Santa Barbara Countywide Integrated Regional Water Management Plan

MAY 2007

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Cachuma Operation and Maintenance Board
Carpinteria Sanitary District
Carpinteria Valley Water District
Casmalia Community Services District
Central Coast Water Authority
City of Buellton
City of Carpinteria
City of Guadalupe
City of Lompoc
City of Santa Barbara
City of Santa Maria
City of Solvang
Cuyama Community Services District
Golden State Water Company
Goleta Sanitary District
Goleta Water District
Goleta West Sanitary District
La Cumbre Mutual Water Company
Los Alamos Community Services District
Mission Hills Community Services District
Montecito Sanitary District
Montecito Water District
Santa Barbara County
Santa Maria Valley Water Conservation District
Santa Ynez River Water Conservation District
Santa Ynez River Water Conservation District Improvement District No. 1
Summerland Sanitary District
Vandenberg Village Community Services District

Acknowledgements

Santa Barbara Countywide Integrated Regional Water Management Plan

The Santa Barbara Countywide IRWMP is a result of the combined efforts of many agencies, organizations, and individuals. The Cooperating Partners spent numerous hours developing the information that is included in the Plan, as well reviewing its contents. The following individuals prepared or reviewed sections of the IRWMP:

Cooperating Partners

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Contents

Appendices

Acronyms

AF	acre-feet
AFY	acre-feet per year
ASR	Aquifer Storage and Recovery
CCA	Critical Coastal Area
CEQA	California Environmental Quality Act
DAC	disadvantaged community
DAU	designated analysis unit
DWR	State of California Department of Water Resources
ERP	Emergency Response Plan
FISH	Tri-Counties Funding for Improved Salmonid Habitat
GIS	geographic information system
gpd	gallons per day
IRWMP	Integrated Regional Water Management Plan
µg/L	micrograms per liter
MCL	maximum contaminant level
mg/L	milligrams per liter
mgd	million gallons per day
MS4	municipal separate storm sewer systems
MTBE	methyl tertiary butyl ether
NEPA	National Environmental Policy Act of 1969
NPDES	National Pollutant Discharge Elimination System
Reclamation	U.S. Bureau of Reclamation
RWEP	Regional Water Efficiency Program
RWQCB	Regional Water Quality Control Board
SBCWA	Santa Barbara County Water Agency
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
TSS	total suspended solids
UCSB	University of California, Santa Barbara
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan

Executive Summary

Development of the IRWMP

Purpose of the IRWMP

The Santa Barbara Countywide Integrated Regional Water Management Plan (IRWMP) increases coordination among agencies and districts responsible for water resources, along with nongovernmental organizations and the public. It facilitates optimal management of water resources, a key challenge facing Santa Barbara County.

Funding Opportunities

The IRWMP provides the foundation for grant applications needed to augment limited local financial resources. Proposition 50, passed by voters in 2002, authorized $500 million for integrated regional water management projects. In November 2006, Proposition 84 was passed, providing an additional $1 billion in funding for integrated regional water management. Proposition 1E was also passed at that time, authorizing the state to sell $4.09 billion in bonds to rebuild and repair California's most vulnerable flood control structures. *An IRWMP is a prerequisite for seeking funds from all of these programs.*

Cooperating Partners

In Santa Barbara County, a range of local agencies, special districts, private companies, and regional joint powers authorities are responsible for managing water and wastewater. All but one of these entities came together in a collaborative process to prepare this IRWMP, as indicated by the following list of "Cooperating Partners":

Cachuma Conservation and Release Board
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Santa Ynez River Water Conservation District Improvement District No. 1
Summerland Sanitary District
Vandenberg Village Community Services District

Public Participation

In conformance with the Brown Act, public stakeholders participated in development of the IRWMP and influenced decisions by attending stakeholder workshops and Cooperating Partner meetings. Public stakeholders represent the general public, agricultural and business interests, disadvantaged communities (DACs), environmental groups, academic institutions, and the media. Four sets of public workshops were held between October 2006 and April 2007 to advise the public of progress on the IRWMP and obtain input at strategic points in its development; each set of workshops was held in both a South Coast and a North County location, for a total of eight workshops. A public review period was held from mid-March through April 27th in order to obtain comments on the Draft IRWMP. These comments were considered in the completion of the Final IRWMP. In addition, the County of Santa Barbara established a Web site to facilitate IRWMP communications with all stakeholders in the region (www.countyofsb.org/pwd/water/irwmp.htm).

Water Resources: Description and History

Regional Description

The planning region for this IRWMP encompasses all of Santa Barbara County. The large land area north of the Santa Ynez Mountains is primarily drained by streams that comprise only a few large watersheds for three relatively long waterways: the Santa Ynez River, San Antonio Creek, and the Santa Maria River, which is formed by the Cuyama and Sisquoc rivers. In contrast, the land area south of the Santa Ynez Mountains is composed of approximately 50 short, steep watersheds. Segments of some of these waterways, along with some coastal areas, have been identified by the State Water Resources Control Board (SWRCB) as being "impaired" for particular contaminants.

Given the county's low annual rainfall and the fact that nearly all rivers and creeks are dry in summer, many areas have historically been dependent on groundwater from four basins along the South Coast and seven basins in the north. Groundwater quality varies considerably between basins.

The county also contains areas of notable freshwater habitat, coastal salt marshes and sloughs, marine protected areas, critical coastal areas and coastal dunes, and areas with sensitive aquatic species.

In spite of low average annual rainfall, Santa Barbara County experiences periods of high intensity rains, which can cause flooding in virtually any watershed. At the other extreme, drought periods of several years or more occur with some regularity.

History of Water Development in Santa Barbara County

Santa Barbara County has a long water development history. Some of that history has been contentious, especially regarding the diversion of Santa Ynez River water to South Coast communities beginning in the early 1900s. Ultimately, through various court decisions, state permit conditions, operation agreements, and settlement agreements, the long contentious arguments over Santa Ynez River water now seem largely settled, providing for both diversions of water to the South Coast and releases for certain downstream needs. In the

South Coast, disagreements also arose over rights to groundwater in the Goleta area, but these were resolved through the 1989 Wright Settlement Agreement.

The history of water management in the Santa Maria watershed has focused primarily on groundwater and on reducing the risk of occasional flooding of the Santa Maria River. In the late 1950s, construction of Twitchell Dam and Reservoir greatly helped to protect against floods, as well as to provide water for recharge of groundwater. However, in 1997, the Santa Maria Valley Water Conservation District filed suit to adjudicate water rights in the Santa Maria Valley Groundwater Basin. Since 2001, the adjudication has proceeded through various court orders, a "partial statement of decision," and a settlement agreement. Although the court has approved an agreement among those parties who have signed it, not all parties to the adjudication have agreed to it. The court's final judgment is pending.

Although water management issues in the Santa Maria area seem far removed from water issues of the Santa Ynez Valley and South Coast, they are now linked through the arrival of imported water from the State Water Project. Since 1997, the Central Coast Water Authority has been delivering State Water Project water to Santa Maria, Guadalupe, Orcutt, Vandenberg Air Force Base, Buellton, Solvang, and Santa Ynez; and then to Lake Cachuma, where State Water Project water is available to the Central Coast Water Authority's member units on the South Coast (Carpinteria, Montecito Water District, Santa Barbara, La Cumbre Mutual Water Company, Goleta Water District, Raytheon Research Center, and the Morehart Land Company). The Central Coast Water Authority's extensive water distribution system now links most of the communities within Santa Barbara County, and is therefore a key component of the overall countywide "system" for managing water distribution, which includes the various agreements for managing Lake Cachuma and the Santa Ynez River, as well as the groundwater adjudications and conjunctive use decisions made by local water managers.

History of Wastewater Management

Efforts to manage wastewater within the county have been underway for more than a century, but have been less visible and less contentious. As communities have grown, septic systems historically have been replaced by sewers, but at first, coastal communities simply discharged the collected and untreated wastewater directly into the ocean. Wastewater treatment plants, providing at least a basic level of treatment, began to be built in South Coast communities in the mid-1900s. These plants have been upgraded a number of times to meet increasingly strict federal standards and state permit requirements.

In the northern part of the county, the City of Santa Maria has treated and disposed of wastewater since 1910. After a major study in 1977 and subsequent plant expansion, the treated effluent was applied to percolation ponds and irrigated lands. Lompoc completed its fourth wastewater treatment plant, the Lompoc Regional Wastewater Reclamation Plant in 1977, with discharge to the Santa Ynez River. It serves Lompoc, Vandenberg Village Community Service District, and Vandenberg Air Force Base.

In some unincorporated areas of the county, wastewater services are currently provided by four community services districts formed between 1956 and 1983. Three of these districts provide both water and wastewater services.

Existing Infrastructure and Management

Water resources management requires extensive physical infrastructure. Through shared water supplies and connected infrastructure, water resources can be managed as an interconnected system within the county boundaries, although no one entity is vested with overarching countywide responsibility.

Water Supply and Distribution

Major infrastructure for water supply in Santa Barbara County includes four major reservoirs. The three surface storage reservoirs on the Santa Ynez River (Cachuma, Gibraltar, and Jameson) provide water to South Coast communities through an extensive system of pipes, conduits, and tunnels. Twitchell Reservoir, on the Santa Maria River, provides for both flood control and groundwater recharge. Other smaller reservoirs are located in cities and districts.

With the advent of State Water Project water in the 1990s, the Central Coast Water Authority constructed a 42-mile extension of the State Water Project pipeline, which ends at Lake Cachuma, as well as pumping stations and related facilities. The Water Authority operates the Polonio Pass Water Treatment Plant and all of the State Water Project Coastal Branch facilities downstream of that plant.

Because communities rely on different types of water supplies, a variety of facilities and processes are in place to treat water before it is provided to customers. Additionally, the City of Santa Barbara owns a desalination plant to be used as an emergency water supply. The plant is currently decommissioned but could be brought into operation within 6 to 12 months if needed.

Water purveyors and the County Water Agency also support a cloud seeding program as a weather modification activity. This program is only conducted in the upper Santa Ynez and Twitchell Reservoir watersheds.

Wastewater Treatment

Wastewater service providers must address increasingly strict discharge limits for wastewater treatment plants under federal requirements and SWRCB's "General Waste Discharge Requirement for Sanitary Sewer Systems." Within the county, there are 14 principal wastewater treatment plants. One of these plants provides only a primary level of treatment; ten provide secondary treatment; and three plants provide tertiary treatment, which is the highest level of treatment. Some wastewater service providers produce treated water that is directly reused in the community (for example, for irrigating landscaped areas). Such recycled water must meet water quality standards before it can be reused. Wastewater service providers may also produce treated water that flows into ponds where the water percolates into the ground to recharge aquifers.

Flood Control

Infrastructure for flood control is most evident with the Santa Maria River levee, which protects residential, commercial, and agricultural areas in and around the city. Various levels of flood control are also offered by the dams that form the reservoirs noted above.

Finally, there are many other less-visible flood control structures countywide, including approximately 42 miles of closed conduits; 22 miles of lined channels; 50 miles of improved earth channels; 34 retarding and recharge basins; and 31debris basins.

Water Resources Management Framework

All projects included in the IRWMP are expected to be consistent with current general plans and land use plans. Any IRWMP project that will be included in a future Proposition 50 grant application will have to be formally evaluated for consistency with the relevant plans prior to submittal to the state as part of a grant request.

Both the IRWMP and the individual projects are consistent with the Urban Water Management Plans (UWMPs), which are required in California for all water purveyors with 3,000 or more customers. Several cities and districts in the region also have adopted or are preparing groundwater management plans, or have adjudicated basins. Unlike UWMPs, development of groundwater management plans is entirely voluntary.

Storm Water Management Plans (SWMPs) are required under federal and state law for local municipalities. Santa Barbara County government is responsible for implementing the SWMP program in unincorporated urbanized areas of the South Coast, Santa Ynez Valley, and Santa Maria Valley. The cities of Carpinteria, Santa Barbara, Goleta, Solvang, Buellton, Lompoc, and Santa Maria have their own SWMPs. The IRWMP includes projects that will help implement some SWMPs.

Water monitoring (for water supply and/or water quality) is occurring through a network of programs at different levels of government, through nonprofits, and though public-private cooperation.

Water conservation programs are implemented at both a local level by individual water purveyors and as a Regional Water Efficiency Program (RWEP) coordinated by the Santa Barbara County Water Agency. Through water efficiency programs, additional water supplies become available for use, reducing pressures on other water sources. The RWEP's scope includes school education; public information; commercial, industrial, and institutional; landscapes and outdoor; and residential/indoor.

Key Elements of the IRWMP

Objectives

Objectives and regional priorities were established to address regional needs. The Cooperating Partners adopted six objectives. Four of these are required by the state: water supply, groundwater management, ecosystem restoration, and water quality. The four mandatory objectives were augmented to reflect regional needs for emergency preparedness and infrastructure efficiency and reliability.

Strategic Approach

In order to attain the IRWMP objectives, the Cooperating Partners adopted a strategic approach with a straightforward, linear path relating place-specific problems to regional objectives, priorities, and strategies in order to identify appropriate projects. In this way, a

list of substantial issues that challenge agencies and special districts in one or more parts of the region is narrowed to specific projects to address key problems.

Key Issues

The Santa Barbara County region faces both regionwide and watershed-specific water issues and problems. The regionwide issues are consistent with the State of California Department of Water Resources (DWR)'s California Water Plan Update 2005, which emphasized two "initiatives" for ensuring reliable water supplies: implementing integrated regional water management and improving areawide water management systems. These key issues reflect short-term (5 years) and long-term (5 to 20 years) regional priorities.

On a watershed-specific basis, water issues evident in one location may be similar or even identical to issues in another area, but **the most pressing water-related problems vary considerably from watershed to watershed** within the region. Nevertheless, the Cooperating Partners noted the following key water issues and actual or potential problems (which are not listed in order of priority):

- The need to replace, rehabilitate, or upgrade **aging infrastructure** serving the general population and especially DACs
- Risk of illness from **inadequate drinking water and pollution from wastewater,** especially in DACs
- Water supply reliability, stemming from multiple factors, including the variable **reliability of State Water Project water**, the **loss of storage capacity** in the four major reservoirs, and the need for water supplies to serve a **growing population**
- The need to operate and maintain water and wastewater systems in a manner that **minimizes impacts to sensitive habitats and species** and complies with federal, state, and local regulatory requirements
- **Overdrafted groundwater** basins in North County
- **Water quality impairments** in both groundwater and surface water bodies, including pollution of creeks and ocean water, especially from sediment runoff
- Potential harm to people and property from **flooding**
- The need for **emergency planning** to address potential impacts to water and wastewater facilities from floods, earthquakes, and fires, as well as planning for (and responding to) periodic droughts

In the short-term, for the purpose of seeking integrated regional water management funding from the state, the Cooperating Partners have determined that Proposition 50 grant requests should focus on two overarching needs: (1) more efficient water use in the northern and central portions of the county through improved water and wastewater treatment to meet standards; and to allow effluent reuse and improved quality of surface discharges and returns to groundwater; and (2) increased reliability and efficiency through conjunctive use and system flexibility in the southern portion of the county.

Regional Priorities: Short-term (5 years)

These priorities focus on the need for "new" projects/initiatives. They do not focus on the substantial existing efforts being made to meet ongoing public needs and protect the local environment. The short-term and long-term priorities described below are not listed in order of importance.

- Protect public safety by reducing the potential for flooding in strategic areas through infrastructure improvements such as levee reinforcement, channel modifications, floodplain restoration, and increasing reservoir storage capacity.
- Increase water supply reliability by developing new water sources; maximizing the efficient use of existing sources, including recycled water used for landscaping, irrigation, industrial and commercial purposes, desalinated water, conservation, and groundwater treatment; and strategically restoring or replacing water infrastructure.
- Strategically restore and replace infrastructure to improve wastewater quality, limit the potential for adverse impacts to water quality and sensitive environmental areas, increase wastewater management efficiency, and meet regulatory requirements.
- Ensure the adequacy of water and wastewater facilities in DACs (Guadalupe, Cuyama, and Casmalia).
- Improve surface and ocean water quality and reduce beach closures by replacing septic systems with sanitary sewers, ensuring the integrity of wastewater collection systems near the ocean and surface water bodies, improving the quality of urban runoff, reducing runoff that enters the ocean and surface waters, and developing education programs to increase awareness of measures to improve water quality.
- Further define sources of groundwater contamination, and develop strategies to prevent contamination and improve quality in areas with known contamination.
- Protect, restore, and enhance ecological processes in aquatic areas through water quality improvements; public education; restoration efforts, including removal of invasive species; and improved steelhead passage on strategic creeks.
- Ensure the adequacy of water supplies during droughts and emergencies such as fires, floods, and earthquakes through strategic replacement and rehabilitation of critical infrastructure.
- Develop programs and policies to increase groundwater recharge or decrease groundwater use, especially in overdrafted groundwater basins.
- Encourage cooperation in beginning to develop groundwater banking programs.

Regional Priorities: Long-term (5 to 20 years)

The preceding short-term priorities will continue to be important in the more distant future, as well; thus, there is overlap between short-term and long-term priorities.

- Provide adequate water and wastewater services to meet projected growth.
- Implement regional and/or interagency conjunctive use and groundwater banking programs where supported by water cases and landowners.
- Promote programs, policies, and infrastructures to increase water supply sustainability through artificial recharge of local groundwater basins.
- Maximize storage capacity of existing surface reservoirs.
- Optimize the use of seawater desalination to increase water supply reliability and offset groundwater use.
- Expand distribution systems to provide recycled water to new users.
- Expand voluntary water conservation programs for residential, commercial, industrial, and agricultural uses.
- Continue interagency coordination to develop opportunities to further integrate the management of water and wastewater projects and programs.
- Continue to coordinate with adjacent counties to develop strategies and programs that improve the management of regional water resources.

Water Management Strategies

The state's IRWMP Guidelines identify 20 water management strategies as potential methods to meet objectives. These strategies were considered by the Cooperating Partners and were part of the evaluation process, as were the resource management strategies identified in the DWR's California Water Plan Update 2005. Many of the strategies in the IRWMP have multiple benefits, and many are already being implemented through local plans and programs. The three "foundational actions" outlined in the California Water Plan (i.e., using water efficiently, protecting water quality, and supporting environmental stewardship) are evident in our priorities and strategies.

Project Solicitation and Prioritization

In determining which projects to include in the IRWMP, the Cooperating Partners evaluated potential projects using the following criteria:

1. Readiness to proceed:
    a. California Environmental Quality Act (CEQA) process has been initiated or completed.
    b. Costs have been adequately estimated.
    c. Schedule, including project timeframe and milestones, has been prepared.
2. One or more regional objectives are addressed.

3. One or more water management strategies are utilized.
4. One or more regional priorities are addressed.
5. One or more statewide priorities are addressed.
6. The project is likely consistent with applicable general plan.
7. The project will not cause long-term significant adverse impacts, including long-term adverse impacts to agriculture.
8. The project serves a DAC.

The highest scoring projects were grouped as Tier I projects, with all other projects being Tier II. This preliminary sorting of projects into two tiers does not presume that any project is more likely, or less likely, to be included in a future application for a Proposition 50 grant. The complete IRWMP contains brief project descriptions for the Tier I projects. Appendices to the IRWMP include a complete listing of all projects, as well as information on how each project was evaluated relative to regional objectives, regional priorities, water management strategies, and statewide priorities.

Compliance with Statewide Priorities

As required by the state's Proposition 50 Guidelines, the IRWMP addresses the state's 11 water-related priorities, which cover a broad range of water supply and water quality issues. DWR and SWRCB also put a heavy emphasis on *integration* through the following program preferences, each of which is discussed in the IRWMP:

- Integration through use of multiple water management strategies
- Integration through multiple projects using the same water strategy; Integration resulting from projects with multiple benefits
- Integration with other projects not in the IRWMP
- Integration with other management plans and programs
- Geographic integration of multiple projects in a single location
- System integration, when new projects complete or complement existing ones
- Integration through interagency cooperation

In addition to these program preferences, the IRWMP has already served as a catalyst for discussions between the Cooperating Partners and other stakeholders regarding ways to increase integrated water resource management planning within Santa Barbara County.

Plan and Project Implementation

The Cooperating Partners will evaluate projects and plan performance, and will use adaptive management strategies to modify the current list of projects and overall plan as needed. The Cooperating Partners will conduct a biennial review and produce a 5-year report summarizing progress made in achieving IRWMP goals, including the tracking of funded and unfunded projects. Likewise, IRWMP objectives, priorities, water management

strategies, and project lists will be evaluated during the biennial review and modified appropriately.

Management of data is an integral component of the IRWMP process. Information from the IRWMP will be available to stakeholders through the use of a Web site, which will be supported by the Santa Barbara County Water Agency. Other venues for information sharing will include project progress meetings, agency coordination meetings, public workshops, e-mail subscription lists, and e-mail newsletters. These forums will serve to continue to facilitate the ongoing data sharing between stakeholders.

Santa Barbara County will maintain existing data and will make it available to the public on the Santa Barbara County Water Agency Web site located at: http://www.countyofsb.org/pwd/water/index.htm. This site will also provide the forum for sharing of reports, public meeting dates, agendas, meeting minutes, and annual reports.

1

1 Introduction

1.1 Background and Purpose of the Santa Barbara Countywide Integrated Regional Water Management Plan

The effective management of water resources is one of the key challenges facing Santa Barbara County. Water resource planning within the county must address multiple factors, including limited local water supplies, variability of imported supplies, water quality issues, population changes and impacts from development, increasing regulatory requirements, aging infrastructure, the need to protect sensitive species and habitats, the loss of capacity in key reservoirs, existing and changing climatic conditions, and ongoing threats from droughts, floods, fires, and earthquakes.

Water resource managers in the Santa Barbara County region have a long history of working cooperatively to resolve multiple issues related to water and wastewater, including ensuring the adequacy of supplies and services, protecting and improving surface and groundwater quality, and protecting and enhancing ecosystems. Together they have planned and implemented significant water resources projects; developed integrated supplies and delivery systems; managed resources to meet the needs of urban users, agriculture, and ecosystems; and developed adaptive management strategies to respond to changing circumstances. Nonetheless, challenges remain, and the Santa Barbara Countywide Integrated Regional Water Management Plan (IRWMP) is intended to increase the level of coordination among all the agencies and districts responsible for water resources planning, nongovernmental organizations, and interested members of the public to facilitate the optimal management of water resources within the county over the next 20 years. The IRWMP also provides the foundation for grant applications needed to augment limited local financial resources.

The planning framework established by the IRWMP will be modified as needed to respond to changing conditions, including regulatory requirements, and will increase flexibility and efficiency by integrating multiple aspects of water resources management, such as water quality, local and imported water supplies, watershed protection, wastewater treatment and recycling, and protection of local ecosystems.

1.1.1 Consistency with State of California Planning Efforts

The IRWMP will allow regional needs to be met in a manner that is consistent with state of California planning efforts, including the California Department of Water Resources (DWR) Bulletin 160 (California Water Plan Update 2005), the State Water Resources Control Board (SWRCB) Strategic Plan, Watershed Management Initiative, basin planning process, and the Central Coast Regional Water Quality Control Board's (RWQCB) draft "Vision, Goals, and

Objectives." The Santa Barbara Countywide IRWMP will help implement these planning efforts by developing an appropriate mix of resource management strategies and projects based on water management objectives and priorities that are specific to Santa Barbara County.

California Water Plan Update 2005

The California Water Plan Update 2005, a roadmap for meeting the state's water demands through the year 2030, indicates that to attain reliable water supplies, water management must pursue two initiatives that incorporate the following actions:

- Promote and practice integrated regional water management
  - Foster regional partnerships
  - Develop integrated regional water management plans
  - Diversify regional water portfolios
- Maintain and improve statewide water management systems, which are the backbone of water management in California
  - Improve aging facilities
  - Improve flood management
  - Implement the CALFED program and sustain the Sacramento-San Joaquin Delta (which will help ensure that State Water Project water flows to Santa Barbara County)

The California Water Plan Update 2005 further indicates that California water management must be based on the following three foundational actions in order to achieve sustainable water uses and reliable water supplies.

- Use water efficiently
  - Increase levels of urban and agricultural water use efficiency
  - Increase recycled municipal water, and expand its uses
  - Change the way water facilities are operated to improve their operation and efficiency
  - Facilitate environmentally, economically, and socially sound transfers to avoid regional shortages
  - Reduce and eliminate groundwater overdraft
- Protect water quality
  - Protect surface waters and aquifers from contamination
  - Explore new treatment technologies for drinking water and groundwater remediation
  - Match water quality to its intended uses
  - Improve management of urban and agricultural runoff

  - Improve watershed management
- Support environmental stewardship
  - Integrate ecosystem restoration with water planning and land use planning
  - Restore and maintain the structure and function of aquatic ecosystems
  - Minimize the alteration of ecosystems through water management actions
  - Improve watershed management
  - Protect public trust resources
  - Integrate flood management with water supply management

SWRCB Strategic Plan

In 2001, the SWRCB and RWQCBs developed a Strategic Plan that highlights new priorities to be addressed, along with specific objectives, key strategies, and strategic projects to be implemented. It identifies nonpoint source pollution from urban and agricultural runoff and other sources as the most significant water quality challenge facing California today; and the plan emphasizes the importance of (1) developing and implementing Total Maximum Daily Loads (TMDLs); (2) reducing storm water pollution; (3) addressing groundwater pollution; (4) permitting point source discharges; (5) increasing compliance assurance and enforcement; and (6) monitoring and assessing water quality (SWRCB and RWQCB, 2001). The SWRCB and RWQCBs have recently begun a process to revise the Strategic Plan.

SWRCB Watershed Management Initiative

The SWRCB and RWQCBs developed the Watershed Management Initiative to meet the goal of providing water resource protection, enhancement, and restoration, while balancing economic and environmental impacts. Potential water quality issues include impacts from agriculture, TMDLs, urban runoff, point source regulatory programs, basin planning, monitoring, and cleanup. Three targeted watersheds are located in Santa Barbara County, and the corresponding state agency concerns are (Central Coast RWQCB, 2002):

- Santa Maria River – Priority concerns include nitrate contamination of groundwater, sedimentation build up in Twitchell Reservoir, and habitat loss.
- Santa Ynez River – Priority concerns include effects of water rights decisions, erosion, sedimentation, flood control, and habitat loss (especially for steelhead); water quality impacts from urban development are another concern.
- South Coast – Priority concerns include creek and near shore water quality and beach closures.

Water Quality Control Plan for the Central Coastal Basin (Basin Plan)

The Central Coast RWQCB developed the Basin Plan in 1994 to show how the quality of the surface- and groundwaters in the Central Coast Region (which includes Santa Barbara County) should be managed to provide the highest water quality reasonably possible. The Basin Plan lists the various water uses in the region, describes the water quality that must be maintained to allow those uses, and describes the programs, projects, and other actions that

are necessary to achieve the standards established in the plan. The Regional Board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality. These requirements can be either (1) State Waste Discharge Requirements for discharges to land, or (2) federally delegated National Pollutant Discharge Elimination System (NPDES) permits for discharges to surface water. The Regional Board also establishes prohibitions on types and locations of discharges through the Basin Plan. The Basin Plan is also implemented by encouraging water users to improve the quality of their water supplies, particularly where discharged wastewater is likely to be reused.

Central Coast RWQCB "Vision, Goals, and Objectives"

The Regional Board (2006) is in the process of developing measurable goals for its region. The proposed goals currently include:

- By 2025, 80 percent of the Aquatic Habitat is healthy, and the remaining 20 percent exhibits positive trends in key parameters.
- By 2025, 80 percent of lands within any watershed will be managed to maintain healthy watershed functions, and the remaining 20 percent will exhibit positive trends in key watershed parameters.
- By 2025, 80 percent of the groundwater will be clean, and the remaining 20 percent will exhibit positive trends in key parameters.

The staff is currently working on organizational objectives.

1.1.2 Related Legislation

Integrated regional planning is facilitated in California by the passage of several legislative acts. The IRWMP is intended to be a dynamic document and will be updated as needed to meet the requirements of changing legislative standards.

Proposition 50, the "Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002," amended the California Water Code to authorize the Legislature to appropriate $500 million for integrated regional water management projects. The purpose of the integrated regional water management grant program is to "encourage integrated regional strategies for management of water resources and to provide funding, through competitive grants, for projects that protect communities from drought, protect and improve water quality, and improve local water security by reducing dependence on imported water." This IRWMP meets all requirements established by Proposition 50, Chapter 8, as specified in the November 2004 Integrated Regional Water Management Grant Program Guidelines prepared by DWR and SWRCB, who jointly administer the program. The guidelines specify that an adopted IRWMP is a prerequisite to obtaining project implementation grant funding through Proposition 50.

In November 2006, voters passed Proposition 84, the "California Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006." This act includes $1 billion in funding for integrated regional water management, including

$52 million for the Central Coast hydrologic region[1], of which Santa Barbara is a part. These funds will provide grants on a regional level to increase water supply, reduce demand, and protect water quality.

Proposition 1E, the "Disaster Preparedness and Flood Prevention Bond Act" also was passed in 2006. This act authorizes the state to sell $4.09 billion in bonds to rebuild and repair California's most vulnerable flood control structures to protect homes and prevent loss of life from flood-related disasters, including levee failures, flash floods, and mudslides; the sale of bonds also is intended to protect California's drinking water supply system by rebuilding delta levees that are vulnerable to earthquakes and storms.

The IRWMP may serve as the basis for obtaining grant funding from these sources to facilitate the implementation of certain projects, and it may be used to obtain funding from other sources as well, such as the federal Clean Water Act Section 319 Nonpoint Source Implementation Program and the U.S. Bureau of Reclamation's (Reclamation) Title XVI Program.

1.2 Group Responsible for Developing the IRWMP

The IRWMP has been prepared by a broadly based group, referred to as the "Cooperating Partners," comprising all but one of the entities responsible for managing water and wastewater in Santa Barbara County. The Cooperating Partners include the following 29 water districts, sanitary districts, community service districts, water conservation districts, private water companies, cities (large, medium, and small), Santa Barbara County, and joint powers agencies.

Cachuma Conservation and Release Board
Cachuma Operation and Maintenance Board
Carpinteria Sanitary District
Carpinteria Valley Water District
Casmalia Community Services District
Central Coast Water Authority
City of Buellton
City of Carpinteria
City of Guadalupe
City of Lompoc
City of Santa Barbara
City of Santa Maria
City of Solvang
Cuyama Community Services District
Golden State Water Company
Goleta Sanitary District
Goleta Water District
Goleta West Sanitary District
La Cumbre Mutual Water Company
Los Alamos Community Services District
Mission Hills Community Services District
Montecito Sanitary District
Montecito Water District
Santa Barbara County
Santa Maria Valley Water Conservation District
Santa Ynez River Water Conservation District
Santa Ynez River Water Conservation District Improvement District No. 1
Summerland Sanitary District
Vandenberg Village Community Services District

[1] This region corresponds with the area under the jurisdiction of the Central Coast Regional Water Quality Control Board, comprising all of Santa Barbara, Santa Cruz, San Benito, Monterey, San Luis Obispo, Monterey, and Santa Cruz counties, as well as the southern one-third of Santa Clara County and small portions of San Mateo, Kern, and Ventura counties.

Many of the Cooperating Partners have worked together since 2002 to develop the regional objectives, strategies, and priorities in the IRWMP, as well as projects to meet regional water needs.

Additionally, as described in detail in Section 4, a broad range of stakeholders participated in the development of the IRWMP, including agricultural, environmental, and academic interests, as well as members of the general public.

1.3 Governance Structure

For the purposes of developing the IRWMP, a Memorandum of Understanding was created and signed by the Cooperating Partners. During the Implementation Grant process, the Cooperating Partners and interested stakeholders will consider a variety of governance models that will lead to establishment of a long-term governance structure. A number of grant application and grant implementation tasks will be conducted as part of this ongoing process. Those tasks are listed at the end of this section.

Agreement will be reached on the steps to be taken to identify a long-term governance structure that will work best for the region. Those steps could include the following: (1) identify the objectives for the long-term governance structure; (2) set a schedule for the process; (3) find examples of governance structures that have led to successful implementation of major projects both within Santa Barbara County (Section 3.3 refers to the many successful interagency planning and integrated management agreements in place within the County) and around the country; (4) lay out the options for governance structures that exist within current state and local legislation; (5) make recommendations for legislation that may be required to enable implementation of governance structures; and (6) develop briefings and workshops to lead to agreement upon and implementation of a permanent governance structure. Examples of governance structures will include a narrative discussion of what has worked, either here in California or elsewhere, along with an appendix of legislation that enables such entities in this state. In addition, sample agreements, which can be a starting point for discussion among departments and agencies, will be included. The County of Santa Barbara will assume a leadership role in the coordination of this task.

Viable governance models should meet the following minimum needs: promote partnerships within the region; facilitate ongoing stakeholder involvement and decision-making; serve as a planning body charged with periodically updating the IRWMP; oversee IRWMP projects and manage data collection and data coordination with state systems.

There are a number of models that could meet the needs of the region. Models to be considered include:

- Memorandums of Understanding/Cooperative Agreements
- Commissions
- Joint Powers Authority

1.3.1 Memorandums of Understanding/Cooperative Agreements

At the simplest level, Memorandums of Understanding and Cooperative Agreements are contracts between and among organizations that specify how work will be performed. They can be of indefinite length and general as to the nature performed or specific to projects. Typical language includes the purpose of the agreement and provisions for financing, indemnification, settlement of disputes, and length and termination of the agreement. They require only the signatures of the authorized representatives of the organizations; although depending on the organization, the agreements may have to go to the governing boards for approval.

1.3.2 Commissions

Commissions exist at every level of government and are often created for purposes of advice and oversight. Commissions can issue plans, award or receive funds, and enter into contracts.

A local example of a commission is the Santa Monica Bay Restoration Commission, formerly the Santa Monica Bay Restoration Project. According to the California Public Resources Code, "It is the intent of the Legislature that the Santa Monica Bay Restoration Commission be a non-regulatory, locally based state government entity that will monitor, assess, coordinate and advise all state programs, and oversee funding that affects the beneficial uses, restoration, and enhancement of Santa Monica Bay and its watershed." The governance structure of the Commission is delineated through a Memorandum of Understanding among the Secretaries for Environmental Protection, Resources Agency, and Chair of the Commission. The Memorandum of Understanding further prescribes the membership by federal, state, and local public agency officials and employees, as well as representatives of other stakeholder interests.

The enabling legislation allows the Commission to request and receive federal, state, local, and private funds, award and administer grants, and enter into and carry out joint powers authority agreements. A separate account was established in the state treasury for receipt and expenditure of funds.

1.3.3 Joint Powers Authority

Joint Powers Authorities are separate public entities created when two or more public agencies come together for a particular mission or purpose. In the pooling of powers, the new entity may have greater power than the parties to the agreement alone. For example, the ability to issue bonds may come from one agency, while eminent domain may come from another. The Joint Powers Authority may be able to act more quickly and efficiently in the hiring and management of staff, making land acquisitions, or carrying out projects.

Section 6500 et seq. of the California Government Code allows for the formation of joint powers authorities. As stated, "If authorized by their legislative or other governing bodies, two or more public agencies by agreement may jointly exercise any power common to the contracting parties, even though one or more of the contracting agencies may be located outside this state. The agreements shall state the purpose of the agreement or the power to be exercised. They shall provide for the method by which the purpose will be accomplished or the manner in which the power will be exercised."

1.3.4 Future Proposition 50 Tasks

Potential future Proposition 50 Grant Application tasks for the Cooperating Partners include:

1. Develop a new Memorandum of Understanding among Cooperating Partners for a Proposition 50 grant application and implementation process covering items such as schedule, process, funding, and key roles.
2. Develop a grant application by:
    a. Managing a process for project evaluation and selection;
    b. Preparing application and related materials, per state requirements; and
    c. Coordinating Partners' and public review and revisions.
3. Submit single application on behalf of Partners with selected projects.
4. Negotiate with state, respond to comments, and revise application.

Potential Proposition 50 Grant Implementation tasks for the Cooperating Partners include:

1. Carry out fiduciary tasks such as tracking expenditures, compiling Cooperating Partners' invoices, preparing billing for submittal to state, and keeping appropriate records.
2. Carry out grant management tasks such as, tracking project status, compiling data, and preparing reports to state on performance and results.
3. Submit invoices, progress reports, and data to state.
4. Manage contracts and subcontracts with Cooperating Partners and consultants.

