



WATER QUALITY

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A. INTRODUCTION

While providing an adequate supply of water has long been one of the primary challenges facing the region, maintaining the quality of the water in the region has become an increasingly important issue. Water serves many functions in the region. It is used by households for drinking and other purposes; it is relied upon by farmers to irrigate crops; it is critical to commercial and industrial operations. It also provides important recreational benefits, for activities such as swimming, fishing, surfing and sailing. Aesthetically, Southern California's rivers, streams, lakes, and oceans are an integral part of the natural landscape that has long drawn people to the region.

Maintaining clean water is an important goal for the future success of Southern California. Yet, the historical growth and urbanization in the SCAG region has often adversely affected water resources. More people have meant more sewage, and increased amounts of wastewater discharged into our water bodies. Urbanization has altered many of the natural filtration systems that maintain the quality of the water and has increased the amount of runoff pollution. Past industrial practices have left major underground aquifers unusable; aquifers that are relied upon by millions of residents for their drinking water.

Recent years, however, have resulted in many changes leading to improved water quality. With the assistance of federal funding, wastewater treatment has drastically improved during the past 15 years. New hazardous waste management practices have significantly reduced the likelihood that current industrial practices will contaminate groundwater supplies. Also, there is a growing awareness and scientific understanding of the relationship among water quality, the surrounding habitat, and land use. While the successes are noteworthy, new challenges still remain in the region. These issues include addressing and financing the control of non-point source pollution, such as stormwater runoff; paying for the cleanup of contaminated groundwater basins; and balancing the costs of water pollution control with other regional objectives. This chapter examines these and other issues.

Under Section 208 of the Clean Water Act, SCAG is the designated agency responsible for developing a Waste Treatment Management Plan for the region. The 208 plan is designed to provide a comprehensive planning framework for both point and nonpoint source water pollution. Specific planning requirements include, but are not limited to, identifying needed treatment works to meet anticipated needs over a 20 year period, the identification of construction priorities for the region, procedures and methods to control nonpoint source pollution from agriculture, mining and other sources. SCAG prepared the Areawide Waste Treatment Management Plan in 1979 and made amendments to the plan in 1981. This chapter, while not a comprehensive update to the 208 plan, addresses similar issues, including a regional framework for the expansion of wastewater treatment capacity.

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PURPOSE OF THE WATER QUALITY CHAPTER

The water quality chapter is not intended to be a prescriptive plan for addressing water quality issues in the region. Many public agencies in the region have responsibility for planning for and maintaining the quality of the region's water. Instead, the chapter is intended to provide a regional perspective on current water quality issues and the plans and programs for addressing these issues, and to better clarify the relationship between water quality and other regional concerns. Accordingly, the chapter is intended to accomplish the following:

- Identify the current water quality goals and objectives for the region as established under existing law.
- Provide an inventory of current water quality problem areas in the region.
- Identify and describe the various plans and programs affecting water quality in Southern California.
- Raise some regional issues associated with maintaining and improving water quality in the region including issues in which water quality goals and policies interact with other regional goals and policies.
- Provide a framework for ensuring that growth in wastewater treatment capacity is consistent with regional growth projections.
- Provide recommendations and policy options for improving the region's water quality and the current system for managing water quality.

C. CURRENT WATER QUALITY GOALS AND OBJECTIVES UNDER EXISTING FEDERAL AND STATE LAW

Both the federal Water Pollution Control Act (commonly referred to as the "Clean Water Act") and the state law on water quality (the Porter-Cologne Water Quality Act) establish goals and objectives for water quality. These two laws provide much of the legal basis for clean water programs in the region and, therefore, the goals and objectives established in these laws guide most of the region's clean water programs.

1. GOALS

The Clean Water Act (CWA) was initially passed in 1972 and has been amended several times thereafter. The law creates several regulatory requirements and programs and provides grants to state and local governments to finance clean water projects. The primary goal of the Clean Water Act is the following:

- To restore and maintain the chemical, physical, and biological integrity of the nation's water.¹

The central state law governing water quality is the Porter-Cologne Water Quality Act. The Act was passed in 1970 and established the State Water Resources Control Board and the various Regional Water Quality Control Boards, the primary state agencies responsible for maintaining water quality. The goal of the State and Regional Boards under the Porter-Cologne Act can be summarized as follows:

- To achieve and maintain water quality objectives that are necessary to protect all beneficial uses of all waters.

2. OBJECTIVES

The specific objectives for water quality in the region under current law are identified in the various Regional Water Quality Control Board Basin Plans. These plans, which are described in more detail below, provide specific objectives for various water bodies. These objectives are the limits or levels of water quality constituents or characteristics established for the protection of beneficial uses. Beneficial uses include the various current or potential uses of a waterbody, including, but not limited to domestic use, agricultural and industrial supply, power generation, recreation, aesthetic navigation, and preservation and enhancement of fish, wildlife, or other quality resources. Each waterbody may have a different set of beneficial uses and, therefore, different water quality objectives.

A summary of the water quality objectives for waterbodies in the SCAG region as contained in the Regional Basin Plans is included in the background document for the Water Quality chapter.

D. WATER RESOURCES IN THE SCAG REGION

¹See Federal Water Pollution Control Act, §§ 101(a).

Despite the perception that the Southern California region has little of its own water, the area includes a wide array of rivers, lakes, streams, groundwater basins and, of course, the Pacific ocean. The major surface water features of the region are identified in the map in Figure 11-1. The water resources in the region include the following.

