the Santa Ana River flows. The City of Riverside has constructed and operates the Hidden Valley wetlands to provide additional nitrogen removal for the City's effluent.

In August 1993, the "California Wetlands Conservation Policy" was announced by the Governor. The Policy's three principal objectives are: to ensure no overall net loss of wetlands and achieve a long-term gain in the quantity, quality, and permanence of wetlands acreage and values; to reduce procedural complexity and confusion in the administration of wetlands conservation programs; and to make cooperative planning efforts and landowner incentive programs the primary focus of wetland conservation and restoration.

The Regional Board's wetlands program supports and implements the Governor's wetlands policy. Through the Clean Water Act Section 401 Water Quality Certification program, the Regional Board ensures that there is no net loss of wetlands as a result of dredge or fill operations. This is accomplished through the practice of avoiding impacts to wetlands and waters, second, minimizing impacts to waters, and third, mitigating for unavoidable impacts by re-creating the functions and values of the impacted wetland or waterbody.

Secondly, the Regional Board, in coordination with the Statewide 401 Program Coordinating Committee and other agencies, is working towards permit streamlining and permit coordination and enforcement activities.

One of the region's major wetlands efforts is the Regional Board's participation on the Southern California Wetlands Recovery Project. The Wetlands Recovery Project (WRP) was formed in 1997 through the signing of a 'memorandum of understanding' (MOU) by several State and Federal agencies, including the Santa Ana Regional Board. The WRP is tasked with the goal of developing and implementing a plan of regional priorities for the acquisition, restoration, and enhancement of southern California's coastal wetlands and watersheds. The WRP project area consists of the coastal watersheds of Orange, Los Angeles, San Diego, Ventura, and Santa Barbara counties. The Wetlands Recovery Project implements the Governor's Wetlands Policy by providing a comprehensive strategy for the acquisition and restoration of coastal wetlands. Because upstream activities result in the continuing degradation of coastal and inland wetlands resources, the WRP has determined that

management of an entire watershed should be an integral part of the Wetlands Recovery Project. While Regional Board staff sees the Wetlands Recovery Project concept as applied to coastal wetlands as a good initial step for protecting these resources, it is believed that additional efforts are necessary to include inland wetlands in the Recovery Project process.

The WRP organization is headed by a Board of Governors responsible for setting the policies that direct the activities of the Wetland Managers Group (WMG), the Public Advisory Committee, five County Task Forces, and the Science Advisory Panel. A Santa Ana Regional Board Member sits on the WRP Governing Board and a Board staff on the Regional Wetlands Managers Group. An Orange County official chairs that County's Task Force. The WRP developed a Regional Strategy, available through the WRP website (www.coastalconservancy.ca.gov/scwrp). The Strategy specifies the WRP goals and priorities, incorporates their first 5-year Implementation Plan, annual Work Plan, and a database of potential projects. Six acquisition, restoration, or planning projects lie within the portion of Orange County that is in the Santa Ana Region. The projects include the San Joaquin Marsh Enhancement Program at UC Irvine, Serrano Creek Stabilization/Restoration, two San Gabriel River projects, and several potential Huntington Beach wetland property acquisitions. The WRP agencies have also conducted an inventory of coastal wetlands from Santa Barbara to the U.S.-Mexico border.

Short and Long Term Goals and Resource Needs

The staff resources in FY 02-03 will be used to manage the Section 401 Water Quality Certification program for the Region. The majority of this task is processing requests for 401 Certifications. Additional staff resources will be used to coordinate wetlands assessments with the Monitoring and Assessment staff and to participate in regulatory coordination meetings with other agencies, the 401 Roundtable, and the Southern California Wetlands Recovery Project.

Time Frame	Program Goals	Resource Needs	
		Pys	Contract Dollars
Short Term (FY 02-03)	<p><u>Wetlands Planning:</u></p> <ul style="list-style-type: none"> Develop new waste discharge requirements to deal with discharges of dredge or fill material into Waters of the State Add wetlands standards (designation of beneficial uses, and narrative and/or numerical water quality objectives) <p><u>Water Quality Certification:</u></p> <ul style="list-style-type: none"> Continue participating in interagency meetings (Cal Dept. of Fish and Game, Army Corps of Engineers, US Fish and Wildlife Service, etc.) and holding project design feedback meetings with the public (pre-application meetings) Create a 401 database to store applicant information in a user-friendly manner 	2.5	\$0
Long Term (FY 03-04 to 06-07)	<p><u>Wetlands Planning:</u></p> <ul style="list-style-type: none"> Ongoing wetland monitoring and assessment Potential addition of mitigation policy to Basin Plan. Avoidance is preferred; next preference is minimization of impacts; least preferred is compensatory mitigation. <p><u>Water Quality Certification:</u></p> <ul style="list-style-type: none"> Review 401 procedures to ensure accurate and detailed mitigation records are kept. This will help verify mitigation is completed, thereby ensuring compliance with the no net loss portion of Executive Order W-59-93 Develop a GIS based system to track impacts and mitigation sites by county Enforcement 	2.5	\$0

4.8 GROUNDWATER RESOURCE PROTECTION/CLEANUP

The significantly increasing population in the region is putting a high demand on limited groundwater supplies. Much of the groundwater in the Region is experiencing a buildup of salts, and many of the groundwater basins exceed water quality objectives or are projected to exceed water quality objectives in the future. This is primarily a result of salts added by historic irrigated agriculture, historic municipal and industrial discharges, historic and current dairy operations, and the increase in salt concentrations resulting from reuse and recycling of groundwater. The Board initiated a total watershed approach for salt control beginning with the 1975 Basin Plan. The total dissolved solids (TDS) Management Plan, developed through extensive ground and surface water modeling of the Middle, Upper Santa Ana River and Elsinore/San Jacinto River Basins, contains specific water supply, wastewater, and groundwater management plans for the Region in order to control salt loadings from residential, commercial, industrial and agricultural sources.