2

2 Region Description

The IRWMP encompasses all of Santa Barbara County (Figure 2-1). The county is an appropriate region for integrated planning for a number of reasons:

- Different subregions within the county share water supplies and infrastructure, and water is managed as an interconnected system within the county boundaries (refer to Section 3).
- Water and wastewater management entities must address issues and challenges that are specific to the region and that would benefit from an integrated management approach (refer to Sections 2 and 3).
- From an institutional perspective, many of the Cooperating Partners have a long history of working together to resolve water issues, and a framework already exists for addressing key issues related to water resource management (refer to Section 3). The IRWMP builds on this framework, expanding existing programs and identifying further opportunities for integration.
- The county is largely geographically separate from neighboring counties. Santa Barbara County abuts Kern County only along its sparsely populated northeast corner. The portions of the Rincon Creek watershed shared by Ventura County and the Cuyama River watershed shared by Ventura and San Luis Obispo counties have very low population densities, are subordinate in size, and have no shared water infrastructure. The Santa Maria Groundwater Basin, shared with San Luis Obispo County, is the subject of nearly complete adjudication (refer to Section 3); the court has imposed a mandatory management structure, and thus, any integrated management must accommodate the court's directives.

2.1 Overview

Santa Barbara County is located approximately 100 miles northwest of Los Angeles and 300 miles south of San Francisco. The county occupies approximately 2,739 square miles. Bordered on the west and south by the Pacific Ocean, the county has 110 miles of coastline. Four of the Channel Islands—Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara—are in Santa Barbara County. These islands are not addressed in this IRWMP, because they are largely owned and managed by the federal government as a national park and marine sanctuary. The county has a population of approximately 421,656 (State of California, 2007a), which is projected to increase to 562,700 by 2030 and to 605,600 by 2040 (SBCWA, 2003). The county is highly diverse in terms of climate, topography, economic activities, recreational opportunities, and social/economic structure. Additionally, there are five major ecological zones and numerous subareas ranging from arid high desert regions in the interior; mountains and foothills; and coastal plains.

About 65 percent of the terrain of Santa Barbara County is hilly or mountainous, and most of the remaining 35 percent is composed of valleys and plains. The steep Santa Ynez Mountains bound the coastal plain on the north; farther north, the San Rafael Mountains rise to the highest elevations in the county; and the Sierra Madre Mountains occupy the northeast portion of the county. Approximately one-third of the land area within the county is located within the Los Padres National Forest, which includes two wilderness areas, the San Rafael Wilderness and the Dick Smith Wilderness. The national forest includes portions of watersheds that provide an important water source for coastal populations, as well as important habitat for several threatened, endangered, proposed, candidate, and sensitive species.

Most of the county population lives in the coastal valleys and in the cities of Santa Barbara and Santa Maria. Other population centers on the South Coast include the cities of Goleta and Carpinteria, along with unincorporated areas such as Isla Vista, Hope Ranch, Mission Canyon, Montecito, and Summerland. The cities of Solvang and Buellton, the unincorporated communities of Los Olivos, Ballard, and Santa Ynez, and the Chumash Indian Santa Ynez Reservation are located in the Santa Ynez Valley, north of the Santa Ynez Mountains. The City of Lompoc, the unincorporated communities of Vandenberg Village and Mission Hills, Vandenberg Air Force Base, and the Lompoc Federal Correctional Complex are in the Lompoc Valley, where the Santa Ynez River flows out to the sea. Los Alamos is the only community in the San Antonio watershed. The cities of Santa Maria and Guadalupe, and the unincorporated towns of Orcutt, Casmalia, Betteravia, Garey, and Sisquoc are located in the northern portion of the county. The City of Santa Maria is the largest city in Santa Barbara County. Northeast of the San Rafael mountains is the dry and sparsely populated Cuyama Valley, where the community of Cuyama is located.

Major land use categories are shown in Figure 2-2, along with a breakdown of land ownership and the amount of land dedicated to generalized land uses. The federal government is the largest land owner in the county; the United States Forest Service and Air Force have jurisdiction over nearly 46 percent of the land area. Los Padres National Forest and Vandenberg Air Force Base comprise approximately 748,000 acres combined. The national forest provides a scenic backdrop to many communities within both north and south Santa Barbara County and is managed for multiple purposes, including recreation, oil development, and grazing. Vandenberg Air Force Base is headquarters for the 30th Space Wing, which manages Department of Defense space and missile testing and places satellites into polar orbit from the West Coast.

The state of California owns approximately 1 percent of county lands, or 18,000 acres. Most of this land comprises the University of California at Santa Barbara (UCSB), near the City of Goleta; the Sedgwick Reserve, which is operated by the University as part of its Natural Reserve System and located east of Los Olivos in the Santa Ynez Valley; La Purisima Mission State Park, located near Lompoc; and several state parks located along the coast, within the city of Santa Barbara, and in the Santa Ynez Mountains. Less than 1 percent of the county is owned by the county or other local agencies, and the remainder is privately owned.

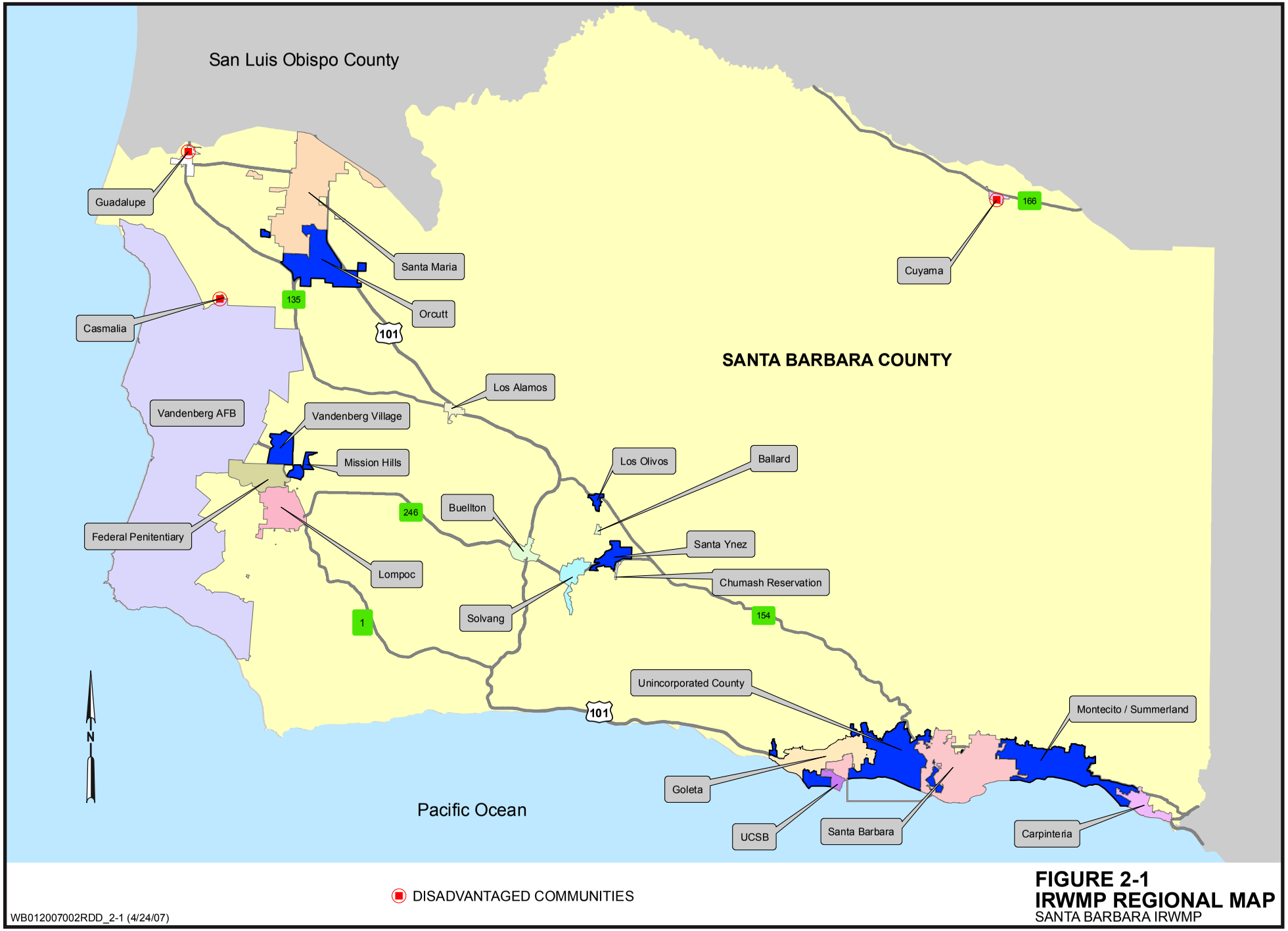

FIGURE 2-1
IRWMP REGIONAL MAP
SANTA BARBARA IRWMP

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	Acreage	% of Gov't Land	% of County
Federally Owned	748,000	96.0	45.8
State or UC Owned	18,000	2.3	1.1
County or Locally Owned	13,000	1.7	0.8
Total Governmentally Owned Land	**779,000**	**100.0**	**47.7**

	Acreage	% of Priv. Land	% of County
Agricultural Preserves	555,000	64.9	34.0
Areas Zoned 100-Acres or Greater Not in Agricultural Preserve	60,000	7.0	3.7
Other Agriculturally Zoned Land	146,000	17.1	8.9
Hillside Estate Lots Zoned 40-Acres	6,000	0.7	0.4
Unincorporated Urban Areas	33,000	3.9	2.0
Incorporated Cities	42,000	4.9	2.6
Remaining Areas	13,000	1.5	0.8
Total Privately Owned Land	**855,000**	**100.0**	**52.3**
Total County Area	**1,634,000**		**100.0**

National Forest Boundary
Rural Boundary

Key to Zoning of Selected "Remaining Areas":
- (A) Residential Ranchette / Estate Residential
- (B) Planned Residential Development / Recreation (Golf Course)
- (C) Industrial

September 13, 2002
0 1 2 3 4 5
Scale in miles

cntywide_2000.dwg LS=lap8514v2000 lap8514.ctb
SANTA BARBARA COUNTY PLANNING AND DEVELOPMENT

FIGURE 2-2
SANTA BARBARA COUNTY LAND STATUS
SANTA BARBARA IRWMP

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Thirty-four percent of the county (555,000 acres) is in agricultural preserves, and an additional 13 percent (206,000 acres) is zoned for 100-acre or greater lot size, or is in other agriculturally zoned land. Less than 3 percent of the county is within incorporated cities, 2 percent is within unincorporated urban areas, and less than 1 percent is zoned for hillside estate lots of 40 acres or more.

2.2 Climate

Santa Barbara County has a Mediterranean climate with several microclimatic regions. Summers are warm and dry; the winters are cool and often wet. Annual precipitation typically ranges from 7 to 9 inches near Cuyama to a maximum of about 36 inches at the uppermost elevations of the San Rafael Mountains. Average rainfall throughout the county is approximately 15 to 18 inches per year. The county topography has a unique physical orientation compared to the rest of California with a series of east-west transverse mountain ranges. This topography causes an orographic effect when a storm approaches from the Pacific Ocean. Storms from the south can cause heavy precipitation on south-facing slopes, while storms from the north or west can concentrate precipitation on west or north-facing slopes. Annual average rainfall at the highest elevation is twice that of the lowest elevation. Most precipitation occurs between November and March with the exception of some far inland mountain areas that may receive sporadic late summer thundershowers. Moist air from the Pacific Ocean moderates temperatures in the coastal areas; lower winter minimums and higher summer maximums prevail in the inland valleys.

Santa Barbara County weather is mainly controlled by the Pacific high pressure system. In the dry season, from about May through September, the Pacific high pressure system usually occupies the area northeast of Hawaii. During the winter months, it is weaker and positioned further south. At times, the persistence of the Pacific high pressure system at a latitude farther north than normal keeps the Pacific storm track farther to the north. This "blocking high" results in either no precipitation for part or all of California, or, at most, only light amounts of rainfall. This climatological scenario is the reason for most of California's droughts, including those occurring in 1976 to 1977 and 1986 to 1991.

2.3 Economic Conditions and Trends in the Region

Santa Barbara County is economically diverse with pronounced differences between the north and the south. Agricultural activities and oil development traditionally have been the dominant economic forces north of the Santa Ynez Mountains; although in recent years, tourism has increased, oil leases have been decommissioned, and more white-collar workers have been moving in to the area because of the high housing prices in the south. Agriculture continues to be the county's major producing industry, despite reductions in the amount of farmland.

The South Coast's economy is largely based on tourism, software or other high-tech pursuits, and education-related activities; although the area continues to support oil development offshore, and agricultural activities continue to occur in the Goleta and Carpinteria valleys, particularly in the foothills. The South Coast has experienced slow economic growth in recent years, while the North County has undergone considerable

economic growth. This is due in large part to the extremely high cost of housing in the South Coast, where the median price of a single family home exceeds $1 million. As a result, the North County is undergoing significant population growth, which in turn, is driving construction and service industry growth in the area. Economists predict that the North County region will be the main driving force in the economy for the foreseeable future because of relatively affordable housing, available work force, and a perceived business-friendly environment (UCSB, 2006).

2.4 Santa Barbara's Social and Cultural Makeup

Santa Barbara County is socially and culturally diverse. The county is predominantly composed of White/Caucasians (approximately 56 percent) and Hispanics (approximately 34 percent), with Asians and African Americans comprising most of the remaining population (State of California, 2007c). The county includes three Disadvantaged Communities (DAC)—Cuyama, the City of Guadalupe, and Casmalia—all of which are located in North County[1]. All three communities are fairly isolated from other populated areas within the county, especially Cuyama and Casmalia. These communities face financial hardships and serious health risks related to the condition of their respective water supply systems and potential threats to the quality of their drinking water, as described in greater detail in Section 6.

Due in part to the high cost of housing, the population in the South County is becoming increasingly stratified. The number of middle class residents is decreasing, leaving a concentration of younger and poorer residents, as well as older and wealthier retirees. School enrollments have been declining in the South County because working families can not afford housing and choose to move to less expensive areas. The North County, on the other hand, is experiencing an influx of younger families because housing is more affordable. North County school enrollments are on the rise (UCSB, 2006).

Santa Barbara residents appreciate its mild climate, scenic beauty, beaches, mountains, recreational resources, and cultural opportunities. Those qualities that make the county a desirable destination for tourists also make it an appealing place to live. The county is home to a long-standing environmental movement, stemming in part from the large oil spill that affected 35 miles of coastline in 1969. Environmental activists are, however, sometimes at odds with other interests regarding the most appropriate way to manage Santa Barbara County resources.

2.5 Major Watersheds and Rivers

The county contains four principal watersheds (Table 2-1): Santa Maria, which includes the Cuyama and Sisquoc watersheds; San Antonio Creek; Santa Ynez; and South Coast, which is composed of approximately 50 short, steep watersheds (Figures 2-3 and 2-4). The headwaters of the principal watersheds are generally undeveloped, and the middle and

[1]DACs were identified by reviewing median household income (MHI) data from the 2000 US Census for all zip codes within Santa Barbara County and identifying those that were 80 percent or less of the statewide MHI based on the 2000 Census ($37,994). MHIs are as follows: Guadalupe, $30,864; Casmalia, $37,574; and New Cuyama, $36,500. In comparison, the MHI for all Santa Barbara County zip codes is $49,027.

lower sections are often developed with urban or agricultural uses. The four major rivers draining these watersheds are the Santa Maria, Sisquoc, Cuyama, and Santa Ynez. Rainfall is variable, and streamflow is flashy. Streamflow is generated directly from rainfall with little base flow contribution from headwaters. Most rivers and the lower reaches of streams are dry in the summer.

TABLE 2-1
Santa Barbara County Watersheds

Watershed	Square Miles
Santa Maria (including Cuyama and Sisquoc watersheds)	1,845
San Antonio Creek	165
Santa Ynez River	900
South Coast (composed of numerous smaller watersheds)	416

2.5.1 Santa Maria Watershed

The Santa Maria Watershed (Figure 2-5) is drained by the Santa Maria River, which is formed by the confluence of the Cuyama and Sisquoc rivers at Fugler Point, 20 miles inland from the coast. Elevations range from sea level to 6,828 feet at Big Pine Mountain, which is at the headwaters of the Sisquoc River. The Santa Maria River Valley covers the 260-square-mile watershed area downstream of the Cuyama-Sisquoc River confluence. Much of the valley consists of a broad alluvial area known as the Santa Maria Plain. The Cuyama River drains a 1,140-square-mile watershed area that includes southeastern San Luis Obispo County, northeastern Santa Barbara County, and relatively small portions of Ventura and Kern counties. Major tributaries to the Cuyama River are Huasna River and Alamos Creek. Most of the river and its tributaries have intermittent flows, although some reaches of the river have surface water most of the year. Some of the major tributaries also have perennial flows in some reaches. Since 1959, flow in the Cuyama River has been regulated by Twitchell Reservoir, which retards a portion of intercepted storm flow for later release. The Sisquoc River receives runoff from a watershed area of approximately 470 square miles. The watershed of the Sisquoc River is defined by the northwestward-trending Sierra Madre Mountains on the north and the westward trending San Rafael Mountains on the south. Most of the Sisquoc River drainage lies within the boundaries of the Los Padres National Forest. The Sisquoc River is designated as a Wild and Scenic River. Except for wilderness areas in the National Forest, all of the land is used for some form of agriculture. Other industries of significance include oil and gravel mining, recreation, light manufacturing, and research and development mostly related to the aerospace business (CARCD, 2002).

2.5.2 San Antonio Creek Watershed

The drainage system of the San Antonio Creek Watershed starts at a point approximately 10 miles east of Los Alamos. It traverses generally to the west through Los Alamos and Vandenberg Air Force Base to the ocean. The basin is rather confined, averaging about 8 miles in width. The lower reaches throughout Vandenberg Air Force Base have a perennial

flow, in part because of irrigation tailwater, but primarily because of a geologic rift at Barca Slough, which causes an upwelling. The principal crops grown are vegetables in the flat areas, and winegrapes in the transitional uplands. All are irrigated from groundwater resources (CARCD, 2002).

2.5.3 Santa Ynez River Basin

The Santa Ynez River originates in the San Rafael Mountains in the Los Padres National Forest near the eastern border of the county. A small portion of the Santa Ynez River watershed lies in Ventura County. The river flows westerly about 90 miles to the ocean, passing through Jameson Lake, Gibraltar Reservoir, and Lake Cachuma. The Santa Ynez River basin is the largest drainage system that is wholly located in Santa Barbara County. The 621,577 acres that it drains is about 40 percent of the mainland part of the county. It is the primary source of water for about two-thirds of the Santa Barbara County residents, including the heavily populated south coastal region around Santa Barbara. Three dams have been constructed on the river to store and divert water to the South County. These are described in detail in Sections 3 and 4. None of the reservoirs on the Santa Ynez River has a prescriptive requirement for a flood control storage area. All of the water diversions from the dams are by tunnels cut through the Santa Ynez Mountains to terminal reservoirs near urban areas.

Approximately 260,000 acres in the watershed are public land, 215,000 of which is within the Las Padres National Forest. The remaining public lands are, for the most part, on Vandenberg Air Force Base. In the Santa Ynez Valley there is an extensive thoroughbred racehorse industry. Crops grown in this area include wine grapes and irrigated forage crops for the horses. Most of the relatively flat lands between Buellton and Lompoc are used for growing a variety of irrigated crops including flowers, vegetables, wine grapes, beans, and walnuts. Most of the irrigated land is located in Lompoc Valley west of Lompoc. That area is similar to Santa Maria Valley in that the marine influences allow year round crop production. All irrigation water is pumped from underground resources. Almost all of the upland areas are used as range to raise beef cattle. Other important industries are oil production, diatomaceous earth mining, and human resources support for Vandenberg Air Force Base (CARCD, 2002).

FIGURE 2-3
WATERSHEDS OF
SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

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FIGURE 2-4
COASTAL WATERSHEDS IN SOUTHERN SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

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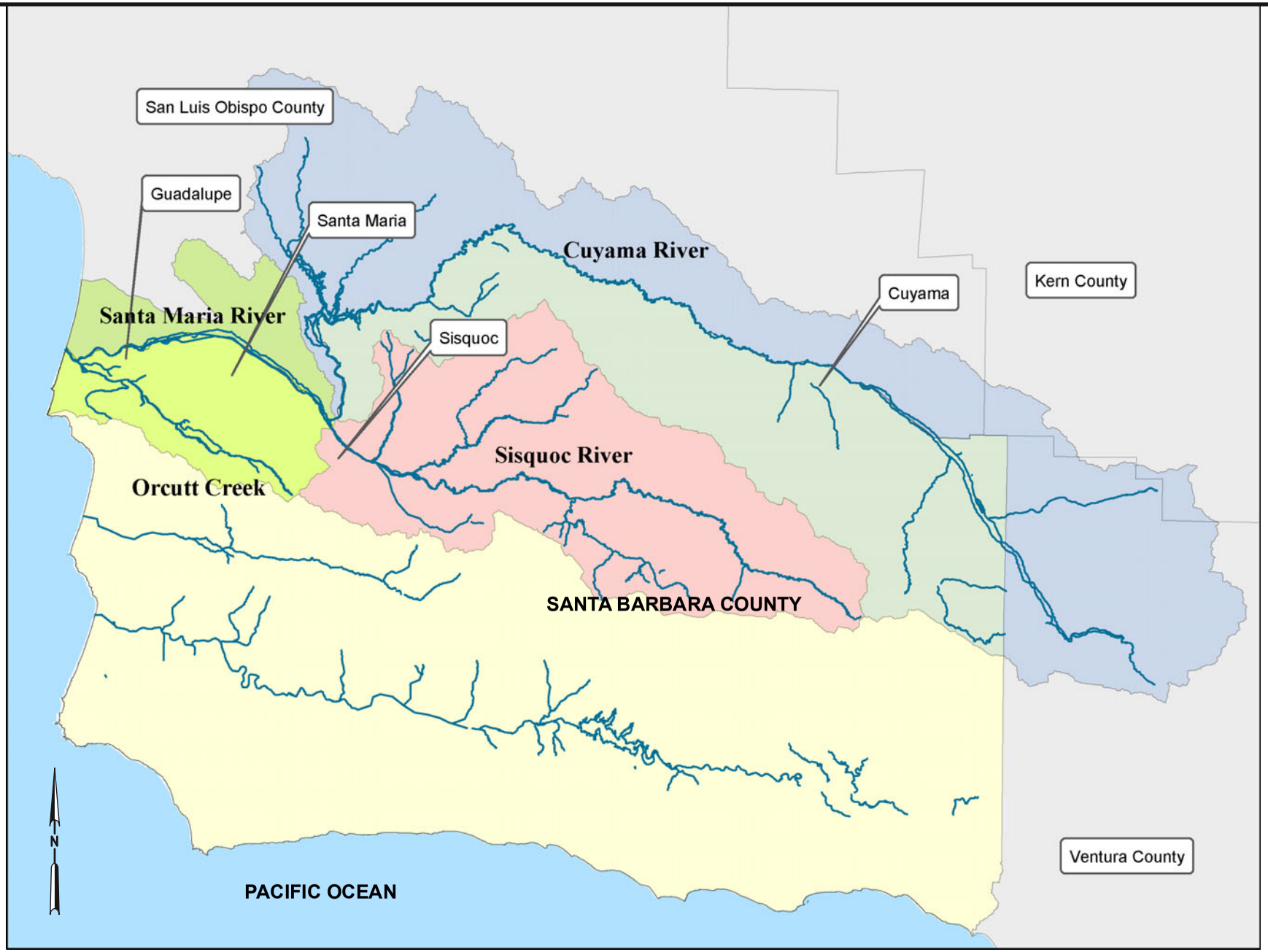

FIGURE 2-5
SANTA MARIA WATERSHED
SANTA BARBARA IRWMP

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2.5.4 South Coast Watersheds

The south coastal region generally includes all of the southerly drainages from Point Concepcion to the Ventura County line. Its approximately 50 watersheds range from 162 acres to 30,572 acres, with an average size of 3,209 acres. This area is heavily influenced by the ocean because of the southerly aspect, and the ocean current which is usually about 10 degrees higher than the current north of Point Concepcion during the winter months. This south to north current is from South American waters as opposed to the north to south Humboldt Current north of Point Concepcion. The currents merge near the point and then trend seaward. The topography is precipitous, rising abruptly from sea level to about 4,300 feet. Annual rainfall varies from about 16 inches on the coast to about 30 inches at the summits. Virtually all the subtropical fruit (principally avocados) and about 75 percent of the nursery and hot-house products of the county are raised in the South Coast, most of which are in the vicinity of the urban complex between Goleta and Carpinteria. Irrigation water is provided from a variety of sources, including pumped groundwater; diversions from Cachuma, Gibraltar, and Juncal Dams; and to a lesser degree from on-farm surface entrapments. The southeastern part is heavily urbanized, and includes the contiguous communities of Goleta, Santa Barbara, Montecito, Summerland, and Carpinteria. Other than agriculture, important industries include tourism, electronic products manufacturing, city and county government, and University of California, Santa Barbara (CARCD, 2002).

2.6 Groundwater Basins

Santa Barbara County groundwater basins are shown in Figure 2-6; their sizes and land uses served are summarized in Table 2-2.

TABLE 2-2
Santa Barbara County Groundwater Basins

Basin	Size (Acres)	Land Use Summary
North County Groundwater Basins		
Santa Maria	110,000 with 80,000 within Santa Barbara County	Two cities; extensive unincorporated urban area (Santa Barbara County); extensive irrigated agriculture; petroleum
San Antonio Creek	70,400	One town; extensive agriculture; some petroleum; Vandenberg Air Force Base
Cuyama	441,600 with 81,280 within Santa Barbara County	Extensive agriculture; some petroleum; very low population density
Santa Ynez River Groundwater Basins		
Santa Ynez Uplands	83,200	Three towns, one city and other medium-density residential; varied high-value agriculture
Buellton Uplands	16,400	Agriculture; one city
Lompoc[a]	48,600	One city, 2 areas of unincorporated urban development; Vandenberg Air Force Base; varied agriculture; petroleum; Federal Penitentiary Complex
Santa Ynez River Riparian Basins	12,000 (3 subunits)	Two cities; 7,300 acres of irrigated cropland
South Coast Groundwater Basins		
Carpinteria	6,700	One city; unincorporated urban development; orchards, irrigated crops, and greenhouses
Montecito	4,300	Primarily low-density residential use; unincorporated
Santa Barbara	4,500	Primarily residential, industrial and commercial
Foothill	3,000	Primarily residential and commercial
Goleta North/Central	5,700	Primarily residential, industrial, and commercial
Goleta West	3,500	Primarily residential, industrial, and commercial
More Ranch	502	Primarily open space; limited residential/agriculture
Ellwood to Gaviota Coastal Basins	67,200	Agriculture, primarily orchards and grazing; limited municipal/industrial
Gaviota to Pt. Conception Coastal Basins	23,040	Agriculture, primarily grazing

Sources: Santa Barbara County, 2000; Santa Barbara County, 2003

[a]Consists of three hydrologically connected subbasins: Lompoc Plain, Lompoc Terrace, and Lompoc Upland

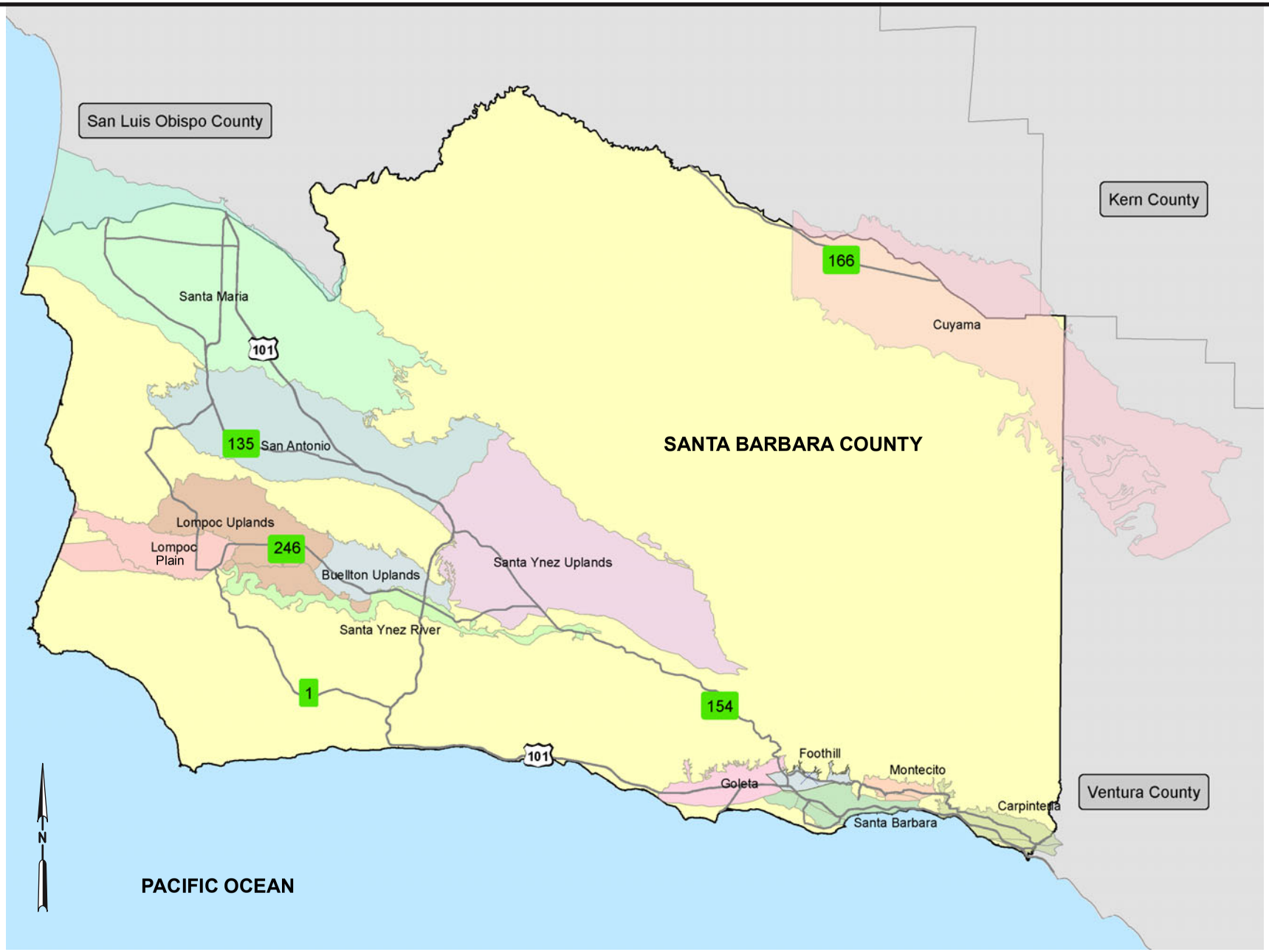

FIGURE 2-6
GROUNDWATER BASINS OF SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

WB012007002RDD_2-6 (5/18/07)

The following conclusions regarding groundwater basins are taken from the 2005 Santa Barbara County Groundwater Report (Santa Barbara County, 2006). References to overdraft pertain to safe yield and not perennial yield. Safe yield is defined in the 2005 report as the maximum amount of water which can be withdrawn from a basin (or aquifer) on an average annual basis without inducing a long-term progressive drop in water level. Perennial yield is defined as the amount of water that can be withdrawn from a basin (or aquifer) on an average annual basis without inducing economic or water quality consequences.

The 2005 Santa Barbara County Groundwater Report (Santa Barbara County, 2006) summarizes the status of groundwater basins as follows:

- The Cuyama Groundwater Basin is in a state of overdraft of approximately 28,525 acre-feet per year (AFY) based on a 1992 study. Water levels have fallen significantly, but no regional economic or water quality problem has yet been documented.
- In the recent litigation, *Santa Maria Valley Water Conservation District versus the City of Santa Maria et al.,* the court ruled that, based on a preponderance of evidence, the Santa Maria Groundwater Basin is not currently in a state of overdraft. Management of this groundwater basin will be subject to the adjudication, which is expected to be completed in 2007. (Refer to Section 3 for additional discussion).
- The San Antonio Groundwater Basin is in a state of overdraft of approximately 9,540 AFY based on a 2003 study. Water levels have fallen significantly, but no regional economic or groundwater quality problem has yet materialized.
- The Lompoc Plain Groundwater Basin is in equilibrium under the State Water Resources Control Board (SWRCB) Decision WR 89-18 and management by the Santa Ynez River Water Conservation District, because natural recharge is augmented with periodic water releases that are made from Cachuma Reservoir to maintain groundwater levels in the basin.
- The Lompoc Uplands Groundwater Basin has apparently reached equilibrium since, over time, water levels have been lowered to approach the elevation of the Lompoc Plain and Santa Ynez River, which now regulate the water levels in the Uplands Basin.
- The Santa Rita subarea of the Lompoc Basin is in a state of overdraft of approximately 800 AFY based on a 2001 study. However, water levels in some parts of this area have declined significantly in the past few years, and thus, in the future some economic effects may be realized as the balance between energy costs and commodity prices fluctuate.
- The Buellton Uplands Basin is in a state of surplus of approximately 800 AFY based on a 1995 study.
- The condition of the Santa Ynez Uplands Groundwater Basin has varied over time, and a 2001 study reported the basin as being in a state of overdraft of approximately 2,028 AFY at that time. The decline in water levels in this basin appears to have bottomed out in the 1987 to 1991 drought, however, and the basin may currently be in equilibrium. Under current extraction practices, part of the basin is used conjunctively

with local and imported surface water supplies. No regional economic or water quality impacts associated with pumping have materialized.

- The South Coast Basins are in equilibrium through management by local water districts and the Wright Suit Settlement[2]. The City of Santa Barbara practices conjunctive use of groundwater resources in the Foothill Basin and Storage Unit No. 1 of the Santa Barbara Groundwater Basin. Relatively minor amounts of pumping occur during average and wet years. More pumping is used during droughts to replace supplies lost to diminished surface water. Between pumping by the City and various private pumpers, the basins are in long term balance.

2.7 Ecological Processes and Environmental Resources

Santa Barbara County is located at a point of transition between the Southern California and Northern California ecozones and is characterized by rare plant assemblages. The county has a range of climatic zones, ranging from Mediterranean climate (South Coast) to Alpine (Big Pine Mountain) to high desert (Cuyama area), resulting in considerable ecological diversity. Over 1,400 plant and animal species are found in the county. Of these, 54 are federally or state-listed threatened or endangered species (22 plant and 32 animal species), and another 60 species are considered rare or of special concern (including proposed endangered, threatened, candidate, and sensitive species).

2.7.1 Aquatic Sensitive Species

The listed species found in Santa Barbara County include five aquatic/stream dependent species (tidewater goby [*Eucycloglobius newberryi*], tiger salamander [*Ambystoma californiense*], red-legged frog [*Rana aurora draytonii*], arroyo toad [*Bufo californicus*], and southern California steelhead trout [*Oncorhynchus mykiss*]). The county's watersheds provide critical habitat for the anadromous steelhead trout, which are found primarily in the Santa Ynez River and its tributaries and the South Coast creeks, including Mission Creek. Steelhead populations have declined due to human activity impacts, such as loss of native vegetation, influx of aggressive exotic species, increased creek/stream scouring, streamflow and groundwater diversion, increases in impervious surfaces and runoff, and degraded water quality because of thermal pollution and potential nutrient, sediment, and other polluted runoff from urban development. Dams, culverts, concrete channels, low-flow crossings, or other structures have created fish passage barriers to important upstream habitat. The southwestern pond turtle (*Clemmys marmorata pallida*), a California Species of Special Concern, also is found in the county.

[2] The 1989 Wright Suit Settlement served to adjudicate the water resources of Goleta North/Central Basin and assigned quantities of the basin's safe yield to various parties, including the Goleta Water District and the La Cumbre Mutual Water Company. The judgment also ordered the Goleta Water District to bring the North/Central Basin into a state of hydrologic balance by 1998. The district has achieved compliance with this order through the importation of State Water Project water and the development of other supplemental supplies. These supplemental supplies have offset the court mandated reduction in pumpage from the basin. Given that the basin has been adjudicated and pumpage is controlled by the court, overdraft is not foreseeable in the North-Central Basin.

2.7.2 Freshwater Habitats

Zaca Lake, located in the San Rafael Mountains north of Lake Cachuma, is the only natural lake in Santa Barbara County. It is less than 1 mile in circumference and tends to become anaerobic seasonally; therefore, the waters do not support a large or diversified biota.

Lake Los Carneros is located on the grounds of Stow House in Goleta and is not a natural body of water; it does, however, support a large and stable ecological community. It is surrounded by typical aquatic vegetation and supports diverse bird species.

Lake Cachuma is the largest reservoir in the county. It attracts numerous migratory birds and has a rookery of great blue herons. The endangered southern bald eagle (*Haliaeetus leucocephalus*) may be observed at the lake. The lake supports large populations of large mouth and small mouth bass, crappie, bluegill, redear, sunfish, channel catfish, and rainbow trout.

