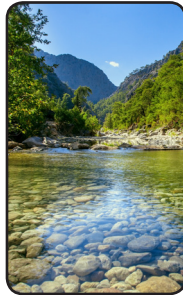
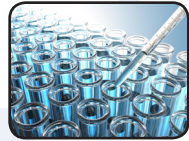
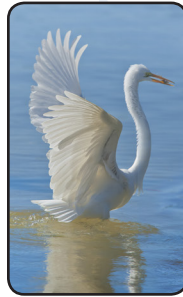




CALIFORNIA
Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY | STATE WATER RESOURCES CONTROL BOARD



PREPARED BY: OFFICE OF INFORMATION AND MANAGEMENT ANALYSIS | OIMA

CALIFORNIA WATER BOARDS

Quality Management Plan

Policy Guidance
Version 2.0



February 2017

I. Approval Page

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1.0	October 2010	First version of document
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Approval:

For the State and Regional Water Boards

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III. Acronyms and Abbreviations

TABLE 1. Acronyms and Abbreviations

ACRONYM	SPELLING
ATP	Alternative Test Procedure
CalEPA	California Environmental Protection Agency
CDPH	California Department of Public Health
CEDEN	California Environmental Data Exchange Network
CIWQS	California Integrated Water Quality System
DDW	Division of Drinking Water
DFA	Division of Financial Assistance
DMR-QA	Discharge Monitoring Report-Quality Assurance
DQO	Data Quality Objective
DRINC	Drinking Water Information Clearinghouse
DWQ	Division of Water Quality
DWR	Division of Water Rights
ELAP	Environmental Laboratory Accreditation Program
GAMA	Groundwater Ambient Monitoring Assessment Program
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
OAL	Office of Administrative Law
OIMA	Office of Information Management and Analysis

ACRONYM	SPELLING
QAPP or Program Plan	Quality Assurance Program Plan
QAPP or Project Plan	Quality Assurance Project Plan
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
RPA	Reasonable Potential Analysis
Regional Water Boards	Regional Water Quality Control Boards
SFDA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SOP	Standard Operating Procedure
State Board	State Water Resources Control Board
STORET	EPA Storage and Retrieval Data Warehouse
SWAMP	Surface Water Ambient Monitoring Program
TMDL	Total Maximum Daily Load
UST	Underground Storage Tank
U.S. EPA	United States Environmental Protection Agency
WQIR	Water Quality Information Replacement
WQM	Water Quality Management
WQX	Water Quality Exchange

IV. Introduction

This Quality Management Plan (QMP) outlines the pathway to integrate quality assurance principles into all data collection, assessment, and analytical work of the State Water Resources Control Board (State Board), Regional Water Quality Control Boards (Regional Water Boards); and the Division of Drinking Water (although a State Board Program described throughout this document, because of its unique organization and mission relative to the other programs within the State Board). Together, they are referred to as the Water Boards. The Water Boards are housed within state government and are part of the California Environmental Protection Agency (CalEPA).

Background

In 1949, the California legislature created a system for protecting water quality with a State and nine Regional Water Boards. In 1967, the legislature combined the system of allocating water rights with the protection of water quality and placed both functions in the hands of the State Board. The State Board is responsible for establishing regulations and policies affecting the total interest of the state. The Regional Water Boards are responsible for planning, permitting, and enforcement within their regions. The National Pollutant Discharge Elimination System (NPDES), created through the Clean Water Act (CWA) in 1972, became a State and Regional Water Boards responsibility. Although the Regional Water Boards are largely autonomous, the Water Boards system is integrated. The regulating federal authority is the Clean Water Act; the regulating state authority is the Porter-Cologne Act.

In July 2014, the Drinking Water Program was transferred to the State Board from the California Department of Public Health (CDPH) and is now the Division of Drinking Water within the State Board. It is comprised of two statewide field operations branches and

five regional offices, in which are located 24 district offices. The State Board has primary enforcement authority known as primacy to enforce both federal and state Safe Drinking Water Acts (SDWA).

The Water Boards have regulatory responsibility for protecting the water quality of nearly 1.6 million acres of lakes; 1.3 million acres of bays and estuaries; 211,000 miles of rivers and streams; 1,100 miles of coastline, and over 8,000 public water systems. The Water Boards work to ensure the protection of water quality across a diverse range of topics, such as regulatory oversight to assure the delivery of safe drinking water, storm water, wastewater treatment, water quality monitoring, wetlands protection, ocean protection, contaminated sites cleanup, low-impact development, and enforcement. Regional Water Board rulemakings are submitted to the State Board for approval, then to the Office of Administrative Law (OAL) for adoption. State Board rulemakings are submitted directly to the OAL. Permitting and enforcement decisions are subject to appeal to the State Board.

FIGURE 1. The Nine Regional Water Quality Control Boards in California

REGIONAL WATER BOARD MAP

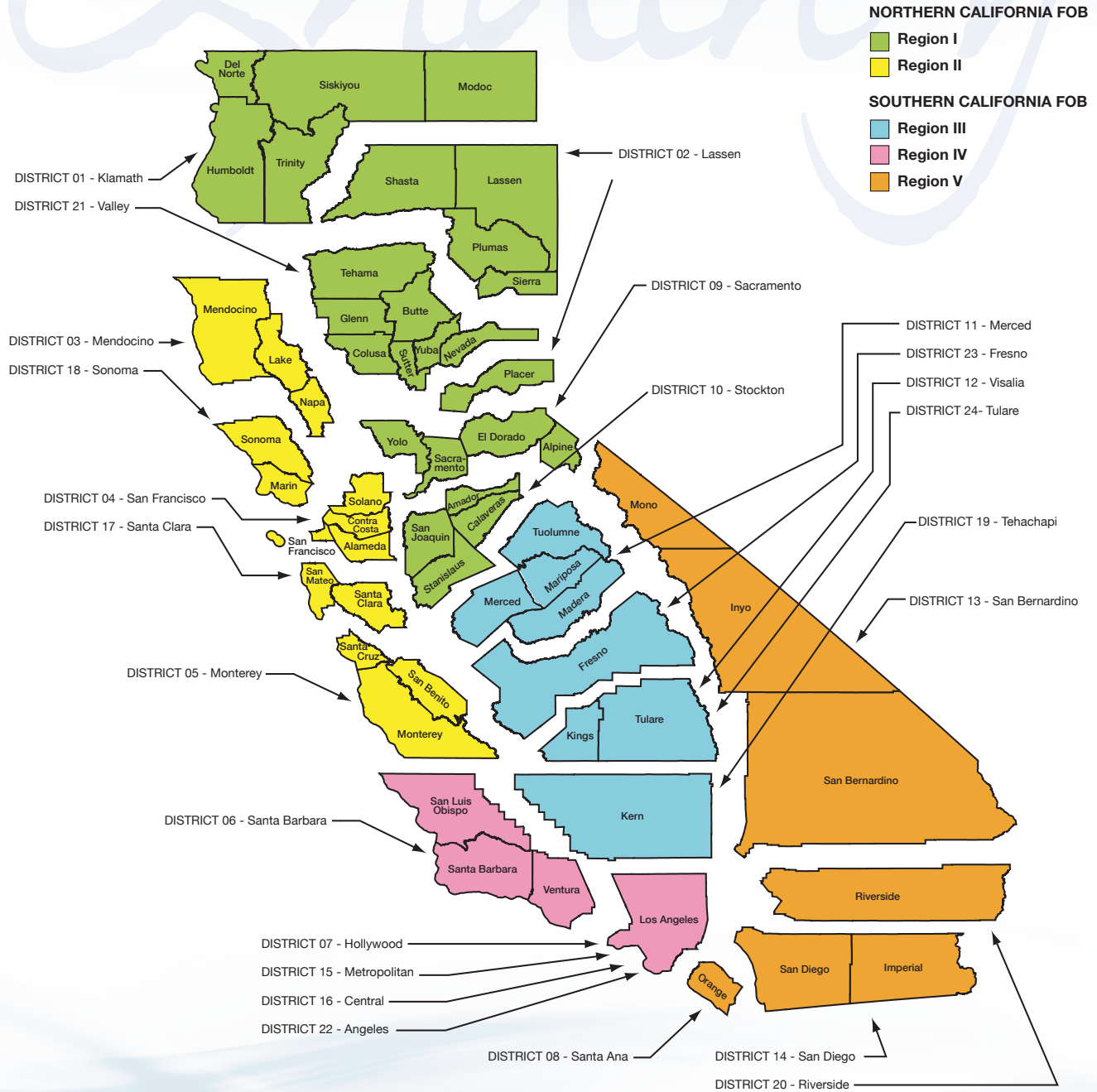


- Region 1 - North Coast
- Region 2 - San Francisco Bay
- Region 3 - Central Coast
- Region 4 - Los Angeles
- Region 5 - Central Valley - Redding (North)
- Region 5 - Central Valley - Sacramento (Mid Valley)
- Region 5 - Central Valley - Fresno (South)
- Region 6 - Lahontan - South Lake Tahoe (North)
- Region 6 - Lahontan - Victorville (South)
- Region 7 - Colorado River
- Region 8 - Santa Ana
- Region 9 - San Diego






FIGURE 2. The Division of Drinking Water District Offices in California

Division of Drinking Water District Offices

Headquarters Office | 1001 I St., 24th Floor | Sacramento, CA 95814 | (916) 449-5600



Division of Drinking Water - District Offices

 REGION I		
District 1 - Klamath District 2 - Lassen District 21 - Valley 364 Knollcrest Drive, Suite 101 Redding, CA 96002 (530) 224-4800	District 9 - Sacramento 1001 I St, 13th Floor Sacramento, CA 95814 (916) 449-5681	District 10 - Stockton 31 E. Channel Street, Room 270 Stockton, CA 95202 (209) 948-7696
 REGION II		
District 03 - Mendocino District 18 - Sonoma 50 D Street, Suite 200 Santa Rosa, CA 95404 (707) 576-2145	District 4 - San Francisco District 17 - Santa Clara 850 Marina Bay Parkway Bldg. P, Second Floor Richmond, CA 94804-6403 (510) 620-3474	District 05 - Monterey 1 Lower Ragsdale Dr. Bldg.1, Suite 120 Monterey, CA 93940 (831) 655-6939
 REGION III		
District 11 - Merced District 12 - Visalia District 23 - Fresno District 24 - Tulare 265 West Bullard Ave, Suite 101 Fresno, CA 93704 (559) 447-3300	District 19 - Tehachapi 4925 Commerce Dr., Suite 120 Bakersfield, CA 93309 (661) 335-7315	
 REGION IV		
District 6 - Santa Barbara 1180 Eugenia Place Suite 200 Carpinteria, CA 93013 (805) 566-1326	District 7 - Hollywood District 15 - Metropolitan District 16 - Central District 22 - Angeles 500 North Central Avenue, Suite 500 Glendale, CA 91203 (818) 551-2004	
 REGION V		
District 13 - San Bernardino 464 W. 4th Street Room 437 San Bernardino, CA 92401 (909) 383-4328	District 14 - San Diego District 20 - Riverside 1350 Front Street, Room 2050 San Diego, CA 92101 (619) 525-4159	District 8 - Santa Ana 605 West Santa Ana Blvd Building #28, Room 325 Santa Ana, CA 92701 (714) 558-4410

A. The Water Boards Quality System Goals and Policies

Water Boards rely on their own environmental measurements and those collected by other agencies, contractors and grant recipients, and regulated parties to make decisions affecting public health and the environment. In response to both U.S. Environmental Protection Agency (EPA) requirements, directives from CalEPA, the Legislature, and the public, the Board established a Board-wide Quality System to ensure that data of known quality are generated by and for the Water Boards. The responsibility to implement the system rests with all Water Boards staff and managers involved in data collection activities. Oversight responsibilities for developing and overseeing the system reside with the Quality Assurance Program. Having an effective Quality System in place provides decision makers the necessary knowledge and confidence to make critical decisions for protecting public health and the environment. This Quality System documented in this Quality Management Plan, describes the management and technical activities necessary to plan, implement, assess, and ensure the effectiveness of quality assurance and quality control operations applied to data collection programs in the Water Boards. It further defines the roles, responsibilities and authorities for implementing this quality system.

State and federal agencies are ultimately responsible for the integrity of the projects they support. The data produced often become the foundation for new or modified environmental regulations.

The key to a successful Quality Management Plan as envisioned here is the “partnership.” The partners are the nine Regional Water Boards, the State Board (including the components- Office of Information and Analysis, Division of Drinking Water, Division of Water Quality, Division of Financial Assistance, Enforcement).

Currently, the partners are brought together in a regularly scheduled Roundtable held each quarter. The chair responsibility remains with the State Quality Assurance

Officer, although this responsibility can rotate any time other partners would like to chair a meeting.

Although not currently being done, it is envisioned that Roundtable members will provide a comprehensive list of all data collection and analysis work they review for quality assurance planning. All of this information will be entered into a program, and updated when necessary to improve the Water Boards’ Quality Systems, and to evaluate the data review process that serves as part of the state’s oversight review process. For example, data developed with state or federal funds and published in peer reviewed journals could be accepted as meeting quality assurance standards.

This Quality Management Plan outlines the pathway to integrate quality assurance principles into all data collection, assessment and analytical work of the Water Boards. This Quality Management Plan is written to be consistent with the EPA guidance- “EPA Requirements for Quality Management Plans (QA/R-2)”- EPA/240/B-01/002, March 2001. Other formats that have been submitted and approved by the State Quality Assurance Officer may be used as appropriate.

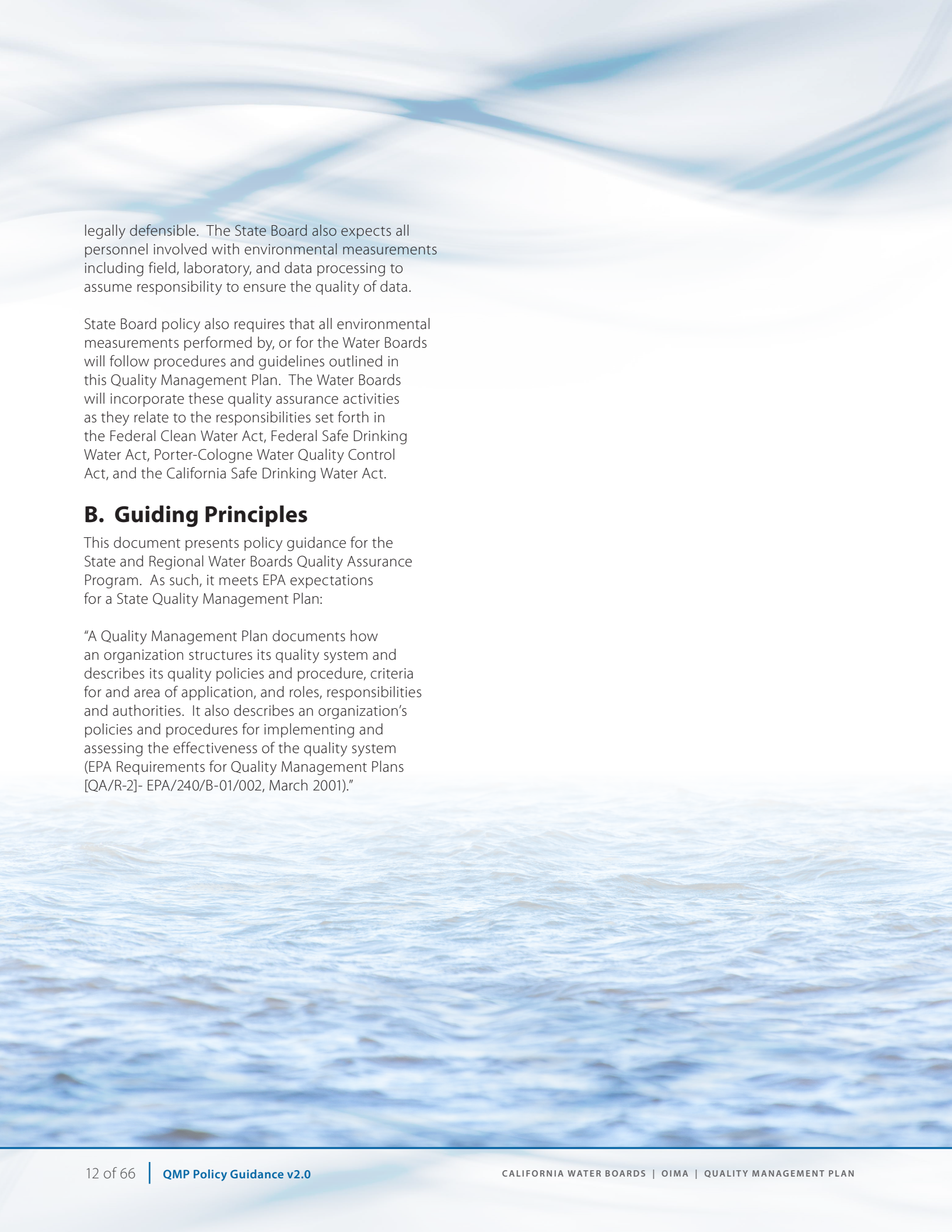
1. Quality Assurance Basic Goals

Water Boards produce data of known and documented quality.