Many drinking water wells have been shut down due to high concentrations of salts, primarily nitrate. The groundwater management plan attempts to balance natural recharge, artificial recharge, groundwater pumping, surface water use, imported water use, and wastewater reclamation in order to optimize water quality and quantity, and integrates the water supply and wastewater management plans. The groundwater management plan includes five specific groundwater extraction and treatment projects, one of which is currently in operation and another that is under construction. These, and other similar projects, will not result in compliance with groundwater objectives for TDS, but are important to provide supplemental, reliable sources of potable supplies. The Regional Board is currently involved with other parties in a multi-million dollar, multi-year TDS/TIN project to address the issue of salt impacts in surface water and groundwater in the Lower, Middle Santa Ana River and the Elsinore/San Jacinto Watershed Management Areas.

The Santa Ana River is the primary source of recharge for the groundwater basins in Orange County. Groundwater makes up about 65% of the water supply for the two million people who reside in Orange County. Increasing concentrations of salts, especially nitrate, are occurring in the groundwater in the recharge areas, and threatening the quality of Orange County's drinking water supply. The Basin Plan specifies water quality objectives for the Santa Ana River that are intended to protect the Orange County aquifers. Salts in the River originate primarily from discharges from POTWs (the Santa Ana River is effluent dominated part of the year), surface discharges from dairy operations, and poor quality groundwater that enters the Santa Ana River from the Chino Basin. The poor quality is the result of historic irrigated agricultural and current and historical dairy operations.

The Chino Groundwater Basin, the largest basin in the region, is used extensively as a municipal water supply, and faces an increasing demand on its limited groundwater resources as the area continues to transition from agricultural land uses to urban. Much of the basin lacks assimilative capacity for and exceeds water quality objectives and drinking water standards for TDS and nitrate. Board staff is currently preparing a 'state of the watershed' report for the Chino Basin under the WMI. Upon completion of the report, Board staff will develop a water quality-based watershed management plan for the basin in conjunction with basin stakeholders. The plan will integrate with the Optimum Basin Management Plan that the court has ordered the Chino Basin Watermaster to prepare.

Groundwater in the Region has also been significantly impacted by chlorinated volatile organic compounds (VOCs), originating from historic industrial practices. Several hundred water supply wells in the region contain VOCs. Many of these wells have been shut down, and many other wells are threatened. In the Bunker Hill Basin, the City of San Bernardino had lost 25% of its drinking water supply as a result of PCE contamination, and currently has about 25 MGD of wellhead treatment capacity. Additional groundwater treatment is being pursued. A large TCE plume in the

Redlands area has closed some drinking water supply wells, and has impacted the water supply of the City of Riverside (Gage Canal Company Wells) and the City of Loma Linda. Board staff has been working with the responsible party and local water agencies, and has developed cleanup and water supply contingency plans. Several TCE and PCE plumes are present in the Chino Basin, where several water supply wells have been shut down. Investigation and cleanup of those plumes are being pursued.

Multiple historic sources of VOCs have impacted groundwater in Orange County. Many impacted water supply wells are being blended with water from other sources to dilute the concentrations of the contaminants. The Orange County Water District is pursuing a potential regional groundwater monitoring and wellhead treatment remediation project for VOCs in the Santa Ana Forebay of Orange County. The District's project will focus on groundwater in the vicinity of the cities of Anaheim, Fullerton, and Placentia. The first phase recommended for implementation includes the installation of two-pump-and treat systems in key areas where the VOC plume is relatively well characterized, and the installation of 15 monitoring wells. The District anticipates that Phase I monitoring wells will be installed by May 2001. Assuming that property acquisition is completed in a timely manner, the District estimates that Phase 1 pump-and-treat systems will begin construction in September 2001, and begin operation in May 2002. The capital cost for Phase 1 is estimated at \$2,175,000. The total capital cost for the ultimate project is estimated to be \$5,535,000, with annual operation and maintenance costs for the six pump-and-treat systems estimated to be \$502,000. The Regional Board oversees many investigation and cleanup projects for VOCs in Orange County.

In addition to the impacts to the region's groundwater from VOCs, several groundwater basins in Riverside and San Bernardino Counties have been impacted by pesticides. DBCP, a nematicide, has been found in about 80 wells in the region. Most of those wells are public drinking water wells, and as a result of the DBCP contamination, most have been shut down.

Short and Long Term Goals and Resource Needs

The following table identifies the short and long term groundwater program goals and resource needs. Contract dollars would be used to investigate shallow groundwater in the Newport Bay WMA.

Time Frame	Groundwater Program Goals	Resource Needs	
		PYs	Contract Dollars
Short Term (FY 02-03)	<ul style="list-style-type: none"> • Investigation of the nutrient content of shallow groundwater in the central Newport Bay WMA (See section 2-2) • Participate on the Chapter 15 Roundtable • Participate on the Underground Storage Tanks Roundtable • Develop and maintain MTBE database • Miscellaneous training 	8.3	\$200,000
Long Term (FY 03-04 to 06-07)	<ul style="list-style-type: none"> • Build program capacity in modeling and GIS capabilities to better integrate with TMDL, NPS, and Basin Planning programs 	8.3	\$150,000