The county's four major rivers (Santa Ynez, Santa Maria, Cuyama, and Sisquoc) and its many creeks and streams are characterized by riparian vegetation along their banks. This habitat can also occur along arroyos, barrancas, and other types of drainages throughout the county. Riparian vegetation supports a great diversity of aquatic and terrestrial wildlife species. Streams and pools provide habitat for aquatic and semiaquatic species such as Pacific chorus frog, western toad, Pacific treefrog, and the introduced bullfrog. Common reptiles include the ensatina, western fence lizard, common kingsnake, gopher snake, and common garter snake. Riparian vegetation is also used by small mammals for cover, movement corridors, and foraging. Small populations of the southwestern willow flycatcher (*Empidonax trailii extimus*), least Bell's vireo (*Vireo bellii pusillus*), federally and state-listed species, are present in the riparian areas along the Santa Ynez River, portions of which are designated as critical habitat for these species.

A number of invasive weeds are present in the county's riparian areas, including arundo, tamarisk, Pampas grass, myoporum, cape ivy, and castor bean. Such weeds are detrimental to habitat and water conservation, and they increase the risk of flooding and erosion in riparian systems. South Coast creeks discharge to the Santa Barbara Channel, and impaired creek water quality affects the water quality of the ocean in the vicinity of public beaches. Common to all urban south coastal watersheds, the natural function of local creeks has been affected over time by human activities and land alteration, which ultimately has altered natural hydrologic and geomorphologic processes, degraded water quality, and diminished native biological communities.

2.7.3 Sloughs/Coastal Salt Marshes

Several salt marshes occur in the county and provide habitat for a number of estuarine invertebrates and fish, migratory birds, and rare and endangered animal species, such as Belding's Savannah sparrow (*Passerculus sanwichensis beldingi*), California brown pelican (*Pelicanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinas*), light-footed clapper rail (*Rallus longirostris levipes*), and tidewater goby; and plant species such as salt marsh bird's beak (*Cordylanthus maritimus*).

Carpinteria Salt Marsh

Carpinteria Salt Marsh is a 230-acre estuary adjacent to the City of Carpinteria and is owned by the City of Carpinteria, the University of California (as part of its Natural Reserve System), and the Land Trust for Santa Barbara County. The marsh was one of the original California Critical Coastal Areas identified in 1995 as an impaired estuary. It is also a 303(d) listed waterbody (for nutrients, organic enrichment, low dissolved oxygen, and priority organics). Nurseries, greenhouses, orchards, row crops, and residential areas may contribute to nutrients in the watershed. Sedimentation is likely coming from construction, storm drains, and agriculture. The marsh and its tributaries (Santa Monica Creek, Franklin Creek, and Arroyo Paredon) contain levels of nitrates that exceed Basin Plan objectives for municipal and domestic supply. Flood control, sediment management, and ecosystem enhancement measures recently have been implemented.

Goleta Slough

Goleta Slough is located near UCSB and includes portions of the Santa Barbara Airport, which is under the jurisdiction of the City of Santa Barbara. Large volumes of sediment and debris contained in runoff from the mountains have entered the Goleta Slough ecosystem and profoundly affected the ecosystem by raising ground surface elevations and affecting patterns of flooding and the development of wetland versus upland habitats. High inputs of sediment and debris, funneled into relatively narrow areas as a result of creek channelization and development of the Goleta Valley, have diminished the capacity of creek channels to convey floodwaters through developed areas, which require regular maintenance by the Santa Barbara County Flood Control District. Goleta Slough is a 303(d) impaired water body for pathogens, and priority organics and is considered a Critical Coastal Area (CCA). The slough is managed by the Santa Barbara Airport and the Goleta Slough Management Committee, which is composed of a variety of federal, state, and local agencies, organizations, and individuals, through the Goleta Slough Ecosystem Management Plan. The importance of the slough is recognized and reflected in its designation as an Environmentally Sensitive Habitat in the Local Coastal Plans of both the City and County of Santa Barbara.

Greater Devereux Slough

The Greater Devereux Slough ecosystem is located on the West Campus of UCSB, and a large portion of the area is a designated Environmentally Sensitive Habitat. The upland drainage areas, commonly referred to as Santa Barbara Shores and Ellwood, are important because they are home to one of the largest monarch butterfly overwintering sites on the West Coast. As a part of the University of California's Natural Reserve System, the area is reserved for habitat and wildlife preservation, public education, and academic research. The slough is not listed on the 303(d) list, but sediment loading is reducing the total size of the slough. Continued residential development in the watershed may increase contamination of runoff entering the slough, and exotic plant species are displacing native plants and altering the habitats. The Santa Barbara Audubon Society began a new habitat restoration project on the north shore of Devereux Slough in September 2002 intended to restore a 1.42-acre portion of Devereux Slough seasonal wetland and upland margin, improve foraging habitat for the state-listed Belding's Savannah sparrow and two species of marsh-dependent butterflies, pygmy blue and wandering skipper.

Surf/Ocean Beach Park

The Surf area, including Ocean Beach Park, is located about 13 miles west of Lompoc at the mouth of the Santa Ynez River. The area contains a salt marsh, a small freshwater marsh, and dune habitat. Access to certain parts of the beach is restricted at times because the western snowy plover nests there. Like the other marshes, this area is a stopover for birds using the Pacific Flyway, and it contains habitat suitable for a number of sensitive species, including Belding's Savannah sparrow and the black rail. Endangered plant species, such as salt marsh bird's beak also may be found here. The Santa Ynez River Lagoon also is found here and generally forms when flows decrease after the winter runoff period when the mouth of the river fills with sand deposited by both the river and by the strong longitudinal drift of sand from north to south along the shoreline. Low summer flows generally are unable to keep the outlet open, although inflow from the Lompoc treatment facility and wave action can breach this barrier (COMB and USBR, 2004). The lagoon represents a unique habitat characterized by saltwater/freshwater mixing.

2.7.4 Coastal Dunes

This community occurs in several places along the coast, including on the southwestern edge of the University of California, Santa Barbara, campus (Devereux Dunes), at Vandenberg Air Force Base, north of Point Sal, between Point Sal and Purisima Point, south of Purisima point, and around Surf. Of particular note is the Guadalupe-Nipomo Dunes Complex, located near the mouth of the Santa Maria River. The Dunes Complex is a National Natural Landmark comprising 18 miles and more than 22,000 acres of one of the largest coastal dune ecosystems on earth. The Dunes Complex is located in a transition zone between Northern and Southern California plant and animal communities, resulting in a high degree of habitat diversity, a large number native plants and animals, and susceptibility to disturbing delicate ecosystem balances. With more than 1,000 known species of birds, plants and animals and some of the highest dunes on the West Coast, it is a place of rare beauty and significance. Established in 2000 and encompassing 2,533 acres, the Guadalupe-Nipomo National Wildlife Refuge is located in the heart of the Dune Complex. The habitat includes coastal dune scrub, dune swales, wetlands, fore and active dune areas and coastal strand. Sensitive species found in the refuge include the western snowy plover, California red-legged frog, California least tern and over 16 species of rare plants. The Oso Flaco Lake Natural Area, a California State Park, also is located within the Dune Complex.

2.7.5 Areas of Special Biological Significance

The SWRCB designates Areas of Special Biological Significance (ASBS) throughout the State of California, defined as "a nonterrestrial marine or estuarine area designated to protect marine species or biological communities from an undesirable alteration in natural water quality, including, but not limited to, areas of special biological significance that have been designated by the SWRCB through its water quality control planning process (PRC Section 36700[f]). In these areas, non-point source pollution is to be controlled as much as possible, and point source and thermal discharges are generally not permitted. The only ASBS within Santa Barbara County is the Channel Islands National Marine Sanctuary, which is managed by the National Park Service out to 6 miles from shore.

2.7.6 Marine Protected Areas

California Assembly Bill (AB 993) the Marine Life Protection Act was passed into law on October 10, 1999. A ''marine protected area'' is a named, discrete geographic marine or estuarine area seaward of the high tide line or the mouth of a coastal river, including any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna that has been designated by law, administrative action, or voter initiative to protect or conserve marine life and habitat. Marine protected areas include marine life reserves and other areas that allow for specified commercial and recreational activities, including fishing for certain species but not others, fishing with certain practices but not others, and kelp harvesting, provided that these activities are consistent with the objectives of the area and the goals and guidelines of the law. Marine protected areas are primarily intended to protect or conserve marine life and habitat, and are therefore a subset of marine managed areas, which are broader groups of named, discrete geographic areas along the coast that protect, conserve, or otherwise manage a variety of resources and uses, including living marine resources, cultural and historical resources, and recreational opportunities. A number of marine protected areas are present within Santa Barbara County, primarily at the Channel Islands, although the Goleta Slough has this designation, as do the Refugio State Marine Conservation Area and Vandenberg State Marine Reserve.

2.8 Water Quality

Water quality is a concern because of its potential effect on human health, enterprise, aquatic organisms, and ecosystem conditions. Quality is determined by factors such as native condition of groundwater and surface water, sources of contamination (natural and human induced), and extent of seawater intrusion.

2.8.1 Critical Coastal Areas (CCA)

The CCA Program is part of the state's Nonpoint Source Pollution Plan and a nonregulatory planning tool to coordinate the efforts of multiple agencies and stakeholders, and direct resources to CCAs. The program's goal is to ensure that effective nonpoint source pollution management measures are implemented to protect or restore coastal water quality in CCAs. CCAs in Santa Barbara County include the Santa Ynez River, Goleta Slough, and Carpinteria Marsh. Criteria for identifying CCAs reflect the dual goals of improving degraded water quality and providing extra protection from non-point source pollution to marine areas with recognized high resource value. The CCA program relies on existing designations of degraded water quality (i.e., the Clean Water Act 303(d) list of impaired and threatened water bodies), and marine or estuarine areas with high resource value (i.e., California Marine Managed Areas, including State Water Quality Protection Areas, and equivalent areas specified in the San Francisco Bay Plan).

2.8.2 Section 303(d) Impaired Water Bodies

Water quality is assessed by comparing measured levels of contaminants to standards that have been established for each beneficial use. The state of California has established "beneficial uses" for all surface water bodies within its jurisdiction. Water quality standards have been established for each beneficial use. The standards are the basis for identifying which water bodies are "impaired," or restricted in their beneficial uses. These impaired

water bodies are formally identified under Section 303(d) of the Clean Water Act, which requires states, territories, and authorized tribes to develop a list of water quality limited segments. The list of these water bodies and their pollutants of concern is the basis for setting priorities for the improvement of water quality. The county contains a number of water bodies that are listed as impaired under Section 303(d). The current list, shown in Appendix A, was approved by the SWRCB on October 25, 2006 (Resolution No. 2006 – 0079); the water segments and their impairments are listed in Table 2-3. Sources of pollution include both urban and agricultural uses, as well as natural sources. The waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that priority rankings be established for the development of action plans, called Total Maximum Daily Loads (TMDLs), to improve the water quality for waters on the list.

2.8.3 Groundwater Quality

The importation of State Water Project water, with lower salt content than the local sources, provides for higher quality "return flows," and thus, helps the basin water quality. In the Santa Maria basin, in addition to improvements provided by the recharge operations of Twitchell Reservoir and state water importation, the Laguna County Sanitation District helps improve water quality in the basin by utilizing a reverse osmosis process to remove and a deep injection well to dispose of approximately 8,000 pounds per day of salts, which would otherwise accumulate in the basin system. In the Santa Ynez River watershed, under the Cachuma Project Settlement Agreement, State Water Project water is mixed with water rights releases from Bradbury Dam to lower the salt content of flows downstream. Since 1997, discharge of State Water Project water has tended to lower the total dissolved solids (TDS) of groundwater in the vicinity of these sources.

Increases in TDS have been recorded in many basins in the county. Efforts to increase recharge and improve irrigation efficiency have been implemented to address this problem.

Several areas in the county (Santa Barbara and near Santa Maria) have experienced signs of seawater intrusion. As of yet, these initial signs of intrusion do not pose a threat to drinking water supplies.

The county contains a number of non-sewered, fairly densely populated areas that remain on septic tanks, requiring integrated action by the Local Agency Formation Commission, cities, and special districts to provide for extensions of sewer systems to serve these areas or other measures to address potential groundwater contamination. State maximum contaminant levels (MCLs) for nitrates already have been exceeded in some areas, and methyl tertiary butyl ether (MTBE) and chlorinated solvents pose problems for some wells. Additionally, the recently constructed Chumash wastewater treatment plant in the Santa Ynez Valley is a new source of wastewater discharge into Sanja de Cota Creek, which is a tributary to the Santa Ynez River. As would occur with any wastewater treatment plant upstream of potable water wells, there is a potential risk of contamination of the potable wells in the Santa Ynez River alluvium. Because of the federal nexus, the U.S. Environmental Protection Agency has regulatory jurisdiction over this discharge. A water quality control plan is being developed to determine potential sources of contamination, designate beneficial uses, and assign water quality objectives.

The following describes groundwater quality in the major basins (Santa Barbara County, 2000; Santa Barbara County, 2005).

Carpinteria Groundwater Basin

Water quality has been monitored sporadically over most of the 20th century. Since the initial U.S. Geological Survey (USGS) study, TDS concentrations within the basin have increased, with recent concentrations ranging from 436 to 980 milligrams per liter (mg/L). Groundwater analyses conducted in 1985 revealed nitrate levels below the state MCL of 45 mg/L for public water systems.

Montecito Groundwater Basin

Water quality in the basin is generally suitable for agricultural and domestic use. Some wells near fault zones or coastal areas yield groundwater with elevated levels of TDS and other constituents. Studies indicate that seawater intrusion is not a significant problem in the basin. It is thought that deeper aquifers of the basin are protected from seawater intrusion by an impermeable offshore fault. However, some encroachment of seawater might occur in shallower aquifers during periods of heavy pumping such as during the early 1960s.

Santa Barbara Groundwater Basin

TDS concentrations within the two basins range from about 400 mg/L to about 1,000 mg/L. Isolated wells have exhibited much higher TDS concentrations. Seawater intrusion occurred in some areas of the south basin (Storage Unit No. 1) where heavy pumping from municipal wells caused groundwater levels to drop as much as 100 feet in the late 1970s. More recently, samples taken from coastal wells have confirmed the presence of seawater intrusion with chloride concentrations greater than 1,000 mg/L. Groundwater pumping within the Santa Barbara Groundwater Basin has been drastically reduced since 1991. Effective pumping practices, together with groundwater injection programs, have restored the previously existing gradient thereby reversing the trend of seawater intrusion.

Foothill Groundwater Basin

TDS concentrations range from 610 to 1,000 mg/L in seven wells sampled in the basin. Chloride concentrations in this basin are relatively low (44 to 130 mg/L) in the seven wells. An eighth well was sampled in the USGS study from which poor quality water (TDS 1,900 mg/L, chloride 360 mg/L) was recovered. This well, however, is known to produce water from bedrock aquifers below the sediments that comprise the Foothill Basin.

TABLE 2-3
List Of Water Quality Limited Segments in Santa Barbara County

Segment Name	Pollutant/Stressor
Alamo Creek	Fecal Coliform
Arroyo Burro Creek	Pathogens
Arroyo Paredon	Boron; Nitrate as Nitrate (NO3); Toxicity
Bell Creek	Nitrate as Nitrate (NO3)
Bradley Canyon Creek	Ammonia (Unionized); Fecal Coliform; Nitrate as Nitrate (NO3)
Bradley Channel	Fecal Coliform; Nitrate as Nitrate (NO3)
Canada de Gaviota	Boron
Carneros Creek	Ammonia (Unionized)
Carpinteria Creek	Pathogens
Carpinteria Marsh (El Estero Marsh)	Nutrients; Organic Enrichment/Low Dissolved Oxygen; Priority Organics
Casmalia Canyon Creek	Sedimentation/Siltation
Cuyama River	Boron
Franklin Creek	Nitrate as Nitrate (NO3)
Glen Annie Canyon	Nitrate as Nitrate (NO3)
Goleta Slough/Estuary	Pathogens; Priority Organics
Main Street Canal	Ammonia (Unionized); Nitrate
Mission Creek	Pathogens; Unknown Toxicity
Orcutt Creek	Ammonia (Unionized); Boron; Chlorpyrifos; DDT; Dieldrin; Fecal Coliform; Nitrate
Rincon Creek	Boron; Toxicity
San Antonio Creek (San Antonio Watershed, Rancho del las Flores Bridge at Hwy 135 to downstream at Railroad Bridge)	Ammonia as Nitrogen; Boron; Nitrogen; Nitrate
Santa Maria River	Ammonia (Unionized); Chlorpyrifos; DDT; Dieldrin; Endrin; Fecal Coliform; Nitrate
Santa Ynez River (below City of Lompoc to Ocean)	Nitrate as Nitrate (NO3); Salinity/TDS/Chlorides; Sedimentation/Siltation
Santa Ynez River (Cachuma Lake to below City of Lompoc)	Salinity/TDS/Chlorides; Sedimentation/Siltation
Shuman Canyon Creek	Sedimentation/Siltation
Pacific Ocean at Arroyo Burro Beach	Total Coliform
Pacific Ocean at Carpinteria State Beach (Carpinteria Creek mouth)	Fecal Coliform; Total Coliform
Pacific Ocean at East Beach (mouth of Mission Creek)	Fecal Coliform; Total Coliform

TABLE 2-3
List Of Water Quality Limited Segments in Santa Barbara County

Segment Name	Pollutant/Stressor
Pacific Ocean at East Beach (mouth of Sycamore Creek)	Total Coliform
Pacific Ocean at Gaviota Beach (mouth of Canada de la Gaviota Creek)	Total Coliform
Pacific Ocean at Hammonds Beach	Fecal Coliform
Pacific Ocean at Hope Ranch Beach	Fecal Coliform
Pacific Ocean at Jalama Beach	Fecal Coliform; Total Coliform
Pacific Ocean at Ocean Beach	Fecal Coliform; Total Coliform
Pacific Ocean at Point Rincon (mouth of Rincon Creek)	Fecal Coliform; Total Coliform
Pacific Ocean at Refugio Beach	Total Coliform

Note: Adopted by Resolution of the SWRCB on October 25, 2006

Goleta Groundwater Basin

The USGS compiled water quality data for these basins in the early 1940s. Groundwater analyses completed at that time indicated that chloride concentrations throughout most of the North-Central and West basins were less than the Department of Health Services secondary standard of 250 mg/L. TDS ranged from about 170 mg/L to 1,400 mg/L in the North-Central Basin, and was approximately 800 mg/L in the West Subbasin. More recent studies yielded similar TDS ranges as the USGS study with the exception of high concentrations in some wells of the West Basin. The recent study yielded no evidence of seawater intrusion. In addition, seawater intrusion is not likely to have occurred at any time due to the rock formations and the More Ranch Fault along the coast that act as barriers to groundwater migration. Near-surface low permeability sediments cause the southern portion of the North-Central and West basins to be under confined conditions and provide a barrier to contamination from potential surface sources of water quality degradation such as agricultural return flow or infiltration of brackish water in the overlying Goleta Slough. High TDS perched water is present in shallow aquifers above the confining layers. This water is not in general use. Water quality in the North-Central Basin is sufficient for many agricultural uses but might require treatment for domestic uses. Water in the West Basin requires treatment for domestic use and can be used for irrigation of a limited variety of crops. The Goleta Water District has extracted water from a bedrock well on a test basis. The well pumped water from the fractures in consolidated bedrock in the foothills north of the basin and was of very poor quality. The District has no plans to utilize water from this source.

Santa Ynez Uplands

Water quality within the basin is generally adequate for most agricultural and domestic purposes. Studies completed in 1970 indicate TDS concentrations ranging from 400 to 700 mg/L. Although recent water quality data are limited, samples analyzed by the USGS in 1992 exhibited a TDS concentration of 507 mg/L.

Buellton Uplands Groundwater Basin

Current water quality data for the basin is limited. However, data from late 1950s and early 1960s indicate TDS concentrations between 300 and 700 mg/L for several wells within the basin.

Lompoc Groundwater Basin

Water quality in the shallow zone of the Lompoc Plain tends to be poorest near the coast and in heavily irrigated areas of the subbasin. TDS concentrations of up to 8,000 mg/L near the coast were measured in the late 1980s. The poor quality water in this area is attributed to upwelling of poor quality connate waters, reduction in fresh water recharge from the Santa Ynez River beginning in the early 1960s, agricultural return flows, and downward leakage of seawater from an overlying estuary in the western portion of the basin. The presence of elevated boron and nitrates (constituents common in seawater and agricultural return flow, respectively) supports this conclusion. In the middle zone, water samples taken from below agricultural areas of the northeastern plain contained TDS concentrations averaging over 2,000 mg/L. However, some middle zone groundwater from the western

plain exhibited TDS levels below 700 mg/L. Areas of recharge, adjacent to the Santa Ynez River, contained TDS concentrations of less than 1,000 mg/L in the eastern plain. It is believed that leakage from the shallow zone is responsible for elevated TDS levels in the middle zone in the northeastern plain. Groundwater from the main zone exhibited TDS concentrations as high as 4,500 mg/L near the coast. It is thought that contamination of the main zone (mainly near the coast) is due to percolation of seawater through estuary lands and upward migration of poor quality connate waters from the underlying rock. Groundwater of the Lompoc Terrace and Lompoc Upland Subbasin is generally of better quality than that of the Lompoc Plain, averaging less than 700 mg/L TDS. Some of the natural seepage from these subbasins is of excellent quality. Groundwater users and public agencies within the basin are working to clarify and resolve water quality concerns.

San Antonio Groundwater Basin

Water quality studies conducted by the USGS in the late 1970s indicated an average TDS concentration within the basin of 710 mg/L, with concentrations generally increasing westward. The cause of the westward water quality degradation is thought to be the accumulation of lower quality water from agricultural return flow and the dissolution of soluble minerals. The highest TDS concentration (3,780 mg/L) was found in the extreme western end; the lowest concentration (263 mg/L) was found at the extreme eastern end. Analyses compiled for samples taken between 1958 and 1978 indicate that groundwater quality remained fairly stable during that period. Analyses of water sampled in 1993 for several wells show only slight increases in TDS since the previous study. There is evidence that poor quality connate waters exist within fracture zones of the bedrock and that this water might be induced into overlying strata through excessive pumping. There is no evidence of seawater intrusion in the basin, nor is the basin considered susceptible to seawater intrusion due to the consolidated rock that separates the basin from the ocean.

Santa Maria Valley Groundwater Basin

Water quality data indicates that TDS concentrations generally increase from east to west, with the most significant degradation occurring in the western part of the basin. TDS concentrations for shallower wells also tend to increase southward, away from the recharge area of the Santa Maria River. TDS concentrations east of Guadalupe have increased to over 3,000 mg/L in 1975 from less than 1,000 mg/L in the 1930s. In addition, TDS levels have increased significantly in Orcutt wells since the 1930s, but have remained relatively stable since 1987. The importation and domestic use of State Water Project water now results in better quality discharge water from the treatment facilities. A recent study conducted by the SWRCB indicates that the basin is subject to nitrate contamination, particularly in the vicinity of the City of Santa Maria and in Guadalupe. The study shows that nitrate concentrations have increased from less than 30 mg/L in the 1950s to over 100 mg/L in the 1990s in some parts of the basin. Coastal monitoring wells are measured biannually for any indication of seawater intrusion, although there has been no evidence that it has occurred. The concern of seawater intrusion is based on evidence that the Careaga Sand crops out on the ocean floor several miles west and there are no known barriers to prevent intrusion. Although it is likely that the seawater-freshwater interface has migrated toward land during the 20th century, the slope of groundwater has remained positive toward the ocean in the western-most part of the basin.

The Central Coast Regional Water Quality Control Board (RWQCB) has begun initial reports on bacteria and nitrates in the Santa Maria River Basin. Based on these reports, they have served notice of the intention to initiate a process to establish TMDLs for these two pollutants of concern. Part of the TMDL process focuses on identification of pollution sources.

Cuyama Groundwater Basin

Agricultural water use began in 1938 and has since progressively increased. The constant cycling and evaporation of irrigation water has resulted in decreasing water quality. Groundwater within the basin makes up 100 percent of the water supply for Cuyama Valley agriculture, petroleum operations, businesses and homes. Agriculture accounts for over 95 percent of the water use within the valley.

2.8.4 Surface Water Quality

Urban Water Quality

Various entities in the IRWMP planning region are focusing their efforts on poor surface water quality in creeks, rivers, and oceans due to polluted storm water and urban runoff discharges. Runoff pollutants can include pesticides, fertilizers, green waste, animal waste, human waste, petroleum hydrocarbons (gasoline, motor oil), trash, and other constituents.

Section 402 of the Clean Water Act established the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of waste from a point source to a receiving water body. Phase II of the NPDES program, enacted in 1999, requires preparation of Storm Water Management Plans (SWMP) to manage discharge of urban runoff to receiving waters (refer to Section 3 for a discussion of regional SWMPs. These plans summarize the management plans and strategies to maintain compliance in all applicable discharge and effluent prohibitions, including control measures such as public education and outreach on storm water impacts, public involvement/participation, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management in new development or redevelopment, and pollution prevention/"good housekeeping."

There are a number of potential urban storm water constituents of concern that the NPDES Phase II Storm Water Management Program aims to control on a national level and that are found in low levels in many areas throughout the county. (Water bodies that are sufficiently polluted to warrant clean up are listed in Table 2-3). These urban pollutants may include sediment, nutrients, bacteria and viruses, oil and grease, metals, organic compounds, pesticides, and gross pollutants such as trash. Storm water and incidental urban runoff are two of the primary carriers of pollutants that enter the county storm drain systems and creeks. Non-storm urban runoff from commercial and residential areas, streets and parking lots, city and commercial facilities, and building construction sites, among others, can all contribute as non-point sources of water pollution.

2.8.5 Ocean Water Quality

Ocean water quality is of concern in Santa Barbara County, as it is in many places along the California coast. Scientific evidence has linked storm water runoff with high levels of indicator bacteria in creeks and ocean water. Exposure to indicator bacteria correlates with

an increased health risk to humans, requiring beach warnings. Sources of these indicator bacteria may include human and domestic and wild animal excrement, decomposing plant matter, and septic and sanitary sewer overflow. Investigations of the City of Santa Barbara sewer system, for example, have indicated that local sewer pipe leaks likely occur in some areas of the city, contributing untreated wastewater to the shallow groundwater zone that can eventually make its way to creeks and to the beaches. In addition, damaged and broken sewer lines may also allow inflow of percolating rainwater into the city sewer system, overwhelming the capacity of the Estero treatment plant to effectively treat sewage during large storm events and resulting in discharge of only partially treated wastewater (City of Santa Barbara Creeks Restoration/Water Quality Improvement Division, 2005).

Table 2-4 summarizes the exceedance percentages (the number of samples exceeding one or more standards/total number of samples taken from the site) for the beaches monitored by the Santa Barbara County Environmental Health Services Department from 1998 to 2006.

2.8.6 Agricultural Water Quality

Agricultural sources may contribute to water quality impairments through irrigation return flow, flows from tile drains, and storm water runoff. These discharges can affect water quality by transporting pollutants including pesticides, sediment, nutrients, salts (including selenium and boron), pathogens, and heavy metals from cultivated fields into surface waters. Some surface water bodies are classified as impaired, at least in part, because of pollutants from agricultural sources.

To control and assess the effects of these discharges, the Central Coast RWQCB has adopted a comprehensive conditional waiver, using proactive solutions to control agricultural discharges, including an extensive public outreach and education approach, resulting in the enrollment of 400,000 acres in the program (State of California, 2007b). All farmers are expected to complete 15 hours of farm water quality education within 3 years of adoption of the waiver, develop farm water quality management plans that address, at a minimum, irrigation management, nutrient management, pesticide management and erosion control, and begin implementing management practices identified in their plans. Those who have completed the above requirements by the deadline qualify for a waiver with reduced reporting requirements.

2.8.7 Drinking Water Quality

Imported water from the State Water Project is of high quality, ranging from 222 to 510 mg/L TDS. In parts of the North County, State Water Project water is blended with other lower quality water, which results in a higher overall quality of the water distributed to customers. For the South Coast water purveyors, State Water Project water is conveyed through Lake Cachuma, where it mixes with local surface water. The water is then directed to local water treatment plants, after which it is distributed to customers. According to the U.S. Geological Survey figures for 1998 (Agajanian et al., 1998) the TDS for the rivers in Santa Barbara County range from 518 mg/L to 1,130 mg/L. Water treatment facilities are discussed in Section 4, and specific drinking water quality issues, including those facing DACs are addressed in Section 8.

TABLE 2-4
Percentage Exceedances for Indicator Bacteria (1998 to 2006)*

Beaches	Exceedance Percentage								
	1998	1999	2000	2001	2002	2003	2004	2005	2006
Arroyo Burro	44	33	36	27	21	17	13	26	46
Butterfly Beach	-	-	11	10	7	12	4	6	12
Carpinteria City Beach	7	10	4	13	9	4	2	10	8
Carpinteria State Beach	36	37	13	31	9	6	4	18	16
East Beach at Mission Creek	55	27	19	39	28	15	25	38	40
East Beach at Sycamore Creek	24	20	20	17	25	13	10	12	16
El Capitan State Beach	15	5	11	9	7	6	2	8	8
Gaviota State Beach	17	13	31	30	4	12	10	4	14
Goleta Beach	13	11	19	27	12	13	6	18	10
Guadalupe Dunes State Beach	3	2	4	12	12	2	4	2	4
Hammond's Beach	15	18	23	20	12	10	6	14	10
Haskell's Beach	-	-	-	21	4	13	6	16	16
Hope Ranch Beach	37	18	30	16	8	10	6	8	18
Jalama Beach	42	36	31	22	6	10	6	22	12
Leadbetter Beach	25	11	16	28	11	12	6	14	16
Ocean/Surf Beach	27	25	11	12	4	2	6	8	4
Refugio State Beach	28	24	32	25	22	6	4	18	18
Rincon at Bates Beach	54	27	17	7	2	2	0	6	4
Sands at Coal Oil Point	12	6	7	12	4	4	4	4	2
Summerland Beach	-	-	-	-	-	-	-	-	9
Average Percentage	30	22	21	23	12	9	6	14	14

Source: County of Santa Barbara Public Health Department, 2007.

*Based on AB 411 year-round sampling data.

2.9 Water Demand

Current agricultural and urban demands are discussed below, as are projected demands.

2.9.1 Agricultural Demand

Agricultural development increased dramatically after World War II due to advances in refrigerated-transport technology, which allowed crops grown in the county to be transported by train in refrigerated rail cars for sale in distant locations. Agricultural water use now accounts for approximately 75 percent of all water demand in the county;

calculating an exact amount would require accounting for the fact that some of the water used for agricultural returns as groundwater recharge. Most agricultural water supplies are obtained from private groundwater wells, although some water purveyors provide agricultural water, as well. Table 2-5 summarizes the amount of water currently provided to agricultural users by source. In recent years, improvements in agricultural technology have allowed increases in crop yield and intensification of agricultural development on an acre-by-acre basis. In some cases, water demand per acre has increased to allow for double and triple cropping and for higher water-using (and income-producing) crops, such as strawberries, to be grown. Irrigation technologies have also improved, reducing the amount of water used by some crops. These improvements include drip irrigation, seedling propagation in controlled greenhouse environments, laser leveling of fields, and use of tailwater recovery systems in furrow-irrigated fields.

TABLE 2-5
Estimated Agricultural Water Demand

Source	Demand (AFY)
Carpinteria Valley Water District	1,840[a]
Goleta Water District	2537[b]
La Cumbre Mutual Water Company	103[c]
Montecito Water District	550[d]
Santa Ynez River Water Conservation District Improvement District No. 1	2,404[e]
Private Wells, Cuyama Valley	15,300[c]
Private Wells, San Antonio Valley	17,020[c]
Private Wells, Santa Maria Valley	117,852[c]
Private Wells, Santa Ynez Valley	59,980[c]
TOTAL	**218,115**

Sources:
[a]Carpinteria Valley Water District, 2005b, Table 12
[b]Goleta Water District, 2005a, Table 16
[c]Santa Barbara County Water Agency, 2000
[d]Montecito Water District, 2005, Table 5D
[e]Santa Ynez River Water Conservation District Improvement District No. 1, 2006

2.9.2 Urban Demand

Urban water use accounts for approximately 25 percent of all water demand in Santa Barbara County. Current supplies provided by each water purveyor are shown in Table 2-6.

Per capita water use is shown in Table 2-7. Variances in water usage are due in part to the amount of industry and subregional climate, as well as variation in lot sizes and soil types.

TABLE 2-6
Urban Water Use Summary for Santa Barbara County

Water Purveyor	Typical Demand (AFY)
Carpinteria Valley Water District	2,122[a]
City of Buellton	806[b]
City of Guadalupe	574[b]
City of Lompoc	5,212[c]
City of Santa Barbara	12,960[d]
City of Santa Maria	13,243[e]
City of Solvang	1,277[b]
Cuyama Community Services District	166[b]
Golden State Water Company (Orcutt)	7,394[b]
Goleta Water District	11,781[f]
La Cumbre Mutual Water Company	1,258[b]
Los Alamos Community Services District	238[b]
Mission Hills Community Services District	540[b]
Montecito Water District	5,655[g]
Santa Ynez River Water Conservation District Improvement District No. 1	2,405[h]
Vandenberg Air Force Base	4,500[b]
Vandenberg Village Community Services District	1,311[f]
TOTAL	**71,239**

Sources:
[a]Carpinteria Valley Water District, 2005b, Table 12
[b]Santa Barbara County Water Agency, 2000
[c]City of Lompoc, 2005, Table 15
[d]City of Santa Barbara, 2005, Figure 7
[e]City of Santa Maria, 2005, Table 4-2
[f]Goleta Water District, 2005a, Table 16
[g]Montecito Water District, 2005, Table 5D
[h]Santa Ynez River Water Conservation District Improvement District No. 1, 2006, Table 6; service area includes the Santa Ynez Reservation
[i]Santa Barbara County Water Agency, 2007

TABLE 2-7
Municipal and Industrial Water Use: Per Capita in 2006

Agency	Per-Capita Water Use (Gallons/Person/ Day)
City of Buellton	281
Carpinteria Valley Water District	102
Casmalia Community Services District	52
Cuyama Community Services District	183
Golden State Water Company	178[a]
Goleta Water District	108
City of Guadalupe	116
La Cumbre Mutual Water District	295
City of Lompoc	104
Los Alamos Community Services District	195
Mission Hills Community Services District	189
Montecito Water District	345
City of Santa Barbara	121
City of Santa Maria	123
Santa Ynez River Water Conservation District Improvement District No. 1	273
City of Solvang	227
Vandenberg Village Community Services District	202

Source: Santa Barbara County Water Agency, unpublished data

[a]Source: Santa Barbara County Water Agency, 2007

2.9.3 Projected Water Demand and Supply

By 2040, the Santa Barbara County population is expected to increase by almost 52 percent over 2000 levels (from about 399,000 to 606,000) (Santa Barbara County, 2003). Total water demand for this same 40-year period is projected to increase by only 9 percent, from 314,000 AFY to 345,000 AFY (Santa Barbara County, 2003). Agricultural water demand, which accounts for about 75 percent of total demand, is expected to remain nearly the same. At present, with careful and strategic planning, water supplies are sufficient to meet demand countywide during normal water years, but water purveyors will need to develop an additional 10,800 AFY by 2030; this number is projected to increase to 12,400 AFY by 2040, or they will have to rely on mining groundwater in certain areas in order to meet future demand (Santa Barbara County, 2003).

Only one of the five Designated Analysis Units (DAU) in Santa Barbara County (as defined by State of California Department of Water Resources [DWR]), DAU 75 South Coast, has a

water supply that meets the current demand in normal rainfall years. The other basins have existing shortfalls in water supply that will increase in the future (Santa Barbara County, 2003).

- DAU 71 Santa Maria—The current 4,200 AFY water supply shortfall will increase to 7,700 AFY by 2040, although water conservation efforts are expected to continue.
- DAU 73 San Antonio—The current 3,900 AFY shortfall will decrease slightly to 3,800 AFY by 2040, primarily due to limited population growth and increased conservation.
- DAU 74 Santa Ynez—Although this DAU has a slight overall current water supply deficit of only 300 AFY, the water supply shortfall is expected to reach 1,600 AFY by 2040.
- DAU 75 South Coast—The DAU as a whole has sufficient water supplies through the year 2040 on a normal year basis. However, periodic severe droughts reduce supplies by as much as 25 percent, requiring water purveyors to reserve available water supply during normal years for later drought use to partially offset shortages.
- DAU 76 Cuyama Valley—This DAU is already experiencing a water supply shortfall of about 7,900 AFY of its total average water demand of 20,700 AFY. This water shortfall is expected to decline slightly to about 6,600 AFY in 2040; however, significant new water supplies will be required to balance average annual water supply and demand.

2.10 Natural Hazards Requiring Emergency Planning

Water resources planning in Santa Barbara County must consider the potential for service disruptions due to natural hazards such as earthquakes, fires, and floods, which can damage water and wastewater infrastructure. Additionally, the area experiences periodic droughts, which requires planning for periodic shortages.