1. SURFACE WATER

Surface water refers to the system of lakes, rivers, streams, and creeks in the region. These systems can be divided into hydrologic basins, or integrated systems that drain a specific area. Many of the surface water systems in the region have been developed into a series of dams, flood control channels, and spreading grounds. Hence, only a portion of the natural runoff actually flows through these river systems to the ocean. In several rivers, discharges from wastewater treatment plants may provide the majority of water flow during the dry season.

The Santa Clara River Basin includes the *Santa Clara river*. The main channel of the Santa Clara River has no lakes or reservoirs, although two of the Santa Clara's tributaries, *Castaic* and *Piru* have been dammed. *Lake Hughes*, *Munz Lake*, and *Elizabeth Lake* have been created by the San Andreas Fault. Elizabeth Lake drains into Castaic Lake. Another tributary of the Santa Clara, *Piru Creek*, flows into both *Pyramid Lake* and *Lake Piru*. *Sespe Creek* also drains a considerable area north of the Santa Clara Basin, eventually connecting with the Santa Clara River near Fillmore.

The Ventura River Valley is a separate hydrologic area, drained by the *Ventura River*. The Ventura River has *Matillja Lake* and *Lake Casitas* on its tributaries.

The *Los Angeles River* and the *San Gabriel River* are considered to be one hydrologic basin. The headwaters of the San Gabriel River and tributaries of the Los Angeles River rise in the San Gabriel Mountains. Prior to extensive urbanization during this century, these two rivers descended to a low-lying area of extensive wetlands before flowing into the ocean. Open bodies of water within the basin are nearly all dammed reservoirs. The *Cogswell Reservoir*, *Morris Reservoir* along with the *San Gabriel Reservoir* in San Gabriel Canyon control and retain much of the run-off from the San Gabriel River before it exits the canyon and the *Santa Fe Dam* and *Whittier Narrows* provide flood control further down the river.

The *Rio Hondo* connects the San Gabriel River from the Whittier Narrows Dam. Reservoirs, such as Chatsworth, Los Angeles, Pacoima, Stone Canyon, Franklin, Hollywood, and Puddingstone, are important both for storage and for recreation, but are not extensive in area. Separate from the Los Angeles and San Gabriel drainage systems, *Malibu Creek* drains a significant portion of the Santa Monica Mountains.

The *Santa Ana River* drainage can be divided into an upper basin and a lower basin. The drainage of upper reaches of the Santa Ana is retained by *Big Bear Valley Dam*. The Santa Ana and *Mill Creek*, have carved very steep canyons and exit the mountains into the Bunker Hill basin. *Cajon Creek* and *Lytle Creek* also charge this basin. *Silverwood Lake* is a terminus of the *California Aqueduct*. This water is channeled through an eight-mile tunnel to provide a source of hydroelectric power to Devil's Canyon power plant, and then is piped to *Lake Perris*.

Figure 11-1, Major Surface Water Features

The middle reaches of the Santa Ana River are perennial only because of waste treatment plant effluent. All the drainage of the Eastern San Gabriel Mountains - San Antonio Creek, Day's Creek, Etiwanda Creek, Deer Creek and Cucamonga Creek - are modified as storm drains and channeled to the El Prado Dam. *Lake Matthews* and Lake Perris provide storage for Colorado River water and State Water Project water, respectively. *Lake Elsinore* and *Railroad Canyon Reservoir* are other surface bodies of water within this basin.

Lower Basin drainage is dominated by the flood control dam at El Prado. The Santa Ana Canyon, which separates the Chino Hills from the Santa Ana Mountains is the major drainage of heavily urbanized Orange County. The lower Santa Ana has been channelized and modified so that in most years flows do not reach the sea, but are used to recharge groundwater. Small portions of wetlands still remain in Orange County, Bolsa Chica, and the Upper Newport Bay area.

The *Mojave River* rises in the San Bernardino Mountains and flows north and then eastward to the Mojave Sink. The Mojave River is very important to the growing High Desert communities as it is the only reliable source of ground water. *Lake Arrowhead* is a reservoir on one of the Mojave River tributaries.

Whitewater River drains the eastern flanks of the San Geronio and collects drainage from the San Jacinto mountains. The Canyons of the Anza-Borrego State Park contain seeps and springs. The Whitewater River becomes the main drainage of the Coachella Valley to the *Salton Sea*, a large saline body of water. The Salton Sea was created by severe flooding that poured Colorado River waters into the below sea-level depression for almost two years (1905-07). The Salton Sea also receives drainage from the *New River*, which crosses the border from Mexico. Finally, on the eastern border of the SCAG region runs the *Colorado River*, which supplies a significant amount of agricultural and drinking water to the region.

2. GROUNDWATER

The SCAG region contains many large groundwater basins. Prior to the development of the Los Angeles Aqueduct, groundwater served as the primary source of potable water. Even with the development of imported water supplies, groundwater continues to provide a significant portion of the region's water. Major groundwater basins in the region include the *Central, Raymond, San Fernando, Central, West Coast* and *San Gabriel* in Los Angeles County; the Upper Santa Ana Valley Basin system including *Bunker Hill*, and *Chino Basins* in San Bernardino and Riverside counties; the *Coastal Plain Basin* in Orange County; the *Coachella Valley Basin* in Riverside County; and the *Oxnard Plain Basin* in Ventura County.