2. Quality Assurance Policy

The Water Boards management considers the reliability and quality of environmental monitoring data to be of paramount importance and issues the following policy.

The State Board will commit, to the best of its ability, the time and resources necessary to operate a Quality Assurance Program that consistently produces quality environmental measurement data (chemical, biological, and physical measurements). The goal is to ensure that all environmental data will be of known quality and therefore, scientifically sound and



legally defensible. The State Board also expects all personnel involved with environmental measurements including field, laboratory, and data processing to assume responsibility to ensure the quality of data.

State Board policy also requires that all environmental measurements performed by, or for the Water Boards will follow procedures and guidelines outlined in this Quality Management Plan. The Water Boards will incorporate these quality assurance activities as they relate to the responsibilities set forth in the Federal Clean Water Act, Federal Safe Drinking Water Act, Porter-Cologne Water Quality Control Act, and the California Safe Drinking Water Act.

B. Guiding Principles

This document presents policy guidance for the State and Regional Water Boards Quality Assurance Program. As such, it meets EPA expectations for a State Quality Management Plan:

“A Quality Management Plan documents how an organization structures its quality system and describes its quality policies and procedure, criteria for and area of application, and roles, responsibilities and authorities. It also describes an organization’s policies and procedures for implementing and assessing the effectiveness of the quality system (EPA Requirements for Quality Management Plans [QA/R-2]- EPA/240/B-01/002, March 2001).”

V. Organization Responsibilities

The State Board consists of five full-time members and an executive director who fill specialized positions representing the public, engineering expertise, water quality expertise, and water supply expertise. They are appointed to a four-year term by the Governor and confirmed by the State Senate.

The State Board develops statewide water quality standards, has general oversight for the NPDES and state discharge permits, long-term and special environmental quality studies, water rights and budgets, primacy enforcement authority, and regulatory oversight for about 8,000 public water systems and certifies approximately 800 environmental laboratories throughout the state.

Regional Water Boards are defined by watershed boundaries (Figure 1). Each of the nine Regional Water Boards has seven part-time members (one chair, one vice chair, and five other members) also appointed by the Governor and confirmed by the State Senate. Reporting to each Regional Water Board are an Executive Officer and Assistant Executive Officer. Regional Water Boards develop “basin plans” for their hydrologic areas, issue and enforce NPDES and state discharge permits, undertake long-term and special environmental studies, and provide regional oversight of certain state programs, such as the Underground Storage Tank (UST) program.

The Division of Drinking Water is comprised of two Field Operation Branches overseeing 26 district offices throughout California (Figure 2.). The Environmental Laboratory Accreditation Program (ELAP) is within the Division of Drinking Water.

A. State and Regional Water Boards Programs/Projects Covered by this Quality Management Plan

The Quality Management Plan applies to programs within the four State Board Divisions and the Regional Water Boards. All data collection and analysis activities of the following programs and activities are guided by this Quality Management Plan.

- **Division of Drinking Water (DDW):** The Division of Drinking Water has oversight of public drinking water systems permits, regulations, enforcement and environmental laboratory accreditation for California. Among DDW's other activities are technical assistance to small water systems, development of recycled water criteria and regulations pertinent to the use of recycled water to augment drinking water supplies, and registration of residential water treatment devices. DDW consists of three branches: The Northern California Field Operations Branch, the Southern California Field Operations Branch, and the Program Management Branch which includes the

Environmental Laboratory Accreditation Program (ELAP). Data collection activities include laboratory certification data, water criteria data for drinking water and reused water.

- o Northern Branch
- o Southern Branch
- o Program Management Branch
- o Environmental Laboratory Accreditation Program (ELAP)

- **Division of Water Quality (DWQ):** The Division of Water Quality consists of the Surface Water/Regulatory Branch and the Groundwater Quality Branch. The Surface Water Branch/Regulatory Branch includes the following sections: the Water Quality Standards and Assessment Unit assesses water quality monitoring data including beach monitoring programs and Total Maximum Daily Load (TMDL) concentration; the National Pollution Discharge Elimination System (NPDES) Unit controls water pollution by regulating point sources that discharge pollutants into waters of the United States and oversees the collection of data from NPDES-permitted dischargers in the form of Reasonable Potential Analysis studies and Discharge Monitoring Reports (DMRs); and the Non-Point Source (NPS) The Non-Point Source Program minimizes NPS pollution from land use activities including those in agriculture, urban development, forestry, recreational boating and marinas. The NPS Program administers grant money it receives from US EPA and from the state Timber Regulation and Forest Restoration Fund. These grant funds can be used to implement projects or programs that will help to reduce NPS pollution. Projects that qualify for funding must be conducted within the state's NPS priority watersheds. The data collected include results of nutrient, sediment, and pathogen analyses. The NPS Grant Program funds projects that implement forest management measures on forestlands to improve water quality. There is also a focus on implementing management activities that lead to reduction and/or prevention of pollutants that threaten or impair surface waters.

Within the Groundwater Quality Branch, the Underground Storage Tank Program (UST) protects public health and the environment from releases of petroleum and other hazardous substances from tanks. There are four program elements: Leak Prevention, Cleanup, Enforcement and Tank Tester Licensing.

- o Water Quality Planning
 - o National Pollution Discharge Elimination System (NPDES)
 - o Ground Water Quality
 - o Underground Storage Tank Program
 - o Non-Point Source Program
 - o Surface Water
- **Office of Information Management and Analysis:** The Office of Information Management and Analysis (OIMA) is responsible for managing programs that integrate data from the Water Board regulatory programs. The programs include the California Integrated Water Quality System (CIWQS), that tracks information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities; the California Environmental Data Exchange Network (CEDEN), a central repository and publicly accessible site containing information about California's water bodies, including streams, lakes, rivers, and the coastal ocean. Many groups in California monitor water quality, aquatic habitat, and wildlife health to ensure good stewardship of our ecological resources. The CEDEN database is used by environmental managers and the public; the Surface Water Ambient Monitoring Program (SWAMP) and the Information Management and Quality Assurance Center assessing water quality in all of California's surface waters. The program conducts monitoring directly and through collaborative partnerships; and provides numerous information products, all designed to support water resource management in California. The Quality Assurance Program is located in OIMA. It oversees the Quality System documents developed by the Water Boards for environmental data collection activities. The Clean Water Team and the California Monitoring Council are within OIMA.

- o Water Boards Quality Assurance Program
- o Surface Water Ambient Monitoring Program (SWAMP)
- o California Integrated Water Quality System (CIWQS)
- o SWAMP Information Management and Quality Assurance Center

- **Division of Water Rights:** The Division of Water Rights (DWR) ensures that the State’s waters are put to the best possible uses through issuance of permits or licenses serving the public interest. The entities to which DWR issues permits or licenses include water districts, electric utilities, farmers, and ranchers. Water rights are property rights, but their holders do not own the property itself. They possess the right to use it. Additionally, DWR maintains records of water appropriation and statewide use. The Permitting and Licensing Section prepares documents describing conditions to be met for the lawful use of the State’s water. The Enforcement Unit investigates whether an unauthorized water diversion has occurred. The Hearings and Special Projects Branch, among other responsibilities, oversees comprehensive planning efforts in the Bay Delta.

- o Permitting
- o Enforcement
- o Hearings and Special Projects

- **Division of Financial Assistance:** The Division of Financial Assistance (DFA) administers the State Water Resources Control Board’s (State Board) financial assistance programs, that include loan and grant funding for construction of municipal sewage and water recycling facilities, remediation for underground storage tank releases, watershed protection projects, and nonpoint source pollution control projects. DFA also administers the Operator Certification Program.

- o Loans and Grants
- o Project Development I, II, III
- o Cleanup and Administration (Superfund)

- **Regional Water Boards:** Specific information about each region and its priorities are found in Appendix 4: Regional Water Boards Maps and Priorities.

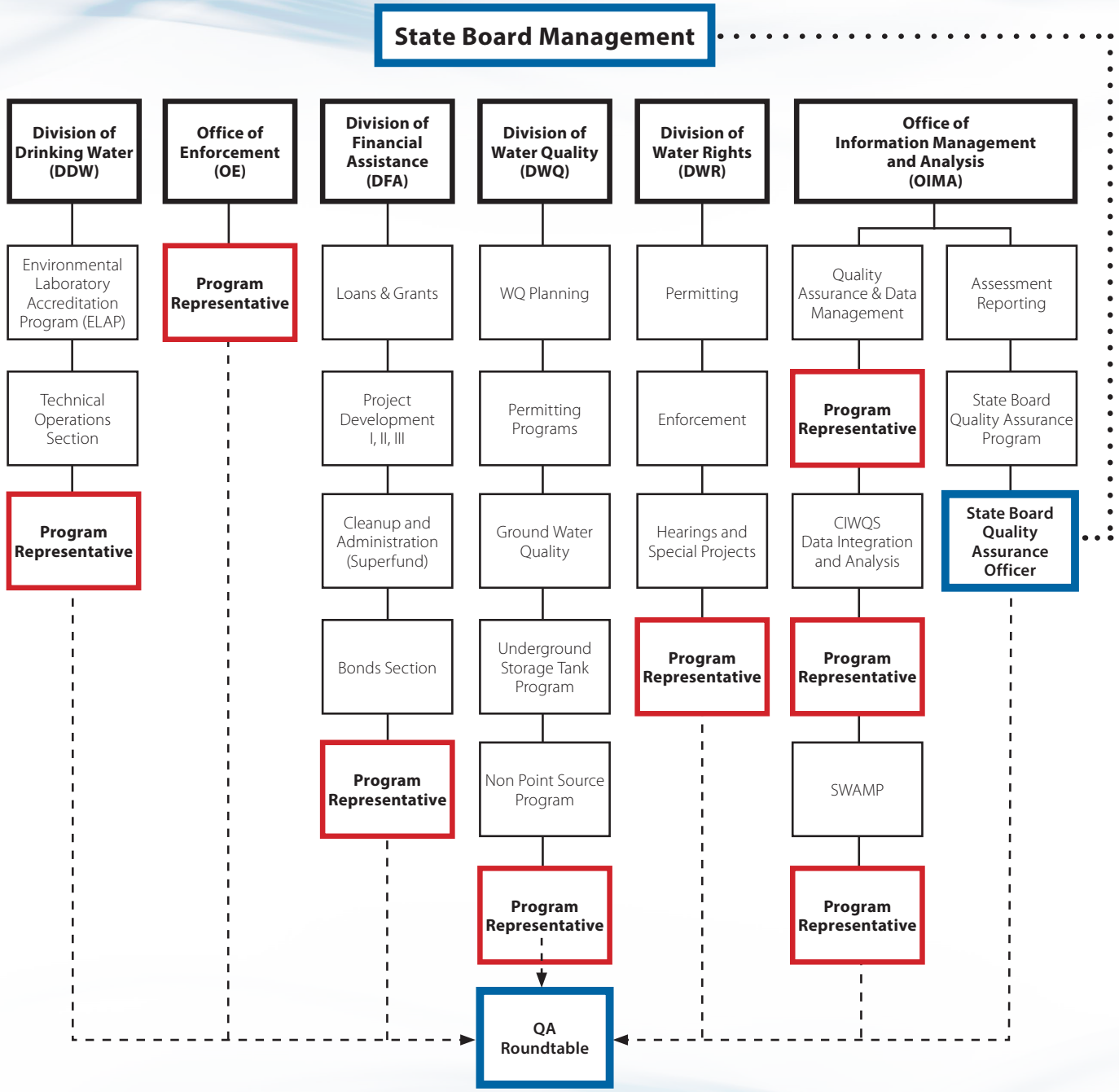
- o North Coast Region (1)
- o San Francisco Bay Region (2)
- o Central Coast Region (3)
- o Los Angeles Region (4)
- o Central Valley Region (5)
 - Rancho Cordova
 - Fresno
 - Redding
- o Lahontan Region (6)
 - South Lake Tahoe
 - Victorville
- o Colorado River Basin Region (7)
- o Santa Ana Region (8)
- o San Diego Region (9)

Final authority and responsibility for the State Board Quality Assurance Program resides with the Executive Director of the State Board; and the Executive Officers and Assistant Executive Officers of the Regional Water Boards. With respect to implementation, responsibilities lie with the State Board Quality Assurance Program Representatives (Figure 3), Regional Water Boards Quality Assurance Leads (Figure 4), and the Quality Assurance Roundtable (Figure 5). All Roles and Responsibilities are listed in Table 2.

The Quality Assurance Program is the point of contact for Quality Assurance activities within the State Board. The Quality Assurance Program is represented by the State Board Quality Assurance Officer at the Quality Assurance Roundtable.

Each program within the State Board Divisions that generates data or funds environmental measurement projects has a designated Quality Assurance Representative. Quality Assurance Representatives are members of the Quality Assurance Roundtable.