2.10.1 Severe Storms and Flooding

Santa Barbara County experiences periods of high intensity rainfall, which cause flooding and landslides. For example, widespread problems resulted from the December 2004/ January 2005 storms including facilities damage, road and railroad closures, mudslides, flooding, power outages, fallen trees, and beach erosion. Some areas, such as the eastern end of Santa Maria, experience chronic flooding in modest storm events because existing floodwater conveyances are not adequate to meet the increased runoff due to both agricultural and urban growth. The Cuyama Valley agricultural area in the proximity of the Cuyama River is another region that is highly susceptible to flooding because the river banks are low (less than 4 feet) and highly erodable, so the natural ability to contain the river is limited. In the city of Santa Barbara, Mission Creek and Sycamore Creek are prone to flooding when significant rainfall occurs. Periodic flooding also occurs on the Santa Ynez River, particularly in the City of Lompoc and on agricultural fields west of Lompoc, associated with the limited ability to maintain channel capacity because of sensitive habitat considerations.

2.10.2 Earthquakes

The county, like the rest of California, is seismically active and has experienced multiple large-scale (magnitude 6.0 or greater) earthquakes over the last two centuries. The December 21, 1812, earthquake was estimated to be magnitude 7.2 (Harp, 1980). Much of Santa Barbara was damaged by the magnitude 6.3 earthquake of June 29, 1925. Another strong earthquake of magnitude 6.0, which also caused damage in Santa Barbara, occurred June 30, 1941. The county contains numerous active and potentially active faults and is also susceptible to ground shaking from regional faults, such as the San Andreas Fault, which is located approximately 7 miles from the northeast corner of the county. Earthquakes present the potential to damage water storage facilities and levees, cause landslides, and disrupt water supply and treatment capabilities in the region for weeks or possibly months.

2.10.3 Fire

During the summer and early fall, much of Santa Barbara County is at risk from wildfires stemming from a combination of dry, windy conditions and woodlands, brushlands, chaparral, and grasslands that burn readily. The county contains a number of high fire hazard areas, particularly in undeveloped and mountainous locations, although fires may occur in urban areas, as well. Fires pose a number of challenges to water resources planners, because adequate water must be supplied at correct pressure to meet fire department requirements, particularly during major incidents, and portions of the county have deficient fire flows. Fires also can result in erosion and runoff from burned areas, which can affect surface water quality and increase sedimentation of local creeks, and reservoirs.

2.10.4 Drought

Historical records show that local drought periods of several years or more are cyclical. Tree ring studies covering time periods of several centuries reveal apparent droughts lasting as long as 16 years or more. The most recent drought occurred from 1986 until 1991 and included some of the driest years on record. Evidence from tree ring analysis indicates that severe droughts occurred as far back as 1544. Droughts in Santa Barbara County have lasted an average of 5 years with a maximum of 9 years. Local water purveyors implement water conservation programs to extend local surface water and conserve groundwater. They also import supplemental water supplies to cope with drought.

3

3 History of Water and Wastewater Management

This section provides an overview of the history of key water and wastewater milestones, as well as integrated regional water management efforts.

3.1 Key Water Management Milestones

Santa Barbara County has a long water development history, dating back to the founding of the Santa Barbara, La Purisima, and Santa Inés missions between 1786 and 1804. Extensive water supply systems, including aqueducts, cisterns, and gravity-fed fountains, were developed to serve the earliest non-native settlements. As the county's population increased, water supplies and treatment and delivery systems were expanded to meet the growing needs in a manner that was accounted for by the County's limited water supply. This section focuses on the development of the major regional water infrastructure, which led to the agreements and management practices that are in place today, as well as the importation of water from the State Water Project.

3.1.1 South Coast, Santa Ynez Valley, and Lompoc Valley

The history of Santa Ynez River water use is a contentious one, and issues raised by water rights holders downstream of the three Santa Ynez River dams have been addressed over the years by litigation, decisions by the State Water Resources Control Board (SWRCB), and by agreements reached between the parties involved. As described below, years of dissent culminated in the Cachuma Project Settlement Agreement, which uses the Bradbury Dam and the Santa Ynez Extension of the State Water Project to integrate surface and groundwater management strategies including surface storage, conjunctive use, groundwater recharge, groundwater quality improvement, flood protection, and habitat improvements. Existing infrastructure is managed cooperatively, creatively, and efficiently to maximize the use and improve the reliability of available water resources, as well as to provide environmental enhancements.

Early Need for Water in the South Coast

The Santa Barbara Mission was founded in 1786 and supported surrounding ranching and fruit-growing efforts. When water supplies became limited due to higher concentrations of people in more populated areas, plans were made to construct the South Coast's first large dam and reservoir, which was completed in 1807. After incorporation as a city in 1850, the population of Santa Barbara expanded, and the city continued to experience the pressures of limited water supplies. A report written in 1889 by the City Engineer concluded that the only feasible long-term source of water for Santa Barbara would have to come from the Santa Ynez River. He recommended land purchases for two possible dam and reservoir sites on the Santa Ynez River, but the city's initial bond proposal was defeated. Droughts in 1894 and from 1898 through 1900 re-emphasized the report's conclusions. While the Cold Spring

Tunnel (constructed in 1896) initially provided essentially a horizontal well producing approximately 290 acre-feet of water per year (AFY), its yield steadily decreased to about 100 AFY, and attention again turned to potential dam and reservoir sites on the Santa Ynez River.

Mission Tunnel

A 1905 report by the United States Geological Survey recommended the construction of a tunnel (the Mission Tunnel) from the Santa Ynez River to the coast side of the mountains, in conjunction with building a dam and reservoir at the Gibraltar site on the river (SBCWA, 2000). The main obstacle to this plan was that the tunnel would have to pass through lands held by the Santa Barbara Water Company, a private firm that owned extensive tracts of land encompassing all practicable reservoir sites on the headwaters of the Santa Ynez River. The City negotiated a contract with the Santa Barbara Water Company to allow construction of the tunnel in exchange for maintenance of flows in Mission Creek. The 3.7-mile-long Mission Tunnel was completed in 1912, the same year that the City purchased the holdings of the Santa Barbara Water Company. Mission Tunnel was designed to intercept groundwater flow and to later convey water from Gibraltar Reservoir to the City of Santa Barbara. Infiltration into Mission Tunnel varies with rainfall, but averages approximately 1,100 AFY.

Gibraltar Dam and Reservoir

The presence of major reservoirs in Santa Barbara County began in 1920 with the completion of Gibraltar Dam and Reservoir on the Santa Ynez River. By 1945, sedimentation had reduced storage in Gibraltar Reservoir from 14,500 acre-feet (AF) to approximately 7,800 AF. In 1948, the dam was raised 23 feet, and storage capacity was restored to approximately the original volume.

Juncal Dam, Jameson Lake, and Doulton Tunnel

The Montecito Water District completed construction of Juncal Dam and Jameson Lake in 1930. Water is diverted from the Santa Ynez River to the Montecito area through the Doulton Tunnel. Construction of Doulton Tunnel began in 1924 and initially penetrated only the first mile of the Santa Ynez Mountains due to substantial groundwater inflow. The tunnel was finally completed in 1928.

Gin Chow Judgment and Upper Santa Ynez River Operations Agreement

The storage and diversion of Santa Ynez River water by the City of Santa Barbara and Montecito Water District at Gibraltar and Juncal dams, respectively, was challenged in court by downstream interests in 1928. Gin Chow, a Lompoc farmer and local prophet, and over 30 others filed suit against Santa Barbara and Montecito, claiming that they were unlawfully diverting water from the Santa Ynez River. In 1933, the California Supreme Court upheld the rights of Santa Barbara and Montecito, setting limits on their ability to store and divert water, and decreeing that the City must release up to 616 AF of water per year from Gibraltar Reservoir for downstream water rights.

In the 1980s, when the City of Santa Barbara initiated a seismic retrofit project at Gibraltar Dam, concern by downstream interests that this could lead to a second enlargement of the

dam (see "Gibraltar" above) led to the "Upper Santa Ynez River Operations Agreement." This Agreement provides for diversions of water to the City of Santa Barbara (including a pass-through provision to protect against loss of capacity) and for downstream releases consistent with the Gin Chow judgment.

Cachuma Project

The Cachuma Project had its beginnings in 1939 when a study referred to as the Hill Report was submitted to the County Board of Supervisors recommending further development of the Santa Ynez River. This resulted in the formation of the Santa Ynez River Water Conservation District by people who felt that the interests of the residents of the Santa Ynez River watershed were not being adequately protected by individual water users, as evidenced by the Gin Chow litigation. The District called for a more extensive study by an impartial government agency. The County contracted with the U.S. Geological Survey (USGS) in 1940 to obtain basic data and with the U.S. Bureau of Reclamation (Reclamation) in 1941 to prepare a countywide water resources development plan. The Cachuma Project, among others, was recommended by Reclamation in 1944.

The Santa Barbara County Water Agency was formed in 1945 to act as a go-between, contracting with both the federal government and local water purveyors (the Cachuma Member Units). The Cachuma Member Units were to be the City of Santa Barbara, Montecito, Carpinteria, Goleta, and Summerland County Water Districts, and the Santa Ynez River Water Conservation District. The Cachuma Project was approved by these entities in 1947 and by the Secretary of the Interior in 1948. Contract negotiations resulted in a master contract, and Member Unit contracts were approved by all parties except for the Santa Ynez River Water Conservation District, which withheld approval pending the negotiation of a separate agreement with Reclamation to protect downstream water rights. The so-called "Live Stream Agreement" was subsequently agreed to, allowing elections to occur in 1949. The elections were successful, federal funding was ultimately forthcoming, and the Cachuma Project facilities were completed by 1956.

The Cachuma Project consists of the Bradbury Dam, which impounds Lake Cachuma; the Tecolote Tunnel, which diverts 90 percent of the Project's yield to the South Coast; and the South Coast Conduit conveyance facilities, which consists of a pipeline and four regulating reservoirs to transport water from Goleta to Carpinteria along the South Coast. In 1957, the Cachuma Operation and Maintenance Board, then consisting of the South Coast Member Units and the Santa Ynez River Water Conservation District, was formed to operate and maintain Tecolote Tunnel and the South Coast Conduit system. Today, the South Coast Member Units consist of the City of Santa Barbara and the Goleta, Montecito, and Carpinteria Valley Water Districts. These entities serve both urban and agricultural users, and in 1973, they formed the Cachuma Conservation Release Board to represent their Cachuma Project water rights interests.

In 1963, the Santa Ynez River Water Conservation District formed Improvement District No. 1 to serve 10 percent of the Cachuma Project yield to urban and agricultural users in the more urbanized areas of the Santa Ynez Valley. In 1968, a separate Improvement District No. 1 Board of Trustees was established, and in 1993, the Santa Ynez River Water Conservation District assigned its interests in the Cachuma Project to Improvement

District No. 1. Today, Improvement District No. 1 and the four South Coast entities comprise the Cachuma Member Units.

Because, under federal law, Reclamation is required to comply with state water rights law, Reclamation filed application with the State Water Rights Board (precursor to the SWRCB) to appropriate Santa Ynez River water in 1946. Hearings did not occur until 1957, a year after the project was in operation. After a contested hearing in 1958, the State Water Rights Board issued the Cachuma Permits subject to the rights of downstream water users. The Board retained continuing jurisdiction for 15 years to ensure that the prescribed releases were adequate.

After prolonged and sometimes contentious negotiations between the South Coast Member Units (now represented by the Cachuma Conservation Release Board) and the Santa Ynez River Water Conservation District, the latter and Reclamation reached agreement on a stipulated modification of the 1958 permit conditions, with the concurrence of the Cachuma Conservation Release Board. These modifications resulted in establishing the Above and Below Narrows Accounts, and the credit water in these accounts is stored in Cachuma Reservoir. The credit water is released for the benefit of downstream water users for the area above the Lompoc Narrows and the Lompoc Plain. The SWRCB adopted these concepts in WR Order 73-37 in 1973. It again retained jurisdiction for 15 years.

Prior to 1989, negotiations between the parties led to agreement on stipulated modifications to WR 73-37. Experience indicated that adjustments were needed because the Lompoc Valley was not receiving the recharge water to which it was entitled. These modifications were adopted by the SWRCB in WR 89-18 in 1989. The Board extended its jurisdiction for another 5 years (1994), which was subsequently extended to 2000.

An SWRCB hearing in 2000 was adjourned and reconvened in 2003. In 2002, the Santa Ynez River Water Conservation District and other downstream interests settled many long outstanding issues with the South Coast interests in the Cachuma Project Settlement Agreement. Although operative for the most part, portions of that Agreement, which are under the jurisdiction of the SWRCB, are pending a Decision of the Board.

Lower Santa Ynez River Fish Management Plan and the Cachuma Project Biological Opinion

During the Cachuma Project authorization process before Congress in the 1940s, the U.S. Fish and Wildlife Service and others suggested that instream flow should be considered for fish and wildlife needs; however, the Division of Water Resources recommended to the Secretary of the Interior that no water from Lake Cachuma be dedicated to the protection of fish because of the limited water supply available to provide for present and future needs of people. The U.S. Congress relied on this recommendation in its funding appropriation; Reclamation and the Member Units relied on it in the construction of the Cachuma Project; and the SWRCB relied on it to issue the Cachuma Project water rights permits. The permits eventually were challenged by fisheries interests, and in 1990, the SWRCB held hearings on fisheries and other issues relating to the Santa Ynez River system.

As a result of the 1990 hearings, beginning in 1993, Reclamation and the Member Units formed a working group seeking consensus on fisheries issues and began to make water

releases from Lake Cachuma to maintain fish habitat and to carry out various studies downstream of Bradbury Dam. The releases were made mandatory by the SWRCB in 1994. Additional studies led to the development of the Cachuma Project Biological Opinion issued by the National Marine Fisheries Service and the Lower Santa Ynez River Fish Management Plan issued by the Santa Ynez River Technical Advisory Committee (to comply with SWRCB Order WR 94-5) in 2000. These two documents contain essentially the same operations, which include enhanced habitat flows, passage flows, and various other actions to benefit the steelhead fishery.

Cachuma Project Settlement Agreement

The 2002 "Cachuma Project Settlement Agreement" resolves various differences between the South Coast Member Units and downstream interests pertaining to the operation of the Cachuma Project that existed for over 50 years. It provides the vehicle to manage Cachuma releases conjunctively downstream of the dam. The background and provisions of the Cachuma Project Settlement Agreement are summarized below.

- The parties support WR 89-18 and agree that releases pursuant to WR 89-18, as modified by the Agreement, will protect downstream water rights holders and will improve quality of water released for downstream uses. The parties agree to mutually support the National Marine Fisheries Service Biological Opinion and the Fish Management Plan for the Cachuma Project to address public trust (steelhead) issues. The parties further agree that WR 89-18 releases will operate conjunctively with fish water releases required to meet target flows in the Biological Opinion.
- In order to lower the salt (total dissolved solids) content of water rights releases for the lower Santa Ynez River downstream of Bradbury Dam, the parties agree to comingle State Water Project water with water from Cachuma in the outlet works of Bradbury Dam by maximizing deliveries of State Water Project water (consistent with the Biological Opinion) when water rights releases are made.
- Santa Ynez River flooding issues are addressed in the Agreement through winter storm operations of Bradbury Dam, including precautionary drawdowns and temporary surcharging, in order to reduce peak flows and provide some measure of flood control. Project water supply is protected by achieving a full reservoir following the peak flow events.
- The parties have requested the SWRCB to incorporate into WR 89-18 a provision involving conjunctive operation of the Below Narrows Account (water stored in Lake Cachuma) with the Lompoc Groundwater Basin. More water would be available for the Lompoc (Below Narrows) area in most years, although some Below Narrows Account water stored in Cachuma Reservoir would be made available to Cachuma contractors during shortage years.

Most of the provisions of the Cachuma Project Settlement Agreement were implemented in 2002. Some others are pending before the SWRCB. Approval of the remaining provisions and full implementation of the Agreement would provide the basis for further water management planning by individual water purveyors downstream of the dams in accordance with the objectives, water management strategies, and regional priorities in the IRWMP.

Wright Suit Settlement

The 1989 Wright Suit Settlement served to adjudicate the water resources of Goleta North/Central Basin and assigned quantities of the basin's safe yield to various parties, including the Goleta Water District and the La Cumbre Mutual Water Company. The judgment also ordered the Goleta Water District to bring the North/Central Basin into a state of hydrologic balance by 1998. The district has achieved compliance with this order through the importation of State Water Project water and the development of other supplemental supplies. These supplemental supplies have offset the court mandated reduction in pumpage from the basin. Given that the basin has been adjudicated and pumpage is controlled by the Court, overdraft is not foreseeable in the North/Central Basin.

3.1.2 Santa Maria Valley

Santa Maria Project

Prior to the construction of Twitchell Reservoir, large portions of the Santa Maria Valley were subject to periodic flooding. In an effort to provide relief from flooding disasters, the Santa Maria Valley Water Conservation District, the Santa Barbara County Water Agency, and Reclamation evaluated a number of potential dam sites on the Santa Maria River in the 1940s and 1950s. In the late 1950s, Reclamation constructed the Twitchell Dam as part of the Santa Maria Project. The dam was intended to provide water for beneficial uses within the District that otherwise would rely on the groundwater supplies underlying the Santa Maria Valley, as well as to protect urbanized and agricultural areas from flood damage. The project provides recharge to the groundwater basin underlying the Santa Maria Valley and provides for flood protection. Twitchell Reservoir is operated and maintained by the Santa Maria Valley Water Conservation District. Twitchell Reservoir is important to both the water supply and the flood protection of the Santa Maria Valley. The reservoir supplies about 20,000 AF of recharge to the Santa Maria Groundwater Basin annually.

Santa Maria Groundwater Adjudication

In 1997, the Santa Maria Valley Water Conservation District filed a lawsuit to adjudicate water rights in the Santa Maria Valley Groundwater Basin (*Santa Maria Valley Water Conservation District vs. City of Santa Maria, et al.*, commonly known as the "Santa Maria Groundwater Adjudication." The court divided the trial of the case into phases. In January 2001, the Court issued the Phase 1 Order, which established the Outermost Boundaries of the Basin. In December 2001, the Court issued the Phase 2 Order, which established the area constituting the Basin for purposes of the adjudication. In May 2004, the Court issued a Partial Statement of Decision on Phase 3 issue regarding the hydrologic conditions in the Basin. As part of its Phase 3 Partial Statement of Decision, the court reserved jurisdiction over remaining water rights issues and management of the Basin.

Subsequent to the Phase 3 trial, the majority of the parties to the lawsuit, including the original plaintiff, the Santa Maria Valley Water Conservation District, negotiated a Settlement Agreement ("Stipulation") that set forth terms and conditions for a physical solution concerning the overall management of Basin water resources, including rights to use groundwater, State Water Project water and associated return flows, the developed groundwater yield resulting from the operation of Twitchell and Lopez reservoirs (located

in San Luis Obispo County), use of Basin storage space, and the ongoing monitoring and management of these resources, consistent with common law water rights priorities and Article X, Section 2 of the California Constitution. The majority of the parties actively participating in the litigation have signed the stipulation.

The Stipulation also subdivides the Basin into three Management Areas: the Northern Cities Management Area, Nipomo Mesa Management Area, and the Santa Maria Valley Management Area. The delineation of these areas was based on historical development and use of Basin water resources, as further delineated in the Stipulation and the court record. As noted above, the Stipulation provides the City of Santa Maria certain rights to water in the Basin. These rights include: a recognition of the City's highest historical use of groundwater from the Basin; the right to recapture a preset portion of the return flows from the City's use of State Water Project in the Basin; and a 14,300 AFY share of the developed groundwater yield resulting from Twitchell Reservoir operations. In addition, the City may access additional supplies through the transfer of Twitchell Yield. Also, return flows from State Water Project water are assignable in whole or part, subject to accounting. The Stipulation also establishes certain preset water shortage response measures in anticipation of reduced availability of groundwater.

Although the court has approved the Stipulation as between those who have signed it, not all parties to the adjudication have agreed to it. Phase 4 proceeded to trial in early 2006 as between the public water suppliers, including the City, and a small number of landowners who opposed the Stipulation. The Phase 4 tentative decision issued by the Court stated that the City and Golden State Water Company met the burden of showing a prescriptive right during various time periods prior to the time the Twitchell Project began recharging the Basin. Phase 5 occurred in July of 2006. The scope of the Phase 5 trial was to allow the remaining landowners to show that they had engaged in self-help during the applicable prescriptive periods and to determine whether, and in what form, the Court should impose a physical solution on the parties' collective future use of the Basin. The Phase 5 tentative decision reaffirms the prescriptive rights obtained by the City and Golden State Water Company, states that those rights are correlative to the rights of the overlying landowners, and provides that the City and Golden State Water Company are entitled to those specific quantities of water in the Basin, the same as any overlying landowner, so long as there is a surplus of water in the Basin. The tentative decision also states that the physical solution contained in the Stipulation will be incorporated into the Court's final judgment and will be binding on all parties to the litigation. Further, the Phase 5 tentative decision provides that the Court will retain jurisdiction to enforce the judgment and to implement the physical solution as necessary. The Phase 5 tentative decision further confirms the ability of the Santa Maria Valley Water Conservation District to allocate Twitchell Yield in the manner provided in the Stipulation. The Court will hold a hearing on the Phases 4 and 5 tentative decisions in January 2007. It is anticipated that a final judgment and physical solution will be entered in early 2007.

The Santa Maria Groundwater Adjudication will determine the manner by which Twitchell Reservoir and the groundwater basin are managed; any projects included in the IRWMP that could affect the Santa Maria Valley Groundwater Basin or Twitchell Reservoir will need to be consistent with the terms of the adjudication.

3.1.3 State Water Project

The increasing population of Santa Barbara (mainly in the county's South Coast), as well as problems associated with rapid siltation of reservoirs, which led to diminished storage capacities, required the development of additional water supplies, including State Water Project water. In 1963, the Santa Barbara County Flood Control and Water Conservation District contracted with the State of California Department of Water Resources (DWR) to deliver State Water Project water to Santa Barbara County. At that time, the County began payments to DWR to retain a share of the State Water Project yield ("Table A Amount[1]") for 57,700 AFY, but funds were not allocated to construct the necessary local facilities to deliver water within the county. In 1981, the original contract was amended to reduce the County's State Water Table A Amount to 45,486 AFY. In 1994, this amount was further modified by the project participants of the Central Coast Water Authority to include 39,078 AFY of Table A Amount; 3,908 AFY of drought buffer; and 2,500 AFY of a special drought buffer for the Goleta Water District.

In 1991, after 4 years of extremely dry conditions, voters in several service areas in Santa Barbara County voted to import State Water Project water. This included the communities of Carpinteria, Summerland, Montecito, Santa Barbara, Hope Ranch, Goleta, Buellton, Solvang, Santa Ynez, Orcutt, and Guadalupe. The Santa Maria City Council and Vandenberg Air Force Base also decided to participate in the State Water Project. The communities of Lompoc, Vandenberg Village, and Mission Hills voted not to participate in the State Water Project. Beginning in 1997, the Central Coast Water Authority began to deliver State Water Project water to Lake Cachuma, where it is mixed with Cachuma Project water and delivered through Tecolote Tunnel to the contractors on the South Coast. South Coast Member Units also receive Cachuma water that was exchanged for State Water Project water with Santa Ynez River Water Conservation District Improvement District No. 1. The Santa Ynez Pipeline, which delivered water to Improvement District No. 1 from Lake Cachuma, was owned by the District until 1996, when it was sold to the Central Coast Water Authority in anticipation of State Water Project deliveries.

3.2 History of Wastewater Management

Efforts to manage wastewater within the county have been underway for more than a century. This section describes the history of the larger wastewater providers in order to give an overview of how systems have evolved over time in responding to population growth and regulatory requirements.

1 "Table A" is a term used in SWP Water Supply Contracts. The "Table A Amount" is the annual maximum amount of water to which an SWP Contractor has a contract right to request delivery, and is specified in Table A of each Contractor's Water Supply Contract. (Prior to the Settlement Agreement arising out of a legal challenge to the Monterey Amendment to the State Water Project contracts, the Table A Amount was referred to as "entitlement.") The amount of water actually available for delivery in any year may be an amount less than the Contractor's Table A Amount due to a number of factors, including hydrologic conditions.

3.2.1 South Coast

City of Santa Barbara

The City of Santa Barbara's first sewers were installed in the 1870s. In 1925, the City constructed a "screening plant" and ocean discharge outfall. The City's growing population and increasing environmental awareness led to the construction of the first treatment plant in 1951. The El Estero Treatment Plant as it exists today was built to comply with the 1972 Federal Water Pollution Control Act. The City continues to update and upgrade the treatment facility each year. Investment in the treatment plant ensures it remains a state-of-the-art, modern facility.

Carpinteria Sanitary District

The Carpinteria Sanitary District was formed in 1928. During the 1930s and 1940s, wastewater was collected and discharged to the ocean without the benefit of treatment. It was during this period that the bulk of the sewer system serving the downtown area was constructed. The District's first wastewater treatment plant, designed to treat 500,000 gallons per day (gpd), was completed and put into operation in 1951. Treated effluent was discharged directly into the Pacific Ocean via an 18-inch outfall pipe that ran along the eastern bank of Carpinteria Creek. As the community grew, so did the sewer collection system and the treatment plant. In 1961, the treatment plant was expanded and upgraded to a capacity of 2.0 million gallons per day (mgd) which included a new, longer outfall pipe, primary clarification, trickling filters, final clarification, and anaerobic sludge digestion. This facility served the community for over 30 years. In 1993, the District completed another major upgrade to its wastewater treatment plant that involved replacement of the majority of the process infrastructure. The current treatment plant includes preliminary screening and grit removal, primary clarification, extended aeration biological treatment, final clarification, chemical disinfection, aerobic digestion, and odor control systems.

Goleta Sanitary District

The Goleta Sanitary District was formed in 1942 to serve the rural agricultural area called Goleta. Only 1,500 people lived within the District. In those years, sewage wastes were disposed of through individual cesspools and septic tanks. With the ending of World War II, the fledgling District applied to the Navy Department to connect its sewer lines to the Marine Air Base, located on the site of today's Municipal Airport. Plans were drawn to build a sewer system and treatment plant. In 1988, Goleta Sanitary District enlarged and improved its treatment system to meet the discharge requirements of a 301(h) National Pollutant Discharge Elimination System (NPDES) permit, whereby primary and secondary effluent is blended, disinfected, and discharged into the Pacific Ocean. The Goleta Sanitary District owns and operates the treatment facility and serves under contract four public agencies: Goleta West Sanitary District, City of Santa Barbara Municipal Airport, University of California at Santa Barbara (UCSB), and certain facilities of Santa Barbara County. In 1991, in cooperation with the Goleta Water District, a water reclamation facility was constructed. The reclaimed water produced at the sanitary district is distributed throughout the community and used as landscape irrigation. The Goleta Sanitary District is required to upgrade its treatment facilities to achieve full secondary effluent treatment by 2014.

Goleta West Sanitary District

The Goleta West Sanitary District was formed as the Isla Vista Sanitary District in 1954 to serve the needs of the growing area of Isla Vista. The organization established a five member Board of Directors and hired a General Manager. The District changed its name to Goleta West Sanitary District in January 1990 to reflect the areawide aspects of the District's service area. In the late 1950s, over 5 miles of sewer lines were installed in the Isla Vista area using assessment bonds. The balance of the system, force main, pump station, and trunk sewers, was financed by issuing general obligation bonds. Through a joint use agreement the District connected to the Goleta Sanitary District treatment plant for treatment and disposal. The District owned only 5 percent of the plant capacity in the 1950s, but has expanded its ownership to over 40 percent to meet District needs.

3.2.2 North County

City of Santa Maria

The City of Santa Maria has treated and disposed of wastewater at the present site off of Black Road since 1910. The original facilities were expanded in several phases beginning in the mid-1930s through 1962. The 1962 expansion resulted in a capacity to handle 5 mgd of wastewater. During peak months of 1975, flows to the treatment plant reached its capacity of 5 mgd. An expansion to treat present and future flow was needed. Also, much of the original plant was 40 years old and had reached its useful life. The City completed a study in 1977 evaluating alternative means of increasing wastewater treatment and disposal capacity. The recommended plan consisted of expanding the existing plant with similar types of processes and equipment. Many of the existing structures were to be rehabilitated and incorporated into the treatment scheme to reduce construction costs. The treated effluent was to be applied to percolation ponds and irrigated pasture. This land application achieves additional treatment at a low cost. Construction of the recommended expansion began early in 1980 and was completed by mid-1982.

Laguna County Sanitation District

Laguna County Sanitation District was formed by the Santa Barbara County Board of Supervisors on December 29, 1958, pursuant to the provision of the County Sanitation District Act (Health & Safety Code Section 5700 et seq.). At that time Lompoc and Santa Maria were experiencing tremendous growth as a result of activities at Camp Cook (renamed Vandenberg Air Force Base in 1958). Housing development occurred in the areas south of the Santa Maria Public Airport District. Septic systems were proposed initially, but the soil was found to be incompatible. The original plant had a capacity of 1.6 mgd. Effluent was recycled for use in growing sugar beets that were processed at the Union Sugar (later Holly Sugar) processing plant constructed in 1898. The district absorbed the Orcutt Sanitary District (formed in 1926) in 1961, as well as two county collection system districts in 1975. The wastewater treatment plant capacity was increased to 2.4 mgd in 1975, to 3.2 mgd in 1987, and to 3.7 mgd in 2003. The most recent upgrade modified the plant to Class IV due to full tertiary treatment using membranes including reverse osmosis for the portion of flow containing high salt levels from water softener discharge.

Santa Ynez Community Services District

The Santa Ynez Community Services District provides wastewater collection for urban uses in the Santa Ynez Township and was formed in 1971. The District owns 0.29 mgd capacity in the City of Solvang 1.5-mgd wastewater treatment plant, and the main trunk line carries an average of 175,000 gpd to Solvang's treatment plant.

The Chumash Indians have a contract for 88,000 gpd of the District's capacity and constructed a wastewater treatment plant with a capacity of 200,000 gpd that was brought online in May 2004. This plant serves the Chumash Casino, hotel, administration buildings, and approximately 350 residents on the reservation. Treatment includes head works, extended aeration, filtration, and ultraviolet disinfection prior to discharge to Zanja de Cota Creek. The discharge meets California Title 22, tertiary 2.2 standards. Some of this tertiary water is being utilized in the irrigation throughout the reservation and for water to flush the toilets. The Santa Ynez Community Services District is under contract to maintain the Chumash wastewater plant and collection system.

Los Alamos Community Services District

The Los Alamos Community Services District was formed on October 29, 1956. Phase I of the Los Alamos Wastewater Collection and Treatment Plant was built in 1988, and Phase II was completed in 1994, increasing the capacity of the treatment facilities to allow a maximum discharge of 176,000 gpd, averaged over each month. In 2005, the Central Coast RWQCB established new waste discharge requirements for the Phase III expansion, allowing the District to discharge a maximum of 225,000 gpd, averaged over each month and to allow for build out of the town as defined in the Community Plan. Phase III was completed in 2006.

City of Lompoc

The City of Lompoc owns the Lompoc Regional Wastewater Treatment Plant. In 1974, the City of Lompoc entered into long-term agreements with Vandenberg Air Force Base and Park Water Company (a private water company that served Vandenberg Village) to construct the Lompoc Regional Wastewater Reclamation Plant. This plant, built in 1975 to 1977, utilizes secondary treatment technology and is the City of Lompoc's fourth plant in its 87-year commitment to protect the environment. The plant has a design capacity of just over 5 mgd and an instantaneous wet weather flow of 16 mgd. The City of Lompoc, Vandenberg Village Community Services District, and Vandenberg Air Force Base contribute flows to the plant. Vandenberg Village Community Services District has contractual rights to 0.89 mgd of the plant capacity. Vandenberg Air Force Base is a contract customer for wastewater treatment. The base's contract is not to exceed an average of 1.3 mgd during the dry weather flow and not to exceed 3.4 mgd for the wet-weather flow. The treatment process incorporates systems to reduce oxygen-demanding organics by at least 85 percent. This keeps the water discharged to the Santa Ynez River from creating a nuisance. Ammonia (nitrogen), which is toxic to fish, is converted to nontoxic nitrate (nitrification). Methane gas is a by-product of the natural digestion of wastewater solids; this gas is burned in internal combustion engines to provide the energy for nitrification and biosolids stabilization. Anaerobically digested, stabilized biosolids are utilized as a soil amendment. Each year, 1.5 billion gallons of water and 1,000 dry weight tons of biosolids are made safe

for return to the environment. The plant will be upgraded in 2007 through 2010 to improve reliability, meet more stringent discharge requirements, and increase treatment level from secondary to tertiary.

Mission Hills Community Services District

Mission Hills Community Services District was formed in 1979 and provides water and wastewater services through 1,200 service connections to the community of Mission Hills. The District operates a primary wastewater treatment plant.

Vandenberg Village Community Services District

Vandenberg Village Community Services District was established in 1983 and provides water and wastewater services though 2,400 service connections to the community of Vandenberg Village. The District acquired wastewater infrastructure and a 17.8 percent capacity right in the Lompoc Regional Wastewater Reclamation Plant from Park Water Company.

3.3 History of Integrated Regional Water Resource Management

Countywide integrated water resource planning has occurred over the past several decades through interagency planning, development of shared water supplies, joint management of resources and operational systems for multiple purposes, and interagency adaptive management responses to changing circumstances.

3.3.1 Interagency Planning and Integrated Water Supply Development

Significant water resources projects have been developed within the Santa Barbara County region. Each new project in the last half century has been characterized by close cooperation among the communities in need and their local agencies. These projects include:

- Cachuma Project (five Cachuma Member Units, Cachuma Operation and Maintenance Board, Cachuma Conservation Release Board, Reclamation, and the Santa Barbara County Water Agency)
- Twitchell Project (Reclamation, Santa Maria Valley Water Conservation District, and Santa Barbara County Water Agency)
- State Water Project (12 local agencies, four private parties, Santa Barbara County Flood Control District, Central Coast Water Authority, and DWR)
- Goleta Valley water recycling project (Goleta Water District and Goleta Sanitary District)
- City of Santa Barbara desalination project (City of Santa Barbara, Goleta Water District, Montecito Water District)
- Interconnections between South County water districts (Goleta Water District, City of Santa Barbara, Montecito Water District, Carpinteria Valley Water District)

- Interconnections between Central County water districts (City of Solvang, Santa Ynez River Water Conservation District Improvement District No. 1)
- Interconnections between North County water districts (City of Santa Maria, Golden State Water Company)

In each case, local agencies evaluated their service area needs, identified opportunities for addressing those needs and, with community support and cross-agency integration and coordination, successfully implemented the above projects.

3.3.2 Integrated Management of Resources and Operational Systems

Several noteworthy examples of integrated management of water resources and operational systems exist in Santa Barbara County. The delivery of Cachuma water to the South Coast area is provided through close cooperation with Reclamation and an interagency agreement that established the Cachuma Operation and Maintenance Board, which operates a key distribution system. The South Coast Conduit's functionality and flexibility are essential to meeting both the day-to-day needs and future demand of the South Coast. The nature and operation of the South Coast Conduit allows the South Coast Cachuma Member Units to integrate their various sources of water allowing conjunctive use of several groundwater basins and water exchanges among water users along its length. The South Coast Conduit is also integrated with water treatment plant operations at the City of Santa Barbara Cater Water Treatment Plant, which provides treated water to the city, the Montecito Water District, the Carpinteria Valley Water District, and the Goleta Water District Corona Del Mar Water Treatment Plant, which provides treated water to the Goleta Valley. A series of integrated projects to protect the South Coast Conduit's integrity and increase its utility, reliability, and flexibility are an important part of this IRWMP.

The City of Santa Barbara and public agencies with interest in the operation of Gibraltar Dam have cooperated to establish the "Upper Santa Ynez River Operations Agreement." The members of the Cachuma Conservation Release Board, the Santa Ynez River Water Conservation District Improvement District No. 1, the Santa Ynez River Water Conservation District, and the City of Lompoc established the "Cachuma Project Settlement Agreement." These documents establish cooperative operation of two of the three reservoirs on the Santa Ynez River to account for:

- Loss of capacity due to siltation (Gibraltar Reservoir)
- Downstream releases consistent with the Gin Chow Judgment (Gibraltar)
- Reservoir operations to moderate peak storm flows (Cachuma)
- Reservoir releases for downstream water rights under SWRCB orders (Cachuma)
- Reservoir releases for downstream steelhead in accordance with the Cachuma Project Biological Opinion
- Conjunctive use of water rights releases and releases for the steelhead fishery
- Downstream water quality improvement based on mixing State Water Project water with Cachuma water at Bradbury Dam

- Conjunctive use of Below Narrows Account water in Cachuma Reservoir with the Lompoc Plain groundwater basin (pending approval to modified WR 89-18 by the SWRCB)

These agreements establish a high degree of integration of facilities planning and Cachuma Project operations affecting the Santa Ynez River, and minimize legal processes that could otherwise frustrate effective regional water management.