3. OCEANS AND ESTUARIES

Perhaps Southern California's most important natural attribute is the Pacific Ocean. The coastline of the SCAG region contains many unique bays, harbors, and estuaries. Starting from the north, these include the estuary at the mouth of the Santa Clara River where wastewater flows maintain a wetland/estuary environment. Further south, lies the *Santa Monica Bay*, the largest indentation on the Southern California coastline. The Bay extends north from Point Dume above Malibu to the Palos Verdes Peninsula in the South. Within the Santa Monica Bay is Marina Del Rey, a large man-made recreational marina. The marina lies adjacent to Ballona Creek, a channelized waterway that receives a significant amount of the urban runoff draining directly into the Santa Monica Bay. Further south in the Bay is *King Harbor* in Redondo Beach, another recreational marina.

On the southern side of the Palos Verdes Peninsula lies the Los Angeles and Long Beach harbors, two of the busiest commercial harbors in the world. The Los Angeles River, which carries the majority of Los Angeles County's urban runoff, as well as wastewater flows from inland treatment plants, flows into the ocean at this point. Further south is *Newport Bay*, which is an enclosed estuary with extensive development in and around the Bay.

4. WETLANDS

In Section 404 of the Clean Water Act, wetlands are defined by EPA and the Corp of Engineers as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands include marshes, swamps, bogs, and playa lakes. In recent years, the environmental importance of wetlands have become better known. Wetlands provide habitat for a large number of plant and animal species and also serve as natural filters, cleansing water of many pollutants. In addition, wetlands function as natural flood control systems, absorbing much of the overflow water from rivers and streams. The SCAG region, particularly the coastal plains, were once home to vast acreage of wetlands. Today, estimates indicate that in some areas, more than 90 percent of the wetlands have been lost. However, wetland areas still exist around Ballona Creek in Los Angeles, in coastal areas of undeveloped portions of Orange County and in other areas in the region.

5. IMPORTED WATER

Imported water is used throughout the region for drinking, agricultural, and industrial purposes. It also provides water for groundwater recharge and for recreational uses. Imported water in Southern California comes from three sources: the *State Water Project*, which carries water from the Sacramento Bay Delta area, the *Colorado River Aqueduct*, and the *Los Angeles Aqueduct*, which imports water from the Owens Valley and Mono Basin. In addition, new federal legislation will allow the region greater access to water from another source, the Central Valley Project. A detailed discussion of these imported sources is provided in the Water Resources chapter.

E. WATER QUALITY IN THE SCAG REGION

How is the quality of the water in the SCAG region? The most direct source for answering this question is the State Water Quality Assessment (SWQA) Report. The SWQA Report is a compilation of Regional Quality Assessment Reports that are adopted first by each regional water quality control board. The report is prepared every two years and is used to satisfy various federal reporting requirements under the Clean Water Act. The report is generated from a Water Quality Assessment Database which is maintained at the Regional Board and is updated as new information is available.

This report provides a general assessment of the quality of waterbodies in the State. The SWQA classifies each waterbody into one of three categories:

- Good-Quality Water,
- Intermediate-Quality Water, and

Impaired-Quality Water.

A fourth classification of Unknown-Quality Water is used when observations are not available. Each waterbody is also identified by its type, including estuaries, groundwater, lakes and reservoirs, oceans and open bays, rivers and streams, saline lakes, and wetlands. All these waterbody types exist in the SCAG region and a significant number of them have been identified as having Impaired-Water-Quality. The summary tables for the SWQA for waterbodies in the SCAG region are included as an appendix to the Background Document. Major waterbodies identified as impaired include the following:

1. RIVERS AND STREAMS

Major rivers in the region include the Santa Clara River, Los Angeles River, San Gabriel River, Santa Ana River, Mojave River, Whitewater River, New River, and the Colorado River. Some of these rivers are intermittent (i.e., they are dry for parts of the year) and many parts of them have been channelized for flood prevention purposes, particularly around urban areas. The Colorado River, which borders the Southeastern portion of the region, is a major source of drinking and irrigation supply water for Southern California.

Much of the water that flows through some of these rivers (particularly those in the urbanized areas) is effluent from wastewater treatment plants. Over the course of a river or stream, various inputs from either point (e.g., wastewater or industrial facilities) or from non-point (agricultural or stormwater runoff) can change the quality of the water in the river. Thus, most of the rivers contain reaches with water quality characteristics ranging from good through intermediate to impaired. Of particular concern in the region is the New River, which suffers from significant contamination from poorly treated wastewater and industrial discharges from Mexico.

2. LAKES

The region's largest inland waterbody, the Salton Sea, has significant water quality problems. The Sea is essentially a man-made waterbody, supported by inflows from agricultural return flows. The Sea lacks an outlet and the water level is maintained through evaporation. This evaporation leaves behind salts and, thus, the salinity in the sea is constantly increasing, which impacts both fish and riparian habitat. In addition, toxic contamination is a concern in the Sea, due in large part to discharges from Mexican facilities into the New River. In addition, recently implemented conservation practices may reduce the amount of fresh water that flows to, and sustains the Salton Sea.

3. OPEN OCEANS AND BAYS

Santa Monica Bay, which extends from Malibu to the Palos Verdes Peninsula, has impaired water quality as the result of several sources. Past wastewater disposal practices included the dumping of large amounts of PCBs, DDTs, and heavy metals into the Bay, which have led to persistent contamination problems in sediments, biota, and seafood. The Bay continues to receive the majority of the region's effluent from wastewater treatment plants. In addition, stormwater pollution, which drains directly into the Bay, may be the major current source of pollution.