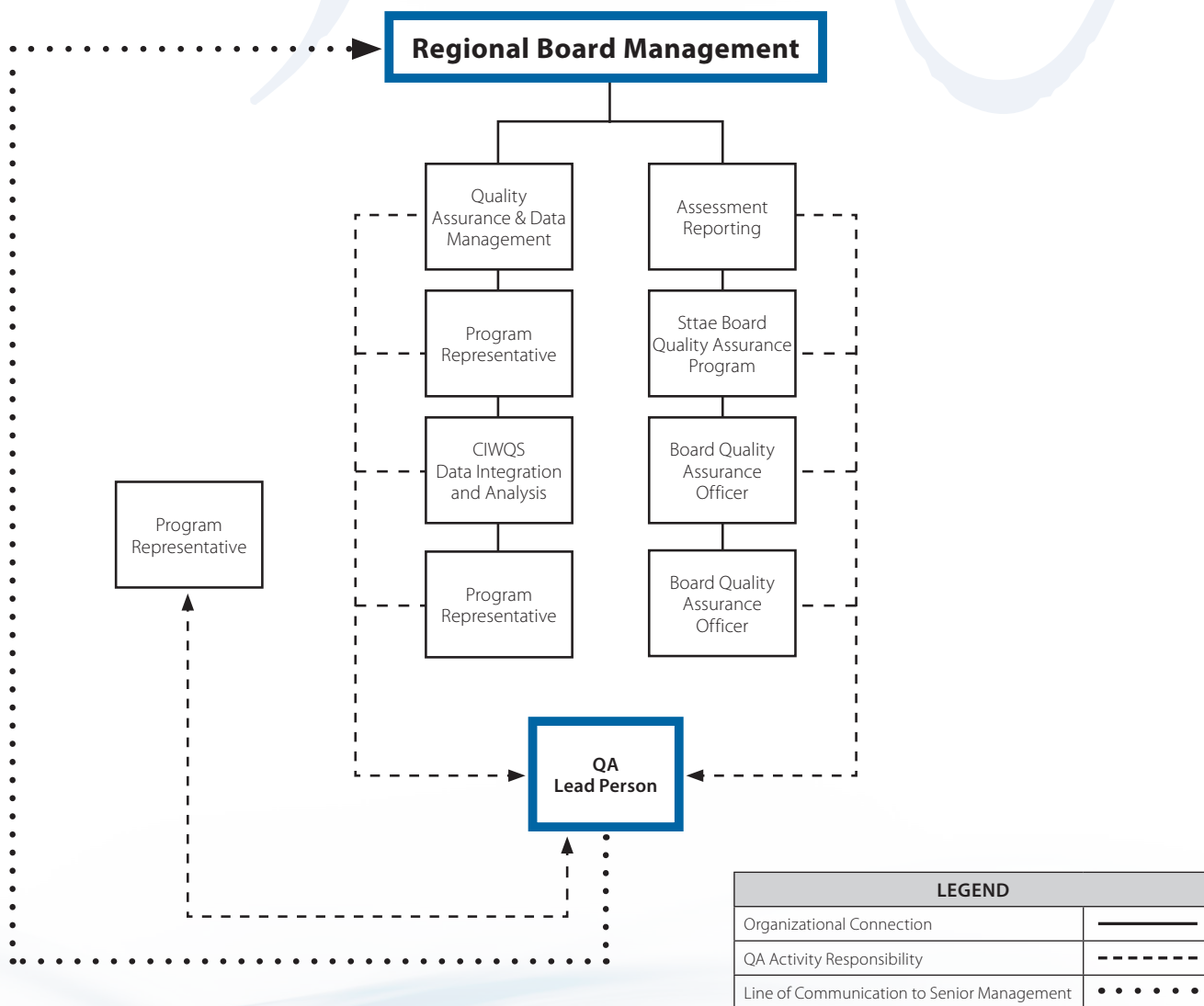
FIGURE 3. State Board Organization with respect to the QMP



LEGEND	
Organizational Connection	—————
QA Activity Responsibility	- - - - -
Line of Communication to Senior Management	•••••

The Regional Water Boards have designated Quality Assurance Leads. The Regional Water Board Leads may be assisted by other personnel for specific program requirements. For example, the SWAMP has a coordinator at each Regional Water Board. Quality Assurance Leads are members of the Quality Assurance Roundtable.

FIGURE 4. Regional Water Boards Organization with respect to the QMP



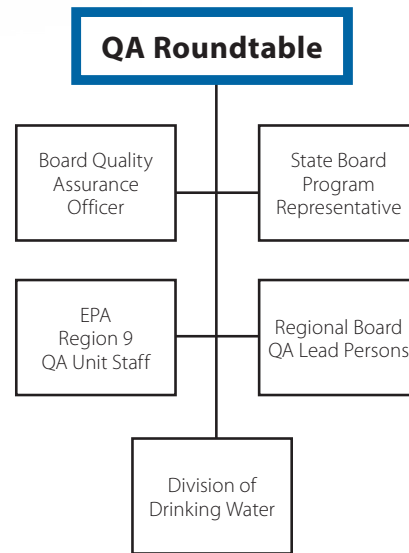
The EPA Region 9 Quality Assurance Unit Manager (or designee) participates in the Quality Assurance Roundtable as do the representatives of EPA Region 9 programs.

B. The Quality Assurance Roundtable

The Quality Assurance Roundtable was established to ensure that an appropriate level of planning for data acquisition and analysis is applied consistently throughout the Water Boards. The Roundtable focuses on information sharing, and discussion of issues and solutions of mutual interest. The Quality Assurance Roundtable agenda includes issues of general or specific interest such as reviews of planning documents, training, laboratory support, work that is accomplished by other regions or programs, data studies, laboratory methods and approval processes. Each year the State Board programs and Regional Water Boards provide the Roundtable with an internal report that is a compilation of all quality assurance activities for which their programs are responsible and that require quality assurance planning. These reports are included in the State Board Annual QA Report for EPA.

Meetings are held each quarter, in person and via conference call. The responsibility for chairing the meetings is with the Board Quality Assurance Officer. At this time, the Board Quality Assurance Officer is responsible for hosting, taking and distributing the minutes.

FIGURE 5. QA Roundtable Structure



C. Roles and Responsibilities

Roles and responsibilities of Water Board staff management and Quality Assurance staff are listed in Table 2.

TABLE 2. State and Regional Water Boards Quality Assurance Responsibilities

State, Regional Water Boards, and Division of Drinking Water Quality Assurance Responsibilities	State or Regional Water Board Program Manager	Quality Assurance Program and Board Quality Assurance Officer	Regional Water Board Quality Assurance Lead	State Board Program Quality Assurance Representative	Division of Drinking Water (State Board)	Division of Drinking Water (District Offices)
POLICY						
Ensures that there are sufficient resources to implement and evaluate the policy.	X					
Sets State, Regional Water Boards, and Division of Drinking Water Quality Assurance policy to be consistent with overall State Board Quality requirements.	X					
Ensures that all applicable programs and projects comply fully with the requirements of the Quality Management Plan.	X	X	X	X	X	X
Ensures that quality assurance performance standards are in place.	X					
Ensures that other organizations generating environmental data under agreements with the State, Regional Water Boards, and Division of Drinking Water comply with requirements in the Quality Management Plan.	X	X	X	X	X	X

TABLE 2. State and Regional Water Boards Quality Assurance Responsibilities

State, Regional Water Boards, and Division of Drinking Water Quality Assurance Responsibilities	State or Regional Water Board Program Manager	Quality Assurance Program and Board Quality Assurance Officer	Regional Water Board Quality Assurance Lead	State Board Program Quality Assurance Representative	Division of Drinking Water (State Board)	Division of Drinking Water (District Offices)
Provides information and training about quality assurance and quality control concepts and practices.		X	X	X	X	X
Participates in the Quality Assurance Roundtable.		X	X	X	X	X
QUALITY ASSURANCE DOCUMENT REVIEW						
Reviews grant proposals to assess the need for quality assurance requirements.		X	X	X	X	X
Reviews and approves project level QA planning documents.		X	X	X	X	X
Prepares annual up-dates of the State, Regional Water Boards, and Division of Drinking Water Quality Management Plan or applicable Quality Assurance Program Plan and revises the plans every 5 years.		X	X	X	X	X
Prepares an annual Regional Water Boards and Program Quality Assurance Report.	X		X	X	X	X

TABLE 2. State and Regional Water Boards Quality Assurance Responsibilities

State, Regional Water Boards, and Division of Drinking Water Quality Assurance Responsibilities	State or Regional Water Board Program Manager	Quality Assurance Program and Board Quality Assurance Officer	Regional Water Board Quality Assurance Lead	State Board Program Quality Assurance Representative	Division of Drinking Water (State Board)	Division of Drinking Water (District Offices)
Prepares an Annual Quality Assurance Report, including all State, Regional Water Boards, and Division of Drinking Water accomplishments, and submits to EPA Region 9 Quality Assurance Program.		X				
QUALITY ASSURANCE TECHNICAL REVIEW						
Maintains a database tracking the status of Quality Assurance documents.		X	X	X	X	X
Performs data validation and review for programs and projects.		X	X	X	X	X
Performs Management System Reviews of Regional Water Boards and Programs.		X				
Performs technical systems audits of State, Regional Water Boards, and Division of Drinking Water environmental data collection activities.		X	X	X	X	X

TABLE 2. State and Regional Water Boards Quality Assurance Responsibilities

State, Regional Water Boards, and Division of Drinking Water Quality Assurance Responsibilities	State or Regional Water Board Program Manager	Quality Assurance Program and Board Quality Assurance Officer	Regional Water Board Quality Assurance Lead	State Board Program Quality Assurance Representative	Division of Drinking Water (State Board)	Division of Drinking Water (District Offices)
Coordinates with EPA to ensure consistency with the requirements of the Clean Water Act (CWA), e.g. Alternate Test Procedure applications and approvals. *		X	X	X		
Manages the Discharge Monitoring Report-Quality Assurance Program (DMR-QA).		X				
Manages contracts for quality assurance related services, such as statistical support and procurement of performance evaluation samples for statewide laboratory contracts.		X				
Coordinates with EPA to ensure consistency with requirements of the Safe Drinking Water Act (SDWA) e.g. Lead and Copper Rule monitoring.					X	X

*National Pollution Discharge Elimination System Program only

D. Personnel Qualifications and Training

Quality Assurance staff must be familiar with and understand the principles described in this Quality Management Plan, and have a working knowledge of EPA, State and Regional Water Boards quality assurance guidance documents. The Quality Assurance Program, Program Representatives and Regional Leads will develop a training curriculum in relevant topics for the State and Regional Water Boards staff in partnership with EPA, the Water Boards Training Academy, and outside sources (Appendix 1, Table 5). If there are specific requirements that must be met by organizations providing data to the State or Regional Water Boards, focused training classes can be held on relevant subjects such as Discharge Monitoring Report-Quality Assurance (DMR-QA) Study data. In addition, the Quality Assurance Program, Program Representatives and Regional Leads may receive training from EPA or contractors to facilitate their roles in implementing the State and Regional Water Boards Quality Program.

VI. Quality Assurance Program Components

The three major Quality Assurance program components are Planning, Implementation, and Oversight.

A. Planning Documents and the Graded Approach

Planning documents discuss and guide how individual data operations are to be implemented within the organization to ensure that data or information collected are of the type and quality for their intended use. Each data collection activity is unique in size, source, data collection (sampling) duration, analytes of interest, data use, etc. Therefore, it is essential that planning documents be appropriate to the size and complexity of the program or project and to the intended use of the data. This “graded” approach allows for the development of quality assurance planning documents that reflect data quality objectives upon which program decisions are made. Data collection activities may be long-term, short-term, seasonal, variable, or a single sampling event. The field and laboratory methods chosen should be appropriate to the program data quality objectives as well as federal and state regulations. Any planning documents that include the use of existing

data or data from secondary sources must specify the criteria used in determining the suitability of data for their current use and must define the criteria upon which environmental decisions are to be made.

All quality assurance planning documents should contain the following elements:

- Identify sponsoring organization and personnel
- Define project goal, objectives and schedule
- Link data to project goal
- Discuss type, quality, and quantity of data needed
- Define acceptance or performance criteria
- Describe sampling plan and Quality Assurance/Quality Control requirements
- Discuss how the data will be analyzed

There are four types of planning documents:

Quality Management Plans, Quality Assurance Program Plans (Program Plans or QAPrPs), Quality Assurance Project Plans (Project Plans or QAPPs), and Sampling and Analysis Plans. Guidance for preparation of these documents is found in Appendix 3. Table 3 identifies responsibilities for each phase of the life cycle of these four types of planning documents.

TABLE 3. QA Planning Document Lifecycle

DOCUMENT	ENTITY THAT DEVELOPS	ENTITY THAT APPROVES	ENTITY THAT IMPLEMENTS	REVIEW AND UPDATE	DOCUMENT SOURCE
Quality Management Plan (QMP)	State Board QA Office	State Board Executive Director and EPA Region 9.	State Board Program Representatives and Regional Water Boards QA Leads.	Review and update yearly. Revise every 5 years.	EPA Requirements for Quality Management Plans, QA-R2.
Quality Assurance Program Plan (QAPrP) or Program Plan	Program	EPA Region 9	Program Staff	Review yearly. Revise every 5 years.	EPA Region 9 Requirements for Quality Assurance Program Plans R9QA/03.2.
Quality Assurance Project Plan (QAPjP) or Project Plan	Program or Regional Water Boards, Grantee, Contractor, or Other Agencies.	For Program or Regional Water Board QAPjPs – Applicable Program Management, Regional Water Boards QA Lead persons, or State Board Program Representative (may use State Board Quality Assurance Officer). For Grantees, Contractors, and Other Agencies – Grantee, Contractor, or Agency Management and Quality Assurance Staff plus applicable QA Lead Person or Program Representative (may use State Board Quality Assurance Officer).	Applicable Program, Regional Water Boards, Grantee, Contractor, or Agency Project staff.	Review yearly. Revise every 3 years.	EPA Requirements for Quality Assurance Project Plans, QA/R-5. AND Guidance for Quality Assurance Project Plans, EPA QA/G-5.
Sampling and Analysis Plans, Monitoring and Assessment Plans, and other types of planning documents	Same as for Quality Assurance Project Plans.	Same as for Quality Assurance Project Plans.	Same as for Quality Assurance Project Plans.	For projects of limited duration. Can be revised if necessary owing to changes in project conditions.	Sampling and Analysis Plan-Guidance and Template v.4-General Projects-04.2014

1. Types of Planning Documents

A. QUALITY MANAGEMENT PLAN

This Quality Management Plan describes management policies and procedures of the State and Regional Water Boards' quality assurance systems. The State Board Quality Management Plan must be approved by EPA.

B. QUALITY ASSURANCE PROGRAM PLANS (PROGRAM PLANS)

A Program Plan defines the data quality objectives, decisions or goals, and measurement quality objectives that apply to all data generated under the program. Program Plans are prepared using the guidance, "EPA Region 9 Requirements for Quality Assurance Program Plans" (R9QA/03.2) found at <https://www.epa.gov/quality/epa-region-9-guidance-quality-assurance-program-plans-r9qa032>. It may also describe the sampling, custody, sampling handling procedures, requirements for data review and validation required by the program. Program Plans define policies concerning when additional planning documents would be required and what information they should contain. As mentioned earlier, the Data Quality Objectives (DQOs) for these programs are typically defined in state or federal regulations. For special projects DQO requirements will be described in specific QA planning documents such as a QAPjP or SAP. Several State Board programs that collect environmental data do not currently have program plans guiding their QA activities. They are the Irrigated Lands Regulatory Program, Storm Water Program, Division of Drinking Water, and the Underground Storage Tank Program. It is the long term goal of the State Board that these programs prepare Program Plans. For the present, the Surface Water Ambient Monitoring Program (SWAMP) has a Program Plan that describes the quality elements associated with its data collections activities. Other State Board programs that collect ambient surface water data may develop a Program Plan using appropriate elements of the SWAMP Quality Assurance Program Plan. The National Pollutant Discharge Elimination System (NPDES) Program is nearing completion of the NPDES

Quality Assurance Program Plan. It will serve as a guide to decision makers within the program to collect the data needed to make the most informed decisions. The document focuses on permit development and data used for compliance decisions, including evaluating effluent and receiving water data in Reasonable Potential Analyses (RPAs), tailoring monitoring requirements to inform compliance determinations, and making data evaluations for permit limits and monitoring triggers.

C. QUALITY ASSURANCE PROJECT PLANS (PROJECT PLANS)

Project-specific data collection activities are documented in Project Plans. Board staff, contractors, other state or local agencies working as partners with the State or Regional Water Boards, grantees or a contractor working for any of these organizations are required to prepare a Project Plan for any project generating or using environmental data. This includes use of data from secondary sources, modeling activities, and biological monitoring, and physical and chemical measurements. A Project Plan is a detailed record of the scope and objectives of data collection activities, and the procedures and types of quality assurance/quality controls required to meet these objectives (Appendix 3).

EPA provides requirements for Quality Assurance Project Plans in "EPA Requirements for Quality Assurance Project Plans (QA/R-5)"- EPA/240/B-01/003, March 2001 as well as "Guidance for Quality Assurance Project Plans (QA/G-5)"- EPA/240/R-02/009, December 2002.

Other formats or guidance that have been submitted and approved by the State Quality Assurance Officer may be used as appropriate.

D. SAMPLING AND ANALYSIS PLANS

For one-time sampling events, Sampling and Analysis Plans, rather than Project Plans, are prepared. Sampling and Analysis Plans must address decisions to be made with data, define data quality objectives or regulatory criteria, and describe sampling, analysis, and data review processes. Guidance can be found

in the EPA Region 9 guidance document “Sampling and Analysis Guidance and Template, Version 4, General Projects, R9QA/009.1, December 2014.