The Santa Ynez River/State Water Exchange Agreement was executed in 1993 between Santa Ynez River Water Conservation District Improvement District No. 1, Central Coast Water Authority, Carpinteria Valley Water District, Goleta Water District, La Cumbre Mutual Water Company, Montecito Water District, Summerland County Water District (merged with Montecito Water District in 1995), and the City of Santa Barbara for the purpose of the long-term exchange of all or a portion of Cachuma Project water available to Improvement District No. 1 for an equal amount of State Water Project water available to the South Coast Cachuma Project/ State Water Project contractors. Through this mechanism, Improvement District No. 1 avoids construction, operation, and maintenance of a water treatment facility, and the South Coast Cachuma Project/ State Water Project contractors avoid certain costs of pumping and retreating the State Water Project water and construction of a separate pipeline to Cachuma through the Central Coast Water Authority's acquisition of the Santa Ynez pipeline.

The Coastal Branch of the State Water Project is operated by the Central Coast Water Authority on behalf of 12 public agencies, the U.S. Air Force, three private interests, and San Luis Obispo County. This project and its operation integrate treated water supply operations along its 110-mile length, delivering water to 23 separate entities. In addition to its direct delivery function, the Coastal Branch is the vehicle for intra- and interregional water exchanges and sales. This integration of supply and delivery capacity is an essential part of meeting the region's long-term supply needs and allowing effective response in emergency circumstances, including prolonged drought. The Coastal Branch is also integrated with the Cachuma Project and relies upon Cachuma Project facilities, such as the South Coast Conduit, Tecolote Tunnel, and Lake Cachuma, for deliveries to the South Coast. The coordinated use of these facilities eliminated the need to construct a costly separate delivery system for State Water Project water.

3.3.3 Integrated Management of Emergency Operations

Agencies preparing Urban Water Management Plans (UWMPs) include a section describing a "Water Shortage Contingency Plan" with elements such as water shortage emergency response, supplemental water supplies, long-term additional water supply options and irrigation and/or urban water shortage policies.

Emergency Response Plans include provisions for interruptions to water and wastewater services.

3.3.4 Interagency Adaptive Management Response to Changing Circumstances

Water related projects now incorporate an adaptive management approach. Southern California steelhead management issues were addressed beginning in the early 1990s through an interagency "consensus group" focusing on the Santa Ynez River, which

resulted in a comprehensive Fish Management Plan for the lower river and a federal Biological Opinion for Cachuma operations. Fisheries management is addressed in the Santa Barbara, San Luis Obispo, and Ventura counties region through the "Tri-Counties Funding for Improved Salmonid Habitat (FISH) Team." Despite explicit Congressional acknowledgement of the loss of fish resources when Congress approved the Cachuma Project in the mid-20th century, local water agencies understood the need to address protection of public trust resources and changing community values in a proactive, constructive manner decades later.

Storm water and other nonpoint source pollution issues continue to be addressed through a regional "interagency committee" begun several years before the adoption of the state's Phase II regulations. Communities throughout the region developed a template for addressing the state's "General Permit."

4

4 Responsible Entities, Major Infrastructure, and Water Supplies

In Santa Barbara County, a range of local agencies are responsible for various elements of water resource management. The discussion below provides an overview of current operations and responsibilities, as well as major infrastructure and water supplies.

4.1 Water Service Providers

Santa Barbara County water service providers, service areas, and sources of water are shown in Table 4-1; service areas also are shown on Figure 4-1.

TABLE 4-1
Water Service Providers in Santa Barbara County

Provider	Service Area and Water Source
Carpinteria Valley Water District	**Service Area:** City of Carpinteria and unincorporated areas in the Carpinteria Valley **Source:** Carpinteria Valley Groundwater Basin, Cachuma Project, and State Water Project
Casmalia Community Services District[a]	**Service Area**: Casmalia **Source**: Santa Maria Groundwater Basin
City of Buellton	**Service Area**: City of Buellton **Source**: Buellton Uplands and Santa Ynez Riparian groundwater basins and State Water Project
City of Guadalupe[a]	**Service Area**: City of Guadalupe **Source:** Santa Maria Valley Groundwater Basin and State Water Project
City of Lompoc	**Service Area:** City of Lompoc **Source**: Lompoc Groundwater Basin
City of Santa Barbara	**Service Area**: City of Santa Barbara **Source**: Cachuma Project, Gibraltar Reservoir, Devil's Canyon Creek, Mission Tunnel, Foothill Groundwater Basin, Santa Barbara Groundwater Basin, State Water Project, recycled wastewater, and desalination (during droughts and emergencies)
City of Santa Maria	**Service Area**: City of Santa Maria **Source**: Santa Maria Groundwater Basin, State Water Project, and Twitchell Reservoir recharge
City of Solvang	**Service Area**: City of Solvang and adjacent unincorporated areas **Source**: Santa Ynez Uplands Groundwater Basin, Santa Ynez River Riparian Basin, State Water Project (acquired through contract with Santa Ynez River Water Conservation District Improvement District No. 1)

TABLE 4-1
Water Service Providers in Santa Barbara County

Provider	Service Area and Water Source
Cuyama Community Services District[a]	**Service** Area: Cuyama Valley **Source**: Cuyama Groundwater Basin.
Golden State Water Company	**Service** Area: Orcutt, Sisquoc, Lake Marie, and Tanglewood areas **Source**: Santa Maria Groundwater Basin and State Water Project water
Goleta Water District	**Service** Area: West of the Santa Barbara city limits to El Capitan State Beach **Source**: Goleta North/Central Groundwater Basin, Cachuma Project, and State Water Project. The Goleta Water District also treats and distributes reclaimed water to various golf courses, UCSB, and other sites for irrigation and agricultural purposes.
La Cumbre Mutual Water Company	**Service Area**: Hope Ranch and Hope Ranch Annex **Source**: Goleta North/Central Groundwater Basin, Foothill Groundwater Basin, and State Water Project.
Los Alamos Community Services District	**Service Area**: Los Alamos **Source**: San Antonio Groundwater Basin
Mission Hills Community Services District	**Service Area**: Mission Hills **Source**: Lompoc Groundwater Basin
Montecito Water District	**Service Area**: Montecito and Summerland **Source**: Montecito Groundwater Basin, the Cachuma Project, State Water Project, Jameson Lake, Fox and Alder creeks, and Doulton Tunnel
Santa Ynez River Water Conservation District Improvement District No. 1	**Service Area**: Santa Ynez, Chumash Indians' Santa Ynez Reservation, Los Olivos, and Ballard; also supplies domestic water to the City of Solvang **Source:** Cachuma Project, State Water Project, Santa Ynez Upland and Santa Ynez River Riparian Basins
Vandenberg Air Force Base	**Service Area:** Air Force Base and Lompoc Federal Correctional Complex **Source**: San Antonio Groundwater Basin and State Water Project
Vandenberg Village Community Services District	**Service Area**: Vandenberg Village **Source**: Lompoc Groundwater Basin

[a]Serves a disadvantaged community (DAC)

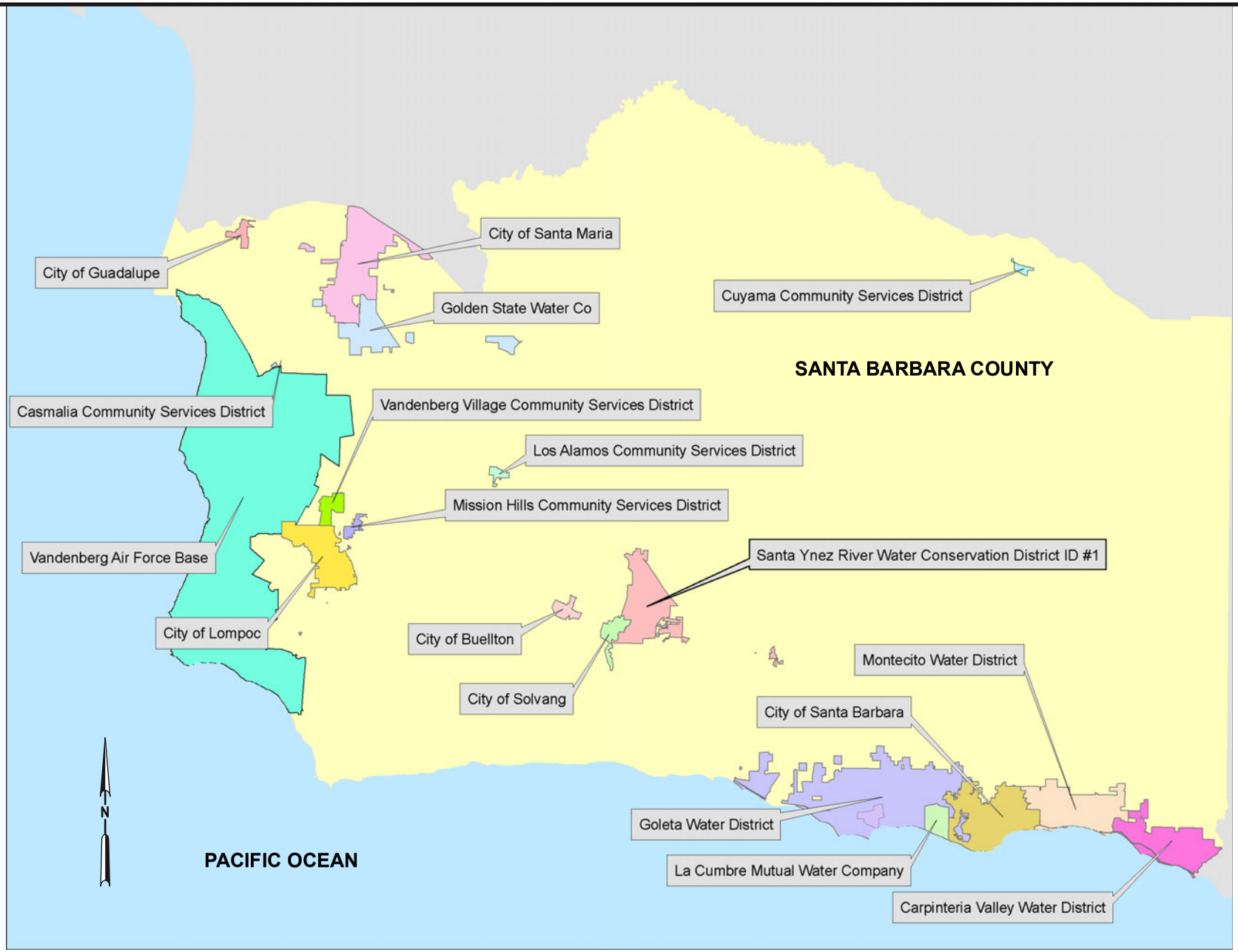

FIGURE 4-1
WATER PURVEYORS IN SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

4.2 Other Water Management Agencies

This section describes other agencies that play key roles in managing water resources within Santa Barbara County, all of which are Cooperating Partners.

4.2.1 Cachuma Conservation Release Board

The Cachuma Conservation Release Board is a joint powers agency formed in January 1973 between the Carpinteria Valley Water District, Goleta Water District, the City of Santa Barbara, and Montecito Water District. The Board was established to jointly represent the respective parties in protecting the Cachuma water rights interests of the four South Coast entities and maximizing the amounts of water that they can obtain from the Cachuma Project or other sources that may be available to them. The Cachuma Conservation Release Board, partnering with the Santa Ynez River Water Conservation District Improvement District No. 1, conducts the long-term steelhead fishery program in the Lower Santa Ynez River in accordance with a Memorandum of Understanding with the U.S. Bureau of Reclamation (Reclamation) and other parties.

4.2.2 Cachuma Operation and Maintenance Board

The Cachuma Operation and Maintenance Board is a joint powers agency that includes the five Cachuma Project Member Units. Although Reclamation owns Bradbury Dam, the Tecolote Tunnel, and the South Coast Conduit and its four regulating reservoirs, the Board has operated and maintained the Cachuma Project facilities, other than Bradbury Dam, since 1957 when it was formed to take over these responsibilities from Reclamation.

4.2.3 Central Coast Water Authority

The Central Coast Water Authority was formed in 1991 to construct, manage, and operate Santa Barbara County's 42-mile portion of the State Water Project and a regional water treatment plant. It later secured agreements with the State of California Department of Water Resources (DWR) to operate and maintain an additional 101-mile portion of pipeline and associated facilities in Santa Barbara and San Luis Obispo counties. It is presently composed of eight public agencies: the cities of Buellton, Guadalupe, Santa Barbara, and Santa Maria, Carpinteria Valley Water District, Goleta Water District, Montecito Water District, and Santa Ynez River Water Conservation District Improvement District No. 1.

4.2.4 Santa Barbara County Water Agency

The Santa Barbara County Water Agency manages a number of regional programs, which include: (1) implementation and partial funding of operational programs such as the cloud seeding program, (2) implementation of the Regional Water Efficiency Program, (3) development of countywide hydrologic data and development of hydrologic models, and (4) development of a program to identify and implement solutions to creek and ocean water pollution on the South Coast of Santa Barbara County. Included in these programs are the compilation and publication of an annual report on groundwater conditions, sediment management studies, technical support to other public agencies, and public information. Major water projects involving the Water Agency include the State Water Project (Coastal Branch Extension), Cachuma Project, and the Twitchell Project. The Water Agency

administers development of the IRWMP supported by a number of local governments. The County Board of Supervisors adopted a Memorandum of Understanding with 28 local agencies in September 2006.

4.2.5 Santa Maria Valley Water Conservation District

The Santa Maria Valley Water Conservation District operates Twitchell Dam and Reservoir and supports water conservation projects within the Santa Maria Valley.

4.2.6 Santa Ynez River Water Conservation District

The Santa Ynez River Water Conservation District was formed in 1939 to protect the water rights and supplies of its constituents in the Santa Ynez River watershed with respect to diversions by South Coast agencies. It also manages releases of water from Bradbury Dam to replenish the Santa Ynez River Riparian Basin and the Lompoc Groundwater Basin and provides groundwater management planning and related activities on the uplands adjacent to the river throughout the watershed.

4.3 Wastewater Service Providers

Santa Barbara County's wastewater providers locations are shown in Figure 4-2; providers and their service areas described in Table 4-2. All are Cooperating Partners with the exception of the Santa Ynez Community Services District.

4.4 Major Infrastructure

This section describes major surface reservoirs, water distribution systems, desalination, and water and wastewater treatment facilities. Much of the county's infrastructure is more than 40 years old and needs to be upgraded or replaced in order to meet increasingly stringent regulatory requirements, including drinking water quality standards for disinfection by-products that require expensive new treatment components. As an example, increasing the reliability of wells in the Santa Ynez River alluvium requires development of a regional water treatment plant to comply with the Surface Water Treatment Rule. Infrastructure also must meet the needs of a growing population, and upgrades are needed to reduce water loss, prevent increased inflow and infiltration during storms, and improve performance.

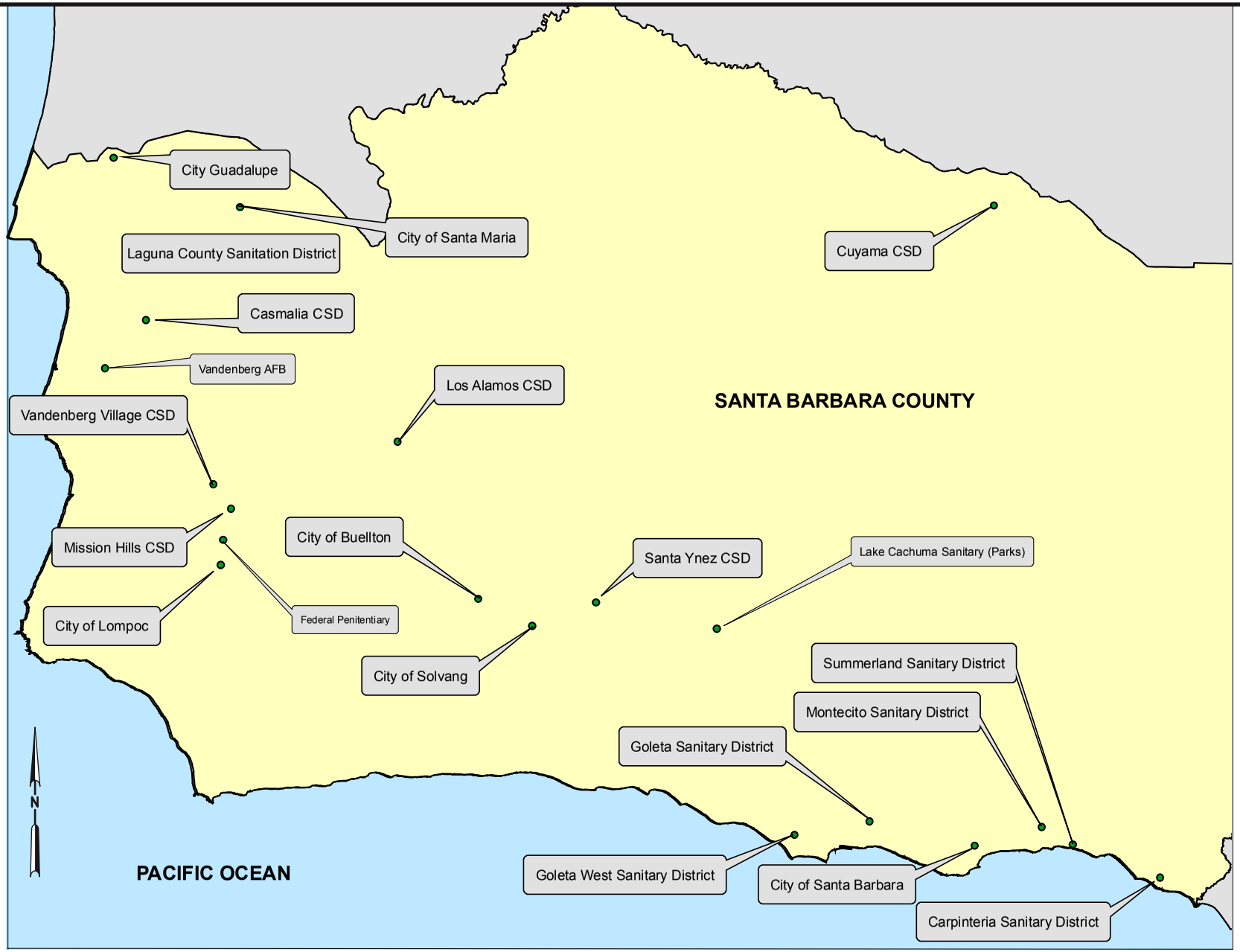

FIGURE 4-2
WASTEWATER SERVICE PROVIDERS IN SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

WB012007002RDD_4-2 (5/3/07)

TABLE 4-2
Wastewater Service Providers in Santa Barbara County

Wastewater Service Provider	Service Area
Carpinteria Sanitary District	City of Carpinteria and unincorporated areas in the Carpinteria Valley
Casmalia Community Services District[a]	Casmalia
City of Lompoc	City of Lompoc, Vandenberg Air Force Base, Vandenberg Village Community Services District
City of Buellton	City of Buellton
City of Guadalupe[a]	City of Guadalupe
City of Santa Barbara	City of Santa Barbara
City of Santa Maria	City of Santa Maria
City of Solvang	City of Solvang and portions of the Santa Ynez Valley
Cuyama Community Services District[a]	Cuyama Valley
Goleta Sanitary District	Goleta Valley (excluding the western portion)
Goleta West Sanitary District	Western portion of Goleta Valley
Laguna County Sanitation District	Orcutt and portions of unincorporated southern Santa Maria
Federal Bureau of Prisons	Lompoc Federal Correctional Complex
Los Alamos Community Services District	Los Alamos
Mission Hills Community Services District	Mission Hills
Montecito Sanitary District	Montecito
Santa Barbara County Parks Department	Cachuma Lake Recreation Area
Summerland Sanitary District	Summerland
Santa Ynez Community Services District	Portions of Santa Ynez (collection and conveyance to Solvang Wastewater Treatment Plant); also manages, operates, and maintains the Chumash Wastewater Treatment Plant
Vandenberg Village Community Services District	Vandenberg Village
Vandenberg Air Force Base	Vandenberg Air Force Base

[a]Serves a disadvantaged community (DAC)

4.4.1 Surface Storage Reservoirs and Associated Distribution Systems

The county's four major reservoirs, discussed above, are managed for various uses, including water supply, groundwater recharge, flood control, recreation, and ecological benefits. Lake Cachuma is owned and operated by the federal government. Twitchell Reservoir is owned by the federal government and operated by the Santa Maria Water Conservation District. Gibraltar Reservoir is owned and operated by the City of Santa Barbara. Jameson Lake is owned and operated by the Montecito Water District. Lake Cachuma, Gibraltar Reservoir, and Jameson Lake are all located in the Santa Ynez River Watershed. The three reservoirs that were constructed on the Santa Ynez River supply most of the water used in the South Coast area of Santa Barbara County. The largest of these is Lake Cachuma, followed by Gibraltar and Jameson reservoirs, which are located upstream. Twitchell Reservoir is located on the Cuyama River 6 miles above its junction with the Sisquoc River and lies within the Santa Maria River Watershed. Twitchell, Jameson, and Gibraltar reservoirs, and to a lesser extent Lake Cachuma, are being filled with sediment, reducing their storage capacity and making it increasingly important to enhance local water supply reliability through conservation and other methods.

The storage capacity of Gibraltar Reservoir is now approximately 7,000 acre-feet (AF); sedimentation has continued to decrease the storage capacity of the reservoir by an average of 150 acre-feet per year (AFY). This reservoir is the source of about one-third of the City of Santa Barbara's water supply. Loss of storage capacity is mitigated by the pass-through provision of the Upper Santa Ynez River Operations Agreement.

The storage capacity of Jameson Lake was originally 7,500 AF and is now approximately 5,290 AF. The unincorporated community of Montecito receives 45 percent of its water supply from Jameson Lake, Fox and Alder creeks via the Doulton Tunnel, so loss of storage capacity is an issue of concern.

Lake Cachuma was created with a storage capacity of about 205,000 AF, but its capacity has been reduced to about 189,000 AF due to sedimentation. The principal features of the Cachuma Project are Bradbury Dam, Lake Cachuma, Tecolote Tunnel and the South Coast Conduit distribution systems. Included in the main conduit system are four regulating reservoirs and Sheffield Tunnel. The South Coast Conduit is constricted between Tecolote Tunnel and Cater Treatment Plant due to decreased pipeline capacity since other facilities were added to that reach of the conduit. Additionally, the aging conduit now requires significant levels of maintenance, which could require that sections of the South Coast Conduit be taken out of service for days or weeks at a time and affect the reliability of the South Coast water supply.

Since its completion, Twitchell Reservoir has been trapping sediments from the 1,140-square mile Cuyama River watershed. Original studies estimated that 40,000 AF of sediment would accumulate in the reservoir during the first 100 years of operation. In 1981, a study found that the rate of sedimentation was about 70 percent greater than the original estimate. As of 1998, the accumulated sediment had reached an estimated 44,000 AF. The reservoir capacity is approximately 198,339 AF. Because of this, the Santa Barbara County Water Agency and the Santa Maria Valley Water Conservation District are preparing a sediment management plan that will help to ensure the continued safe operation of the reservoir's water release works and also extend the usable life of the reservoir.

4.4.2 Flood Control Infrastructure

Santa Barbara County dams are discussed in the preceding section. Other flood control infrastructure in the IRWMP planning area includes:

- 24 miles of levees along the Santa Maria River
- 42 miles of closed conduits
- 22 miles of lined channels
- 50 miles of improved earth channels
- 150 miles of unimproved earth channels
- 34 retarding and recharge basins
- 31 debris basins

4.4.3 State Water Project Facilities

The Central Coast Water Authority was formed to finance, construct, manage, and operate Santa Barbara's State Water Project facilities. Construction of the facilities to import State Water Project water to the county began in 1994, including a 42-mile extension of the State Water Project water pipeline, pumping plants, and a regional treatment plant to treat the water for both San Luis Obispo and Santa Barbara counties (Figure 4-3). The Coastal Branch portion of the State Water Project brings water 117 miles from the California Aqueduct in Kern County, through San Luis Obispo County and the Santa Maria Valley, continuing to the northerly portion of Vandenberg Air Force Base. At Vandenberg Air Force Base, the Coastal Branch connects to the 42-mile pipeline comprising the Mission Hills and the Santa Ynez Extensions. The Santa Ynez section ends at Lake Cachuma. Water is then delivered through existing facilities to the South Coast of Santa Barbara County. The Authority also constructed and operates the Polonio Pass Water Treatment Plant, located in northern San Luis Obispo County and described below. In addition, under a joint powers agreement with DWR, the Authority operates all of the Coastal Branch facilities downstream of the treatment plant.

4.4.4 Desalination Plant

The City of Santa Barbara owns a reverse osmosis desalination plant, which is adjacent to the El Estero Wastewater Treatment Plant. This plant was constructed in 1991 to 1992 by the City of Santa Barbara, Goleta Water District, and Montecito Water District as an emergency water supply in response to the severe drought lasting from 1986 to 1991. The latter two agencies are no longer participants in the desalination plant, which is currently decommissioned due to ample quantities of less expensive supplies. The desalination facility can, however, be brought into operation within 6 to 12 months if needed during drought or water shortage conditions. Just over half of the prefiltration capacity and reverse osmosis treatment modules were sold, leaving sufficient capacity to meet the City's anticipated need for approximately 3,000 AFY of production in future droughts.

4.4.5 Water Treatment Facilities

Communities in Santa Barbara County rely on different types of water supplies. As a result, a wide variety of treatment processes are in use. The following provides a description of selected treatment facilities and processes used in several communities within the county and used in San Luis Obispo County to treat State Water Project water that is delivered to Santa Barbara County. Purveyors routinely monitor water supplies for constituents in accordance with federal and state laws. The Safe Drinking Water Act is the main federal law that ensures the quality of drinking water. Under the Safe Drinking Water Act, the U.S. Environmental Protection Agency sets standards for drinking water quality and oversees the states, localities, and water suppliers that implement those standards. Maximum Contaminant Levels (MCLs) are enforceable regulatory standards under this Act and must be met by all public drinking water systems to which they apply. The California Safe Drinking Water Act was passed to build on and strengthen its federal counterpart. It authorizes the state's Department of Health Services to protect the public from contaminants in drinking water by establishing MCLs that are at least as stringent as those developed by the U.S. Environmental Protection Agency.

Montecito Water District

The Montecito Water District's Lake Cachuma water supply is treated by the City of Santa Barbara at the City's Cater Water Treatment Plant. Its Jameson Lake water supply is treated at the District's Bella Vista and Doulton water treatment plants. Jameson Lake is an open reservoir situated high in the Santa Ynez Mountains. With the completion of the new 2.2-million-gallons-per-day (mgd) Bella Vista Treatment Plant in 1993, and its smaller 150,000-gallons-per-day (gpd) companion, Doulton Treatment Plant, the District has come into full compliance with the 1993 government-mandated standards.

William B. Cater Water Treatment Plant

The City of Santa Barbara constructed the William B. Cater Filtration Plant in 1964. The 1978 Joint Exercise of Powers Agreement provided for the expansion and operation of the Cater Water Treatment Plant to also treat all Cachuma water delivered to the Montecito and Carpinteria Valley water districts. The plant was expanded to its current 37-mgd capacity in 1982. The water treated at the plant may be drawn directly from the South Coast Conduit or from Lauro Reservoir. The water in the South Coast Conduit comes directly from Lake Cachuma (via the Tecolote Tunnel). The water in Lauro Reservoir is a combination of water from Gibraltar Reservoir (via the Mission Tunnel into the Penstock pipeline) and water from the South Coast Conduit. Normal operation is for Cater to draw the water from Lauro Reservoir.

Corona Del Mar Water Treatment Plant

The Goleta Water District began operating the Corona Del Mar Water Treatment Plant in 1974. Due to the plant elevation of 615 feet, water can move through the plant by gravity flow and be delivered to the vast majority of district customers without pumping. The rated nominal capacity of the plant is about 24 mgd) with a peak capacity of 36 mgd. The "raw water" received from Lake Cachuma is directed to the plant for removal of suspended matter, such as clay particles and algae, in order to meet state health standards.

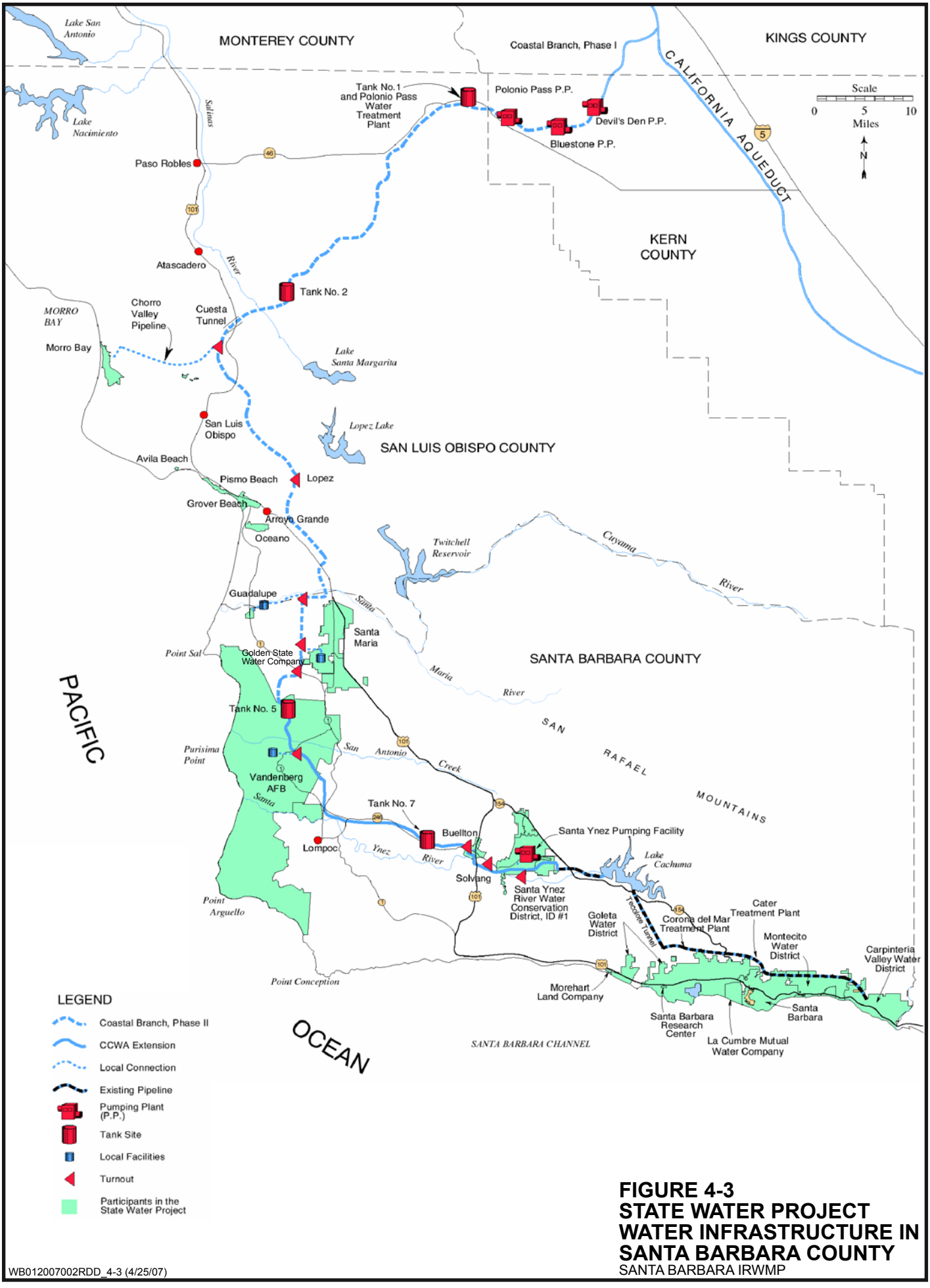

FIGURE 4-3
STATE WATER PROJECT WATER INFRASTRUCTURE IN SANTA BARBARA COUNTY
SANTA BARBARA IRWMP

WB012007002RDD_4-3 (4/25/07)

City of Lompoc Water Treatment Plant

The City of Lompoc operates nine wells of varying capacities between 250 and 2,500 gallons per minute. Groundwater is pumped from the wells to the water treatment plant for demineralization and softening. The City of Lompoc Water Treatment Plant has a peak capacity of 10 mgd with a reservoir capacity of approximately 12 million gallons of usable storage.

Polonio Pass Water Treatment Plant

State Water Project water provided to Santa Barbara County is treated at the 43-mgd Polonio Pass Water Treatment Plant in San Luis Obispo County. This treatment plant disinfects water through chloramination. Chloramines are removed from the water before it is discharged to Lake Cachuma. The detreated State Water Project water is mixed with Cachuma Project water and delivered through Tecolote Tunnel to the contractors on the South Coast. Water treated at Polonio Pass is provided directly to Santa Maria, Guadalupe, Buellton, Solvang, Santa Ynez River Water Conservation District Improvement District No. 1, and Vandenberg Air Force Base.

4.4.6 Wastewater Treatment

Wastewater service providers must address increasingly strict discharge limits for wastewater treatment plants requiring increasing costs for wastewater agencies. SWRCB General Waste Discharge Requirement for Sanitary Sewer Systems (SWRCB Order No. 2006-0003) also requires wastewater agencies to evaluate and rehabilitate sewer systems with a target of zero sewer overflows.

There are several steps to the wastewater treatment process. Wastewater enters sewers and is then transported to the wastewater treatment plant, where it receives "primary treatment." This involves removing solids that settle to the bottom, as well as floating materials.

Next the water undergoes "secondary treatment," which removes solids that are suspended or dissolved in the water. During this treatment process, chemicals are added to disinfect the water before it is released into the ocean, adjacent river, or stream, either directly or indirectly by percolation ponds or upland spreading areas. Most wastewater in Santa Barbara County is treated to this secondary level.

Finally, some treatment plants use "tertiary treatment," which filters and disinfects the water. If treated to this advanced level, wastewater (or "effluent") can be reused for such purposes as irrigation of pasture grasses, landscaping, and even some crops. Such reclaimed water is used for several purposes within the County of Santa Barbara.

The county's primary wastewater treatment plants, their capacities, level of treatment, and uses for recycled water are shown in Table 4-3. The Lompoc Federal Correctional Complex also provides its own wastewater service. Wastewater collected from the Main Cantonment Area at Vandenberg Air Force Base is conveyed to the Lompoc Wastewater Treatment Plant. Other areas in the North Base and South Base are served by leach fields, septic tanks, and package treatment plants.

TABLE 4-3
Wastewater Treatment Facilities within Santa Barbara County

Treatment Plant	Permitted Capacity (MGD)	Level of Treatment	Recycled Water Uses
Buellton	0.65	secondary	groundwater recharge
Carpinteria Sanitary District	2.0	secondary	treatment plant landscape irrigation
City of Santa Maria	9.0	secondary	groundwater recharge
El Estero (City of Santa Barbara)	11.0	secondary/ tertiary	landscape irrigation; toilet flushing
Goleta Sanitary District and Goleta West Sanitary District	10.64	primary/blended secondary	landscape irrigation; toilet flushing
Laguna County Sanitation District	3.7	tertiary	agricultural; landscaping; industrial
Lake Cachuma County Park	0.22	secondary	none
La Purisima [a]	0.40	primary	groundwater recharge; pasture/crop irrigation
Lompoc Regional Wastewater Reclamation Plant	5.0	advanced secondary	sewer line cleaning; dust control & compaction; city street tree irrigation
Mission Hills	0.57	secondary	groundwater recharge
Montecito Sanitary District	1.5	secondary	none
Santa Ynez Band of Chumash Indians	0.2	tertiary	none
Solvang Wastewater Treatment Plant	1.0	secondary	groundwater recharge
Summerland Sanitary District	0.30	tertiary	none

Source: Family of Santa Barbara Water Providers, 2006; Cooperating Partners, 2007.

[a]Located at La Purisima State Park

4.5 Water Supplies

Water supplies include groundwater, surface water, imported State Water Project water, and recycled water; water supplies also are enhanced by the conjunctive use of surface and groundwater supplies and cloud seeding. The current average annual water supplies for Santa Barbara County total about 223,000 AFY, plus about 90,000 AFY in return flows to useable groundwater basins.

4.5.1 Groundwater

Groundwater basins are the major source of water in the county, supplying about 77 percent of Santa Barbara County's domestic, commercial, industrial, and agricultural water. The

regional groundwater basins are described in Section 2. In the South County, water purveyors use groundwater as a secondary source of potable water. However, the North County is largely supported by groundwater and/or shallow, riparian basin water, both of which are recharged by surface flows.