4. GROUNDWATER

Several of the major groundwater basins, relied upon by millions of residents and businesses for potable water, suffer from contamination from past industrial and agricultural practices and from problems due to overdraft. Contamination from common industrial organic solvents, including trichlorethylene (TCE), perchloroethylene (PCE), and from nitrates has been found in many of the major groundwater basins underlying Los Angeles County. Widespread contamination has been discovered in both the San Fernando Valley and San Gabriel Valley basins. The U.S. Environmental Protection Agency (EPA) has declared both basins "Superfund" sites under the Comprehensive Environmental Response and Liability Act (CERCLA). Remediation work directed by EPA to extract and treat the contaminated water has begun in the San Fernando Valley. Remediation work has begun in the San Gabriel Valley. The San Gabriel Basin Water Quality Authority has been working to achieve a coordinated approach to the clean-up of groundwater contamination in the San Gabriel Basin.

Other impaired groundwater basins include the Oxnard Plain Pressure Basin, which suffers from saltwater intrusion due to continued pumping; the Chino and Middle Santa Ana basins, which have been affected by agricultural and dairy practices; and the Mojave Basin, which has wide variations in the water table from excessive pumping and contamination from past waste disposal practices.

5. BAYS AND HARBORS

The state's water quality assessment identifies several bays and harbors in the region with impaired water quality. These include Alamitos Bay, King Harbor, Long Beach Harbor, Los Angeles Harbor, Marina Del Rey, and Port Hueneme. A common problem with these bays and harbors includes heavy metal contamination of sediments. Impacts to biota are often significant in these bays and harbors, and has led to health advisories due to elevated levels of contamination in shellfish tissues.

6. ESTUARIES

Estuaries include the area's tidal prisms and tidal wetlands. Those identified as impaired include Ballona Wetlands, Colorado Lagoon, Dominguez Channel Tidal Prism, Los Angeles River Tidal Prism, Malibu Lagoon, Mugu Lagoon, San Gabriel River Tidal Prism, Santa Clara River Estuary, and the Ventura River Estuary. These estuaries suffer from similar problems as the bays and harbors—elevated heavy metal levels—and also have potential problems with eutrophication. In addition, significant alteration of wetlands from development has created habitat and species problems in areas such as the Ballona Wetlands.

F. CURRENT FRAMEWORK FOR WATER QUALITY PLANNING AND MANAGEMENT

Who is responsible for planning and managing water quality in Southern California? The answer to this question is not as simple as it might appear. Numerous federal, state, and local governmental entities in one way or another are vested with responsibilities that affect water quality. In addition, private businesses and organizations also have significant legal requirements to ensure that their activities do not adversely affect water quality.

One of the purposes of this water quality chapter is to identify the agencies with planning and management responsibilities for water quality in the region. The Background Document to this chapter provides a more detailed identification of the various responsible agencies as well as descriptions of their functions and responsibilities.

The primary regional planning documents for water quality in the SCAG region are the basin plans prepared by the State Regional Water Quality Control Boards (RWQCBs). Four such plans, which also include specific regulatory controls, cover most of the water resources in the SCAG region. The purpose and structure of these basin plans is described below.

While these plans are important parts of the water planning and management process, they do not cover many of the planned activities in the region for improving water quality. Thus, this chapter identifies the additional major organizations, primarily public sector, that have water quality planning and management responsibilities within the SCAG region. The list of organizations contained in this document is not intended to be exhaustive. However, it provides an overview of the intricate and sometimes diffuse nature of water quality planning and management in the SCAG region.

1 REGIONAL WATER QUALITY CONTROL BOARD BASIN PLANS

The primary planning documents for improving water quality in the SCAG region are prepared by the State Regional Water Quality Control Boards. There are nine RWQCBs throughout the State of California. Six of these boards overlap with the SCAG boundaries (*see* Figure 11-2). Of these six, almost all of the SCAG region is covered by four boards: the Los Angeles Region (No. 4), the Santa Ana Region (No. 8), the Lahontan Region (No. 6), and the Colorado River Basin Region (No. 7). In addition to the regional boards, the State Water Resources Control Board (SWRCB) is responsible for establishing statewide policy on water quality issues. Both the SWRCB and the regional boards are part of the California Environmental Protection Agency (Cal-EPA).

The regional boards have primary responsibility for implementing the state Porter-Cologne Water Quality Act, the major water quality legislation in California, and the CWA. Responsibilities under both of these acts include developing "basin plans" for the regions, which provide objectives for improving or maintaining water quality, and issuing water quality permits to dischargers.

The Porter-Cologne Act directs each regional board to "... formulate and adopt water quality control plans for all areas within the region."² There are three fundamental components in these plans:

1. Establishment of Beneficial Uses. In the basin plan, each regional board must identify the "beneficial uses" of each water body. Beneficial uses are the various ways in which a water body may be used and include such activities as municipal and domestic water supply, agricultural supply, groundwater recharge, industrial supply, hydropower generation, wildlife and aquatic habitat, and recreational uses.
2. Establishment of Water Quality Objectives. Water quality objectives are the limits or levels of water constituents or characteristics established to protect beneficial uses. These

²Water Code §§ 13000-13999.16.

objectives can either be expressed in narrative or numerical form. In addition, the objectives can apply to all water bodies or types of water bodies in the region or to a specific water body. When combined with beneficial uses, water quality objectives establish the specific standards that must be met for a water body.