E. OTHER PLANNING DOCUMENTS

Consistent with the use of a graded approach for the development of planning documents, programs may develop specialized templates to cover unique data collection activities, such as inspections, emergency response, or samples of opportunity. Examples can be found on the EPA Region 9 website (<https://www.epa.gov/quality/quality-assurance-planning-region-9>).

2. Quality Assurance Documentation Requirements

State or Regional Water Boards staff must conduct their data collection activities under an approved Quality Assurance planning document. In all cases, the decision as to what documentation is needed will follow a graded approach that is consistent with program or project objectives, and will be sufficient to generate data of known and appropriate quality.

Approved Quality Management Plans, Program Plans and Project plans remain in effect for five years, but should be reviewed annually for minor changes, such as changes in personnel. Sampling and Analysis Plans apply only to a one-time event.

Quality assurance planning documents are reviewed and approved by appropriate Quality Assurance Program staff (Table 3). For example, the EPA Quality Assurance Office reviews and approves the State Board Quality Management Plan. EPA reviews and approves State Board Program Plans. Regional Water Boards Quality planning documents are reviewed and approved by the State Board Quality Assurance Program. The State Board Quality Assurance Representatives or Regional Water Boards Quality Assurance Leads review and approve Project Plans, and Sampling and Analysis Plans.

A. CONTRACTS

State Board contracts that include environmental sampling, environmental measurements or use of environmental data should be reviewed by either the State Board Quality Assurance Program, State Board Division Representative or Regional Water Board Quality Assurance Representative. Contractors providing environmental services should provide the appropriate level of Quality Management System documents outlining their Quality Management System. For large or multi-year projects, submission of the contractor’s Quality Management Plan is appropriate. For specific data collection activities of a short duration, a Project or Sampling and Analysis Plan is appropriate.

Services involving environmental measurements may include sampling contracts, analytical services, data validation contracts, emergency services contracts, and support for inspections, modeling, or other activities. A Program must identify its requirements and develop technical specifications, evaluation criteria, and certifications to meet them. These are documents on a standard contract form, with attachments, which are reviewed and approved by the appropriate State or Regional Water Board Contract Manager.

B. GRANT OR ASSISTANT AGREEMENTS

The State Board intends that grant-funded data collections and analysis activities are compatible with those described in the EPA “Guidance for Quality Assurance Project Plans” EPA QA/G5, December 2002, Appendix 3; and the SWAMP Quality Assurance Program Plan. Grants that include data collection activities or use secondary data must contain provisions for the preparation of appropriate planning documents and should be reviewed by the State Board Representative and the Quality Assurance Program.

The use of the graded approach extends to grantees. The nature and size of the project, the size and expertise of the grantee organization, the grantee’s quality assurance program, and the

grantee's history in documenting data quality in previous work will be taken into account during the Quality Assurance planning process.

C. INTERAGENCY AGREEMENTS

When the State or Regional Water Boards enter into an agreement with other governmental agencies to collect environmental data, that agency must submit an appropriate planning document to be reviewed and approved by the appropriate Quality Assurance staff before measurement activities begin.

B. Implementation

Implementation of the specific tasks and procedures relating to a quality system requires documenting purchased items and services that directly affect the quality of environmental programs. The appropriate controls such as quality-related records determined to be important to the mission of the organization should be maintained, and the computer hardware and software used to record and store data, must satisfy the organization's requirements.

1. Procurement

A. PROCUREMENT OF EQUIPMENT AND MATERIALS

Purchases of goods and services made by State and Regional Water Boards are made in accordance with the rules for purchasing, found on the State Boards' Intranet site (Contracts: <http://waternet/das/contracts/>; and Procurement (<http://waternet/das/procurement/>) and applicable purchasing rules set forth by the State Administrative Manual (SAM) and the State Contracting Manuals (Vols. 1, 2, 3, and F), as determined by the Department of General Services.

B. PROCUREMENT OF SERVICES INVOLVING ENVIRONMENTAL MEASUREMENTS

Environmental services contracts must have quality assurance and quality control requirements integrated into the statement of work. Quality assurance requirements should be included in the requests for Proposal and/or Invitations for Bid. A State or Regional Water Board Quality Assurance staff person should be included on the review panel.

Once the contract is awarded, the State or Regional Water Board Contract Manager is responsible for ensuring that activities covered in the statement are implemented as required. The prime contractor maintains responsibility for all subcontracted work.

2. Methods

A. SAMPLING

Sampling methods, sample preservation, and sample storage used by the State and Regional Water Boards and their contractors follow accepted procedures described in EPA guidance, statutes, and regulations, Standard Methods for the Examination of Water and Wastewater or other recognized and/or published sources. Protocols developed internally, are written as standard operating procedures (SOPs).

Sampling methods are described or included in Program Plans, Project Plans, Sampling and Analysis Plans, or SOPs. The Division of Drinking Water requires public water systems to develop sampling plans for their water systems.

B. ANALYTICAL

State and Regional Water Programs that contract for laboratory analytical services include the NPDES Program, SWAMP, Beach Monitoring Program, Groundwater Ambient Monitoring Assessment Program

(GAMA), Underground Storage Tank Program (UST), Non-Point Source Program, Stormwater Program, special projects, and Superfund. Analytical methods may be prescribed by program. If other methods are proposed, they must be referenced, documented, and certified by the State Board Environmental Laboratory Accreditation Program (ELAP). Some programs, such as NPDES and Stormwater, have a method review and approval process in regulation. NPDES Program permittees must use methods listed in the Clean Water Act (40 CFR Part 136 and updates). If Alternative Test Procedures (ATPs) are proposed, an application to use them must be submitted in accordance with 40 CFR Parts 136.4 and 136.5. The individual proposing the ATP must submit the data package to the State Board QA Officer who reviews the data packet before submitting it to the EPA Regional ATP Coordinator for review and approval or disapproval (<https://www.epa.gov/cwa-methods/alternate-test-procedure-documents>). Method requirements are described in quality assurance planning documents or permits.

The Division of Drinking Water follows methods prescribed by the Safe Drinking Water Act (http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr141_main_02.tpl) that are found at <https://www.epa.gov/dwanalyticalmethods/approved-drinking-water-analytical-methods>. New or alternate drinking water analytical methods are submitted for approval to U.S. EPA through the Alternate Test Procedure Program.

C. STANDARD OPERATING PROCEDURES

SOPs are written instructions that document a routine or repetitive activity. The development and use of SOPs are an integral part of a successful quality program. Guidance for preparing SOPs can be found in "Guidance for Preparing Standard Operating Procedures (QA/G-6)" EPA/600/B-07/001 April 2007.

D. GUIDANCE DOCUMENTS

The State and Regional Water Boards may develop specific guidance when EPA guidance is not available or appropriate. Guidance documents are assigned unique document control numbers. For references, EPA National and Region 9 guidance documents are available on the EPA Region 9 Quality Assurance web page.

3. Documentation and Record Keeping

A. RECORDS TRACKING SYSTEM

Quality Management Plan & Quality Assurance Program Plan Availability

The State Boards Quality Management Plan and Program Plans are available on the web: http://www.waterboards.ca.gov/water_issues/programs/quality_assurance/index.shtml

Each program has responsibility for quality control of data entry and corrections and will document all requirements in their Quality Assurance Program Plans, and will stipulate in their Program Plan what elements will be required for specific Quality Assurance Project Plans or other planning documents that each Program undertakes for their specific data gathering activities.

Planning Document Database-Tracking System

When a planning document is received, it is entered in a unique file based on the project's name, the program manager and the Water Board region of origin. Once the project has been reviewed and approved, and the sign off sheet signed, a copy of the sign off sheet is placed in the file. All email communication concerning the project will be kept in the project file.

4. Planning Documents Storage and Retention

The Quality Assurance Officer keeps copies of the Program and Project Plans and SOPs, with copies for the appropriate program for seven years. Each Program or Regional Water Board defines its requirements for the transmittal, distribution, and retention of planning and guidance documents. These requirements should be documented in Program or Project Plans or other quality assurance documents. Program plans and Project Plans should also describe requirements for storage and retention of hard copy information associated with data generated by project and sampling and analysis plans.

5. Information Management

A. INFORMATION MANAGEMENT POLICIES

Computer hardware and software purchase, development and maintenance are the responsibility of the State Board Office of Information Technology. This Office also maintains and manages internet and intranet capabilities. Each State and Regional Water Board Program is responsible for the implementation of policies relative to the electronic submission of data. For program or specific data submission requirements, the appropriate Program Plans, Project Plans, or quality assurance documents should be consulted.

B. PURCHASE OF COMPUTER HARDWARE AND SOFTWARE

The purchase of computer hardware and software by the State and Regional Water Boards and their contractors must comply with the procedures found in the management Memo 01-01 California Software Management Policy (http://waternet/das/contracts/apm_section6.shtml) This policy is designed to ensure that computer hardware and software meet program requirements and are consistent with State standards.

6. Databases

Databases used by the State and Regional Water Boards are either off-the-shelf software or programs developed for a specific application. If a commercial program is used, the organization will ensure that it is appropriate for its intended use. If a program is developed for a specific Water Board, the organization using the program will fully validate and test the program to ensure that it meets the requirements of the user and its intended use. These requirements will be described in work plans, statements of work, or other documents when the program is procured or developed.

It is a State and Regional Water Boards requirement that quality control data accompany environmental data. NPDES related data are stored in the California Integrated Water Quality System (CIWQS). This includes effluent, compliance, and enforcement data. Surface water ambient monitoring data are stored in the California Environmental Data Exchange Network (CEDEN) system. CEDEN has standardized data formats for submittal of ambient water data, including physical, chemical, toxicological, and biological parameters. Groundwater data are stored in the GeoTracker database or in the Groundwater Ambient Monitoring and Assessment (GAMA) database. The Division of Drinking Water utilizes many databases for water data. The following databases store water quality information for drinking water systems: Water Quality Management (WQM), Drinking Water Information Clearinghouse (DRINC), Safe Drinking Water Information System (SDWIS), and Water Quality Information Replacement (WQIR). The Environmental Laboratory Accreditation Program stores its data in the ELAP database.

TABLE 4. State and Regional Water Boards Databases

	CIWQS	GEO-TRACKER	SWAMP	CEDEN	STORET-WQX EPA*	CA SWRCB WEBSITE	WQM	WQIr	DRINC	SDWIS
DATA SOURCE										
NPDES	X									
Effluent	X									
Enforcement	X									
Compliance	X									
GAMA		X								
UST		X								
SWAMP			X	X	X	X				
Grantees				X		X				
Other Agencies				X		X				
Division of Drinking Water							X	X	X	X

(<http://www.epa.gov/waterdata/storage-and-retrieval-and-water-quality-exchange>)

*STORET (Storage and Retrieval), the EPA's repository for water quality data is changing to WQX (Water Quality Exchange)

A. STANDARDS FOR COMPUTER-GENERATED DATA

Grants and contracts under which data are transmitted to the State or Regional Water Boards must conform to the State Board Division of Information Technology standards for data delivery format. Data generated via computer software, such as maps generated by ARC-GIS, must also meet Division of Information Technology standards. These standards are found at the Boards intranet site: <http://waternet/dit/gis/standards.shtml>

B. HARDWARE REQUIREMENTS

The CIWQS, CEDEN, and SDWIS databases are server based and all standard State or Regional Water Board workstations are compatible with it.

C. DEVELOPMENT OF SOFTWARE

Software applications developed within the Boards are usually limited in scope and are developed using existing software. Before such programs are used in wider applications, they must be tested to ensure that they will meet the requirements of the program or project to which they will be applied. The process includes development and verification of the application and preparation of a manual.

C. Oversight

Assessment of the quality of environmental data collection activities consists of four activities: management system reviews, technical systems audits, data review, and oversight record keeping.

1. Management System Reviews

The EPA Region 9 Quality Assurance Office will conduct a management system review of the State Board Quality Assurance Program every three years. The Quality Assurance Program will review State Programs and Regional Water Boards every four years; three organizations will be evaluated each year. The results of these reviews will be included in the annual report to EPA.

Management System Reviews evaluate whether an organization has an effective quality assurance program and whether it has the necessary resources and qualified individuals to generate data of known quality. These reviews evaluate staff understanding of quality assurance roles and responsibilities and knowledge of quality assurance practices and principles. These reviews also describe how the quality assurance program is being implemented.

Management systems reviews will be conducted in accordance with the "Guidance on Assessing Quality Systems EPA/240/R-03/002, G-3", March 2003 Appendix 3.

The Quality Assurance Roundtable will develop a management system review schedule for the year. Ideally, the reviews are conducted on-site, but desktop exercises and review self-evaluation reports may also provide relevant information.

2. Technical Systems Audits

Program Representatives conduct technical system audits for State Board Programs or Projects. Regional Leads conduct Regional Water Board technical system audits. Audit schedules reflect availability of resources and the level of decisions being made by the program generating the data. The Environmental Laboratory Accreditation Program (ELAP) oversees performance audits on an annual basis by requiring the labs certified by ELAP perform proficiency testing and undergo on-site laboratory reviews by ELAP inspectors every other year. NPDES permittees must participate in annual laboratory performance testing known as the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study by providing data results of Water Pollution proficiency testing data results.

Technical systems audits evaluate the data collection activities of a project or program. Documentation of data generation activities is reviewed to determine whether quality assurance planning documents are followed. Schedules and procedures for technical system audits are specified in Program Plans. Although

it may not be stated in each Program Plan, Project Plan or other applicable quality systems document, when a technical systems audit is deemed necessary either by situation or time, it is recommended that the State Board Quality Assurance Officer also receive the results of the Technical System Audits.

State contracted laboratories may also be audited. These audits do not replace SWRCB-Division of Drinking Water ELAP audits. The technical systems audit will focus on data being generated for a specific project or program.

Technical system audit reports describe when, how, and by whom the audit was conducted, what specific procedures were reviewed and will include a summary of the findings and recommendations for corrective action. The audit report will be transmitted to appropriate project or management personnel so that corrective action can be initiated. Follow-up activities are project-specific.

3. Data Review

Program and project data should be reviewed at a level appropriate to their intended use at periodic intervals as described in the relevant planning document. Programs are encouraged to work with the Quality Assurance Roundtable to identify procedures for reviewing the data against QA/QC criteria to establish whether the data are suitable for the intended use.

Laboratories performing compliance monitoring for NPDES dischargers must be state- certified and must participate in the annual EPA Discharge Monitoring Report Quality Assurance (DMR-QA) Study. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits to ensure the integrity of the Program. Permittees are responsible for having their on-site and contract laboratory(ies) test wastewater analytes that are both in their NPDES permit and included in the DMR-QA Study. The Study is implemented by the

State Board due to a waiver granted by EPA in 2011. The data are received by the State Board Quality Assurance Officer. The data are tabulated and sent to the Quality Assurance Manager at EPA Region 9 and to the DMR-QA Coordinator at EPA Region 9 and Headquarters.

4. Oversight Record Keeping

A record of results from quality assessments, such as Management System Reviews, Technical System Audits or data validation reports are retained by the auditor and the audited organization, and made available to the Quality Assurance Roundtable.

VII. Quality Improvement Process

A. Project-specific problem identification Reports

When data quality problems are encountered during a project, they are identified by project staff and a report, including corrective actions taken, is submitted to the Quality Assurance Representative or Lead for review. Quality staff investigates the problem to determine whether it is specific or systemic. Training in investigative procedures, assessment, potential corrective actions, and reporting processes are included in the basic training program relative to this Quality Management Plan provided to all staff. The forum for discussing these reports is the Quality Assurance Roundtable.

B. Internal Quality Assurance Reports

Annual quality assurance reports are prepared by the Program Representative and Regional Water Board Leads and are submitted to the Quality Assurance Program. These reports include the following information:

- Personnel actions and activities, including trainings, staff changes, organizational changes that affect quality assurance
- Current and projected resources available to perform quality assurance activities
- Number and category of planning documents reviewed and/or approved
- Number and category of guidance documents developed
- Number and category of audits performed
- Status of audit findings and corrective actions taken
- Data quality issues, findings, and corrective actions taken

C. Annual Quality Assurance Report to EPA

This annual quality assurance report includes a compilation of quality assurance information from the Program and Regional Water Boards (see Sections A and B above); a summary of the QA Roundtable meetings, action items, and actions taken; and any other relevant activities. The report should address the following topics: adequacy of personal and financial resources to meet workload; training, including needs assessments and trainings provided; significant quality assurance management accomplishments, such as innovative practices, revisions to the Quality Management Plan, technical assessments, quality assurance planning documents, awards and recognition; assessments of quality systems and outcomes; and information management associated with data quality; Finally, the report should include a discussion of quality assurance activities planned for the next year (work plan).