4.5.2 Surface Water

Surface water refers to water resources that flow or are stored in surface channels (streams and rivers or lakes and reservoirs). Surface water reservoirs are an important part of the regional water supply so the loss of storage capacity is of significant concern. Gibraltar Reservoir is the source of about one-third of the City of Santa Barbara's water supply. The unincorporated community of Montecito receives 45 percent of its water supply from Jameson Lake, Fox and Alder creeks via the Doulton Tunnel. On an average annual basis, Lake Cachuma provides approximately 65 percent of the South Coast's water supply. Twitchell Reservoir is important to both the water supply and the flood protection of the Santa Maria Valley. The reservoir supplies about 20,000 AF of recharge to the Santa Maria Groundwater Basin on an average annual basis.

4.5.3 Imported Water (State Water Project)

Table 4-4 shows the amount of water to which each Santa Barbara County participant in the State Water Project has a contractual right, referred to as Table A Amount. Actual deliveries may be less than shown in Table 4-4. The primary factors affecting the amount of Table A deliveries are the availability of State Water Project supplies and the State Water Project Contractors' demands for this water. Climatic conditions and other factors can significantly alter the availability of State Water Project water in any year; a topic of growing concern for water planners and managers is global warming and the potential impacts it could have on California's future water supplies, including State Water Project supplies. The amount of water DWR determines is available and allocates for delivery in a given year is based on that year's hydrologic conditions, the amount of water in storage in the State Water Project system, current regulatory and operational constraints, and Contractors' requests for State Water Project supplies. Even in years when additional Table A supplies are available, the amount of water DWR allocates is limited to Contractors' requests.

State Water Project water has helped reduce the use of groundwater in all major basins, except the Cuyama Basin, which does not have a water purveyor that receives State Water Project water. It also has improved water quality in areas that directly receive State Water Project water and has increased the overall water supply in Santa Barbara County.

4.5.4 Water Conservation

Water conservation addresses the "demand side" of water management, and thereby constitutes an important part of stretching the county's water supplies. Through water conservation programs implemented at the regional and water purveyor level, additional water supplies become available for use within the county, reducing pressures on other water resources. Water conservation activities occur countywide through the Regional Water Efficiency Program (RWEP), in which water purveyors work cooperatively to implement conservation in the areas of residential, commercial, agricultural, and landscape programs. Additionally, regional education and public information programs help change

behavior to decrease water use. Regional programs have been in place since 1990 and are staffed and funded by a multiagency team of conservation staff from the Santa Barbara County Water Agency and local water purveyors. Water purveyors also implement individual programs of particular interest within their service areas. Programs are discussed in greater detail in Section 5. Water savings through conservation programs are calculated on an annual basis by those agencies who are members of the California Urban Water Conservation Council. Council Signatories, who have committed to best management practices for water conservation by signing the Council Memorandum of Understanding, plus the conservation activities of nonmembers in the County, have resulted in the conservation of 86,660 AF during the period from 1991 to 2006. Not all water purveyors report their savings and therefore, savings may be significantly higher.

TABLE 4-4
State Water Project Table A Amounts in Santa Barbara County

State Water Project Participant	Drought Buffer (AFY)[a]	Table A Amount (AFY)
Carpinteria Valley Water District (includes Summerland)	200	2,000
City of Buellton	58	578
City of Guadalupe	55	550
City of Santa Barbara	300	3,000
City of Santa Maria	1,620	16,200
Golden State Water Company (Orcutt area)	50	500
Goleta Water District	450	4,500
La Cumbre Mutual Water Company	100	1,000
Montecito Water District	300	3,000
Morehart Land Company	20	200
Santa Barbara Research Center	5	50
Santa Ynez River Water Conservation District Improvement District No. 1	200	500
City of Solvang	0	1,550
Vandenberg Air Force Base	550	5,500
Total	3,908	39,078
Goleta Water District Additional Drought Buffer[b]	2,500	

Source: SBCWA, 2000

[a]The drought buffer entitlement of 3,908 AF increases the reliability of each project participant's Table A Amount. This can be stored for future use and/or requested in dry years when cutbacks are expected to State Water Project allocations. By storing this water and/or increasing the Central Coast Water Authority's water request in dry years, even after a percentage cutback by DWR, the project participants can reduce shortages in their entitlement deliveries.

[b]Goleta has 2,500 AFY of drought buffer, in addition to its 450 AFY, that does not have pipeline or treatment plant capacity (i.e., it is for increased reliability only).

4.5.5 Recycled Water

Recycled water must meet rigorous water quality standards before it can be reused. The type of reuse varies depending upon the level of treatment. In addition, other constituents, such as total dissolved solids (TDS), in the treated wastewater sometimes limit the use for landscape irrigation and groundwater recharge. Presently, there are two agencies in the county that treat all of their effluent to full tertiary levels. These are the Laguna County Sanitation District and the Summerland Sanitary District. The Laguna County Sanitation District produces approximately 2,400 AFY, which is used for agricultural, landscaping, and industrial purposes with recycling as its only discharge mechanism. Reverse osmosis is used to reduce TDS to improve water quality. The Summerland Sanitary District treats approximately 168 AFY, which is discharged to the Pacific Ocean.

Two other agencies treat some of their flow to tertiary levels for reuse landscape irrigation. These include the City of Santa Barbara and the Goleta Sanitary District. The City of Santa Barbara El Estero Wastewater Treatment Plant has the capacity to treat up to 1,200 AFY of tertiary effluent and currently treats 800 AFY. The Goleta Sanitary District recycled water system is operated jointly with the Goleta Water District as the purveyor and can treat up to 1,500 AFY of tertiary effluent and currently has a demand of 1,000 AFY. The City of Lompoc utilizes approximately 5 AFY of its secondary treated effluent for reuse and discharges to the Santa Ynez River. The Los Alamos Community Services District discharges all of its approximately 130 AFY of secondary effluent for pasture irrigation. Many of these agencies, as well as others not discussed, discharge to percolation ponds, the Pacific Ocean, or other water bodies.

4.5.6 Desalted Water

The City of Santa Barbara's desalination plant is discussed in Section 4.4.4.

4.5.7 Conjunctive Use

Santa Barbara's water purveyors practice the conjunctive use of surface and groundwater supplies when excess water is available to recharge groundwater basins for later withdrawal when supplies are short. Some purveyors use State Water Project water, when available, and rely on groundwater to supplement when demand is higher. Purveyors may also purchase a "drought buffer" of additional State Water Project water or bank water in a groundwater basin. Similarly, some purveyors may manage, possibly in accordance with an AB 3030 Groundwater Management Plan, the groundwater pumped and stored in groundwater basins in order to optimize the basin's overall long-term working yield. The City of Santa Barbara maintains a water well system capable of extracting up to 4,500 AFY. Most of this potential supply is kept in reserve in case of drought, since a majority of its water supply is from surface water sources outside of the watershed area. During normal years, the City's groundwater basins are allowed to recharge, with groundwater extraction generally reserved for periods of drought or other supply shortages. Pumping occurs in Storage Unit No. 1 (downtown area) and the Foothill Basin (outer State Street area). The City of Santa Barbara conducts conjunctive use water supply management activities by injecting and storing surface water in the basins.

4.5.8 Cloud Seeding

Since as early as 1948, Santa Barbara County has participated in weather modification activities in order to augment local water supplies. The County cloud seeding program is only conducted in the upper Santa Ynez and Twitchell Reservoir watersheds. The effectiveness of cloud seeding has been evaluated to demonstrate its benefits. Recent statistical studies suggest that seeding results in a maximum increase in precipitation of about 15 percent over one rain season. This translates to thousands of acre-feet of additional water captured for storage in local reservoirs. For example, in a wet year such as 1992 to 1993, approximately 20,000 AF of water was generated through cloud seeding, and this figure does not include infiltration into groundwater basins (SBCWA, 2000). The local cloud seeding program is operated between December 1 and March 30 of most years. The cost of the annual cloud seeding program is shared among the County and the water districts that receive a benefit from it.

5

5 Water Resources Management Framework

Santa Barbara County has an extensive array of plans and programs that provide an effective framework for the management of water resources. This section highlights the key elements of this framework and describes the relationship between these elements and the IRWMP. The IRWMP builds on this existing framework, identifying objectives, strategies, regional priorities, and projects that are consistent with the existing plans.

5.1 Planning Framework

5.1.1 County and City General Plans

In accordance with state law, Santa Barbara County and each of the incorporated cities have adopted General Plans that contain land use maps, goals, objectives, policies, and standards to guide development. Development can affect water resources through a variety of means, such as increasing the demand for water and wastewater services; changing rates of groundwater infiltration and recharge through the creation of impervious surfaces; increasing the amount of storm water runoff; and increasing erosion and use of chemicals that enter surface and groundwater and affect water quality. Development also can result in changes to ecosystems through mechanisms such as loss of habitat and direct impacts to species through construction. The locally adopted General Plans contain policies that are intended to protect water and ecological resources within the county and ensure that water supplies and sewage treatment are adequate. These General Plans also reflect regulatory requirements relating to nonpoint source pollution control, conservation, and other water resource regulations. Decision makers must consider a project's consistency with these policies before approving new development. A preliminary evaluation of consistency was performed on all projects in the list, recognizing that some types of projects are not subject to General Plan policies. The results are reflected in Section 8. Projects included in the IRWMP will be formally evaluated for consistency with the relevant plans by decision makers prior to their approval.

5.1.2 Los Padres National Forest Land Management Plan

The U.S. Forest Service has developed a Land Management Plan for the Los Padres National Forest (USFS, 2005), which identifies a strategic direction and program emphasis objectives that are expected to result in the sustainability (social, economic, and ecological) of the national forest and, over the long-term, the maintenance of a healthy forest. The legislative mandate for the management of national forests requires that public lands be conservatively used and managed in order to ensure their sustainability and to guarantee that future generations will continue to benefit from their many values. Forest plans are founded on the concept of sustainable use of the national forests. The plan consists of three parts. Part 1 describes the national forest in the future, the niche it occupies in the community framework, the desired conditions the Forest Service is trying to realize, and the challenges

that will be faced. Part 2 includes the "tools" that resource staff will use to accomplish the plan's objectives. Part 2 also defines and describes each of the land use zones and includes a prospectus describing the past performance history of the national forest and the anticipated performance in 3- to 5-year increments over the life of the forest plan. Part 2 also describes what types of management is expected in specific areas of the national forest and addresses the monitoring to be done to assess the effective implementation of the strategies used. Part 3 of the forest plan is the design criteria and constitutes the "rules" that the Forest Service will follow as the national forest implements projects and activities over time. Some of the IRWMP planning area is within the Los Padres National Forest, as are key major water infrastructure and waterbodies (for example, Tecolote Tunnel, Jameson Lake, Gibraltar Reservoir, South Coast Conduit, portions of the Santa Ynez River, and numerous creeks). Projects on these lands will require coordination with the U.S. Forest Service to ensure consistency with the forest plan.

5.1.3 Vandenberg Air Force Base General Plan

The Vandenberg Air Force Base General Plan guides the installation's comprehensive planning process. It identifies essential characteristics and capabilities of the installation and assesses the potential for development. The Utility Systems component of the General Plan contains information about the existing utility infrastructure and presents a general framework for future development. It illustrates existing and planned services, including water and wastewater systems. Utility system capacities, both existing and potential, are noted to determine Vandenberg Air Force Base's ability to support existing and future missions. The General Plan indicates that comprehensively planned and maintained utility systems are able to support mission requirements and should be developed in conjunction with the Capital Improvements Program and future land-use plans. Although the General Plan focuses specifically on development at the installation, planning efforts are related to those of the Cooperating Partners through shared water supplies (State Water Project and San Antonio Groundwater Basin) and wastewater treatment facilities (Lompoc Wastewater Treatment Plant), as well as through participation in programs such as Santa Barbara County's Regional Water Efficiency Program (RWEP), described below.

5.1.4 Urban Water Management Plans

In 1985, statewide legislation (AB 797) was passed requiring all water purveyors with 3,000 customers or serving over 3,000 acre-feet (AF) of water for urban uses, to prepare an urban water management plan. These plans must be updated every 5 years. An urban water management plan is a comprehensive plan that addresses past, current, and future water supplies for each affected district. These plans must include a water shortage contingency plan for droughts and other water shortage emergencies, a plan for using recycled wastewater if feasible, a comprehensive assessment of all water supplies within the district, a plan for meeting future water needs, and a water efficiency plan, which includes a description of how best management practices will be implemented.

In Santa Barbara County, the Carpinteria Valley Water District, Central Coast Water Authority, City of Lompoc, City of Santa Barbara, City of Santa Maria, Goleta Water District, Montecito Water District, and the Golden State Water Company (Orcutt) have prepared Urban Water Management Plans to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

The Santa Ynez River Water Conservation District Improvement District No. 1 also has prepared a Water Management Plan with a similar intent. Projects included in the IRWMP that increase water supplies and supply reliability will help meet the water demands identified in these plans.

5.1.5 Groundwater Management

Enacted in 1992, AB 3030 allows local agencies, with public involvement, to prepare, adopt, and enforce groundwater management plans for the protection of groundwater. These plans are in various stages of completion. Groundwater levels and quality are already monitored in most of the county, and thus, are not a primary focus of this IRWMP. Several cities and water districts in the region have adopted or are preparing groundwater management plans in accordance with local ordinances and agreements, as well as AB 3030. Those that are adopted are listed in Table 5-1, along with those that are subject to court actions.

TABLE 5-1
Groundwater Plans

Basin	Public Agency Participants[a]	Status
Carpinteria	Carpinteria Valley Water District	Plan Adopted
Montecito	Montecito Water District	Plan Adopted
Santa Barbara	City of Santa Barbara	Plan Adopted
Foothill	City of Santa Barbara	Plan Adopted
Goleta	Goleta Water District	Court Action[b]
Buellton Uplands	Santa Ynez River Water Conservation District City of Buellton	Plan Adopted
Santa Maria Valley	City of Santa Maria Santa Maria Valley Water Conservation District Golden State Water Company	Court Action (Pending)

[a]Other participants include private water companies and overlying property owners.

[b]The "Wright Suit" Settlement stipulates management actions in the North and Central subbasins.

5.1.6 Water Shortage Contingency Plans

Water conservation is an integral part of water resource planning in Santa Barbara County. Most local water purveyors have prepared water shortage contingency plans that identify how they will reduce demand during a shortage. These plans address water savings over and above ongoing water efficiency practices that are now an integral part of customer demand management. Ongoing (long-term) efficiency measures include best management practices (pricing, education, efficient landscapes and irrigation, efficient plumbing fixtures and appliances). Short-term water shortage contingency measures include steeply tiered (penalty) water rates, prohibitions against certain unnecessary uses of water (i.e., car washing), water rationing programs, restricted landscape irrigation (i.e., designated days for watering) and public information campaigns. Typical contingency plans are based on scenarios of shortages, such as 10 percent, 20 percent, and 30 percent reductions in supply.

The demand reduction contingencies are planned according to the severity of the water supply reduction, with the most severe restrictions being carried out during the most severe shortage. In the last local drought water demand was actually reduced by over 50 percent during the peak of the shortage.

Local plans are complemented and augmented by the Water Agency's 2004 Santa Barbara County Regional Water Shortage/Drought Management Plan. To ensure that the County's plan complements the purveyor's plans, the Water Agency created a Water Shortage/ Drought Preparedness Planning Technical Advisory Committee comprising staff from the Water Agency and local water purveyors. This group helped shape the regional plan, particularly those actions to be implemented by the Water Agency in conjunction with the individual efforts of the water purveyors. More recently, under a grant from the U.S. Bureau of Reclamation (Reclamation), the County Water Agency prepared a "Water Shortage Contingency/Drought Planning Handbook" (January 18, 2006) as a guide to assist local water districts in preparing their own contingency plans (SBCWA, 2006b).

5.1.7 Capital Improvement Plans/Master Plans

Virtually all of the Cooperating Partners have adopted Capital Improvement Plans or Facilities Master Plans, outlining the infrastructure improvements needed to correct deficiencies in their service areas and ensure the efficient functioning of their water and wastewater systems. Infrastructure projects included in the IRWMP are also included in these plans and can provide a mechanism to obtain grant funding for these much-needed projects.

5.2 Water Management and Monitoring Programs

5.2.1 Storm Water Management Programs

The Clean Water Act sets water quality standards for all contaminants in surface waters and makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

The Municipal Storm Water Permitting Program regulates storm water discharges from municipal separate storm sewer systems (MS4s). MS4 permits were issued in two phases. Under Phase I, which started in 1990, the Regional Water Quality Control Boards (RWQCB) issued NPDES storm water permits for medium (serving between 100,000 and 250,000 people) and large (serving 250,000 people) municipalities. No Phase I communities are located in the Santa Barbara County region.

Phase II regulations expanded the scope of the NPDES program to include local municipalities serving populations of less than 100,000[1]. These local governments must design a Storm Water Management Program to include the development and implementation of six specified measures that reduce storm water pollution to the maximum extent practicable. Evaluation and reporting measures are also required. In addition, the rule sets requirements for construction activity that disturbs between 1 and 5 acres and extends a previously set deadline for municipalities that operate industrial activities regulated under Phase I.

The Phase II NPDES Program is intended to reduce adverse impacts to water quality and aquatic habitat by instituting the use of controls on the unregulated sources of storm water discharges that have the greatest likelihood of causing continued environmental degradation. Storm water discharges from urbanized areas are a concern because of the high concentration of pollutants found in these discharges. Concentrated development in urbanized areas substantially increases impervious surfaces, such as city streets, driveways, parking lots, and sidewalks, on which pollutants from human activities settle and remain until a storm event washes them into nearby storm drains. Common pollutants may include sediment, nutrients, bacteria and viruses, oil and grease, organic compounds, and gross pollutants such as trash. Storm water runoff picks up, transports, and discharges these pollutants, untreated, to waterways via storm drain systems. These discharges can result in the loss of wildlife habitat, reduced aesthetic value, and contamination of recreational waterways that can threaten public and aquatic health. Pollutants of concern in Santa Barbara County are sediment, oil and grease, phosphorous, copper, and bacteria.

Santa Barbara County is responsible for implementing the storm water management program in the unincorporated urbanized areas of the South Coast, Santa Ynez Valley, and Santa Maria Valley. The cities of Carpinteria, Santa Barbara, Goleta, Buellton, Solvang, Lompoc, and Santa Maria are responsible for implementing independent storm water management programs. The storm water management programs define strategies and guidelines for the protection of water quality and reduction of pollutant discharges to the maximum extent practicable. Through existing environmental programs and services as well as established land development policies, the local jurisdictions have a number of programs that meet the intent of the NPDES Phase II regulations and the state General Permit requirements.

Best management practices for each of the six minimum control measures being implemented in the IRWMP planning region include, but are not limited to, educational programs for children, informational materials, community events, storm drain markers, storm water hotline/creeks information numbers, neighborhood-based outreach, Web sites,

[1] In agricultural areas, runoff is being addressed through the state of California's Agricultural Waiver Program, which is a program adopted on the Central Coast in 2004 by the RWQCB to regulate wastewater discharges from irrigated land. It allows the RWQCB to waive waste discharge requirements for growers who enroll in the program and commit to certain steps, including attending 15 hours of approved education training, completing a Farm Water Quality Plan, implementing best management practices in the Farm Plan, and participating in an individual or cooperative monitoring program. In Santa Barbara County, the Agricultural Waiver Program is coordinated by the Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition. Additionally, the state's Agricultural Water Quality Grant Program provides funding for projects that reduce or eliminate nonpoint source pollution discharge to surface waters from irrigated agricultural lands. Funding is available from Propositions 40 and 50 (but through a section of Proposition 50 other than that which defines the IRWMP process). Grants for Nonpoint Source Pollution Control projects from Clean Water Act Section 319 funding is also available through this program. Thus, nonpoint source pollution from irrigated agriculture is not the focus of this IRWMP, because other programs and funding sources are available.

and business outreach programs. Additionally, post-construction best management design criteria, such as low impact development criteria are being studied and considered.

The IRWMP includes projects, described in Section 8, that are consistent with and will help implement the goals of the storm water management programs.

5.2.2 Water Monitoring Programs

Groundwater Well Monitoring and Data Collection

The Santa Barbara County Water Agency currently monitors 283 wells for depth to groundwater throughout the county in cooperation with the United States Geological Survey (USGS). Individual water districts monitor many more wells. The County and local water districts cooperate with the USGS to collect and publish groundwater data. There are historical records on many more sites than are currently being measured. These records were developed for a number of purposes, including USGS investigations, prior inclusion in the County monitoring network, or measurements to address specific issues. The current monitoring network is sufficient to accurately reflect groundwater conditions throughout the County while being measured with a reasonable amount of resources. Sufficient data/information to better understand shallow groundwater quality in certain areas (Western Santa Maria basin) are lacking. In other areas, such as the Santa Ynez River Riparian Corridor, significant data have been developed to support ongoing management.

Local water districts and municipalities currently monitor or fund monitoring of many sites in addition to those measured by Santa Barbara County. Agencies that currently have cooperative agreements with the USGS for groundwater monitoring besides the County Water Agency are: the Carpinteria Valley Water District, City of Santa Barbara, Goleta Water District, Santa Ynez River Water Conservation District, Reclamation, City of Lompoc, and the Santa Maria Valley Water Conservation District. Agencies that provide information for this report but are not participants in the USGS program are Montecito Water District, the City of Santa Maria, and Golden State Water Company. Monitoring frequencies vary among agencies and wells and reflect the data needs of the individual agency.

Of the 283 wells currently monitored by the Santa Barbara County Water Agency, 27 sites include water quality monitoring. Although partially funded through Water Agency programs, this groundwater quality data is collected directly by USGS. Other information is gathered by the RWQCB, or local water agencies. Additionally, through the Cachuma Resource Conservation District's mobile lab program, farmers are trained to monitor and record groundwater quality, allowing them to manage crop irrigation in a way that minimizes the amount of nutrients entering the groundwater.

Surface Water Monitoring

Surface water quality monitoring is performed by a number of federal, state, and local agencies, as well as interested educational institutions, organizations, and individuals. These monitoring efforts are performed to accomplish a wide variety of objectives, including serving as the basis of surface water quality improvements.

Project Clean Water

Project Clean Water was established in 1998 to identify and implement solutions to creek and ocean water pollution on the South Coast. The County of Santa Barbara and the cities of Santa Barbara and Carpinteria are joined in this effort by members of groups such as the Urban Creeks Council, the Audubon Society, the Surfrider Foundation, Heal the Ocean, CURE, Santa Barbara Channelkeeper, Coalition of Labor, Agriculture & Business, Environmental Defense Center, and the Community Environmental Council, as well as many community members. The County of Santa Barbara's Public Health Department monitors 20 beaches on a weekly basis, year-round. Water samples are tested for indicator bacteria (total coliform, fecal coliform, and enterococci) and compared to standards, as mandated by AB 411. Beaches with test results above the acceptable standards are placed under warning status and are resampled 2 days later. Data are available in the local newspapers and at http://www.sbcphd.org/ehs/ocean.htm, the Public Health Department Web site.

Annual Bioassessment Program

Beginning in 2000, the County of Santa Barbara began an annual bioassessment program, which involves collecting and analyzing physiochemical and biological (including benthic macroinvertebrates) data from local streams using standardized methods adapted from the U.S. Environmental Protection Agency's Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers. The study area includes approximately 35 miles of the southern Santa Barbara County coast from the Rincon Creek watershed at the Santa Barbara/Ventura County line west to Gaviota Creek.

Creek Walks

The County of Santa Barbara Public Works Department walks most creeks in the County on an annual basis. Flood Control staff walk the same creeks every year. Project Clean Water staff walk the unincorporated urbanized portions during the late summer/early fall in areas most likely to have water quality impacts. Local city staff and special interest groups also conduct organized creek walks and scheduled monitoring of the creeks, which contributes to the overall understanding of the region's watersheds and highlights the problem areas.

Santa Ynez River Monitoring

Surface- and groundwater monitoring in the Santa Ynez River watershed has occurred for decades. Surface flow, groundwater levels, and water quality are monitored by several local agencies and the USGS. Monitoring efforts include:

USGS Stream Gauging

The USGS operates several stream gages on the Santa Ynez River. Data collected is available from the USGS Web site and is used for several purposes. High flow data are used for public safety purposes including winter storm operations at Bradbury Dam. Low flow data are used for managing the river-flow to meet water right requirements and fish protection objectives. The program relies on both federal agencies and local cooperators for funding; County Flood Control District and Water Agency are both major participants.

USGS Water Quality Measurements

Water quality measurements are made by the USGS as part of stream gauging and groundwater monitoring. Data collected is available from the USGS Web site and is used for several purposes including monitoring suitability of water quality for beneficial uses,

monitoring the salt content of the water rights releases, and habitat suitability for fish habitat.

Flow and Water Quality Measurements as Part of Steelhead Trout Studies

Since 1994, federal, state and local agencies have monitored conditions in the Santa Ynez River to develop a plan for protecting and enhancing the local steelhead trout population. Water quality monitoring includes field measurements of temperature, specific conductance, and oxygen levels. These measurements are summarized in annual reports prepared by the Cachuma Conservation Release Board staff. The studies are conducted in accordance with the Cachuma Project Biological Opinion and the Lower Santa Ynez River Fish Management Plan under a Memorandum of Understanding among the Cachuma Conservation Release Board, Santa Ynez River Water Conservation District Improvement District No. 1, Reclamation, and other parties.

Stream and Groundwater Monitoring as Part of Water Rights Orders

Releases from Bradbury Dam, stream flow, and groundwater adjacent to the Santa Ynez River are monitored by Reclamation and the USGS in accordance with State Water Resources Control Board Order WR 89-18. Results are analyzed and reported in annual reports by Reclamation and the Santa Ynez River Water Conservation District, which are available from these agencies.

Monitoring by Operators of Public Water Supply Systems

Water quality monitoring is required of each operator of a public water supply system. The Cities of Lompoc, Buellton, and Solvang, and the Santa Ynez River Water Conservation District Improvement District No. 1 each may operate wells close to the Santa Ynez River such that their water quality is influenced by the river. The water quality monitoring results from these wells may be obtained from the respective entity owning the well.

Monitoring by Operators of Sewage Treatment Plants

Water quality monitoring of discharge is required of each sanitary treatment plant operator that discharges to surface water. Records of such discharges are submitted to the Central Coast RWQCB and may be obtained from that agency.

Central Coast Ambient Monitoring Program

The Central Coast Ambient Monitoring Program is the Central Coast RWQCB's regionally scaled water quality monitoring and assessment program. The purpose of the program is to provide scientific information to Regional Board staff and the public, to protect, restore, and enhance the quality of the waters of central California.

The Central Coast Ambient Monitoring Program monitoring strategy for watershed characterization calls for dividing the Central Coast Region into five watershed rotation areas and conducting synoptic, tributary based sampling each year in one of the areas. Over a 5-year period, all of the Hydrologic Units in the Region are monitored and evaluated. In addition to the synoptic site selection approach, additional monitoring sites are established in each area to provide focused attention on watersheds and water bodies of special concern.

The program uses a variety of monitoring approaches to characterize the status and trends of coastal watersheds, including:

- Rapid bioassessment using benthic invertebrates
- Conventional water quality parameter analysis
- Chemical analysis of tissue, water, and sediment
- Toxicity evaluations
- Habitat assessments
- Sedimentation evaluations

Data are available on the organization's Web site: http://www.ccamp.org/ccamp/ccamp.htm.

Long-term Ecological Research Project

The Santa Barbara Coastal Long-term Ecological Research Project is focused on investigating the relative importance of land and ocean processes in structuring giant kelp forest ecosystems. As a component of this project, several researchers are focusing on characterizing nutrient loading and developing a model to predict future nutrient export from these watersheds resulting from projected changes in land use. Biweekly base flow and storm water are sampled from Gaviota, Refugio, Arroyo Hondo, Arroyo Burro, Mission, Santa Monica, Franklin and Carpinteria creeks (2003-04 program). Data are available through the Web site: http://sbc.lternet.edu/catalog/style/skins/sbclter/index.jsp.

Santa Barbara Channelkeeper

Santa Barbara Channelkeeper has established Stream Teams in both the Ventura and Santa Barbara area. The purpose of these teams is to monitor water quality and involve citizen volunteers in the protection of their local watershed while providing educational opportunities and fostering environmental stewardship. The Channelkeeper's Goleta Stream Team collects data at 11 sites throughout the Goleta Slough watershed on a monthly basis. Parameters measured by these teams of volunteers include dissolved oxygen, pH, conductivity, turbidity, temperature, flow, nitrate, orthophosphate, and indicator bacteria. Data and analysis are disseminated through the organization's Web site (www.stream-team.org), as well as a quarterly newsletter.

South Coast Watershed Characterization Study and Ongoing Monitoring

The County partnered with the City of Santa Barbara to evaluate water quality concerns through the South Coast Watershed Characterization Study in 1998. The four major creeks–Rincon, Sycamore, Mission, and Arroyo Burro–were sampled. The results identified indicator bacteria as the pollutant of concern in these watersheds. Since that time, the City has expanded its storm water monitoring program in order to better determine the sources and types of pollutants discharged to creeks and the ocean. Over the past 5 years, the City has sampled storm drains, creeks, lagoons, and ocean water. Dry weather efforts focus primarily on indicator bacterial pollution and physical parameters such as temperature, turbidity, and pH. To date, the City has identified specific storm drain outlets that are most likely to discharge urban runoff that contains indicators of certain contaminants.

As a result of sampling thus far, the City has identified known and suspected pollutants of concern. These pollutants are targeted with the implementation of best management practices identified in the City of Santa Barbara Storm Water Management Program. Indicator bacteria and total phosphorus have been identified as known pollutants of concern

based on storm samples containing levels that are consistently above appropriate water quality criteria. Oil and grease is identified as a known pollutant of concern based on the occasional visual observation of oil sheens in creeks during periods of runoff.

Although there is no clear indication that other potential storm water pollutants (such as sediment, nitrate, pesticides, and certain metals) are present in detectable amounts, the City continually revises and improves its monitoring efforts in order to determine the presence and sources of storm water pollutants. In addition to its dry weather and storm monitoring program, in 2004, the City funded research partnerships with USGS and the University of California, Santa Barbara to begin identifying the sources of indicator bacteria and to develop better methods of monitoring the presence of harmful bacterial pollutants in surface waters. The City's reports on progress and findings are shared with other local agencies, nongovernmental organizations, and the public, on an annual basis as well as periodically through newsletters and individual mailings.

Agricultural Cooperative Monitoring Program

The Cooperative Monitoring Program represents a watershed approach to meeting monitoring requirements as set forth in the Conditional Agricultural Waiver. Fifty (50) sites on the Central Coast, including 14 sites in Santa Barbara County, are monitored on a regular basis to see whether implementation of farm-level water quality and environmental management practices are improving water quality.

5.2.3 Other Water Quality Improvement Programs

Local jurisdictions have a system of regulations to protect their waterways and the ocean from pollution and degradation. Additional local agency programs include:

- **Microbial Source Tracking Research.** Microbial source tracking is used to develop DNA-based tools for tracking fecal pollution in creeks and to identify sources of indicator bacteria. The City of Santa Barbara contracts with University of California, Santa Barbara, to conduct microbial source tracking.
- **Bioassessment.** Bioassessment uses benthic macroinvertebrate surveys and an index of biological integrity to assess and track the health of creeks for aquatic organisms.
- **Restoration and Water Quality Project Assessment.** Local agencies use restoration and water quality treatment assessment to determine the success of projects in lowering microbial and chemical pollution levels and improving water quality for aquatic organisms. Local agencies are examining the effectiveness of several creek restoration and water quality improvement projects that should result in decreased pollution levels, improved water quality parameters, or both. Many projects are in development, and baseline data is being collected presently for pre- and post-project comparisons.
- **Creek Cleanups.** While the relationship between garbage in creeks and water quality is unclear, it is apparent that cleaning debris from creeks helps to keep debris off beaches and out of the ocean. Local jurisdictions contract with an outside vendor to clean creeks on a weekly basis. Trash, furniture, appliances, bicycles, mattresses, and grocery carts are collected as well as any other material that does not belong in the creek.
- **Storm Drain Filters.** In an effort to clean water before it enters the City of Santa Barbara's water systems, 100 special storm drain filters have been installed in key

locations including the City's Yanonali Street Annex Yard and at the intersection of West Haley Street at Brinkerhoff. These filters capture debris, garbage, and sediment that otherwise would flow to the creeks.

- **Street Sweeping Program.** Several jurisdictions employ street sweeping programs to improve water quality by keeping trash, debris, and sediment out of storm drains and creeks.

5.2.4 Conservation Programs

Both regional and service area-specific programs that focus on water conservation activities occur in Santa Barbara County. Santa Barbara County's RWEP was established in December, 1990 to promote the efficient use of urban and agricultural water supplies in Santa Barbara County, and to provide information and assistance to the 18 local water purveyors within the County.

The RWEP provides coordination for cooperative efforts among purveyors, acts as a clearinghouse for information on water efficiency technology, manages specific projects, and monitors local, state, and national legislation concerning efficient water use. The RWEP is housed at the Santa Barbara County Water Agency, whose staff work cooperatively with water purveyor staff to implement conservation projects throughout the County. Individual water purveyors work with County staff on projects, as well as implement their own conservation programs within their service areas.

A multi-agency team of conservation staff meets regularly to ensure that water conservation goals are being met. In addition to the Santa Barbara County Water Agency, partnering water providers, who provide staff time or funding to regional programs include: City of Buellton, Carpinteria Valley Water District, Casmalia Community Services District, Cuyama Community Services District, Golden State Water Company, Goleta Water District, City of Guadalupe, La Cumbre Mutual Water Company, City of Lompoc, Los Alamos Community Services District, Mission Hills Community Services District, Montecito Water District, City of Santa Barbara, City of Santa Maria, Santa Ynez River Water Conservation District Improvement District No. 1, City of Solvang, Vandenberg Air Force Base, and Vandenberg Village Community Services District. Of these, the Carpinteria Valley Water District, City of Santa Barbara, City of Santa Maria, Goleta Water District, Montecito Water District, Santa Barbara County Water Agency, and Santa Ynez River Water Conservation District Improvement District No. 1 are also members of the California Urban Water Conservation Council, and are committed to implementing water conservation best management practices.

There are seven focus areas of conservation activities within Santa Barbara County:

- School Education
- Public Information
- Commercial, Industrial, and Institutional
- Landscape/Outdoor Water Use
- Residential/Indoor Water Use

- Agricultural
- Coordination/Administration

School Education

Regional school education programs include participation in the State of California Department of Water Resources (DWR) statewide Water Education Committee, free educational materials and curricula distribution to teachers, the Water Awareness High School Video Contest, a Book Bag Lending Program, and classroom presentations for K-12 grades. Through these programs, students and teachers gain exposure to water conservation ideas. Additional programs for individual water purveyor districts include an elementary school art contest and after-school program in Lompoc, and extensive classroom programs by many water purveyor staff in the Cities of Santa Barbara, Lompoc, Santa Maria, and in the Goleta, Carpinteria Valley and Montecito water districts.

Public Information

The RWEP and individual water purveyors work towards an integrated, cohesive message about the importance of water conservation countywide. This is accomplished through an annual Summer Media Campaign, a cooperative Web site (www.sbwater.org), interpretative signage along the Santa Maria Bike Path and at water purveyor facilities, and production and distribution of informative brochures and a regional newsletter. The regional group of purveyors has created a logo to promote a shared message, and this is used on publications, in public service announcements, and on the Web site. Water Awareness Month in May includes tours of local demonstration gardens and the City of Santa Barbara Desalination facility. Staff from many purveyors attend public events including Earth Day, Boy and Girl Scout activities, Lompoc Environment Fair, and others. All purveyors as well as the County Water Agency are available to respond to information requests by citizens.

Commercial, Industrial, and Institutional

Water efficiency in local businesses is an important target area for Santa Barbara's RWEP and water purveyors. Programs include the Green Awards Consortium, which honors businesses that save water among other environmentally friendly activities; a Lodging Industry Program, which distributes water-saving tips on door hangars and table tents to local hotels; as well as the Save Water, Save a Buck Rebate Program, which offers rebates to commercial, industrial, and institutional water users who retrofit their businesses with water efficient toilets, urinals, and clothes washers. Other programs include the Rinse and Save Program, which retrofits restaurants with efficient pre-rinse spray nozzles; the Conductivity Controller Retrofit Program, which rebates controllers on commercial cooling towers; and the Waterless Urinal Installation Program, retrofitting County facilities with waterless urinals. Water district and County staff work on these programs in varying capacities to provide an integrated commercial water efficiency program throughout the County.