3. Implementation Plan. The implementation plan describes the programs, projects, and other actions necessary to achieve the objectives established in the basin plan. The primary mechanism for implementing the point source portions of the basin plan is through issuing and enforcing waste discharge and National Pollutant Discharge Elimination System (NPDES) permits to entities discharging waste water to either the land or to a water body. In addition, the boards implement non-point source loan programs, issue NPDES permits for stormwater, and oversee groundwater remediation projects. Implementation measures for nonpoint source discharges are carried out in accordance with the state's "Nonpoint Source Management Plan" as adopted by the State Water Resources Control Board in 1988.

Basin plans are in effect for all four of the regional boards that cover most of the SCAG region. The Porter-Cologne Act requires regional boards to review and, if necessary, update these plans every three years (known as the "triennial review"). Several of the plans in the SCAG region are in the process of being updated. The current status of the regional basin plans in covering the SCAG region are as follows:

1. Los Angeles Region. The Los Angeles Region develops basin plans for two areas: the Santa Clara River Basin and the Los Angeles River Basin. The plans for both of these basins were developed and adopted by the regional board in 1975. The L.A. Regional Board made some revisions to the plan in 1978, 1990, and 1991. A triennial review of the plan is currently underway that will result in more comprehensive changes to the 1975 plan. The updated plan is expected to be adopted in early 1994.
2. Santa Ana Region. The Santa Ana Region first adopted its plan in 1975 and then conducted a complete update of the plan in 1983. The Santa Ana Regional Board is in the process of updating the plan again and is expected to adopt a revised regional plan between late 1993 and early 1994.
3. Colorado River Region. The Colorado River Regional Board adopted its most recent basin plan in 1991 and is working on an update to the plan to be released by the end of 1993.
4. Lahontan Region. The Lahontan Region adopted its basin plan in 1975 and has amended the plan several times since then. The Lahontan Board is currently undertaking a revision to the basin plan.

2. OTHER PLANNING AND MANAGEMENT ACTIVITIES

Numerous other governmental agencies have planning and management responsibilities in the SCAG region. They include federal, state, regional, and local agencies that implement programs relating either directly or indirectly to maintaining water quality. These agencies and their responsibilities are identified in Figure 11-3. The specific responsibilities and activities are described in more detail in the background document for this chapter.

Figure 11-2, California Regional Water Quality Control Boards in the SCAG Region

**G. REGIONAL ISSUES FOR IMPROVED WATER
PLANNING AND MANAGEMENT**

Numerous important issues face the region as it strives to maintain and improve its water quality. The RCPG identifies and discusses several of these issues. They include:

1. IMPLICATIONS OF CONTINUED GROWTH IN THE REGION

The SCAG region has experienced population and urban growth throughout the past several decades, anywhere in the United States. Projections indicate that growth is likely to continue for the next 20 years. This growth presents several water quality problems. It creates an increased demand for treatment services as additional development and additional residents generate more wastewater. Growth, particularly as it includes increased urbanization, will also affect the amount of stormwater runoff, a major source of water pollution in the region. In addition, the growing population will affect drinking water, and potentially exacerbate the water quality problems associated with wastewater. Since the issuance of the 208 plan in 1979, the region has lacked a comprehensive plan for future wastewater treatment plant development and expansion. Current "conformity" mandates of the federal Clean Air Act, to ensure that individual development or expansion does not conflict with regional air quality objectives. The process of ensuring conformity with water quality objectives will be facilitated by updating the information in the 208 plan to reflect current projections for the region's wastewater facility service areas. Such an update, conducted by the wastewater treatment agencies, is to be included as part of the RCPG process.

2. FUTURE NON-POINT SOURCE MANAGEMENT

Nonpoint source pollution, and in particular stormwater runoff, is increasingly becoming a major water pollution source in the region, particularly for coastal waters. Agriculture is a major nonpoint source pollution. The federal, state, and local programs and resources dedicated to nonpoint source pollution, however, have traditionally had a primary focus on point sources (i.e., discharges from factories, power plants, and industries). While this attention to point-source pollution has resulted in significant improvements in water quality, emphasis on nonpoint sources will be crucial to making further progress. Such an emphasis on nonpoint sources, however, will require significant resources. An analysis of the potential costs associated with nonpoint source pollution control is needed to identify potential sources for this funding. Such an analysis will facilitate future planning regarding policy options for addressing nonpoint source pollution.

Because of the relative importance of nonpoint source pollution, the region will need to evaluate the currently expended on water pollution control to consider, (1) whether the total amount of money spent on point sources, and (2) whether changes in where the money is spent need to be considered to maximize benefits. In addition, planning for the control and quality improvement of nonpoint source pollution more fully integrated into the local planning process. Additional attention in local planning focusing on the nonpoint source pollution issue is critical in effective control of this type of pollution. Inventorying existing studies and reports that have been prepared on nonpoint source pollution is also a priority.