The report is submitted to EPA Quality Assurance Office as partial fulfillment of the requirements of the State Board grant and is submitted 90 days after the end of the fiscal year. And The routine use of planning, implementation, and oversight activities by trained Quality Assurance staff who are in regular communication about data quality issues assures continual "Quality Improvement" for the State and Regional Water Boards data collection activities.

VIII. Appendices

Quality

APPENDIX 1.

Board Quality Assurance Training Agenda

Outline view of training material, including an overview of the Quality Management Plan, basic training in processes/procedures required by the Quality Management Plan, quality assurance/quality control, and specialty topics.

BOARD QA TRAINING AGENDA

TABLE 5. Outline of Quality Assurance Training

TRAINING TOPICS	
General	Short description and intended audience
Overview of the Quality Management Plan and Quality Systems	Large-picture view of the Quality Assurance Plan and quality systems in general for upper management.
Overview of the Quality Management Plan and Major features, functions, processes, and procedures	Overview of the Quality Assurance Plan as it applies to program activities. Intended for program management at the State and Regional Water Boards.
Program requirements for writing a Quality Assurance Program Plan and implementing its features	Detailed descriptions of processes and procedures including the writing and application of a Quality Assurance Program Plan. Intended for Program management and staff assigned to write and implement a Quality Assurance Program Plan.
Program requirements for writing a Quality Assurance Project Plan for Board data collection activities	Detailed description of the process of writing a Quality Assurance Project Plan using the requirement set forth in a Program's Quality Assurance Program Plan. Intended for Program staff participating in data collection activities.
Writing a quality planning document for Board data collection activities	Description of the contents for writing a quality planning document other than a Quality Assurance Project Plan. Intended for Program staff participating in data collection activities.
Writing a Quality Assurance Project Plan or other quality planning document based on the requirements of a Program's Quality Assurance Program Plan and prepared by parties outside the Board	Same as those for Board staff except will include use of any templates developed by the Program. Intended for persons outside the Board who must comply with Board requirements in order to report data.
Topics of Interest and Basic Knowledge	
Basic Statistical Elements	A discussion of those statistical elements, such as averages and standard deviations, used by staff in the assessment of data. Little or no math – concepts only. Required training for all staff reviewing and assessing data.

BOARD QA TRAINING AGENDA

TABLE 5. Outline of Quality Assurance Training

TRAINING TOPICS	
General	Short description and intended audience
Using Censored Data (data reported as non-detect)	A discussion of the processes available to assess datasets containing one or more reported non-detections. Required training for all staff reviewing and assessing data.
Basic Laboratory Quality Assurance	Beginning instruction in the processes and procedures used by environmental testing laboratories. Required for all staff using or collecting data.
Special topics in Laboratory Quality Assurance/Quality Control	Selected topics and discussion on items of interest to Board staff. Those interested in the topic.
Auditing and Assessing Data Quality Processes under a Quality Planning Document	Overview of the auditing and assessing process of systems under a quality planning document. Program Representatives and Regional Water Boards Lead Persons.
Auditing and Assessing Quality Assurance Program Plans	Overview of the auditing and assessing process for activities under a Quality Assurance Program Plan. Program Representatives and Regional Water Boards Lead Persons.
Discharge Monitoring Report- Quality Assurance (DMR-QA) Training	Annual proficiency test training for various Board Roundtables, NPDES staff, RB staff, and dischargers.
Alternative Test Procedure (ATP)	Introduction to the process of applying to use a modification to an EPA analytical method. For QA and NPDES Roundtables and NPDES permittees.
Laboratory Report Review	How to understand and use data from lab reports. Board Roundtables upon request.
Oceans Unit Training/Update	In progress: Standardizing the procedures for beach monitoring of Fecal Indicator Bacteria (FIB)
Quality Systems	As above for managers, this training is for QA, NPDES, and Drinking Water Roundtables
Sufficiently Sensitive Methods (SSM) Rule	State Board QA Officer and EPA staff provide training about EPA's SSM Rule affecting all NPDES dischargers.
Other Special Topics	As requested by Board staff
Special topics of interest	As requested by individuals outside of the Board such as persons required to comply with a Quality Assurance Project Plan or dischargers groups that are complying with the Alternative Test Procedures, or DMR-QA requirements.

APPENDIX 2.

List of Current Quality Assurance Staff, State Board Program Representatives, and Regional Water Boards Quality Assurance Lead Persons

Quality Assurance Program Staff

State Board Quality Assurance Officer..... Renee Spears

State Board Program Representatives

Division of Drinking Water..... Bruce Burton
ELAP..... Christine Sotelo
Surface Water Ambient Monitoring Program (SWAMP)..... Melissa Morris
Stormwater..... Laurel Warddrip
NPDES..... Carl Henriet
303(d) Assessment..... Jesse Maxfield
Total Maximum Daily Load- TMDL..... Vacant
Irrigated Lands..... Johnny Gonzalez
Underground Storage..... Vacant

Regional Water Boards Quality Assurance Lead Persons

Region 1 – North Coast Region..... Vacant
Region2 – San Francisco Bay..... Vacant
Region 3 – Central Coast..... Karen Worcester
Region 4 – Los Angeles..... Jau Ren Chen
Region 4-- Los Angeles- Groundwater..... Thizar Tintut-Williams
Region 5 – Central Valley..... Vacant
Region 6 – Lahonton..... Bruce Warden
Region 7 – Colorado River..... Jeff Geraci
Region 8 – Santa Ana River..... Vacant
Region 9 – San Diego..... Helen Yu

APPENDIX 3.

EPA Guidance Documents

Guidance on Assessing Quality Systems EPA GA/G-3

<https://www.epa.gov/sites/production/files/2015-06/documents/g3-final.pdf>

EPA Quality Manual for Environmental Programs

https://www.epa.gov/sites/production/files/2015-09/documents/cio_2105-p-01-0.pdf

EPA QA/R-2, EPA Requirements for Quality Management Plans

<https://www.epa.gov/sites/production/files/2016-06/documents/r2-final.pdf>

EPA QA/R-5, EPA Requirements for Quality Assurance Project Plans

https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf

Guidance for Quality Assurance Project Plans, EPA QA/G-5

<https://www.epa.gov/sites/production/files/2015-06/documents/g5-final.pdf>

Guidance for Geospatial Data Quality Assurance Project Plans EPA QA/G-5G

<https://www.epa.gov/sites/production/files/2015-06/documents/g5g-final.pdf>

Guidance for Preparing Standard Operating Procedures, EPA QA/G-6 from March 2001

<https://www.epa.gov/sites/production/files/2015-06/documents/g6-final.pdf>

Guidance for Developing a Training Program for Quality Systems EPA QA/G-10

<https://www.epa.gov/sites/production/files/2016-03/documents/g10-final.pdf>

APPENDIX 4.

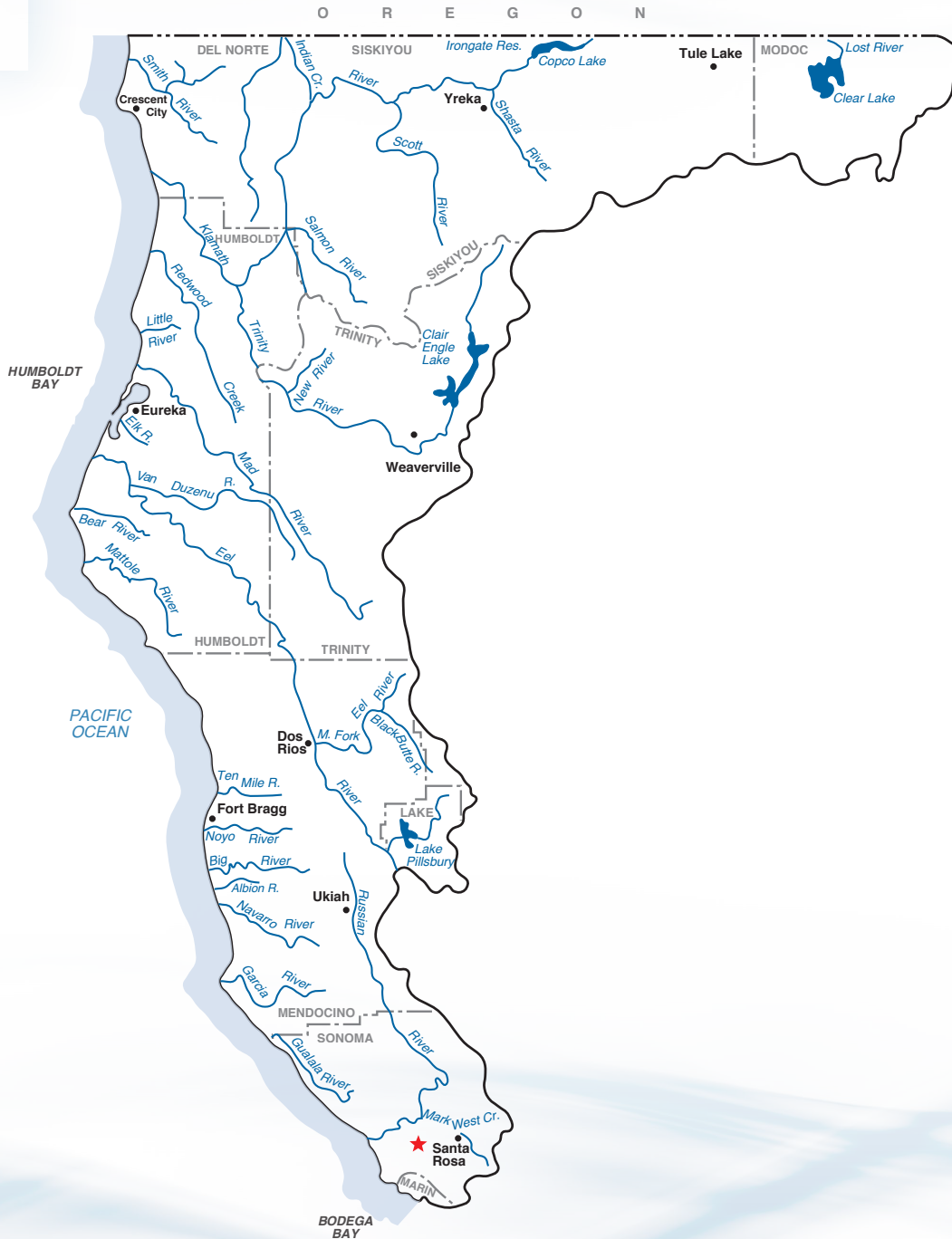
Regional Water Boards Maps and Priorities

Quality



REGION ONE

North Coast Regional Water Board



REGION 1

North Coast Regional Water Board

Includes land in the counties of: Del Norte, Glenn, Humboldt, Lake, Marin, Mendocino, Modoc, Siskiyou, Sonoma, and Trinity.

Remote wilderness and towering redwoods characterize the North Coast Region, which stretches from the Oregon border to Marin County. A land of wet coastal mountains and drier inland valleys, it accounts for 12 percent of the state's land area, but 35 percent of its freshwater runoff. Its 340-mile-long coastline includes estuaries and environmentally sensitive areas protected by state law. Timber harvesting, agriculture, recreation, and tourism are mainstays of the local economy.



Priorities:

- Develop and implement permits for county roads, confined livestock, and irrigated agriculture/grazing in the Klamath Basin.
- Maintain investment in wastewater infrastructure and assist rural communities to upgrade their wastewater discharges to land.
- Develop a groundwater quality protection plan for discharges to land in the Region.
- Continue accelerated closure of underground tank sites.

REGION TWO

San Francisco Bay Regional Water Board



REGION 2

San Francisco Bay Regional Water Board

Includes land in the counties of: Alameda, Contra Costa, Marin, Napa, San Francisco, Santa Clara (north of Morgan Hill), San Mateo, Solano, and Sonoma.

San Francisco Bay lies at the heart of this area, home to more than 7 million people. Industries range from high-tech computer manufacturers in Silicon Valley to oil refineries in Contra Costa County. The northern part of the region supports agriculture, such as the wine industry and dairies. Despite the heavy urbanization, there are still abundant natural resources, such as migratory birds, and fish in and around the Bay.

Priorities:

- Implement TMDLs for pathogens, pesticides, mercury, and PCBs by using waivers for grazing activities and vineyards, implementing the regional urban storm water permit, and directing grants towards TMDL actions.
- Pursue aggressive enforcement with emphasis on sewage spills and polluted storm water discharges.
- Close low-risk contaminated groundwater sites following investigation and cleanup actions necessary to protect water quality human health, and the environment.



REGION THREE

Central Coast Regional Water Board



three

REGION 3

Central Coast Regional Water Board

Includes land in the counties of: Santa Clara (south of Morgan Hill), Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara.

The Central Coast Region extends from Santa Clara County south to northern Ventura County. The region has 378 miles of coastline, including Santa Cruz and the Monterey Peninsula, the agricultural Salinas and Santa Maria Valleys, and the Santa Barbara coastal plain. Tourism, power and oil production, agriculture and related food processing activities are the major industries.

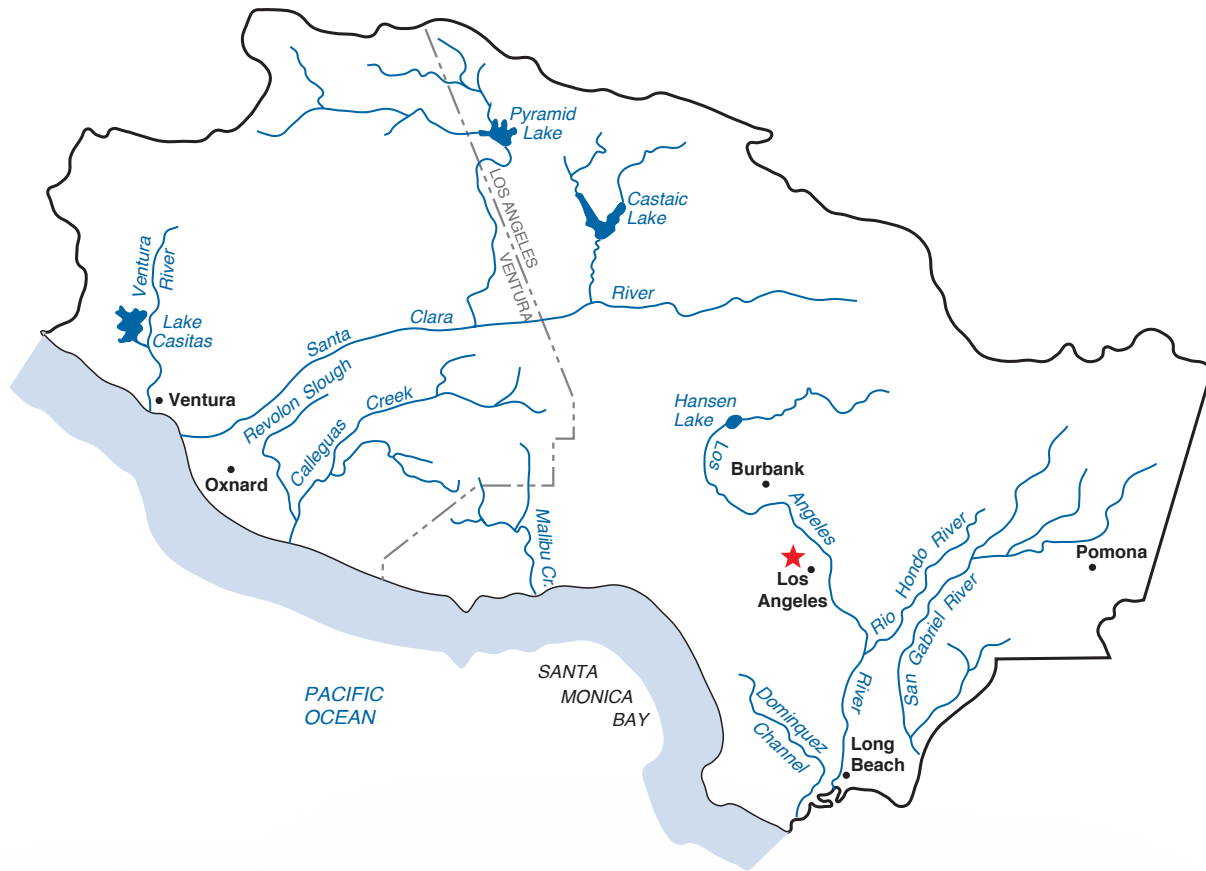


Priorities:

- Decrease nitrate sources (predominantly agricultural sources in the larger basins) and continue with cleanup of chemical and fuel sites.
- Secure replacement water for rural wells without treatment.
- Improve urban stormwater runoff quality and quantity, and increase watershed sustainability through the development and approval of high-quality Stormwater Management Plans, including hydromodification criteria and requirements.

