SAN FRANCISCO BAY
REGIONAL WATER QUALITY CONTROL BOARD

WATERSHED MANAGEMENT INITIATIVE
INTEGRATED PLAN CHAPTER

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EXECUTIVE SUMMARY

WATERSHED MANAGEMENT INITIATIVE OVERVIEW

The water resource protection and restoration efforts of the State Water Resources Control Board and the nine Regional Water Quality Control Boards are guided by a five-year *Strategic Plan* (last updated in November 2001). A key component of the *Strategic Plan* is a watershed management approach for water resources protection and restoration. To protect water resources within a watershed management approach, point and nonpoint source discharges, ground and surface water interactions, and water quality/water quantity relationships within each watershed must be considered. These complex relationships present considerable challenges to water resource protection programs. The State and Regional Boards are responding to these challenges with the Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues.

Past State and Regional Board programs tended to be directed at site-specific problems. This approach was reasonably effective for controlling water pollution from point sources. However, with diffuse nonpoint sources of pollutants now representing the majority of uncontrolled pollution, a new regulatory strategy is needed. The WMI strategy is to draw solutions from all interested parties within a watershed, to more effectively coordinate and implement measures to control both point and nonpoint pollution sources.

During the initial phase of the WMI, each Regional Board identified the watersheds in its Region, prioritized water quality issues within each watershed, and began to develop watershed management strategies. These strategies and the State Board's overall coordinating approach to the WMI are contained in each Board's Chapter of the *Integrated Plan for Implementation of the WMI*. This San Francisco Bay Region Chapter is designed to be a planning tool for identifying priorities that are funded by existing resources, as well as listing some of the priority tasks that are not currently funded. The Introduction to the Chapter discusses how we work to implement the WMI, discusses our priority setting process, and summarizes priority actions within each of our Regionwide programs.

WATERSHEDS IN THE SAN FRANCISCO BAY REGION

The San Francisco Bay Region, which covers a basin of approximately 4,550 square miles, is located on the central coast of California (see Figure 1-1). The San Francisco Bay and Delta form the largest estuary on the West Coast and are the drainage outlet for waters of the Central Valley. The basin also marks a natural topographic separation between the northern and southern coastal mountain ranges. Because of its highly dynamic and complex environmental conditions, the basin supports an extraordinarily diverse and productive ecosystem. Its deepwater channels, tidelands, and marshlands provide a dynamic and complex environment that supports an extraordinary array of plants, animals, birds, and aquatic life. Two-thirds of the

state's salmon pass through the Bay and Delta each year, as do half of the waterfowl and shorebirds migrating along the Pacific Flyway.

Nearly 50 significant upland watersheds have been delineated in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan). The basin includes freshwater and estuarine streams and rivers whose beneficial uses include habitat and spawning areas for anadromous fish, municipal and domestic drinking water, agricultural and industrial process water supply, water recreation, and navigation. In addition to San Francisco Bay, there are many water bodies of special significance within the basin. For example, coastal watersheds in Marin (Lagunitas Creek, Olema Creek, and Redwood Creek) and San Mateo Counties (Pescadero Creek and San Gregorio Creek) are critical habitat in Central California for threatened and endangered coho salmon and steelhead populations.

Tomales Bay on the northwest coast of Marin County has special significance since it is one of the few relatively undeveloped major estuaries along the coast. It is one of four commercial shellfish growing areas in the west, has significant sport and commercial fisheries, and is a major recreational area for the whole San Francisco Bay region. Both Tomales Bay and the Bolinas Lagoon on the southern Marin coast have been designated Wetlands of International Importance under the Ramsar Treaty (an international agreement on wetland conservation and protection signed in 1971).

Within the nine-county Region there are over 33 groundwater basins. Santa Clara Valley, Niles Cone, Livermore Valley and Westside Basins are the largest water supply resources, which supply groundwater to approximately 3 million people. During the dry seasons, groundwater discharges to surface water provide essential fresh water replenishment to creeks. Locally, groundwater is also used for irrigation and industrial supply beneficial uses.