A. Federal Agencies

B. State Agencies (Cont'd)

- 2. California Resources Agency
 - a. Department of Fish and Game
 - b. Department of Industrial Resources
 - c. California Coastal Commission
 - d. State Coastal Conservancy
 - e. Colorado River Water Conservation District

3. Department of Health Services

C. Regional and Local Agencies

- 1. City and County General Services Departments
- 2. Comprehensive Regional Councils
- 3. Single Purpose Agencies
 - a. Wastewater Treatment Plants
 - b. Water Supply Agencies
 - (1) Metropolitan Water District of Southern California
 - (2) Whittier Narrows Water Treatment Plant
 - (3) Retail Water Agencies
 - c. Flood Control Districts
 - d. Irrigation Districts
 - e. Resource Conservation and Development Councils
 - f. Water Replenishment Fund
 - g. Water Masters
 - h. Others
 - (1) San Gabriel Valley Water Replenishment Fund

(2) Santa Ana Water Replenishment Fund

(3) Santa Ana Water Replenishment Fund

(4) Southern California Water Replenishment Fund

important first step in the preparation of additional nonpoint source pollution studies.

3. WATERSHEDS AS A PLANNING AND MANAGEMENT FRAMEWORK

A growing consensus exists among the water pollution community that more effective planning and management of water quality could be achieved through a process of "comprehensive watershed management." A watershed is the system of creeks, streams, and rivers that flow into a common water body and includes the associated riparian habitat. Watersheds are distinct ecosystems, such that changes to one part of the system can have effects on other parts. For example, changes in the riparian vegetation to a stream that eventually flows into a lake can increase the pollutant loading to that stream and impair the water quality of the lake.

The traditional planning and management of water quality has focused primarily on individual water bodies. In addition, coordination among the water pollution agencies, various land use agencies, water supply agencies, and other public entities that affect a watershed has been sporadic. In watershed management, both public and private agencies that rely upon or manage components of a water body, work in a cooperative fashion to determine the best strategy for improving water quality in the watershed. These "stakeholders" jointly determine the problems in the watershed, search for consensus on the actions to be taken, and then implement those actions in an integrated fashion. Such cooperative effort will lead to more cost-effective solutions to ensuring that the "beneficial uses" of the region's waterbodies are maintained.

The Santa Monica Bay Restoration Project (SMBRP) represents an example of watershed management on a broad scale. The SMBRP is part of the federal National Estuary Program and is required to develop a comprehensive plan for improving water quality in the bay. This plan is being developed through the coordinated efforts of federal, state, and local government agencies, industry representatives, and community and environmental groups. Similar types of coordinated actions are developing to address the water quality problems of the Salton Sea and the Santa Ana River watershed. These watershed management projects serve as examples to be used for other watersheds in the region.

4. FINANCING GROUNDWATER CLEANUPS

The region faces a significant environmental and economic problem from contaminated groundwater. The contamination threatens important sources of drinking water for the growing region. In addition, the liability associated with cleaning up contaminated groundwater poses financial threats to local industries and to local governments. A coordinated, local-based approach to addressing the groundwater issue in areas such as the San Gabriel Valley is crucial to the future of the region. Such an approach would leverage the available federal and state resources to address the problems, while apportioning the local financial burden in an equitable fashion.

5. REDUCING REGULATORY OVERLAP

The watershed management approaches, as described above, will require agencies at all level of governments to work together in a cooperative fashion. This chapter identifies some of the many agencies that affect water quality in the region. As the region faces the difficult problems posed by nonpoint source pollution, the ability for these agencies to work together effectively, while avoiding unnecessary duplication, will be crucial.

H

RECOMMENDATIONS AND POLICY OPTIONS

To improve the planning and management of water quality in the SCAG region, this chapter offers several recommendations. These recommendations include actions or activities that can be undertaken by regional entities, such as SCAG, as well as policies and programs that can be explored by other agencies, particularly at the state and federal level. These recommendations include the following:

1. Streamline water quality regulatory implementation. Identify and eliminate overlaps with other regulatory programs to reduce economic impacts on local businesses.

Discussion: This Water Quality chapter is a first step at a comprehensive identification of the various water-related agencies in the SCAG region. The continuation of this effort along with other state and regional streamlining projects is critical to improving water quality in the region in the most cost-efficient manner. Such efforts include streamlining permitting process, including the integration of water permitting into ongoing "one-stop" permitting efforts and reducing overlaps in the overlapping responsibilities of water quality and other agencies in such areas as solid waste facility permitting and inspections.

2. Encourage "watershed management" programs and strategies encouraged, recognizing the primary role of local governments in such efforts.

Discussion: Watershed management can be encouraged in several ways. Changes to current federal and state law for water quality should be amended to incorporate watershed management as an integral part of state and federal water quality programs. These watershed management efforts should facilitate local decision-making in establishing the water quality objectives for a water body and the strategies for achieving those objectives, including the appropriate public expenditures on point source control and nonpoint source control, strategies for wetlands enhancement, and funding approaches. In addition, federal and state funding of water quality projects should be targeted at recommendations stemming from water quality planning efforts and should be flexible to finance a variety of water quality projects.

3. Coordinate watershed management planning at the subregional level by 1) providing consistent regional data; 2) serving as a liaison between affected local, state, and federal watershed management agencies; and 3) ensuring that watershed planning is consistent with other planning objectives (e.g., transportation, air quality, water supply).

Discussion: Watershed management initiatives will be most effective when local governments are integrated into the decision-making process. The regional comprehensive planning process offers the opportunity for incorporating an existing local-based decision making system into watershed management. Existing subregions in SCAG are primarily established along jurisdictional boundaries. As appropriate watershed

management boundaries are identified within the region, the appropriate linkage with subregional entities should be made so that watershed management can be part of the subregional planning process.