REGION FOUR

Los Angeles Regional Water Board



REGION 4

Los Angeles Regional Water Board

Includes land in the counties of: Los Angeles, Ventura counties, small portions of Kern and Santa Barbara counties.

With 10 million residents, the Los Angeles region is the most densely populated region in the state. It encompasses all the coastal watersheds of Los Angeles and Ventura Counties., along with portions of Kern and Santa Barbara Counties. Land use varies considerably. In Ventura County, agriculture and open space exist alongside urban, residential, and commercial areas. In northern Los Angeles County, open space is steadily being transformed into residential communities. In southern Los Angeles County, land uses include urban, residential, commercial, and industrial.

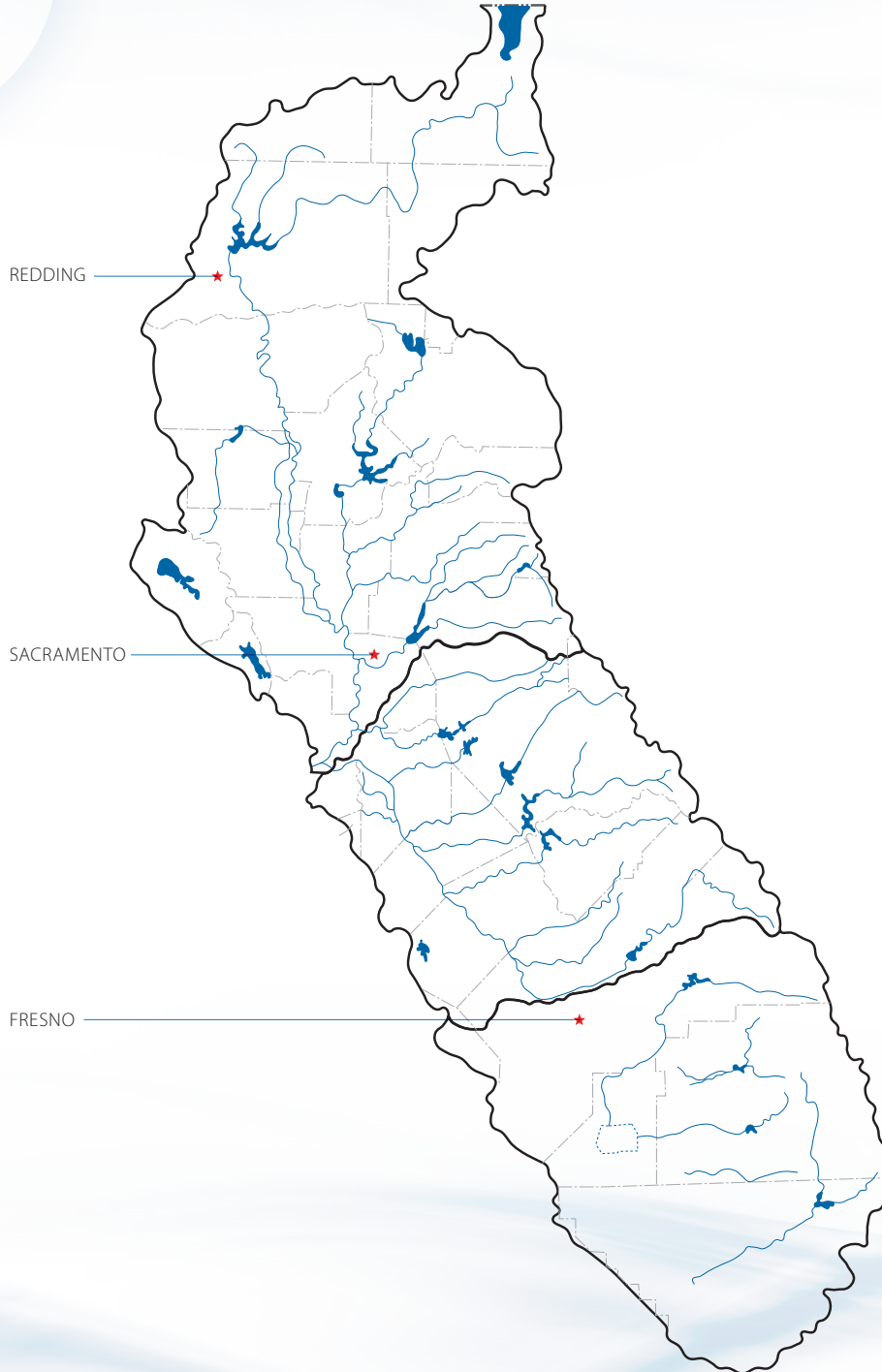


Priorities include:

- Protect and restore water quality by reissuing the Region's Conditional Waiver for Irrigated Lands, which regulates discharges from agricultural activities.
- Reissue the Municipal Separate Storm Sewer System (MS4) Permits for municipalities within Los Angeles County and the unincorporated portions of the County, which regulate urban runoff and stormwater discharges.
- Improve water quality regulation by prioritizing water quality standards to update, consistent with federal and state requirements, based on the best available science and stakeholder input.
- Increase the level of groundwater protection through permitting, monitoring, inspections, and enforcement to ensure that groundwater resource remains available for use during droughts and for future generations.
- Initiate efforts to implement the State Board's recent water recycling policy which requires the Region to optimize the use of recycled water recycling policy which requires the Region to optimize the use of recycled water through the establishment of nutrient and salt load estimates for critical groundwater reserves.
- Protect and preserve water quality by renewing NPDES permits which regulate discharges of wastewater from municipal and industrial wastewater systems into rivers, lakes, and the ocean, and by implementing Waste Load Allocations from TMDLs.
- Prevent illegal disposal of materials in waterways, wetlands, and flood plains through permitting and enforcement.
- Restore and enhance water quality through rigorous and timely clean-up of brownfields and contaminates properties – especially in EJ communities.

REGION FIVE

Central Valley Regional Water Board



REGION 5

Central Valley Regional Water Board

Includes land in the counties of:

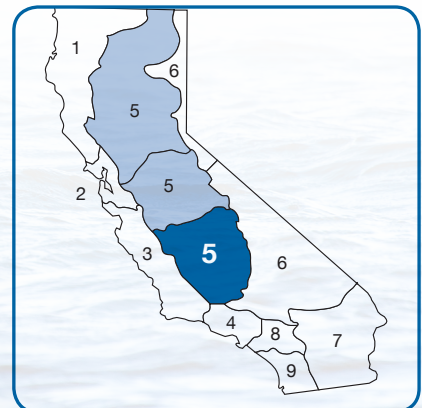
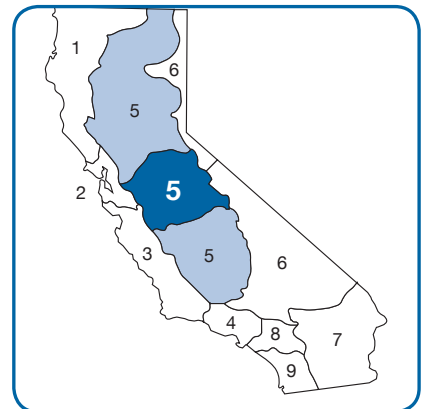
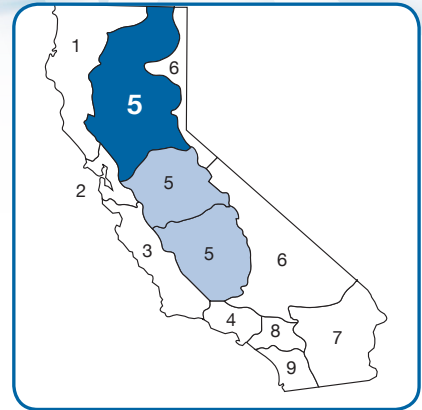
Sacramento Office - Alameda (East), Amador, Calaveras, Colusa, Contra Costa (East), El Dorado, Glenn, Lake, Napa (N. East), Nevada, Placer, Sacramento, San Joaquin, Stanislaus, Sierra, Solano (West), Sutter, Yolo, and Yuba.

Fresno Office - Fresno, Kern, Kings, Madera, Mariposa, Merced, Tulare, and Tuolumne, and small portions of Los Angeles, San Benito, and San Luis Obispo Counties.

Redding Office - Butte, Glenn, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Tehama Counties.

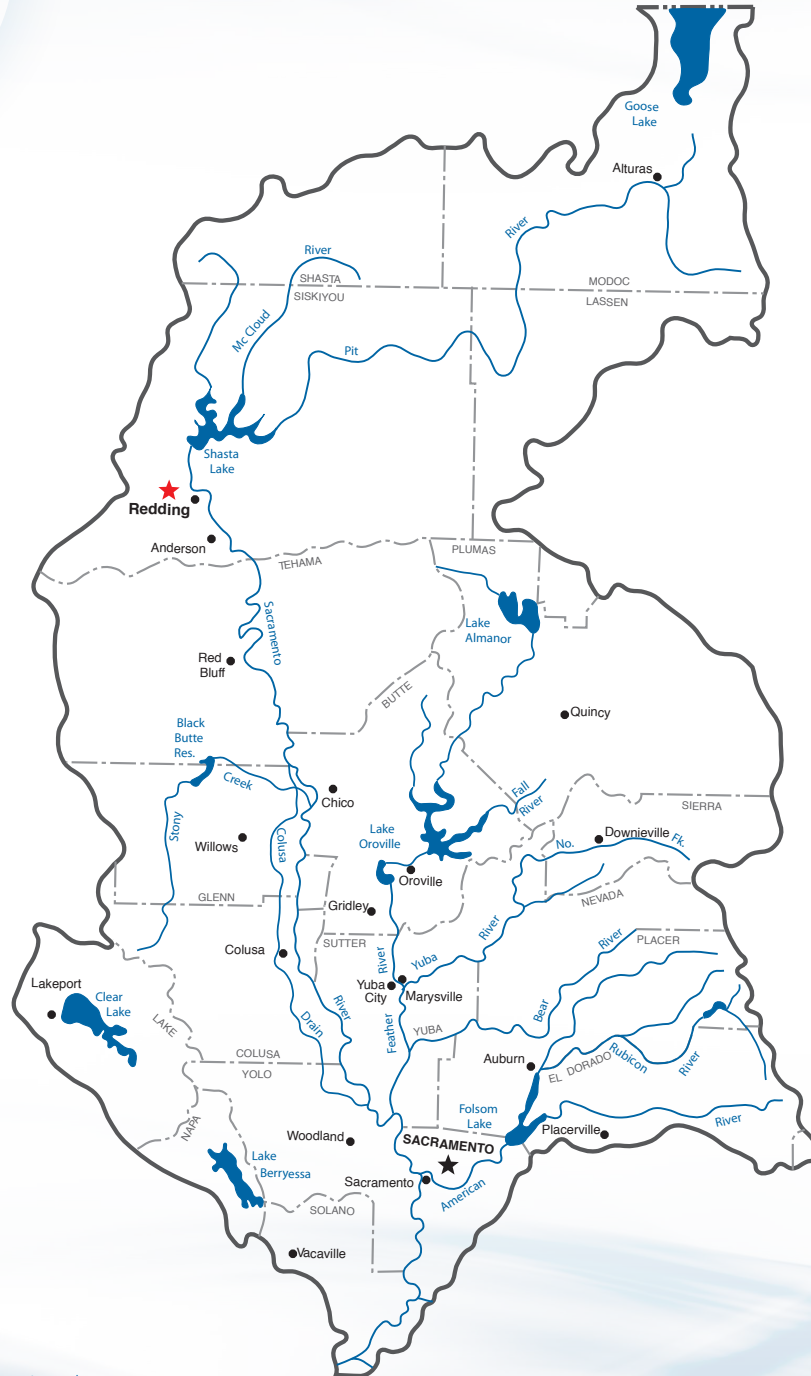
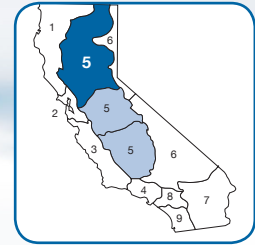
Priorities:

- Develop a Groundwater Quality Protection Strategy for the Central Valley Region.
- Develop a programmatic EIR and General Waste Discharge Requirements Order (General Order) for digesters associated with dairy facilities. The Dairy Digester EIR project addresses the need to streamline California's renewable energy project approval process, and supports the California's Renewable Portfolio Standard, renewable energy load target for 2020.
- Finalize the EIR and recommend a program for the long-term irrigated lands regulatory program. Hold public workshops throughout the Central Valley regarding the draft EIR and Staff Report.
- Develop a Salinity and Nitrate Management Plan for surface and groundwater throughout the entire Central Valley, using a stakeholder based approach. Implement Delta Strategic Workplan, including continues work on TMDLs and coordinated interagency studies of Delta issues.