WATER QUALITY ISSUES AND PRIORITIES

The San Francisco Bay Region has a large variety of water quality issues to address. The Bay Area is highly urbanized and is affected by all of the impacts associated with commercial, industrial, and residential development, including wastewater and industrial discharges, significant historic loss of wetlands through diking and filling, widespread stream modification projects for flood control and urban development, and contamination from pollutants such as industrial chemicals, hydrocarbons, pesticides, and legacy pollutants such as PCBs and mercury. The Region has seen a rapid expansion of residential development within the past thirty years, which has lead to impacts from increased impervious surface, storm water pollution, and changes to stream channels, hydrographs and riparian zones. Groundwater contamination from industrial sites, leaking underground tanks, landfills, and MTBE are also major water quality concerns in the Region. Other major stressors include water diversions, from bays and other waterways, and impacts from invasive species.

There are also water quality impacts in the more rural areas of the Region from grazing and agriculture, confined animal facilities, onsite sewage systems, and land conversions. Coastal watersheds are impaired due to impacts from sedimentation and habitat degradation (e.g., excess fine sediments, lack of large woody debris, and lack of spawning gravels). Tomales Bay, though protected from urban development, is an impaired water body due to impacts from pathogens,

sediment, and mercury. There are also many watersheds draining to San Francisco Bay that have important beneficial uses for fishes and other aquatic species; in most cases these streams have suffered severe habitat degradation due to the impacts of urbanization and flood control projects. The Introduction to this Chapter, Section 1.0, summarizes the water quality priority setting processes we have carried out in Region 2 since the Watershed Management approach was first developed. Table 1-1 in the Introduction lists the current Regional Water Quality Priorities, which include program priorities, regulatory mandates, and priorities for potential grant funding. Regional priorities and targeted projects are also discussed more fully in Section 2.1 High Priority Issues and Funding Needs of our Regionwide Activities.

CRITICAL COASTAL AREAS

Critical Coastal Areas (CCAs) are specially designated land areas of the California coast where state, federal and local government agencies and other stakeholders have agreed to improve degraded water quality or protect exceptional coastal water quality from the impact or threat of nonpoint source pollution, by coordinating expertise and resources. The CCA Program was established to coordinate actions within identified CCAs through an interagency CCA Committee led by the California Coastal Commission (CCC) in coordination with the State Coastal Conservancy, SWRCB, the six coastal Regional Boards, and the public. The CCA Committee is working to identify CCAs and develop additional Management Measures (MMs) necessary to protect these areas. CCAs are selected from coastal areas adjacent to nearshore State Water Quality Protection Areas (SWQPAs, formerly known as Areas of Special Biological Significance) or adjacent to 303(d) listed impaired waterbodies. A total of 21 CCAs in Region 2 have been designated, and nine of these have been proposed as high priority CCA planning and implementation areas. Following a public review process in early 2005, one or more of these sites will be chosen for potential pilot projects, which will have a high priority for funding from a variety of sources targeting nonpoint source projects, including Proposition 50, chapter 8 Integrated Regional Water Management.

WATERSHED MANAGEMENT ACTIVITIES

As a regional agency, we work to solve priority water quality issues at the local watershed level and at the regionwide level. This process is flexible, with communication occurring up and down the watershed scale to ensure optimum use of resources and effective actions.

County Watershed Management Area Activities

Because of the hydrology of our region, we have many small watersheds draining to San Francisco Bay, and relatively few discrete large watersheds, which precludes an obvious, clear division into watershed management areas. Therefore, the majority of our watershed work is carried on within the framework of each of the nine Bay Area Counties. Within each County, specific key sub-watersheds may be a focus of staff efforts, particularly in the larger North Bay river systems such as the Napa River, Sonoma Creek, and the Petaluma River and the coastal watersheds in Marin and San Mateo Counties. Staff working within each of the nine county watershed management areas (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties) is responsible for core regulatory programs (stormwater permitting, water quality certifications, waste discharge requirements) and management of nonpoint sources. In addition, staff participate in review of federal and state

grant applications; manage 319(h), Proposition 13 and 50 contracts and grant agreements; participate and provide technical guidance on specific watershed projects; and conduct public outreach and education efforts. Section 3.0 Watershed Based Activities describes each watershed management area, significant issues in each, and planned and proposed work tasks. Planned activities are tied to specific funding sources, whereas proposed activities currently have no funding sources. A summary of significant water quality issues in each of the county watershed management areas is listed below in Table ES-1. Currently, identification of these issues is based on collective input from staff and stakeholders working in individual watersheds.