4. Encourage opportunities for pollution reduction marketing and other market-incentive water quality programs as an alternative to strict command-and-control regulation.

Discussion: Appropriate waterbodies in the region for pollution reduction marketing programs should first be identified. A pollution reduction marketing system for water quality could operate similar to the RECLAIM program have been adopted by the South Coast Air Quality Management District for air quality. Under such a system, an overall pollutant loading limit for all dischargers into a water body would be established. Each facility discharging into the waterbody would be allocated, based on historical discharges, a specific number of credits. These credits allow the facility to discharge a specified amount of pollutants. The facility can either discharge less than the credits allow and sell the credits or can buy credits from another facility and discharge more than their original allocation. A trading system encourages facilities in which it is less expensive to reduce their pollution to do so while at the same time reducing the costs to facilities that face higher costs. The Los Angeles and Santa Ana Rivers may be potential candidates. Additional analysis and evaluation should be conducted to determine whether a pilot project for pollution reduction marketing can be initiated on one of these, or another appropriate, waterbody.

5. Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.

Discussion. The urban growth in the region has resulted in the loss of vast amounts of wetlands. Wetlands play an important role in maintaining water quality by providing natural filtration systems. In addition, wetlands are important habitats for many types of species. However, current efforts at wetlands protection through the federal permitting process is a piece-meal approach, which can result in long, sometimes unnecessary, delays in project approval. More regional, cooperative planning for maintaining and/or improving the region's wetlands is needed. Such an approach would encourage a regional identification of all wetlands resources and their relative value and provide a framework for making future decisions in the region regarding wetlands.

6. Clean up the contamination in the region's major groundwater aquifers since its water supply is critical to the long-term economic and environmental health of the region. The financing of such clean-ups should leverage state and federal resources and minimize significant impacts on the local economy.

Discussion: The contamination of major aquifers in the SCAG region threatens our long-term water supply. Because of the unique nature of this contamination (i.e., hundreds of contributing sources, numerous water purveyors, and the large population relying on the water source), different approaches than the application of stringent federal joint-and-several liability are necessary. Several groundwater clean-up approaches are

being utilized in the region, including wellhead and spreading basins.

7. Encourage water reclamation throughout the region where it is cost-effective, feasible and appropriate to reduce reliance on imported water and wastewater discharges. Current administrative impediments to increased use of wastewater should be addressed.

Discussion. Water reclamation is a priority in both the Water Quality and Water Resources chapters of the RCPG. The Water Resources chapter projects that a growing percentage of total water supply will come from reclaimed water. To achieve this or higher percentages, current impediments to water reclamation must be overcome in the region. These impediments include financial obstacles, insufficient infrastructure, health concerns, and public perception. A regional cooperative effort among water supply agencies, local governments, public works officials, state and federal agencies, and others should be initiated to identify and address these impediments.

Under state and federal water quality infrastructure funding programs, consideration should be given to other eligible projects such as non-point source and water reclamation projects.

8. Ensure wastewater treatment agency facility planning and facility development be consistent with population projections contained in the RCPG, while taking into account the need to build wastewater treatment facilities in cost-effective increments of capacity, the need to build well enough in advance to reliably meet unanticipated service and stormwater demands, and the need to provide standby capacity for public safety and environmental protection objectives.

Discussion. Ensuring that wastewater capacity planning and development is consistent with SCAG's population projections serves two important goals. First, it ensures that adequate treatment capacity exists to manage the region's waste thereby serving an important clean water objective. One of the primary purposes of the Clean Water Act Section 208 planning process is to ensure that adequate and environmentally beneficial treatment capacity will be available to meet the demands of a growing Southern California population. Without such capacity, improperly treated wastewater will contribute to poor water quality in the region.

Second, consistency between wastewater capacity expansion and population projections helps ensure that increases in capacity do not unnecessarily out pace projections of future population and development. Capacity expansions may serve as an inducement to development and growth in a manner that is contrary to the region's air quality goals. EPA recognized this is the federal Clean Air Act. Section 316 of the Act gives EPA the authority to withhold grants for sewage treatment works construction if such construction does not conform with the region's air quality plan. In addition, Section 176 of the Act prohibits any federal agency from providing financial assistance, licensing, permitting or approving any activity that does not conform with a region's air plan. However, if this is so interpreted to interfere with a public wastewater treatment

agency subject to federal conformity requirements ability to conduct its master planning efforts to proactively build needed facilities, then this becomes a classic example of contradictory public policy.

While it is certainly important to meet air quality objectives in this region, it is equally important that wastewater treatment agencies meet their objectives of protecting public health and the environment. This can only be done by proactively constructing the facilities necessary to meet the objectives of the Clean Water Act, a 208 Plan, a comprehensive watershed management plan or the stated policy objectives of a public wastewater treatment agency. For this reason, it is the stated policy of SCAG to encourage and support those wastewater facilities planning and construction efforts that are intended to proactively address service, reliability and environmental demands.

In compliance with SCAG's updated Intergovernmental Review Procedures guidelines, consistency determinations are conducted for specific facilities. In its reviews, SCAG will take into account other considerations such as the need to build wastewater treatment facilities in cost-effective increments of capacity, the need to build well enough in advance to reliably meet unanticipated service and stormwater demands, and the need to provide standby capacity for public safety and environmental protection objectives. By taking a balanced view of wastewater treatment facilities planning and construction, SCAG acknowledges that federal, state, or regional mandates for achieving clean air objectives are equally important with the competing federal, state or regional mandates to achieve clean water objectives and to meet the long-term service demands of the community served by wastewater treatment facilities.