Landscape/Outdoor Water Use

Landscape programs are a major focus of the RWEP and purveyor activities, because as much as 50 percent of customer water use often goes to outdoor water use. A weather-based irrigation controller program that retrofits residential landscapes with weather-based irrigation controllers is underway. The Green Gardener Program in Santa Barbara and Santa Maria offers classes to landscape professionals on green practices with an emphasis on efficient irrigation. Other cooperative programs include the Garden Wise Guys TV show, a locally produced television show on sustainable landscaping; the Landscape Water Budget Program, which provides customers with customized water budgets for their landscapes; and large landscape irrigation evaluations, provided by staff of the Cachuma Resource Conservation District staff. Landscape facilities include the Santa Maria Valley Sustainable Garden, which demonstrates technology and plantings that reduce water use; several "water-wise" installations at water purveyor facilities throughout the County; and five California Irrigation Management Information System network weather stations throughout the County, providing localized evapotranspiration data used in landscape programs. The City of Santa Barbara also uses a landscape ordinance to regulate the installation of new landscapes and ensures they are making efforts to reduce water use.

Residential/Indoor Water Use

Many local water purveyors provide in-home water checkups (audits) that educate customers about water efficient appliances and leak detection. In some cases, residential landscape audits are also offered. The RWEP Web site promotes these services and offers County residents a clearinghouse for residential and indoor water saving information. The City of Lompoc offers rebates on water efficient toilets, clothes washers, and dishwashers. The City of Santa Barbara and the City of Santa Maria offer free 2-gallon-per-minute showerheads to all city residents upon request.

Agricultural

RWEP partners work closely with the Cachuma Resource Conservation District to promote the Irrigation Evaluation Program on agricultural lands within the County. The District's mobile lab visits farms to evaluate water use and make suggestions for increasing efficiency. Staff analyze the distribution uniformity of the sprinklers; provide an estimate of seasonal evapotranspiration, effective rainfall, leaching, and irrigation water requirements; test pumping plants for energy efficiency; and measure the water quality by testing pH, electrical conductivity, nitrates, hardness, and iron in the irrigation water.

Coordination/Administration

The RWEP acts as a clearinghouse for water conservation information and programs. Tasks include surveying water providers and collecting data on water production and rates, water planning coordination including integrated regional water management planning and drought planning activities, and information sharing. Information sharing includes attending state and national meetings on topics related to water conservation, working closely with the California Urban Water Conservation Council on implementing programs and reporting on conservation activities, as well as coordinating among all the water purveyors within Santa Barbara County on cooperative programs within the RWEP. The

RWEP also provides information and training to local water conservation staff. This includes legislative updates, information on new water conserving technologies, reporting to local agencies on regional programs, and workshops on various water efficiency topics. The RWEP also serves an oversight role for shared conservation projects including financial management of shared grants and project management activities such as budgeting, scheduling, and logistics.

Multiple benefits result from using water efficiently, including saving energy, reducing flow into wastewater treatment facilities, and minimizing the need to develop new supplies, which comes with associated costs. Individual water consumers can also benefit by saving money on their water and energy bills when using water efficiently. The IRWMP includes projects that enhance existing conservation programs and will help increase water supply reliability, which is essential to effective regional water management for years in which water is in short supply.

5.2.5 Clean Marina Program

Nonpoint source pollution in the City of Santa Barbara Harbor is addressed through the Clean Marina Program. The program goal is to achieve and maintain, via feasible means and alternatives, a clean harbor environment for people, aquatic life, and seabirds. The Clean Marina Program requires annual review by the Harbor Commission. Program Elements include (1) facilities for boaters, (2) water quality monitoring, (3) best management practices, (4) pollution prevention and abatement projects, (5) education, and (6) compliance and enforcement. In 2006, Santa Barbara Harbor earned the "Clean Marina" certification from the state, one of only a handful of public marinas to have earned this distinction. Santa Barbara Harbor received a score of 96 percent, far exceeding the minimum requirement for Clean Marina certification.

Since 1997, landside harbor activities have been regulated under an NPDES General Industrial Storm Water Permit. This permit requires a Storm Water Pollution Prevention Plan, a comprehensive plan document, the goal of which is to prevent discharge of pollutants into the harbor. Under the plan, the harbor area is inspected quarterly, with areas or operations needing improvement noted and addressed.

5.2.6 Weed Management Programs

The Santa Barbara County Weed Management Area is a multiagency coalition concerned with the invasion of farms, rangeland, and native plant and animal habitat by non-native weeds. The Santa Barbara County Weed Management Area conducts invasive weed control projects and coordinates and educates members towards the common goal of reducing the impact of harmful non-native weeds and enhancing the viability of agricultural, horticultural, and native ecosystems in Santa Barbara County. The program recently has been involved with pampas grass control projects in the Goleta Slough and in the vicinity of the Arroyo Burro; it currently is working with the Carpinteria Creek Watershed Coalition on the rehabilitation of Carpinteria Creek for steelhead habitat and will be leading an effort to control *Arundo donax* and *Tamarix spp*. on the Santa Ynez River. The latter project is included in the IRWMP, which also contains projects to improve steelhead habitat in the Santa Ynez watershed and on the South Coast and improve riparian and other sensitive habitats in the Carpinteria area, Goleta Slough, Arroyo Burro, and elsewhere in the county.

Thus, the IRWMP is consistent with and may be used to obtain funding for projects proposed by the Santa Barbara County Weed Management Area.

5.2.7 Vector Control Programs

The Mosquito and Vector Management District is a local governmental agency providing multifaceted health and safety protection to the residents of Santa Barbara County including mosquito breeding source monitoring and control. Some of the projects included in the IRWMP would increase wetlands and other areas where mosquitoes may breed; therefore, project proponents will coordinate closely with the district to ensure that mosquito abatement issues are appropriately addressed.

5.2.8 City of Santa Barbara Watershed Action Plans

In 2004, the City of Santa Barbara's Creeks Restoration and Water Quality Improvement Division initiated the development of watershed action plans for the Arroyo Burro, Mission Creek, Sycamore Creek, and Laguna Creek watersheds, as part of the City's Creeks Restoration/Water Quality Improvement Program. A watershed action plan will be multi-objective and may cross jurisdictional boundaries, as it covers all water-related issues and resources, including flooding, bank stability, groundwater, creek restoration, fisheries and stream habitat enhancement, and water quality. A watershed action plan comprehensively looks at contributing factors and cause-and-effect relationships on a watershed-wide scale. It identifies and coordinates program and individual project development needs, aimed at solving identified problems (stressors), with the agencies in the best position to implement them.

6

6 Stakeholder Involvement and Coordination

6.1 Introduction

The Santa Barbara Countywide IRWMP has been developed through active stakeholder involvement in a collaborative process. The high level of participation from a broad spectrum of stakeholders has created a strong foundation for future cooperative planning and project implementation in the region.

Two stakeholder groups have worked together to develop the IRWMP. The Cooperating Partners who have guided and funded the planning process are made up of water and wastewater agencies and districts (including privately owned water companies), cities, joint powers authorities, and the County of Santa Barbara. Public stakeholders who have participated throughout the planning process include agricultural, environmental, academic, and disadvantaged communities. The organizational structure of the IRWMP is presented in Figure 6-1. State and federal agencies have played an advisory role.

6.2 Cooperating Partners Involvement

Agencies in Santa Barbara County have worked together to coordinate water-related activities for many years, including the formation of a joint powers agency to manage Lake Cachuma water and participation in the State Water Project through CCWA. Since May of 2002, a regional stakeholder group has been working together to identify and assess water related projects listed in local and regional planning documents.

In early 2006, Santa Barbara County initiated efforts to expand regional participation for the preparation of an IRWMP. All water management entities in the region were contacted and encouraged to participate in initial organizational meetings. These meetings resulted in the signing of a Memorandum of Understanding between the various agencies and organizations during the summer of 2006. These participants are known as the IRWMP Cooperating Partners.

The Cooperating Partners, listed in Section 1, represent all geographical areas of the region and virtually every governmental agency with responsibility for water resource management. Among all the special districts, only one very small community services district is not actively involved. Only one city is not participating, but it is neither a water purveyor nor a wastewater service provider because three participating special districts provide its citizens' water and wastewater needs. This broad level of support marks a new level of regional engagement.

The County of Santa Barbara Water Agency (Water Agency) has been the lead administrative agency throughout the development of the IRWMP. The Water Agency has been responsible for overseeing and guiding the consulting team preparing the IRWMP and coordination

with Cooperating Partners. Approximately half of the cost of preparing the IRWMP was shouldered by the Water Agency, and the other half was split among the Cooperating Partners. Shared funding demonstrated the Cooperating Partners' commitment to the IRWMP process.

The Steering Committee of the Cooperating Partners is an inclusive and active committee made up of Cooperating Partners that have committed to participating in a leadership role in the development of the IRWMP. This has involved attending all or most of the Cooperating Partner meetings, contributing to document content, and participation in document review. Most Cooperating Partners have participated on the Steering Committee. Participation on the Steering Committee is voluntary.

The Cooperating Partners have met on a bimonthly or monthly basis with consistently strong representation from agencies and districts. These meetings have been open to the public in conformance with the Brown Act and announced 72 hours in advance on the IRWMP Web site, with agendas also posted at the meeting sites and at the County public notice bulletin board at the County Administration Building. Copies of meeting presentations and materials were provided to those in attendance and made available on the Web site. Copies of materials have been e-mailed to those Cooperating Partners not in attendance and other individuals or organizations upon request. Over 30 Cooperating Partner representatives attended the first meeting of the Cooperating Partners on September 28, 2006. The high level of participation has been steady throughout the planning process and is expected to continue in the months and years ahead. Cooperating Partners meeting notes are available for review on the IRWMP Web site.

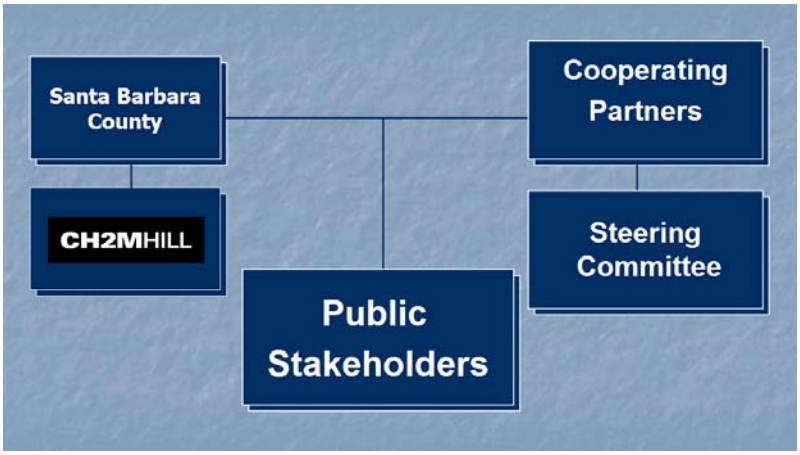

FIGURE 6-1
IRWMP Organization Chart

The "Outreach and Public Involvement Plan," developed in September 2006, guided the IRWMP outreach efforts. The meeting schedule for the Cooperating Partners and public stakeholders and the "Outreach and Public Involvement Plan" are provided in Appendix B.

6.3 Public Stakeholder Participation

Other participants in the development of the IRWMP include interested public stakeholders. The public stakeholders have participated in the planning of the IRWMP and influenced decisions by attending stakeholder workshops and Cooperating Partner meetings. This group has provided review and comments on development of objectives, water management strategies, regional priorities, key issues and challenges, the project evaluation process, the Draft IRWMP, and Final IRWMP. The public stakeholders represent the general

public, the business community, disadvantaged communities, the media, and the agricultural, environmental groups, and academic institutions.

Public stakeholders include representatives from Heal the Ocean, Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition, Community Environmental Council, Santa Barbara Channelkeeper, Surfrider Foundation, Santa Barbara City Creeks Committee, Santa Barbara County Special District Association, Southern California Wetlands Recovery Project, Environmental Defense Center, and the Dunes Center.

6.3.1 Stakeholder Outreach Workshops

A total of eight public stakeholder outreach workshops were held during the development of the IRWMP. Each series of two workshops occurred alternately in a South County then North County location.

The workshop schedule was as follows:

- 1st Workshops – October 23 and 24, 2006
- 2nd Workshops – December 5 and 6, 2006
- 3rd Workshops – January 3 and 4, 2007
- 4th Workshops – April 23 and 24, 2007

At each public workshop, stakeholders were provided with comprehensive background materials and updated on the planning process (Figure 6-2) through both presentations and written materials. Dialogue and questions were encouraged and received throughout the presentations. Comments and questions were noted in meeting minutes and incorporated into the planning process, where appropriate. Public Feedback Forms were available at each meeting providing a means to submit comments in writing. Electronic comments also were encouraged. Copies of PowerPoint presentations from the public workshops are available on the IRWMP Web site.

Public notification of stakeholder outreach workshops occurred in advance of each workshop and utilized a variety of media outlets and public forums to convey meeting details. Media outlets and public forums included:

- Santa Barbara News-Press, Goleta Valley Voice, The Lompoc Record, Santa Barbara Daily Sound, Santa Maria Times, Santa Ynez Valley News, Santa Ynez Valley Journal, Santa Maria Sun, Santa Barbara Independent, Casa, and Family Life.

- Community facilities such as county and city office buildings and the Watershed Resource Center where fliers were posted. The notice from third Workshop series is included in Appendix B.
- Cooperating Partners' constituents and organizations were informed of the IRWMP process on a regular basis using mailings and meetings to both inform and encourage participation.
- The Carpinteria newspaper, Coastal View, published an article, written by County Water Agency staff, regarding the IRWMP process with an emphasis on the public and stakeholder component. The article was published on January 11, 2007.

6.3.2 Electronic Outreach

Several mechanisms and processes were used to expand stakeholder participation in the preparation of the IRWMP. The Cooperating Partners utilized contact names from existing contact lists to create the Master E-mail Outreach List.

The Master E-mail Outreach List included agricultural, watershed, wetland, environmental, nongovernmental organizations, community-based organizations, and other individuals.

In addition, stakeholders contacted other stakeholders, and the contact list grew to include an ever-widening circle of participants. For example, the Santa Barbara Surfrider Foundation regularly published notice of the Santa Barbara IRWMP public stakeholder meetings through their monthly newsletter that reaches over 2,000 people and organizations.

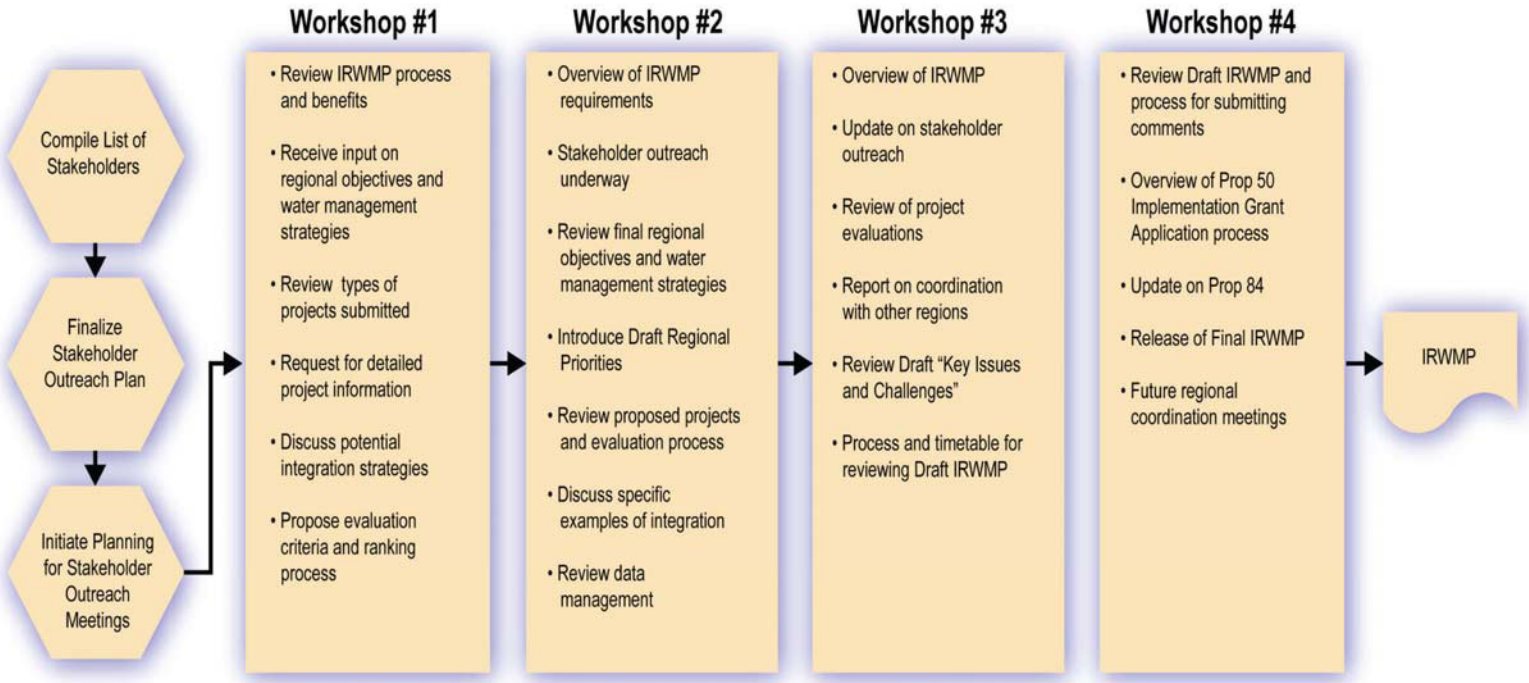

FIGURE 6-2
IRWMP STAKEHOLDER PROCESS
SANTA BARBARA IRWMP

WB012007002RDD_6-2 (3/6/07)

6.3.3 Dedicated Web Site

Santa Barbara County operates a Web site (www.countyofsb.org/pwd/water/irwmp.htm) dedicated to facilitating IRWMP communications with all stakeholders in the region.

The Web site includes the following information:

- Schedule for Cooperating Partner Steering Committee meetings, public stakeholder workshops, and major milestones for the project
- Draft IRWMP
- Final IRWMP
- List of Cooperating Partner agencies and organizations
- Meeting minutes and presentations
- Contact information
- Important documents relating to the development of the IRWMP
- Links to other regional planning efforts and pertinent state documents

Throughout the IRWMP process, the Web site presented various elements of the IRWMP including the proposed project list and project details, regional priorities, key issues and challenges, objectives, and water management strategies.

6.3.4 Targeted Outreach

Cooperating Partners conducted targeted outreach to various stakeholder groups to inform participants of the IRWMP process, encourage participation, and solicit feedback.

- **Santa Barbara County Task Force of the Southern California Wetlands Recovery Project –** The Task Force met Thursday, October 5, 2006. A representative from the Cooperating Partners attended, participated in a discussion, and answered questions regarding the Santa Barbara Countywide IRWMP. In addition to addressing the group, the Santa Barbara County Water Agency Manager briefed the chairman of the Task Force.
- **DWR/SWRCB Town Hall Meeting –** Santa Barbara IRWMP representatives attended a "Town Hall Meeting" with DWR and SWRCB sponsored by the Southern California Water Dialogue and the Los Angeles County Flood Protection Agency; the meeting focused on the Proposition 50 IRWMP planning and grant process.
- **Elected Officials and Agency Boards of Directors –** Elected officials have been engaged in the IRWMP process. The Memorandum of Understanding was approved by the boards of all 29 Cooperating Partners organizations, including the Santa Barbara County Board of Supervisors. A member of the Santa Barbara County Board of Supervisors attended the second Stakeholder Workshop in December 2006. The Santa Barbara County Water Agency Manager made a presentation to a joint meeting of the boards of two Cooperating Partners, Vandenberg Village Community Services District and

Mission Hills Community Services District, with attendance by Vandenberg Air Force Base staff.

- **City Creeks Advisory Committee** – The City of Santa Barbara Creeks Division staff was presented with information and received an IRWMP update in January 2007.
- **Creek Week** – IRWMP fliers were distributed, and announcements were made at Creek Week (from October 7 to 15, 2006), which is a week long event focused on protecting watersheds and improving water quality. It is sponsored by multiple county and city agencies and nonprofit organizations.
- **Santa Barbara County Agricultural Advisory Committee (AAC)** – Representing the Cooperating Partners, the Deputy Director of Santa Barbara County Flood Control, gave a presentation to the AAC on the proposal to develop an IRWMP to utilize funds authorized by Proposition 50. The AAC represents agricultural interests from throughout the county and it serves as a standing advisory group to the County Agricultural Commissioner's office. The AAC was interested in how agriculture was going to be represented in the development of the IRWMP and wanted to be assured that agriculture would not be negatively impacted. The AAC has received regular updates from the Santa Barbara County Water Agency Manager on November 9, 2006, and on February 8, March 8, and April 4, 2007.
- **University of California, Santa Barbara, Donald Bren School of Environmental Science and Management –** A representative of the Cooperating Partners made a presentation on the IRWMP to graduate students enrolled in the "Advanced Study of Water Policy" class taught by Dr. Robert Wilkinson.
- **Santa Barbara Special Districts Association –** A presentation on the IRWMP process was given to the monthly meeting of the Santa Barbara Special Districts Association, which includes organization's water issues and related topics such as vector control, public health protection, and other relevant topics. The presentation was given on February 26, 2007.
- **Goleta Slough Management Committee –** A presentation to the Goleta Slough Management Committee, a nonprofit group, took place on February 8, 2007.
- **Goleta Valley Chamber of Commerce** – A presentation on the IRWMP was made to the Goleta Valley Chamber of Commerce on February 22, 2007.
- **Chumash Tribe** – A representative of the Cooperating Partners has initiated dialogue on development of the IRWMP with the Chumash Tribe from the Santa Ynez Valley area. The Cooperating Partners recognize the need to expand this dialogue in the future.
- **Sanitation Agency Managers' Association** – The Santa Barbara County Water Agency Manager made a presentation to the Sanitation Agency Managers' Association encouraging participation by wastewater agencies.
- **Citizen's Planning Association –** The Santa Barbara County Water Agency Manager met with and gave a presentation to the Citizen's Planning Association in Lompoc on March 29, 2007.

6.3.5 Cooperation and Coordination with State and Federal Agencies

The Cooperating Partners Steering Committee has consulted with several state and federal agencies throughout the IRWMP process. Consultations have been initiated by direct contact or through general communications. (See Appendix B for November 21, 2006, e-mail from County of Santa Barbara to NGOs and state and federal agencies). These agencies include:

- **Department of Water Resources** - The Cooperating Partners have been in regular communication with DWR. Consultation with DWR was initiated with Tracie Billington, Division of Planning and Local Assistance, in January 2006 during the Tri-County IRWMP meeting with San Luis Obispo, Santa Barbara, and Ventura counties. Following consultations later in the year, Ms. Billington recommended that the Cooperating Partners utilize Natalia Deardorff, Environmental Scientist, Division of Planning and Local Assistance, the primary point-of-contact for the region. The Cooperating Partners have had regular communication regarding the IRWMP process with Ms. Deardorff. Ms. Deardorff attended the October 19, 2006, Cooperating Partners meeting in Santa Barbara. The Cooperating Partners had a special meeting with DWR staff including Tracie Billington, Joseph Yun, and Brett Wyckoff in Los Angeles on January 30, 2007, to review and receive feedback on the Initial Draft IRWMP. Consultations have continued with Ms. Billington and Ms. Deardorff throughout the planning process.
- **State Water Resources Control Board –** Initial contact was made with Shahla Farahnak, Director of the SWRCB Water Recycling Funding Program and primary Proposition 50 contact for the SWRCB, during a Southern California Water Dialogue meeting. Communications have continued with the Central Coast Regional Water Quality Control Board.
- **Central Coast Regional Water Quality Control Board –** The Santa Barbara IRWMP has coordinated with Corinne Huckaby, Sanitary Engineering Associate, Central Coast Regional Water Quality Control Board (RWQCB) in San Luis Obispo. Ms. Huckaby has reviewed an internal draft IRWMP (dated 1/12/07) and made several suggestions regarding the appropriate balance of types of projects, the need to be specific and detailed, and the need for matching funds. She also has suggested incorporating more water quality projects and mentioning the watershed working groups that are associated with various water quality projects.
- **Vandenberg Air Force Base –** Communications with Vandenberg Air Force Base were initiated in early October 2006 by the County of Santa Barbara (representing the Cooperating Partners). Relevant planning documents were requested from Vandenberg Air Force Base. Base staff attended a December 11, 2006, presentation on the IRWMP and committed to provide the county with relevant water planning documents. In 2007, the County received pertinent planning documents. Vandenberg Air Force Base has been informed about projects with potential to impact the base or those that would benefit from base participation.

6.3.6 Outreach to Other Regions

The Santa Barbara Countywide IRWMP process included several meetings and interactions with neighboring regions.

- **Tri-County Meeting, January 25, 2006 –** The "IRWMP Opportunities and Challenges Workshop" included participation by San Luis Obispo, Santa Barbara, Ventura, and the Greater Los Angeles regions and was held on January 25, 2006, in Santa Barbara County. Representatives from the State included Tracie Billington, DWR; Scott Couch, State Water Board; and Bill Hoffmann and Macaria Flores, Regional Water Boards. This meeting provided an opportunity to discuss differing IRWMP approaches being undertaken in each region, the potential of future consolidation of regions, the use of watershed versus county boundaries, and regional goals and objectives.

  Following a presentation by Tracie Billington, DWR, a panel discussion ensued entitled "Future of Integrated Regional Water Management Planning in California and Related Benefits." The panelists included: E.J. Remson, The Nature Conservancy, presenting the habitat and preservation perspective; Paavo Ogren, San Luis Obispo County, presenting his views from the regional water management perspective; Tracie Billington, DWR, presenting the state perspective on IRWM planning; and Don Davis, City of Ventura, presenting the local government perspective. Other speakers included Mark Hutchinson, San Luis Obispo County; Kate Rees, Santa Barbara County; Lynn Rodriquez, Ventura County; and Tom West, Greater Los Angeles region.

- **Watersheds Coalition of Ventura County** – The Cooperating Partners consulted with and attended meetings of the Watersheds Coalition of Ventura County (Coalition). Specifically, the Santa Barbara County Water Agency Manager attended the October 5, 2006, Coalition meeting.

  Representatives from the Cooperating Partners met with Lynn Rodriquez, Project Manager for the Watersheds Coalition of Ventura County IRWMP, on December 5, 2006, to discuss the Ventura IRWMP process and details for another Tri-County meeting in January 2007. Ms. Rodriquez also attended the public stakeholder meeting on December 5, 2006, in the South Coast region. She shared many of her "lessons-learned" and experiences with the over 25 people gathered to learn more about the Santa Barbara IRWMP. Ms. Rodriquez also attended the January 17, 2007, Cooperating Partners meeting.

- **Central Coast Regional Meeting** – Representatives of the Santa Barbara IRWMP Cooperating Partners have participated in multiple meetings throughout 2007 with Central Coast Region representatives. The meetings have included agency representatives from the Central Coast region including Santa Cruz County, Pajaro Valley Water Management Agency, Salinas Valley, Monterey County Water Resources Agency, Monterey Peninsula Water Management District, San Luis Obispo County, and Santa Barbara County. Agreement has been reached by all parties that long-term interests are best met by working together to develop a coherent approach to benefit all planning subregions within the Proposition 84 Central Coast funding area.

6.3.7 Outreach to Disadvantaged Communities and Environmental Justice Concerns

The Steering Committee of the Cooperating Partners has been working with several disadvantaged communities (DACs) in the region to help them become part of the IRWMP process and to ensure submittal of projects. Section 2.4 contains a discussion on DACs, and Section 6 includes details on DAC projects.

A potential obstacle to implementing this part of the IRWMP is that the DACs lack the staff and expertise to engage effectively in the planning and grant applications process. The Cooperating Partners recognize that one or more of the Cooperating Partners will need to take a lead role in working with each DACs to support project planning and implementation.

- City of Guadalupe – The City of Guadalupe is in the northwestern extremity of Santa Barbara County, immediately south of the Santa Maria River. The Steering Committee has been in contact with the consulting engineering firm that represents Guadalupe. Two representatives from Guadalupe attended the first Cooperating Partners meeting. The City has inferior water and wastewater services that are in need of upgrading. The IRWMP includes the "Guadalupe Wastewater Treatment Plant Reuse Improvements Project," which will provide treatment improvements, new effluent transfer capability, and potential improvements to a 20-acre wetland site located within the city limits.

- Cuyama – Cuyama is located in the northeastern corner of Santa Barbara County. The Cooperating Partners have been in consultation with the Manager of the Cuyama Community Services District. In addition, he attended the first Stakeholder Workshop in Santa Maria. The Cuyama Community Services District has proposed the "Wastewater Treatment Plant Effluent Disposal Project." This project involves installing two percolating ponds for effluent disposal instead disposing the effluent into Salisbury Creek. The disposal into Salisbury Creek will result in mandatory penalties, starting by March 31, 2007, and which the district can ill afford.

- Casmalia – Casmalia is located north of Vandenberg Air Force Base. The area has significant environmental justice issues that were underscored in December 2006 when bacterial contamination of drinking water supplies resulted in a "boil water" order. The water supply system in Casmalia needs to be upgraded in order to prevent similar incidents in the future. The Director of the Santa Barbara County Laguna Sanitation District has been working with the Director of the Casmalia Community Services District to help identify needs and options. A project is proposed to replace deficient infrastructure such as water pipelines and tank facilities, update buildings and facilities to comply with design and code requirements, and make improvement to the existing well facility.

7

7 Key Issues, Plan Objectives, Regional Priorities, and Water Management Strategies

IRWMP objectives and regional priorities were established by the Cooperating Partners to address the key issues requiring regionwide solutions, as well as those affecting individual watersheds. Water management strategies also were identified to be used in resolving those issues. While the explicit statement of these strategies is new, addressing them is not. Given ongoing efforts to meet identified local water supply, water quality, and environmental protection concerns, much has been accomplished over the past few decades. The focus of these efforts has been, and continues to be, ever-improving efficiency of water use, improving water treatment, attaining water quality standards, and enhancing habitats. Currently, for the purpose of seeking integrated regional water management funding from the state under Proposition 50, the Cooperating Partners decided that grant requests should focus on two major needs:

1. Meeting water quality objectives in the central and northern parts of the county to increase effluent reuse and improve quality of groundwater return flows and surface discharges
2. Meeting water supply efficiency and reliability in the southern part of the county

The relationship between regional objectives, priorities, strategies, and existing needs is discussed in this section.

7.1 Key Regionwide and Watershed-specific Issues

7.1.1 Overview

As described in Section 5, a number of existing plans, programs, and agreements have resulted in the effective management of many Santa Barbara water resources. However, areas of concern remain, particularly in relation to:

- The need to replace, rehabilitate, or upgrade aging infrastructure serving the general population and especially disadvantaged communities
- Risk of illness, especially in disadvantaged communities, from inadequate drinking water and pollution from wastewater
- Water supply reliability, stemming from multiple factors, including the variable reliability of State Water Project water, the loss of storage capacity in the four major reservoirs, and the need for water supplies to serve a growing population
- The need to operate and maintain water and wastewater systems in a manner that minimizes impacts to sensitive habitats and species and complies with federal, state, and local regulatory requirements

- Overdrafted groundwater basins in North County
- Water quality impairments in both groundwater and surface water bodies, including pollution of creeks and ocean water, especially from sediment runoff
- Potential harm to people and property from flooding
- The need for emergency planning to address potential impacts to water and wastewater facilities from floods, earthquakes, fires, as well as planning for (and responding to) periodic droughts

7.1.2 Regionwide Issues

The regionwide issues are consistent with the initiatives for ensuring reliable water supplies identified in the California Department of Water Resources (DWR) *California Water Plan 2005*; that is, implementing integrated regional water management and improving areawide water management systems.

The following describes those issues that are considered most critical to the entire region.

- **Emergency Response**. Water supplies or water quality could prove to be inadequate during emergencies. The ability to provide water service during severe emergencies (for example, earthquake, large wildfire, or extreme drought) may be reduced through damage to infrastructure or a shortage of supplies in a given area, resulting in potential adverse health and safety impacts.
- **Regionwide Water Management System**. Numerous challenges are inherent in managing a complex, integrated, regional water supply system that moves water from one end of the region to the other in order to meet community needs. Water supply reliability needs to be increased given limited and variable water supplies and periodic droughts.
- **Water Quality Standards**. Water management entities responsible for ensuring acceptable water quality for both public health protection and environmental stewardship must comply with increasingly stringent state and federal water quality requirements, including those for impaired water bodies, while also respecting property rights.

The current integrated regional water management commitment will extend for at least the next several years. As the planning process continues to meet the goals of efficient water utilization and improving water quality, it will remain viable and ongoing. In the short-term, the integrated regional water management process has identified the region's primary needs as more efficient water use through improved water and wastewater treatment in the northern and central portions of the county; and increased reliability and efficiency through conjunctive use and system flexibility in the southern portion.

7.1.3 Watershed-specific Issues

On a watershed-specific basis, water issues evident in one location may be similar or even identical to issues in another area, but the most pressing water-related problems vary considerably from watershed to watershed within the IRMWP planning region. The following issues are those currently considered to be the most important in each watershed.

These are also those of importance to the state as a whole, involving public health issues facing disadvantaged communities (DACs); public safety impacts from flooding, surface water (including ocean water) and groundwater quality impacts from point sources and nonpoint sources; environmental protection; water rights; water supplies; the need to comply with regulatory requirements; and water supply reliability.

Santa Maria River and Cuyama River

Public Health. The public faces risk of illness, especially in DACs, from inadequate drinking water and pollution from wastewater. A number of water bodies are impaired, and groundwater has elevated levels of nitrates in some areas.

Public Safety. People and property may experience potential harm from flooding.

Groundwater Overdraft. The Cuyama Groundwater Basin is in overdraft, causing increased pumping lift for agricultural users.

San Antonio Creek

Public Health and Environmental Protection. Sedimentation of creeks is a concern.

Groundwater Overdraft. The San Antonio Groundwater Basin is in overdraft, causing increased pumping lift for agricultural users.

Jalama Creek

Public Health and Environmental Protection. Surface water quality in Jalama Creek and the ocean may be affected as a result of saturation of the leach fields at Jalama Beach.

Santa Ynez River

Integrated Water Management. A State Water Resources Control Board (SWRCB) decision is needed on the Cachuma Project water rights permits that support those elements of the Cachuma Project Settlement Agreement under its jurisdiction to facilitate integration of water supply, downstream water rights, and public trust resources.

Water Supply Reliability. Issues include reliance on the Lompoc Uplands Groundwater Basin, in the face of growth, as a single water source; lack of diversity in viable water sources in City of Solvang; and water supply source management and interconnection between Santa Ynez River Water Conservation District Improvement District No. 1 and Solvang.

Public Health and Environmental Protection. Issues include the need to comply with emerging wastewater discharge standards; water quality problems in shallow groundwater in the Santa Ynez Uplands; and control of noxious weeds along the Santa Ynez River.

Groundwater Overdraft. Further study of the hydrology of the Lompoc groundwater basins is needed, especially as it relates to potential overdraft in the Santa Rita subbasin.

South Coast (Multiple Small Creek Watersheds)

Water Supply Reliability. Issues include difficulty meeting peak demands; aging infrastructure, which constrains system operability; and insufficient integration of adjacent systems.

Public Safety. People and property may experience potential harm from flooding.

Public Health and Environmental Protection. Pollution of creeks and coastal waters could result from nonpoint sources and point source runoff during rain events.

7.2 IRWMP Objectives

The IRMWP objectives described below were adopted by the Cooperating Partners and reflect those four minimally required by the state: water supply, groundwater management, ecosystem restoration, and water quality. These objectives were refined to more specifically describe how the objectives should be met in light of regional issues. The four mandatory objectives also were augmented by the Cooperating Partners to reflect regional needs. Emergency preparedness was added to reflect ongoing risks to the county from droughts, other water shortages, and emergencies such as earthquakes, floods, and fires. The Cooperating Partners' interest in emergency response also has been heightened by awareness of the Hurricane Katrina experience in New Orleans. Infrastructure efficiency and reliability also was added to address the need for the replacement and rehabilitation of water and wastewater infrastructure to increase its reliability and use water resources more efficiently. Such activities are essential to the delivery of adequate water and wastewater services within the county and often result in benefits to areas targeted by the state, including water supply, groundwater management, ecosystem restoration, and water quality. For example, distribution system upgrades can both improve water quality and reduce water loss, and thus the need for imported water supplies. This objective also is consistent with the California Water Plan Update 2005, which lists maintaining and improving statewide water management systems, including improving aging facilities, as one of the state's key initiatives.

The following are the regional objectives developed for this IRWMP; those with asterisks are required by the state. Emergency preparedness and infrastructure efficiency and reliability are objectives that were developed to reflect regional needs.

*Water Supply**

Protect, conserve, and augment water supplies.

- Improve water supply reliability
- Improve system flexibility and efficiency
- Enhance local water supplies through groundwater recharge projects, conjunctive use of water supplies, water recycling, water conservation, water transfers, and precipitation enhancement
- Meet demands

- Optimize existing storage capacity
- Capture and manage runoff
- Match water quality to water use
- Desalinate seawater and brackish groundwater for reuse
- Ensure fire protection capacity
- Support appropriate recreational activities

*Groundwater Management**

Protect current and future groundwater supplies.