REGION 5 (North)

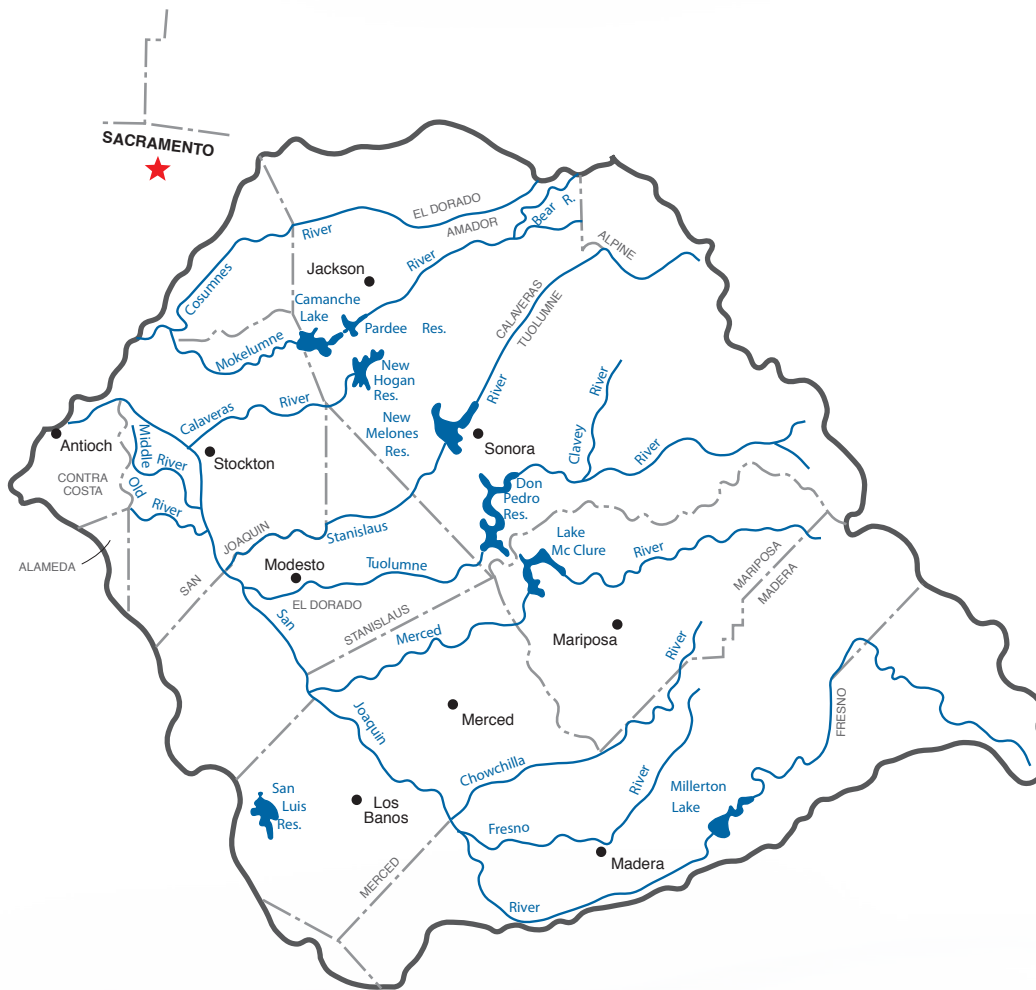
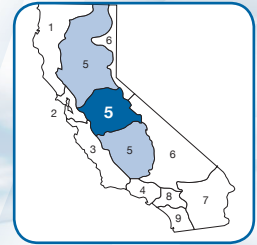
Central Valley Regional Water Board



* Land within Redding Office Jurisdiction

REGION 5 (Mid Valley)

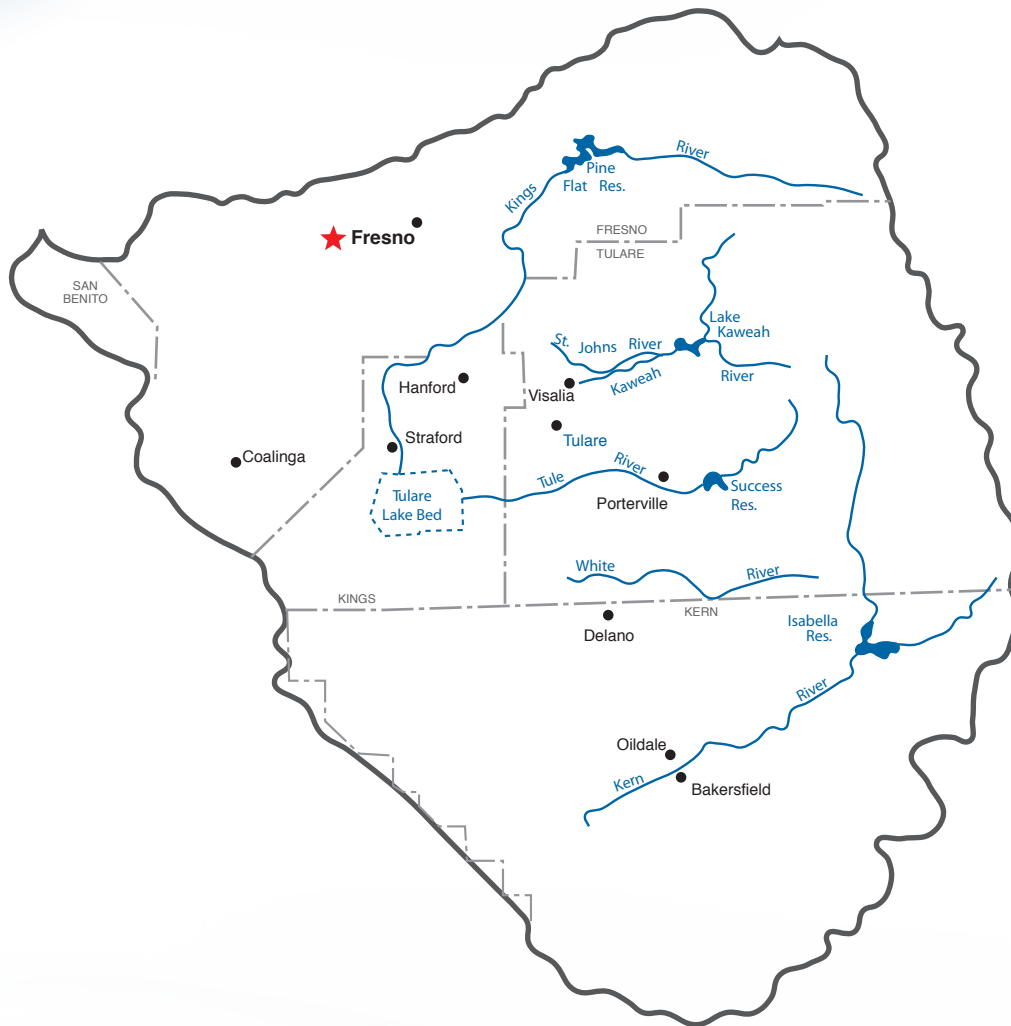
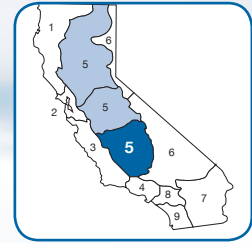
Central Valley Regional Water Board



* Land within Sacramento Office Jurisdiction

REGION 5 (South)

Central Valley Regional Water Board

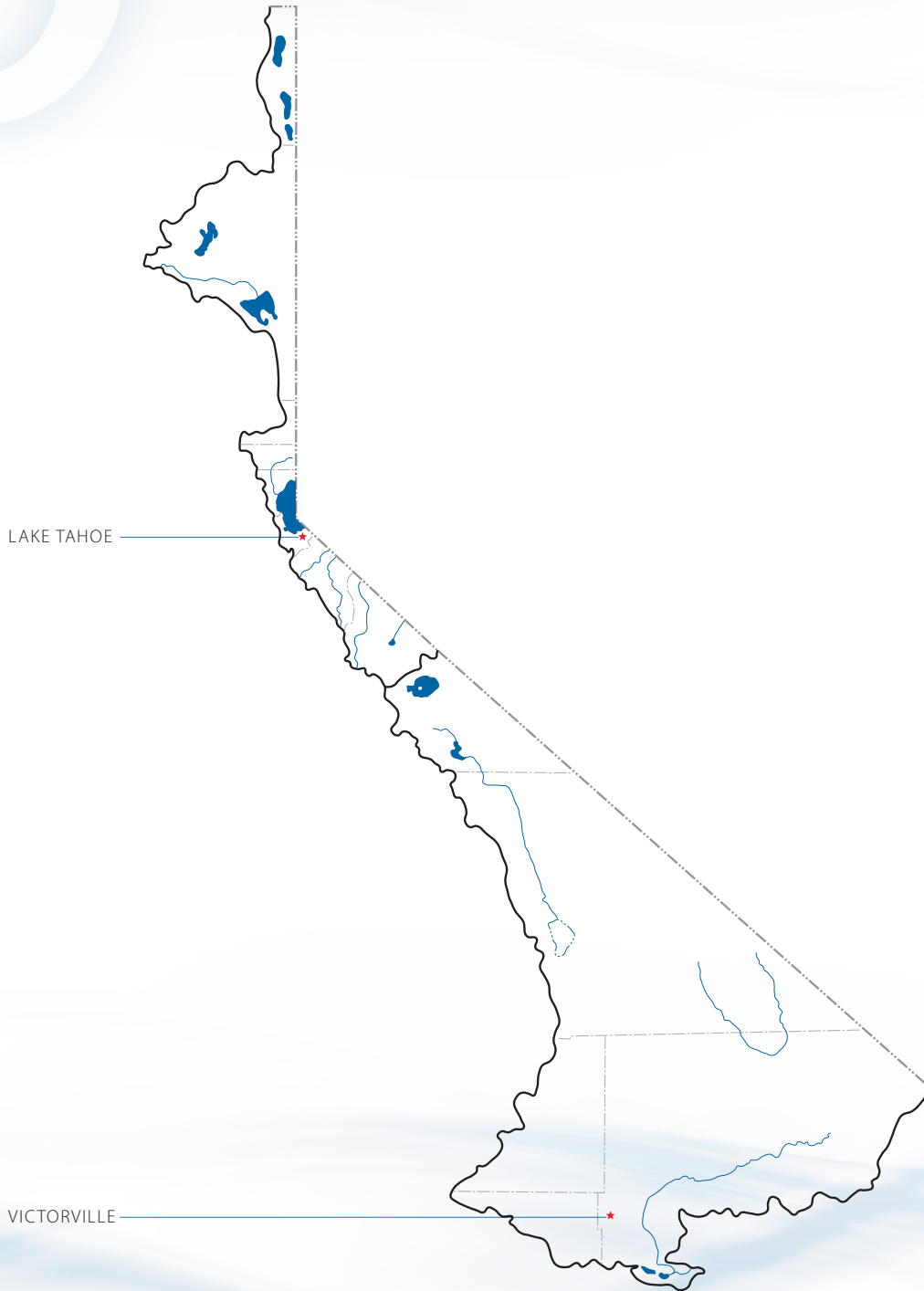


* Land within Fresno Office Jurisdiction

Quality

REGION SIX

Lahontan Regional Water Board



REGION 6

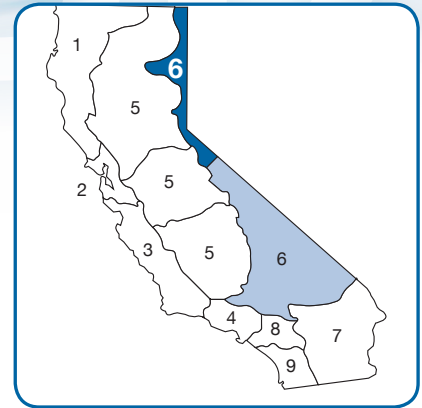
Lahontan Regional Water Board

Includes land in the counties of: Modoc (East), Lassen (East side and Eagle Lake), Sierra, Nevada, Placer, El Dorado, Alpine, Mono, Inyo, Kern (East), San Bernardino, and Los Angeles (N/E corner).

The Lahontan Region is named for a prehistoric lake that once covered much of the Great Basin. The region includes about 20 percent of California from the Oregon border south along the eastern crest of the Sierra Nevada through the northern Mojave Desert. Within this area are hundreds of lakes, streams, and wetlands, including the nationally significant Lake Tahoe and Mono Lake. Tourism is the most important industry in the region, which also includes Death Valley, National Park, the Mammoth Lakes area and portions of the Mojave National Preserve. The region's southern cities are experiencing rapid population increases ranking them within the top ten nationally.

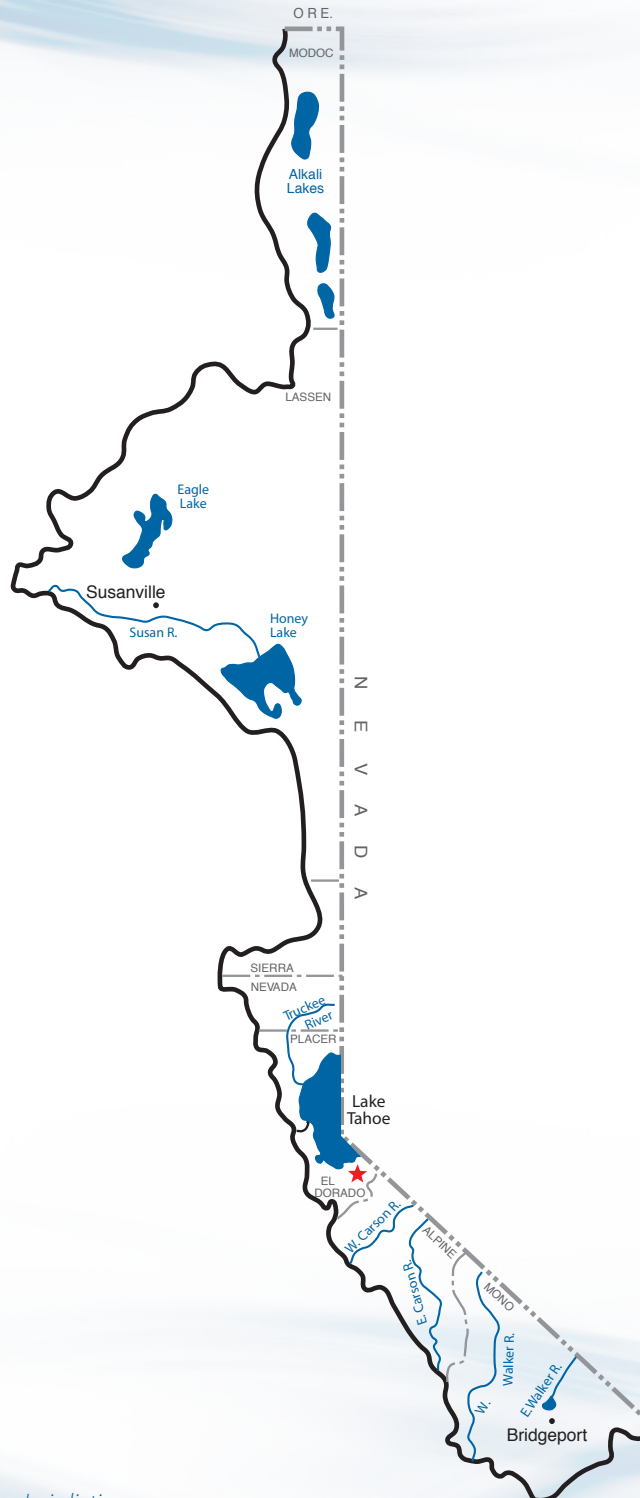
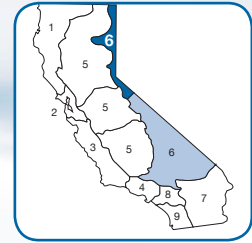
Priorities:

- Adopt and implement a Lake Tahoe TMDL concurrently with the Nevada Division of Environmental Protection.
- Protect and restore groundwater quality threatened or polluted by nitrate and total dissolved solids from municipal and dairy wastes.
- Support the California Energy Commission's actions to permit numerous solar generating facilities.
- Ensure timely efficient remediation of groundwater at sites affected by petroleum and other contaminants.