In light of the general federal conformity requirements for actions on waste water treatment projects³, as well as the need to have a region-wide process for ensuring appropriate wastewater capacity growth, SCAG is proposing the following actions. Consistent with the philosophy underlying the RCPG, this process emphasizes cooperative efforts between local agencies (i.e., wastewater treatment facilities) and SCAG⁴. Under this process, SCAG will allocate its growth projections by each wastewater treatment service area in the region and work cooperatively with wastewater treatment agencies to ensure that facility plans are consistent with such growth projections. Such an effort is designed to minimize the need for conformity review for specific projects.

The following actions are proposed:

1. Upon adoption of this chapter, SCAG, after consultation and in conjunction with local governments and wastewater treatment agencies within the sub-regions, will allocate the growth projections contained in the Growth Management Chapter of the RCPG by the service area of each wastewater treatment agency in the SCAG region. SCAG will seek to ensure wastewater treatment agency facility planning and facility development are consistent with population projections contained in the RCPG, while taking into account the need to build wastewater treatment facilities in cost-effective increments of capacity, the need to build well enough in advance to reliably meet unanticipated service and stormwater demands, and the need to provide standby capacity for public safety and environmental

³Federal General Conformity Rule §51.857 (a)(5)(v) Determining Conformity - Where the action involves regional water and/or wastewater projects, such projects are sized to meet only the needs of population projections that are in the applicable SIP.

⁴The conformity process will be described in detail during the Plan implementation.

protection objectives.

2. SCAG, in conjunction with wastewater treatment agencies in the region, will review existing facility plans to ensure that the population, housing, and employment projections underlying these plans are consistent with the SCAG-adopted projections.
3. In instances in which wastewater treatment facility plans are not consistent with SCAG-adopted growth projections, SCAG will work with such agencies to either: 1) modify facility plans to conform with the growth projections, or 2) reevaluate the growth projections for the wastewater treatment agency service area, or 3) both.
4. Facility plans found to be consistent with the SCAG-adopted population projections will be incorporated into the Water Quality component of the Regional Comprehensive Plan and Guide. For those facility plans adopted by the governing board of a wastewater treatment agency that are inconsistent with the SCAG-adopted population projections, SCAG, in consultation with the local governments of the sub-region, will use the dispute mediation process and procedure.
5. Working with their local governments, wastewater treatment agencies would be responsible for the timing and sizing of the wastewater treatment facilities with oversight of State and Federal permitting and funding agencies.

Table 11-1 identifies the proposed actions for ensuring wastewater capacity growth and agencies responsible for them.

Table 11-1

**Proposed Actions and Involved Agencies
Wastewater Treatment Conformity Review**

| Actions |
|-----------------------|
| Allocate Growth |
| Review Existing |
| Reevaluate/Monitor |
| Incorporate Findings |
| Determine Significant |

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ISSUES**

INTEGRATION OF WATER QUALITY AND OTHER REGIONAL

Water quality is related to several of the other issues in the RCPG. The most direct relationship is with **water supply**. Poor water quality in the region—in particular, poor groundwater quality -- is and will continue to have significant implications for the supply of water for drinking and commercial purposes in the region. In addition, water quality in other regions of the state is interconnected with the supply of imported water into this region. Other interrelationships between water quality and other chapters of the plan include:

- **Economic Development and Water Quality.** Maintaining water quality is important to the economic viability of the region. However, there are increasing regulatory and liability costs associated with maintaining water quality and these costs can have adverse effects on operating expenses of regional businesses. Businesses are also subject to regulatory costs to meet NPDES permit requirements or pretreatment standards. In some areas, these costs may be increasing due to the poor quality of the imported water supply. This chapter emphasizes the need to streamline water quality regulation and to explore market-based regulatory alternatives when possible. Liability costs are primarily associated with the clean-up of contaminated groundwater in the San Gabriel Valley, San Fernando Valley, and other areas. This chapter recognizes the need to address these groundwater concerns while not driving companies out of business.

- **Growth Management and Water Quality.** The projected population growth in this plan will have significant implications for maintaining water quality, by increasing the demand for

wastewater treatment and by increasing the urbanized surface area and, therefore, the amount of urban runoff.

· **Air Quality and Water Quality.** The impact of poor air quality on water quality is an important, but poorly understood, issue. Some research indicates that air contaminants can substantially contribute to poor water quality in the region through a process known as "aerial fallout." Thus, efforts at improving air quality as described in the air quality chapter, may also have benefits for water quality.

· **Solid and Hazardous Waste and Water Quality.** Primary objectives for solid and hazardous waste management are to reduce and recycle wastes and to provide environmentally safe disposal options. These objectives contribute directly to improved water quality by protecting groundwater and surface water from contamination.

An additional important relationship is the need for adequate flood control in the region and the impact of flood control projects on nonpoint source runoff. Traditionally, flood control projects have increased the amount of urban runoff by directly channeling stormwater through a system of storm drains, concrete channels, and channelized rivers to the ocean. Thus, the need to maintain adequate flood control is often in conflict with efforts to reduce urban runoff. More information is needed on the costs and safety implications of alternative flood control systems in the region.