Regionwide Activities

Through regionwide activities we address watershed issues that impact San Francisco Bay as a whole as well as addressing issues that are common to many watersheds. Our regionwide activities include: (1) Basin planning and policy development, (2) monitoring and assessment, (3) the Nonpoint Source Program, (4) wetlands and stream protection, (5) core regulatory programs (NPDES, Waste Discharge Requirements, and Chapter 15 WDRs), (6) groundwater management, (7) GIS, and (8) Total Maximum Daily Loads (TMDLs). These activities are briefly summarized below, with a more detailed discussion in the Regionwide Activities and Watershed Activities sections of this Chapter.

<u>Basin Planning and Policy Development</u>
Our long-term objectives are to:

- Refine existing regulations, policies, and implementation measures in order to define limits and requirements that are appropriate for local conditions in cases where federal standards and/or statewide implementation measures may not be appropriate;
- Develop regulatory program tools that will facilitate the transition between point source discharge regulation and broader watershed and cross-media management;
- Develop local policies and regulatory approaches for watershed management,; and
- Develop TMDLs for pollutants of concern (see also TMDL section under Watershed Activities).

<u>Monitoring and Assessment</u>
The goals of monitoring and assessment are to define issues, set priorities, and evaluate effectiveness of pollution prevention and control actions. Dischargers fund a $2.6 million annual San Francisco Bay Regional Monitoring Program to regularly monitor and assess San Francisco Bay segments. The Surface Water Ambient Monitoring Program (SWAMP) implements part of our Regional Monitoring and Assessment Strategy developed in 1999. The goal of the SWAMP program in this Region is to monitor and assess all of our waterbodies in order to identify reference sites (clean sites) and sites that are impaired. Data developed in this program are used for evaluating waterbodies for the water quality assessment report required by Clean Water Act Section 305(b) and the impaired waterbodies list required by Clean Water Act Section 303(d). We also participate in a number of other ongoing regional and local watershed monitoring and assessment programs..

<u>Nonpoint Source Program</u>
Our overall goals for the nonpoint source program are to:

- Facilitate implementation of watershed management plans for the prevention and control of nonpoint source pollution throughout the San Francisco Bay Region;
- Promote implementation of land-use specific nonpoint source pollution management measures that prevent or solve nonpoint source pollution problems throughout the San Francisco Bay Region; and
- Educate, inform, and provide technical assistance to the public, public agencies, and private landowners and other interested parties about prevention and correction of nonpoint source pollution problems.

Our priority areas for nonpoint source funding are: facility wastewater and runoff from confined animal facilities, management measures for urban areas, and management measures for hydromodification.

Wetlands and Stream Protection

Wetlands and creeks are closely linked in the environment and through our regulatory programs. The Water Board regulates activities affecting wetlands and creeks under both Federal and State law. Staff resources are dedicated to overseeing applications for Water Quality Certifications and WDRs to regulate discharges of wastes to waterways under Federal and State laws. Our wetlands efforts are guided by the goals of conserving, protecting, restoring, and increasing wetlands habitat within the region, while continuing to improve the permitting process

Our stream protection efforts are guided by the long-term goal of having creeks and waterways that function as well or better than they do at the present time. Priority tasks in FY 2004/05 and beyond are to educate the Regional Board, Board staff, and local municipalities and stakeholders on the Stream Protection Policy (under development), using the recently developed technical reference circular, "A Primer for Stream and River Protection for the Regulator and Program Manager" as guidelines for project reviews, and identifying ways to improve cross-divisional communication and organization to be more effective in protecting streams.