REGION 6 (North)

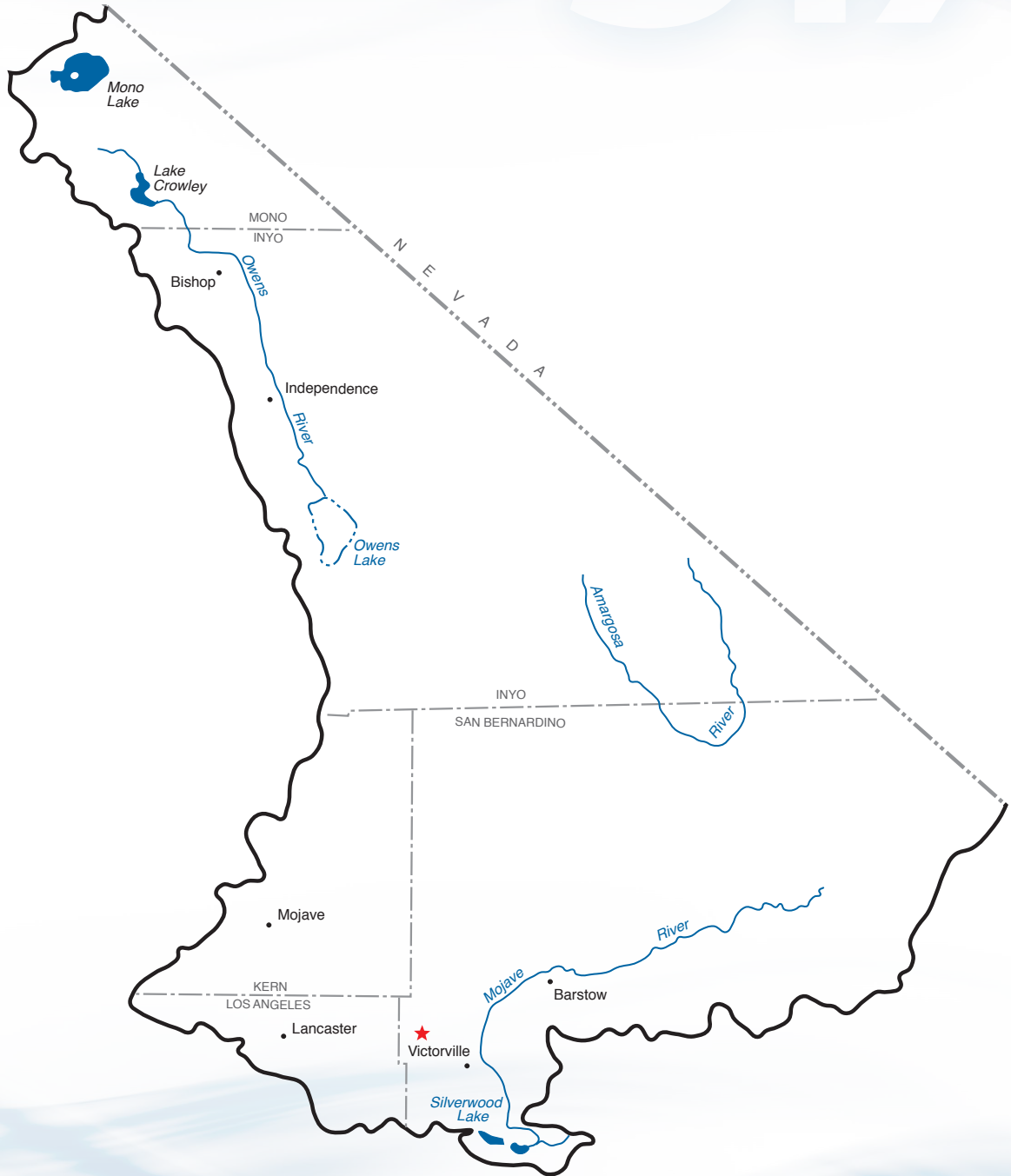
Lahontan Regional Water Board



* Land within South Lake Tahoe Office Jurisdiction

REGION 6 (South)

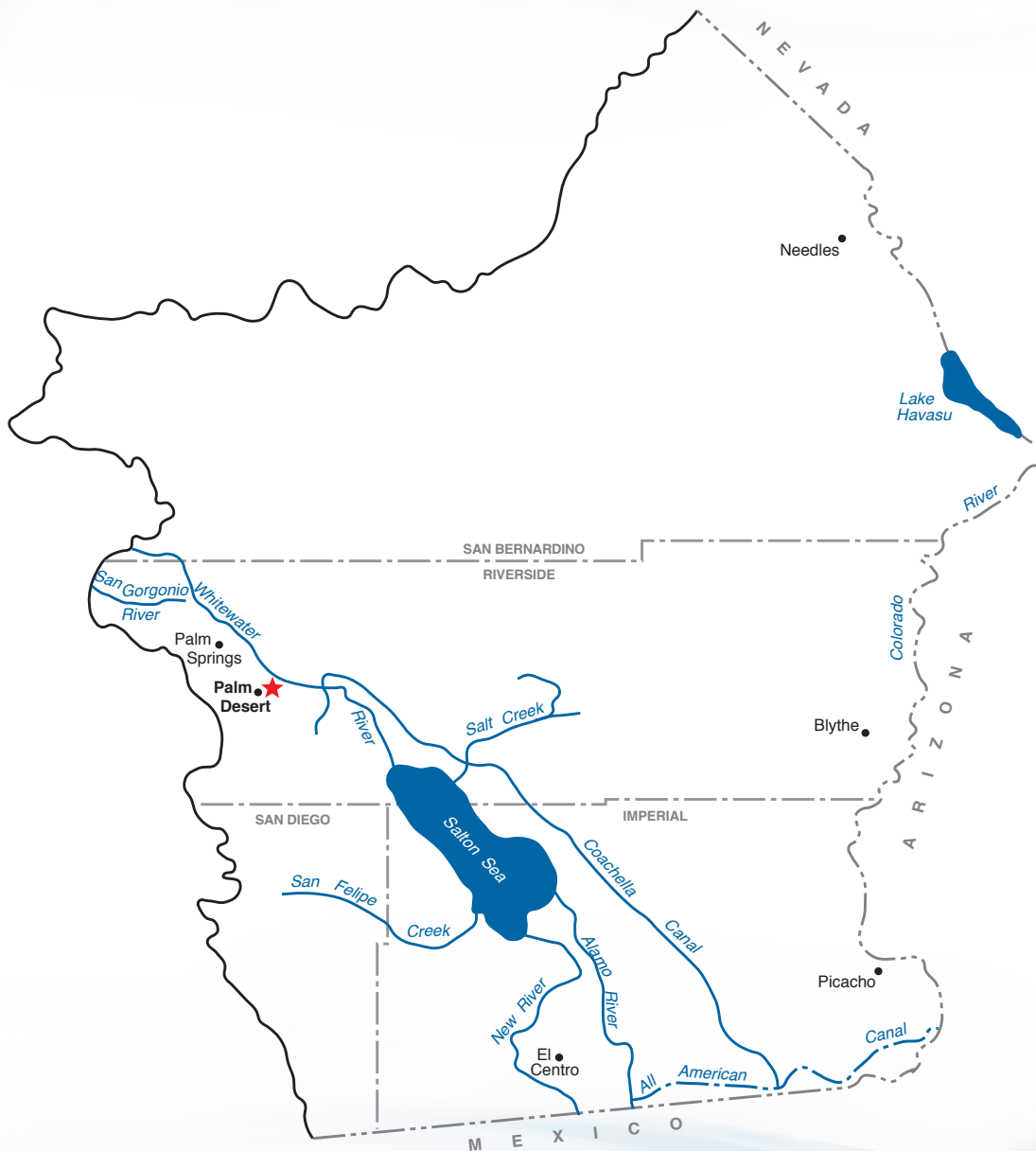
Lahontan Regional Water Board



* Land within Victorville Office Jurisdiction

REGION SEVEN

Colorado River Basin Regional Water Board



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REGION 7

Colorado River Basin Regional Water Board

Includes land in the counties of:

Imperial, Riverside, San Bernardino, and San Diego.

The Colorado River Basin Region covers California's most arid area. Despite its dry climate, the region contains two water bodies of state and national significance: the Colorado River and the Salton Sea. Water from the Colorado River irrigates more than 700,000 acres of productive farmland in the Imperial, Coachella, Bard, and Palo Verde Valleys. The river also provides drinking water to several million people in California's southern coastal cities.

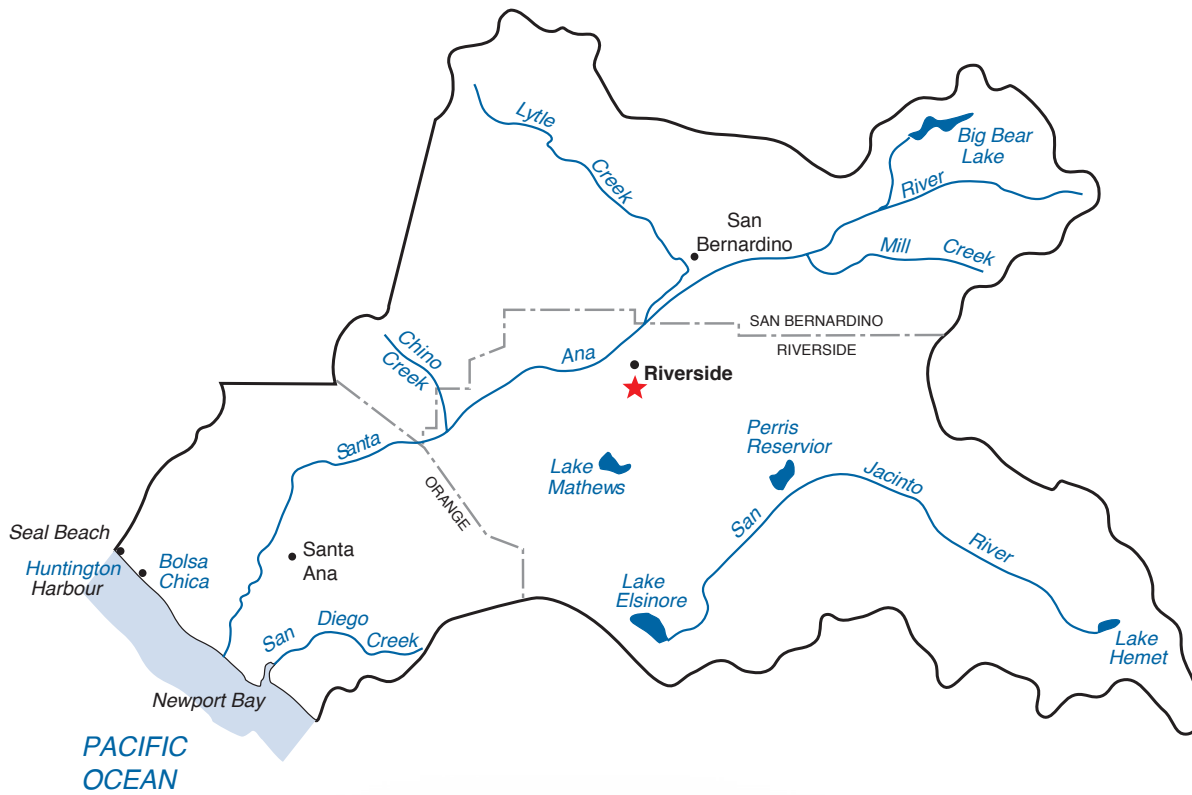


Priorities:

- Monitor, inspect, and assess water quality improvements in the New River at the international boundary with the Republic of Mexico.
- Eliminate septic tanks and promote the construction of wastewater treatment plants and sewer lines in dense residential and commercial areas.
- Prohibit agricultural discharges through basin plan amendments.

REGION EIGHT

Santa Ana Bay Regional Water Board



REGION 8

Santa Ana Bay Regional Water Board

Includes land in the counties of:

Orange, Riverside, and San Bernardino.

The Santa Ana Region, which extends from the San Bernardino and San Gabriel mountains in the north and east to Newport Bay along the coast, continues to be one of the most rapidly growing areas of the state. While the region is geographically the smallest, 2,800 square miles, it boasts one of the largest populations with almost 5 million people. This semi-arid region is known for its temperate climate and relatively low rainfall – about 15 inches per year.

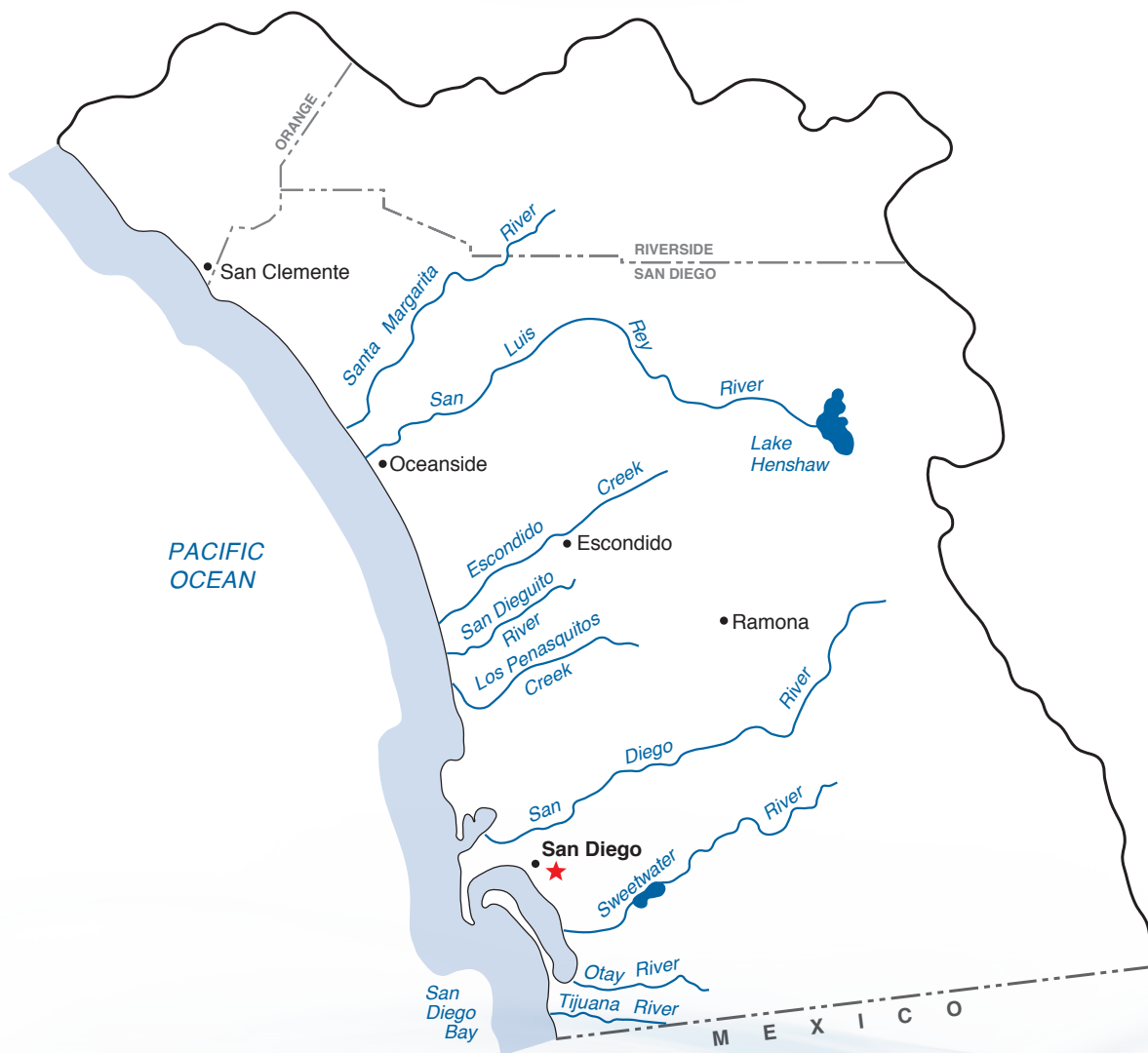


Priorities:

- Continue work to implement a cleanup plan for perchlorate contamination in the Rialto-Colton groundwater basin.
- Adopt and implement a selenium TMDL and selenium site-specific objective for the San Diego/Newport Bay Watershed.
- Oversee three municipal separate storm sewer (MS4) permits for the Santa Ana River Watershed in parts of Orange, Riverside, and San Bernardino Counties, including development of low impact development guidelines for the three counties.
- Revise recreational water quality standards, including revised objectives based on EPA's national criteria, suspension of standards during high-water flows, and modification of the definition for water contact recreation.

REGION NINE

San Diego Regional Water Board



REGION 9

Santa Diego Regional Water Board

Includes land in the counties of:
Imperial, Riverside, and San Diego.

The San Diego Region stretches 85 miles of scenic coastline from Laguna Beach to the Mexican Border and extends 50 miles inland to the crest of the coastal mountain range. In a mild, coastal climate, the region's growing populations enjoy many water-related activities; however, little precipitation falls within the semiarid region. About 90 percent of the region's water supply is imported from northern California and the Colorado River.



Priorities:

- Continue evolution of effective municipal storm water regulation with greater emphasis on environmental outcomes. Increase use of low-impact development, decrease effects of hydromodification, and focus efforts on effective regulation of prohibited non-storm water discharges.
- Continue to address the list of impaired, 303 (d)-listed water bodies and coordinate with stakeholders to develop TMDL or non-TMDL solutions to effectively mitigate sources of pollution.
- Assume leadership in designing and implementing regional and ambient components to all monitoring programs.
- Continue effective regional regulation of activities/sites that threaten local potable water supplies serving groundwater dependent communities.



Quality