Core Regulatory Programs

Core Regulatory programs include NPDES wastewater permitting, municipal and industrial storm water permitting, and permitting of facilities under non-Chapter 15 WDRs. These activities are implemented at both the regionwide and watershed level. Regionwide activities include program management and coordination and activities that are more efficiently implemented at the regionwide level. Storm water permitting, which is included in the Watershed Management Division, is integrally related to other watershed priorities such as TMDLs, and staff work closely together to assure that the watershed management approach is being maximized.

Groundwater Resource Management

The overall goal of the groundwater program is to protect and improve water quality for all beneficial uses. Our key stakeholders are the public, water supply agencies, owners of sites with contaminated groundwater, and property owners and developers. Groundwater programs are a major focus at the Regional Board. Groundwater priorities are to protect and restore groundwater quality for drinking water supply and other beneficial uses, through supporting local agencies, overseeing key contaminated MTBE sites and SLIC site cleanups, supporting Brownfield cleanups, facilitating cleanup and timely transfer of DOD/DOE sites, and regulating

landfills.

Geographic Information System (GIS)

The Regional Board continues to use GIS as a useful analytical tool for the study and monitoring of groundwater quality. The Regional Board is also increasing the use of GIS in watershed and TMDL analysis, and the SWAMP team is using GIS to track and monitor sampling sites. Future goals include updating watershed maps for the Basin Plan, increasing staff access to GIS tools, developing staff training, and increasing public access to Regional Board data layers.

Total Maximum Daily Loads (TMDLs)

TMDL development and implementation rely on a watershed-based approach. A complete TMDL encompasses many tasks and activities directly or indirectly associated with watershed/waterbody characterization, assessment, and management and other programs (e.g., NPDES, Nonpoint Source Program, Monitoring and Assessment, and Basin Planning). Consequently, TMDL development and implementation must be closely coordinated with watershed and program tasks on both the regionwide and county watershed management area levels. The goal of each TMDL is to solve the identified water quality impairment, not just to produce the TMDL itself. We will evaluate the need and benefit of tasks in each of the complete TMDL elements and focus resources on tasks most critical to the ultimate solution. Stakeholder participation and support are essential for all TMDL projects. We continually identify and create opportunities to enhance involvement and collaboration with stakeholders. These efforts include improved outreach and communication, improved descriptions and use of stakeholder involvement, and collaboration opportunities and mechanisms.

For more information on Water Board programs and activities, please visit the San Francisco Bay Region's website at http://www.waterboards/sanfranciscobay or contact the Watershed Management Initiative coordinator, Dale Hopkins, at Dhopkins@waterboards.ca.gov.

Table ES-1. Summary of Significant Issues in Bay Area Watersheds

County Watershed	Pollutants of Concern	Significant Issues and Water Quality Problems
Alameda	Sediments, PCBs, pesticides, turbidity and pH	Urban runoff, groundwater quality and groundwater recharge, pesticides in urban streams, fish barriers, soil erosion, water recycling
Contra Costa	Sediments, PCBs, pesticides	Urban runoff, groundwater recharge, pesticides in urban streams, changes in hydrograph from new development
Marin	Sediments, pathogens, mercury, pesticides in urban creeks, nutrients	Creek and wetland impacts, protection of fishery habitat, confined animal facilities, urban runoff, mercury mine waste, on-site sewage systems, pathogens, rural road erosion
Napa	Sediments, nutrients, pesticides, dissolved oxygen	Sedimentation in creeks, hillside erosion, creek and wetland impacts, new development, flow alteration
San Francisco	PCBs, pesticides, pathogens	Groundwater recharge, urban runoff, base conversions, beach closures
San Mateo	Sediments, nutrients, pathogens, pesticides	New development, beach closures, stream alteration, equestrian facilities
Santa Clara	Sediments, nutrients, mercury, pathogens, pesticides	Urban runoff, hydromodification, groundwater recharge, flood control projects
Solano	Sediments, nutrients, PCBs, hydrocarbons	Base conversions, upland erosion, refinery discharges, wetland impacts
Sonoma	Sediments, nutrients, pathogens, temperature	Vineyard conversions, confined animal facilities, urban runoff, hydromodification, water diversions