- Promote sustainable groundwater use
- Utilize conjunctive use
- Implement groundwater banking
- Protect and improve groundwater quality
- Implement groundwater recharge projects

*Ecosystem Restoration**

Protect and restore habitat and ecosystems.

- Protect, restore, and enhance natural processes and habitats
- Enhance recreational and educational opportunities

*Water Quality**

Protect and improve groundwater, freshwater, brackish water, ocean water, and drinking water quality.

- Meet current and future state and federal water quality standards
- Improve the quality of urban runoff, storm water, and wastewater
- Reduce erosion and sedimentation
- Utilize seawater desalination as appropriate
- Protect public and aquatic ecosystem health
- Support appropriate recreational activities

Emergency Preparedness

Ensure secure water supplies by helping local water purveying districts address the impacts of future droughts, other water shortages, and emergencies such as earthquakes, floods, and fires.

- Implement groundwater banking and conjunctive use programs and needed facilities improvements
- Maintain infrastructure and operational flexibility
- Augment surface storage
- Implement flood control measures
- Ensure emergency drinking water availability

Infrastructure Efficiency and Reliability

Maintain and enhance water and wastewater infrastructure efficiency and reliability.

- Systematically and strategically rehabilitate and replace aging water and wastewater delivery and treatment facilities
- Ensure fire protection capacity

7.3 Regional Priorities

Short-term and long-term regional priorities were defined by the Cooperating Partners in order to provide more specific direction regarding the types of projects and programs that should be implemented to meet IRWMP objectives. Short-term priorities are those that are expected to be implemented within 5 years. Long-term priorities are those expected to be implemented after 5 years, *but the short-term priorities will continue to be important in the more distant future, as well; thus, there is overlap between short-term and long-term priorities.* The regional priorities are inherently integrative because they help meet regional objectives. For example, reducing the potential for flooding can involve water supplies, groundwater management, ecosystem restoration, water quality, emergency preparedness, and infrastructure efficiency and reliability, depending on the methods used.

These priorities are based on identified needs and anticipated future challenges. For example, some major facilities such as levees and regional distribution systems are over 50 years old and need to be upgraded or rebuilt. Other facilities are believed to be susceptible to substantial damage in seismic events, potentially leaving the area without adequate water supplies during the key emergency response period. These priorities reflect the need for "new" projects/initiatives. These do not reflect the substantial effort being made to meet ongoing public needs and protect the local environment. Those efforts are briefly described in Sections 2 through 5 and are assumed to continue. The short-term and long-term priorities described below are not listed in order of importance.

7.3.1 Short-term Priorities (5 years)

- Protect public safety by reducing the potential for flooding in strategic areas through infrastructure improvements such as levee reinforcement, channel modifications, floodplain restoration, and increasing reservoir storage capacity.
- Increase water supply reliability by developing new water sources; maximizing the efficient use of existing sources, including recycled water used for landscaping, irrigation, industrial and commercial purposes, desalinated water, conservation, and groundwater treatment; and strategically restoring or replacing water infrastructure.
- Strategically restore and replace wastewater infrastructure to improve wastewater quality, limit the potential for adverse impacts to water quality and sensitive environmental areas through accidental releases, increase wastewater management efficiency, and meet regulatory requirements.
- Ensure the adequacy of water and wastewater facilities in disadvantaged communities (Guadalupe, Cuyama, and Casmalia).
- Improve surface and ocean water quality and reduce beach closures by replacing septic systems with sanitary sewer connections, ensuring the integrity of wastewater collection systems near the ocean and surface water bodies, improving the quality of urban runoff, reducing the amount of urban runoff that enters the ocean and surface water bodies, and developing public education programs to increase awareness of the measures individuals can take to improve water quality.
- Further define sources of groundwater contamination and develop strategies to prevent groundwater contamination and improve groundwater quality in areas with known contamination.
- Protect, restore, and enhance ecological processes in aquatic areas through water quality improvements; public education; restoration efforts, including removal of invasive species; and improved steelhead passage on strategic creeks.
- Ensure the adequacy of water supplies during droughts and emergencies such as fires, floods, and earthquakes through strategic replacement and rehabilitation of critical infrastructure.
- Develop programs and policies to increase groundwater recharge or decrease groundwater use, especially in overdrafted groundwater basins.
- Encourage cooperation in beginning to develop groundwater banking programs.

7.3.2 Long-term Priorities (5 to 20 years)

- Provide adequate water and wastewater services to meet projected growth.
- Implement regional and/or interagency conjunctive use and groundwater banking programs where supported by legal decisions and landowners.
- Promote programs, policies, and infrastructures to increase water supply sustainability through artificial recharge of local groundwater basins.

- Maximize storage capacity of existing surface reservoirs.
- Optimize the use of seawater desalination to increase water supply reliability and offset groundwater use.
- Expand distribution systems to provide recycled water to new users.
- Expand voluntary water conservation programs for residential, commercial, industrial and agricultural uses.
- Continue interagency coordination to develop opportunities to further integrate the management of water and wastewater projects and programs.
- Continue to coordinate with adjacent counties to develop strategies and programs that improve the management of regional water resources.

7.4 Water Management Strategies

The state IRWMP Guidelines identify the following 20 potential water management strategies to be considered as methods to meet the objectives identified in Section 7.1. Those marked by an asterisk must be considered to meet the minimum IRWMP standards.

Ecosystem Restoration*
Environmental and habitat protection and improvement*
Water Supply Reliability*
Flood management*
Groundwater management*
Recreation and public access*
Storm water capture and management*
Water conservation*
Water quality protection and improvement*
Water recycling*
Wetlands enhancement and creation*
Conjunctive use
Desalination
Imported water
Land use planning
Nonpoint source pollution control
Surface storage
Watershed planning
Water and wastewater treatment
Water transfers

These strategies were considered by the Cooperating Partners, as were the 25 resource management strategies identified in the State of California Department of Water Resources (DWR) California Water Plan Update 2005. Those most applicable to Santa Barbara County needs are included in the IRWMP, including those that are mandatory. These represent strategies that are already being implemented through local planning processes, such as General Plans, Urban Water Management Plans, Capital Improvement Plans/Master Plans, Groundwater Management Plans, Drought/Conservation Plans, Storm Water Management Plans, and Operational Agreements, and those that will continue to be implemented through specific projects identified in Section 8 and Appendix C. The list of water management strategies included in the IRWMP, modified to reflect regional issues, is shown below; each strategy is followed by a brief discussion of some of the integrated benefits that could result from its use. The use of strategies with multiple benefits clearly increases water planning efficiency in a cost-effective manner.

Environmental and Habitat Protection and Improvement

- Ecosystem restoration
- Wetlands enhancement and creation
- Watershed planning

Integrated Benefits

As described in the California Water Plan Update 2005 (DWR, 2005), ecosystem restoration can "improve plant and animal life, increase diversity and connectivity of habitat, help endangered species, and improve watersheds. Restoration can rehabilitate natural processes to support native communities with minimal ongoing help. Restored habitats are likely to help sustain reproduction, foraging, shelter, and other needs of fish and wildlife species… As ecosystem restoration actions help increase the health and abundance of species protected under the state and federal Endangered Species Acts, there might be fewer Endangered Species Act conflicts. As ecosystems such as wetlands and sloughs are restored, their natural pollutant filtering capabilities can improve water quality. As floodplains and seasonal lakes and ponds are restored, groundwater recharge can increase. The result will be a more reliable, higher quality water supply supported by a sustainable ecosystem. The economic benefits that improved rivers, estuaries, wetlands, wildlife, beaches, and their surrounding habitats can have in the state may far exceed the investments for restoring ecosystems." The California Water Plan Update 2005 continues, "Considering California lifestyle trends and travel and tourism as the major growth industry for the state, investments in ecosystem restoration actions may provide a high return on investment. Second only to the state's beaches, rivers are the biggest attraction for California's recreation industry. Similarly, managed wetlands and wildlife refuges provide bird watching and hunting opportunities that contribute hundreds of millions of dollars annually to California's economy."

Watershed management also results in multiple, integrated benefits through preserving ecological functions and processes while considering natural cycles (hydrologic, nutrient, and life cycles) when designing projects. The California Water Plan Update 2005 gives the following example: "elevated stream temperatures are often identified as a problem. Promoting groundwater accretion to streams and improving riparian cover often cools stream temperatures. Designing projects to allow more water to soak into the ground, less water to sheet off as runoff, protecting the soil surface from erosion by planting native plants, and stabilizing stream channels with vegetated buffers brings the stream more in line with the natural watershed cycles and sustains important ecological processes."

In addition to ecological benefits, use of this strategy can reduce the potential for flooding through the restoration of floodplains, including the removal of invasive weeds that restrict flood flows. This strategy also can improve water quality by maintaining natural vegetated stream buffers that filter pollutants and nutrients. Restoration also can stabilize creek banks, reducing erosion and resulting water quality impacts. Ecological benefits also can result from improvements to wastewater infrastructure by reducing the potential for spills into sensitive habitats and water bodies. Santa Barbara County's creeks discharge to the ocean, and impaired creek water quality also affects the water quality of the ocean in the vicinity of public beaches. Thus, improving creek water quality can improve ocean water quality and have recreational benefits. Restored ecosystems can have additional educational benefits by

enhancing opportunities for activities such as bird watching and informing the public of ecosystem restoration benefits.

Surface Water Management

- Flood protection and management
- Storage (storm water capture and management)
- Banking/conjunctive use
- Urban runoff management

Integrated Benefits

Flood protection and management and storage provide multiple benefits by reducing risks to life and property and enhancing natural resources. Twitchell Reservoir, for example, is managed for both flood protection and groundwater recharge; and other reservoirs are managed for multiple purposes as well, including water supply and ecological benefits.

The banking and conjunctive use of surface water resources increases the reliability of water supplies by using or banking surface water for later use during dry years when local water is not available. This strategy can reduce the demand for groundwater, allowing the replenishment of local water supplies, and it can improve groundwater quality by banking higher quality water, such as State Water Project water.

Urban runoff management, including nonpoint source pollution management, can improve water quality, which has ecological benefits (for example, benefits to wetlands and other important aquatic and terrestrial ecosystems), and it can improve recreational opportunities and health benefits by reducing beach closures. Furthermore, capturing storm water in appropriately designed detention basins and filter swales results in several beneficial functions; flood management by reducing storm flows, erosion and sedimentation control by slowing storm water runoff, and water quality improvement through the natural benefits of absorption and filtering and settling water. This strategy also can protect groundwater quality.

Groundwater Management

- Recharge area protection
- Conjunctive use
- Groundwater remediation and aquifer remediation

Integrated Benefits

The benefits of conjunctive use are described under Surface Water Management. Recharge area protection can have ecological benefits in addition to protecting groundwater supplies. Groundwater and aquifer remediation also have water quality, supply, and reliability benefits, and local groundwater supplies serve as a stable regional water supply during disaster recovery.

Imported Water

- Increase reliability

Integrated Benefits

Imported State Water Project water has increased the reliability of local supplies, but has variable reliability; other strategies, such as the use of recycled water and groundwater banking, are used to increase the reliability of State Water Project supplies. Banking State Water Project supplies can improve local groundwater quality.

Water Supply Reliability

- Conjunctive use
- Precipitation enhancement
- Water conservation
- Water transfers
- Sharing facilities to efficiently manage infrastructure
- Emergency drinking water availability

Integrated Benefits

Precipitation enhancement is used to increase surface water supplies, which can lead to increased groundwater recharge (for example, by increasing the amount of water stored in Twitchell Reservoir) and reduced reliance on groundwater in some areas. Water conservation reduces the need for additional imported supplies, increases water supply reliability, and minimizes the amount of water and wastewater treatment required. Water conservation also meets the state's goal of using state water resources more efficiently. Sharing facilities to efficiently manage infrastructure reduces the need for additional construction, which can have adverse environmental impacts (for example, impacts to air quality, biological resources, and cultural resources), as well as high costs. Emergency drinking water availability is of critical concern in Santa Barbara County due to its history of floods, fires, and earthquakes.

Drinking Water – Treatment and Distribution

Integrated Benefits

Ensuring the adequate treatment and distribution of water is an essential strategy that is critical to the health and well-being of all residents of Santa Barbara County.

Water Quality Protection and Improvement

Integrated Benefits

Water quality protection and improvement are discussed above under Environmental and Habitat Protection and Improvement, Surface Water Management, Groundwater Management, and Imported Water.

Matching Water Quality to Water Use

Integrated Benefits

This strategy would allow water to be used in an efficient manner (for example, by using recycled water to irrigate landscaping), which minimizes the need to develop new water supplies or use existing water supplies; it also potentially reduces the amount groundwater required for higher or more beneficial uses. This strategy also may reduce the amount of treatment needed. For example, by water matching quality for agricultural and in-stream uses, water treatment may be avoided. For drinking water, appropriately matching high quality source waters can reduce the levels of pollutants and pollutant precursors that cause health concerns in drinking water. Additionally, less costly treatment options can be used when water utilities start with higher quality source waters, and water supply reliability can be enhanced simultaneously.

Water Recycling – Treatment and Distribution

Integrated Benefits

Use of recycled water can provide multiple benefits (DWR, 2005), including:

- Providing a more reliable local water supply
- Providing organic matter for use in agricultural soil conditioning and allowing for a reduction in fertilizer use
- Reducing the discharge of pollutants to water bodies, beyond levels prescribed by regulations, and allowing more natural treatment by land application
- Providing a more secure water supply during drought periods
- Providing economic benefits resulting from a more reliable water supply
- Improving groundwater and surface water quality and contributing to wetland and marsh enhancement
- Providing energy savings (the use of recycled water as a local source may offset the need for more energy-intensive projects to import water)

Desalination

- Seawater
- Brackish
- Reuse

Integrated Benefits

Use of desalinated water could minimize the need for other surface and groundwater supplies; associated benefits are described under Surface Water Management and Groundwater Management. In addition to proving an increased, more diversified water supply in general, more high quality potable water would be available during droughts, which could protect public health.

Recreational Opportunities

Integrated Benefits

Enhancing recreational opportunities can occur through Environmental and Habitat Protection and Improvement, where improvements are specifically designed for that purpose and can be an additional benefit of managing urban runoff. (For example, ocean water quality could be improved, reducing the number of beach closures).

Water and Wastewater Treatment

Integrated Benefits

Ensuring adequate water and wastewater treatment is an essential strategy that is critical to the health and well-being of all residents of Santa Barbara County. Several of the wastewater treatment plants in the county produce recycled water, which offsets use of potable water sources. This increases water supply reliability, matches water supplies with the appropriate use, and potentially reduces the impacts that could result from using surface water and groundwater supplies. Treated effluent also can be used for ecosystem restoration purposes. Water treatment also can be used to enhance water supplies; for example, by treating groundwater that was otherwise not usable.

Economic Incentives

Integrated Benefits

Economic incentives can be used to encourage water conservation, which reduces the need for additional imported supplies, increases water supply reliability, and minimizes the amount of water and wastewater treatment required. Reducing water demands may create environmental or social benefits, and avoid or delay construction of new water supply projects, which would avoid any environmental impacts resulting from their construction.

7.5 Water Management Strategies and their Integration with Objectives and Regional Priorities

Tables 7-1 and 7-2 illustrate the integration between the IRWMP objectives, regional priorities, and water management strategies. Water management strategies that could be used to implement each regional priority are shown, as are the objectives that could be met by the use of these strategies to meet regional priorities, depending on the specific methods used.

TABLE 7-1
Integration of Water Management Strategies, Regional Priorities, and Objectives – Short-term Priorities (5 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Short-term Priorities (5 years)							
Reduce the potential for flooding in strategic areas through infrastructure improvements such as levee reinforcement, channel modifications, floodplain restoration, and increasing reservoir storage capacity	Surface water management Environmental and habitat protection and improvement Watershed planning	X	X	X	X	X	X
Increase water supply reliability by developing new water sources; maximizing the efficient use of existing sources, including recycled water used for landscaping, irrigation, industrial and commercial purposes, desalinated water, conservation, and groundwater treatment; and strategically restoring or replacing water infrastructure.	Imported water/increase reliability Water supply reliability Drinking water—treatment and distribution Water quality protection and improvement Matching water quality to water use Water recycling—treatment and distribution Desalination Water treatment Economic incentives	X	X		X	X	X

TABLE 7-1
Integration of Water Management Strategies, Regional Priorities, and Objectives – Short-term Priorities (5 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Strategically restore and replace wastewater infrastructure to improve wastewater quality, limit the potential for adverse impacts to water quality and sensitive environmental areas through accidental releases, increase wastewater management efficiency, and meet regulatory requirements	Water and wastewater treatment Environmental and habitat protection and improvement Water quality protection and improvement	X	X	X	X	X	X
Ensure the adequacy of water and wastewater facilities in disadvantaged communities (Guadalupe, Cuyama, and Casmalia)	Water and wastewater treatment Drinking water -- treatment and distribution Water supply reliability	X	X		X	X	X
Improve surface and ocean water quality and reduce beach closures by replacing septic systems with sanitary sewer connections, ensuring the integrity of wastewater collection systems near the ocean and surface water bodies, improving the quality of urban runoff, reducing the amount of urban runoff that enters the ocean and surface water bodies, and developing public education programs to increase awareness of the measures individuals can take to improve water quality	Environmental and habitat protection and improvement Surface water management Water quality protection and improvement Recreational opportunities Watershed planning	X		X	X		X

TABLE 7-1
Integration of Water Management Strategies, Regional Priorities, and Objectives – Short-term Priorities (5 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Further define sources of groundwater contamination and develop strategies to prevent groundwater contamination and improve groundwater quality in areas with known contamination	Groundwater management Water quality protection and improvement Imported water	X	X		X		
Protect, restore, and enhance ecological processes in aquatic areas through water quality improvements; public education; restoration efforts, including removal of invasive species; and improved steelhead passage on strategic creeks	Environmental and habitat protection and improvement Surface water management Water quality protection and improvement	X		X	X		
Ensure the adequacy of water supplies during emergencies such as fires, floods, and earthquakes and during droughts through strategic replacement and rehabilitation of critical infrastructure.	Water supply reliability Water and wastewater treatment	X			X	X	X
Develop programs and policies to increase groundwater recharge or decrease groundwater use, especially in overdrafted groundwater basins	Groundwater management Imported water Water supply reliability Matching water quality to water use Water recycling	X	X		X		

TABLE 7-1
Integration of Water Management Strategies, Regional Priorities, and Objectives – Short-term Priorities (5 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Encourage inter-agency cooperation in beginning to develop groundwater banking programs	Surface water management						
	Groundwater management						
	Water supply reliability	X	X		X		
	Imported water						
	Desalination						

TABLE 7-2
Integration of Water Management Strategies, Regional Priorities, and Objectives – Long-term Priorities (5 to 20 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Long-term Priorities (5 to 20 years)							
Provide adequate water and wastewater services to meet projected growth	Surface water management Groundwater management Imported water Water supply reliability	X				X	X
Implement regional and/or interagency conjunctive use and groundwater banking programs where supported by water cases and landowners	Surface water management Groundwater management Water supply reliability Imported water Desalination	X	X		X	X	X
Promote programs, policies, and infrastructures to increase water supply sustainability through artificial recharge of local groundwater basins	Surface water management Groundwater management Water supply reliability Imported water Desalination	X	X		X	X	X
Maximize storage capacity of existing surface reservoirs	Surface water management	X	X				X

TABLE 7-2
Integration of Water Management Strategies, Regional Priorities, and Objectives – Long-term Priorities (5 to 20 Years)

Regional Priorities	Water Management Strategies Used	Objectives Met					
		Water Supply	Ground-water Manage-ment	Eco-system Restoration	Water Quality	Emergency Prepared-ness	Infra-structure Efficiency and Reliability
Optimize the use of seawater desalination to increase water supply reliability and offset groundwater use	Surface water management Groundwater management Water supply reliability Imported water Desalination	X	X				X
Expand distribution systems to provide recycled water to new users	Recycled water—treatment and distribution Matching water quality to water use	X	X				X
Expand voluntary water conservation programs for residential, commercial, industrial and agricultural uses	Water supply reliability Economic incentives	X	X				
Continue inter-agency coordination to develop opportunities to further integrate the management of water and wastewater projects and programs	All strategies could be involved	X	X		X	X	X
Continue to coordinate with adjacent counties to develop strategies and programs that improve the management of regional water resources	All strategies could be involved	X	X	X	X		

8

8 Strategic Approach for Plan Implementation

This section describes how the IRWMP is to be utilized, outlining the strategic approach that is used to link regionwide and watershed-specific issues with the need for specific projects. The methods used to identify and prioritize projects are also described, along with detailed information regarding those projects that are currently thought to be the highest priority.

For the purpose of seeking integrated regional water management funding from the state, the Cooperating Partners determined that Proposition 50 grant requests should focus on two overarching needs: (1) more efficient water use in the northern and central portions of the county through improved water and wastewater treatment to meet standards; and to allow effluent reuse and improved quality of surface discharges and returns to groundwater; and (2) increased reliability and efficiency through conjunctive use and system flexibility in the southern portion of the county.

8.1 Strategic Approach

A straightforward, linear path is followed to relate place-specific issues to regional objectives, priorities, and strategies in order to identify projects needed to resolve these issues. The following schematic presents this strategic approach.

Places	→	Key Issues	→	Objectives	→	Priorities	→	Strategies	→	Projects
By addressing both the region as a whole and its major watersheds…	→	…the Cooperating Partners identified the most pressing issues, problems, and challenges…	→	…identified objectives to meet regional needs…		….and set regional priorities to provide more specific direction…	→	…using strategies from the state's Proposition 50 Guidelines and California Water Plan Update 2005…	→	….to identify projects to solve problems and meet objectives

The logic sequence shown above was developed to ensure that specific projects that met countywide needs were included in the IRWMP. In this way, the list of substantial issues that challenge agencies and special districts in one or more parts of the region was narrowed to specific projects to address key problems. Projects have not yet been identified to address all of the countywide problems, and as discussed in Section 10, the IRWMP will be used as a mechanism to develop solutions to existing problems, as well as to identify new issues and methods for their resolution.

The linkages between regionwide issues, objectives, priorities, strategies, and the Tier I projects are shown in Table 8-1. Some regionwide issues, such as addressing the developing TMDLs, the need for more conservation, and the need for continued integrated regional water management planning, will require cooperative efforts by regionwide entities. Other regionwide issues will be addressed by individual agencies developing projects that collectively will work together to resolve issues that are important to the county as a whole. The linkages between watershed-specific issues, objectives, priorities, strategies, and Tier I projects are shown in Table 8-2. In some cases (such as San Antonio Creek and Santa Ynez River watersheds), projects have not yet been developed to address specific local concerns, but the IRWMP may be used as the mechanism to do so.

8.2 Project Solicitation and Prioritization

Projects required to address countywide issues were solicited from the Cooperating Partners, as well as other interested stakeholders within Santa Barbara County through the outreach efforts outlined in Section 6. All projects received were evaluated and prioritized according to the following criteria:

1. Readiness to proceed
    a. California Environmental Quality Act (CEQA) process has been initiated or completed
    b. Costs have been adequately estimated
    c. Schedule, including project timeframe and milestones, has been prepared
2. One or more regional objectives are addressed
3. One or more water management strategies are utilized
4. One or more regional priorities are addressed
5. One or more statewide priorities are addressed
6. The project is likely consistent with applicable general plan
7. The project will not cause long-term significant adverse impacts, including long-term adverse impacts to agriculture
8. The project serves a disadvantaged community (DAC)

Each criterion was assigned one point, including readiness to proceed; a single point was awarded in a category if any one of the three subcriteria were met. The highest scoring projects, with scores of 7 or above, were considered to be the highest priority projects for the near-term (Tier I projects) and are shown in Table 8-3 and Figure 8-1; the corresponding project descriptions are shown in Appendix C-1. Further prioritization of these projects will be conducted by the Cooperating Partners as they consider which projects are appropriate candidates for grant funding.

Descriptions of the projects with scores below 7 (Tier II projects) are included in Appendix C-2, and tables showing the consistency of all projects with the regional objectives, regional priorities, water management strategies, and statewide priorities are included in Appendix D-6.

TABLE 8-1
Linkages between Regionwide Issues and Projects

Watershed	Key Issues	Objectives	Regional Priorities[a]	Strategies[b]	Project Examples[c]
All	**Emergency Response:** Inadequate backup supplies for severe emergencies (earthquake, large wildfire, extreme drought), with potential adverse health and safety impacts	Water supply	Ensure the adequacy of water supplies during drought and emergencies	*Water supply reliability*	Interconnect: Goleta and City of Santa Barbara Modifications to the South Coast Conduit Other projects still to be developed
All	**Improve Regionwide Water Management System:** Challenges inherent in managing a complex, integrated, regional water supply system; increased water supply reliability needed	Water supply Groundwater management Water quality	Expand voluntary water conservation programs Encourage expanded cooperation in conjunctive use	*Water conservation* *Water transfers* *Conjunctive use*	Water efficiency rebates and incentives Goleta Water District and Carpinteria Valley Water District injection well projects to improve conjunctive use
All	**Water Quality Standards:** Comply with state and federal requirements for impaired water bodies, while also respecting property rights	Water quality	Improve surface and ocean water quality	*Water quality protection and improvement*	Wastewater treatment plant upgrades for City of Guadalupe, City of Santa Maria, Laguna County Sanitation District and Vandenberg Village Community Services District. Watershed working groups for South Coast beaches
All	**Implement IRWMP:** Current Integrated Regional Water Management commitment is only short-term	All	Continue interagency coordination	*All strategies in state's IRWMP Guidelines*	Develop a Memorandum of Understanding for IRWMP governance

Notes:

[a]The text is verbatim from language approved as regional priorities by the Cooperating Partners, as presented in Section 7.

[b]The italicized words are verbatim from the state's Proposition 50 Guidelines; many strategies are already being implemented, but in some cases specific projects are needed to enhance current efforts.

[c]The projects listed in the "Projects" column are examples of those that scored highest in the Cooperating Partners' project evaluation process. They are not necessarily the projects that would be included in an application for a project implementation grant; specific criteria for project selection will be developed for the grant application. More information on these projects can be found in appendices to this IRWMP.

DAC: Disadvantaged community

TABLE 8-2
Linkage between Watershed-specific Issues and Projects

Watershed	Key Issues	Objectives	Regional Priorities[a]	Strategies[b]	Project Examples[c]
Santa Maria River and Cuyama River	**Public Health:** Risk of illness, especially in DACs, from inadequate drinking water and pollution from wastewater; impaired water bodies; elevated levels of nitrates in groundwater in some areas	Water supply Water quality Infrastructure efficiency and reliability	Ensure the adequacy of water and wastewater treatment facilities, especially in DACs	*Water and wastewater treatment* through improved drinking water treatment and distribution systems; upgrades to wastewater treatment systems	Casmalia water system improvements Guadalupe wastewater treatment plant improvements Cuyama wastewater treatment plant effluent disposal Cuyama water tower repair Expansion of Santa Maria wastewater treatment plant
	Public Safety: Potential harm to people and property from flooding	Emergency preparedness Flood control	Protect public safety by reducing the potential for flooding	*Flood management* through levee reconstruction	Santa Maria River levee reinforcement
	Groundwater Overdraft: Overdraft in the Cuyama Groundwater Basin, causing increased pumping lift for agricultural users	Water supply	Develop programs to increase groundwater recharge or decrease groundwater use	Groundwater management	To be developed
San Antonio Creek	**Public Health and Environmental Protection:** Sedimentation of creeks	Water quality	Improve surface water quality	*Water quality protection and improvement*	Specific projects developed through implementation of Consolidated Resource Management Plan for the area
	Groundwater Overdraft: Overdraft in the San Antonio Groundwater Basin, causing increased pumping lift for agricultural users	Water supply	Develop programs to increase groundwater recharge or decrease groundwater use	Groundwater management	To be developed
Jalama Creek	**Public Health and Environmental Protection:** Saturation of the leach fields at Jalama Beach, potentially affecting surface water quality in Jalama Creek and the ocean	Water quality	Improve surface and ocean water quality	*Water and wastewater treatment*; and *Water quality protection and improvement*	Replace undersized septic tanks at county park

TABLE 8-2
Linkage between Watershed-specific Issues and Projects

Watershed	Key Issues	Objectives	Regional Priorities[a]	Strategies[b]	Project Examples[c]
Santa Ynez River	**Integrated Water Management:** A State Water Resources Control Board (SWRCB) decision is needed on the Cachuma Project water rights permits that supports those elements of the Cachuma Project Settlement Agreement under its jurisdiction to facilitate integration of water supply, downstream water rights, and public trust resources	Water supply Ecosystem restoration	Protect, restore and enhance ecological processes in aquatic areas Increase water supply reliability Protect public safety by reducing the potential for flooding	*Environmental and habitat protection and improvement* *Water supply reliability* *Storm flow management* *Surface water management* *Groundwater management* *Water quality improvement* *Conjunctive use*	No infrastructure needed; an SWRCB decision supporting the flows for fisheries and downstream water rights as provided in the Cachuma Project Biological Opinion and Settlement Agreement would facilitate integration of water supply, downstream water rights, and public trust resources
	Water Supply Reliability: Reliance on a single water source (Lompoc Uplands Groundwater Basin) in the face of increasing growth; lack of diversity in viable water sources in City of Solvang; and water supply source management and interconnection between the Santa Ynez River Water Conservation District, Improvement District No. 1 and Solvang	Water supply Groundwater management	Increase water supply reliability Provide adequate water to meet projected growth	*Water supply reliability* *Water quality improvement* *Conjunctive use*	Specific projects still in planning stage
	Public Health and Environmental Protection: Compliance with emerging wastewater discharge standards; water quality problems in shallow groundwater in Santa Ynez Uplands; control of noxious weeds along the Santa Ynez River	Groundwater management Ecosystem restoration Water quality Infrastructure efficiency and reliability	Strategically restore and replace wastewater infrastructure Protect, restore and enhance ecological processes	*Water and wastewater treatment;* *Water quality protection and improvement* *Conjunctive use* Environmental and habitat protection and improvement	Lompoc Regional Wastewater Reclamation Plant Santa Ynez Uplands projects in planning stage Arundo eradication
	Groundwater Overdraft: Need for further study of the hydrology of the Lompoc groundwater basins, especially as it relates to potential overdraft in the Santa Rita subbasin	Groundwater management	Develop programs to increase groundwater recharge or decrease groundwater use	To be determined	To be developed; conduct a study of the hydrology of the Lompoc Groundwater Basin, especially for the Santa Rita subbasin

TABLE 8-2
Linkage between Watershed-specific Issues and Projects

Watershed	Key Issues	Objectives	Regional Priorities[a]	Strategies[b]	Project Examples[c]
South Coast (multiple small creek watersheds)	**Water Supply Reliability:** Difficulty meeting peak demands; aging infrastructure constrains system operability; insufficient integration of adjacent systems	Water supply Infrastructure efficiency and reliability	Increase water supply reliability	Water supply reliability through expanding capacity of distribution system	South Coast Conduit 2nd pipeline Carpinteria Valley Water District Central Zone transmission main Goleta plant sedimentation upgrades Blended irrigation at La Cumbre Mutual Water Company
	Public Safety: Potential harm to people and property from creek flooding	Emergency preparedness Flood flow management	Protect public safety by reducing the potential for flooding	Flood management by improving flow channel capacity for large storms	Storm water management and flood control for Mission, Las Positas, San Jose, Las Vegas, and San Pedro creeks
	Public Health and Environmental Protection: Pollution of creeks and coastal waters from nonpoint sources and point source runoff during rain events	Groundwater management Ecosystem restoration Water quality Infrastructure efficiency and reliability	Improve surface and ocean water quality Develop programs and policies to increase groundwater recharge	*Water and wastewater treatment through sewers in certain septic areas; and sewer repairs* *Water recycling* *Water quality protection and improvement* *Storm water capture and management*	Sewer line extension, replacements and relocation in Goleta, Carpinteria, and City of Santa Barbara El Estero Swale restoration Goleta water reclamation facility refurbishment Goleta backwash tanks replacement

Notes:

[a]The text is verbatim from language approved as Regional Priorities by the Cooperating Partners, as presented in Section 7.

[b]The italicized words are verbatim from the state's Proposition 50 Guidelines.

[c]The projects listed in the "Projects" column are examples of those which scored highest in the Cooperating Partners' project evaluation process; they are not necessarily those which would be included in an application for a project implementation grant; specific criteria for project selection will be developed for the grant application. More information on these projects can be found in appendixes to this IRWMP.

DAC: disadvantaged community

TABLE 8-3
Santa Barbara County IRWMP Projects Scoring 7 or Above (Sorted by Watershed)

No.	Watershed	Sponsor	Project
1	All	Southern SLO and Santa Barbara Counties Ag Watershed Coalition	Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups
2	All	Water Purveyors and the County Water Agency	Regional Water Conservation Rebates, Incentives, and Promotion
3	Cuyama	Cuyama Community Services District	Wastewater Treatment Plant Effluent Disposal
4	Cuyama	Cuyama Community Services District	Water Tower Repair
5	Jalama	Santa Barbara County Parks	Jalama Beach County Park Septic System Improvements
6	Santa Maria	Casmalia Community Services District	Casmalia Water System Improvements
7	Santa Maria	City of Guadalupe	Guadalupe WWTP Reuse Improvements
8	Santa Maria	City of Santa Maria	Wastewater Treatment Plant Expansion
9	Santa Maria	Laguna County Sanitation District	Wastewater Reclamation Plant Upgrade
10	Santa Maria	Santa Barbara County Flood Control District	Santa Maria River Levee Reinforcement
11	Santa Ynez	Agricultural Commissioner's Office *Doing Business As* Santa Barbara County Weed Management Area	Santa Ynez River Arundo Eradication
12	Santa Ynez	Cachuma Conservation Release Board/Santa Ynez River Water Conservation District Improvement District No.1	Quiota Creek, Fish Passage Enhancements
13	Santa Ynez	Santa Ynez River Water Conservation District Improvement District No. 1	Gallery Well Filtration Facility
14	Santa Ynez	Vandenberg Village Community Services District	Lompoc Regional Wastewater Reclamation Plant
15	South Coast	Cachuma Operation and Maintenance Board	South Coast Conduit 2nd Pipeline - Upper Reach
16	South Coast	Carpinteria Sanitary District	Bluffs Sewer Relocation
17	South Coast	Carpinteria Sanitary District	Carpinteria Creek Overhead Crossing Replacement
18	South Coast	Carpinteria Valley Water District	Central Zone Transmission Main/ASR Demonstration Well
19	South Coast	Carpinteria Valley Water District	Recycled Water Feasibility Study
20	South Coast	City of Santa Barbara	Braemer Area Sewer Extension
21	South Coast	City of Santa Barbara	El Estero Swale Restoration
22	South Coast	City of Santa Barbara	Elings Park Solid Waste Assessment Test/Corrective Action Plan

TABLE 8-3
Santa Barbara County IRWMP Projects Scoring 7 or Above (Sorted by Watershed)

No.	Watershed	Sponsor	Project
23	South Coast	City of Santa Barbara	Las Positas Storm Water Management
24	South Coast	City of Santa Barbara and Santa Barbara County Flood Control District	Lower Mission Creek Flood Control and Rehabilitation
25	South Coast	City of Santa Barbara	Old Mission Creek Storm Water Management and Restoration
26	South Coast	Goleta Sanitary District	Fairview Avenue Sewer Line Installation
27	South Coast	Goleta Sanitary District	Mattorral Way Creek Arial Crossing Sewer Replacement
28	South Coast	Goleta Sanitary District	Modoc Road New Sewer Line Installation
29	South Coast	Goleta Sanitary District	Water Reclamation Facility 2007 Refurbishment
30	South Coast	Goleta Water District	ASR Well Rehabilitation and Construction
31	South Coast	Goleta Water District	Backwash Tank Replacement at 4 Wells
32	South Coast	Goleta Water District	Cathedral Oaks Pipeline Replacement
33	South Coast	Goleta Water District	Corona Del Mar Water Treatment Plant - Sedimentation Basin Effluent Upgrades
34	South Coast	Goleta Water District	Downstream Reservoir Meters
35	South Coast	Goleta Water District	Interconnect with City of Santa Barbara
36	South Coast	La Cumbre Mutual Water Company	Blended Irrigation
37	South Coast	La Cumbre Mutual Water Company	Iron and Manganese Removal Plant
38	South Coast	Santa Barbara County - Project Clean Water	Diversion of Non-storm Flows from Storm Drain System to Sanitary System
39	South Coast	Santa Barbara County Flood Control District	Las Vegas and San Pedro Creeks, Goleta
40	South Coast	Santa Barbara County Flood Control District	San Jose Creek Improvements (Goleta)

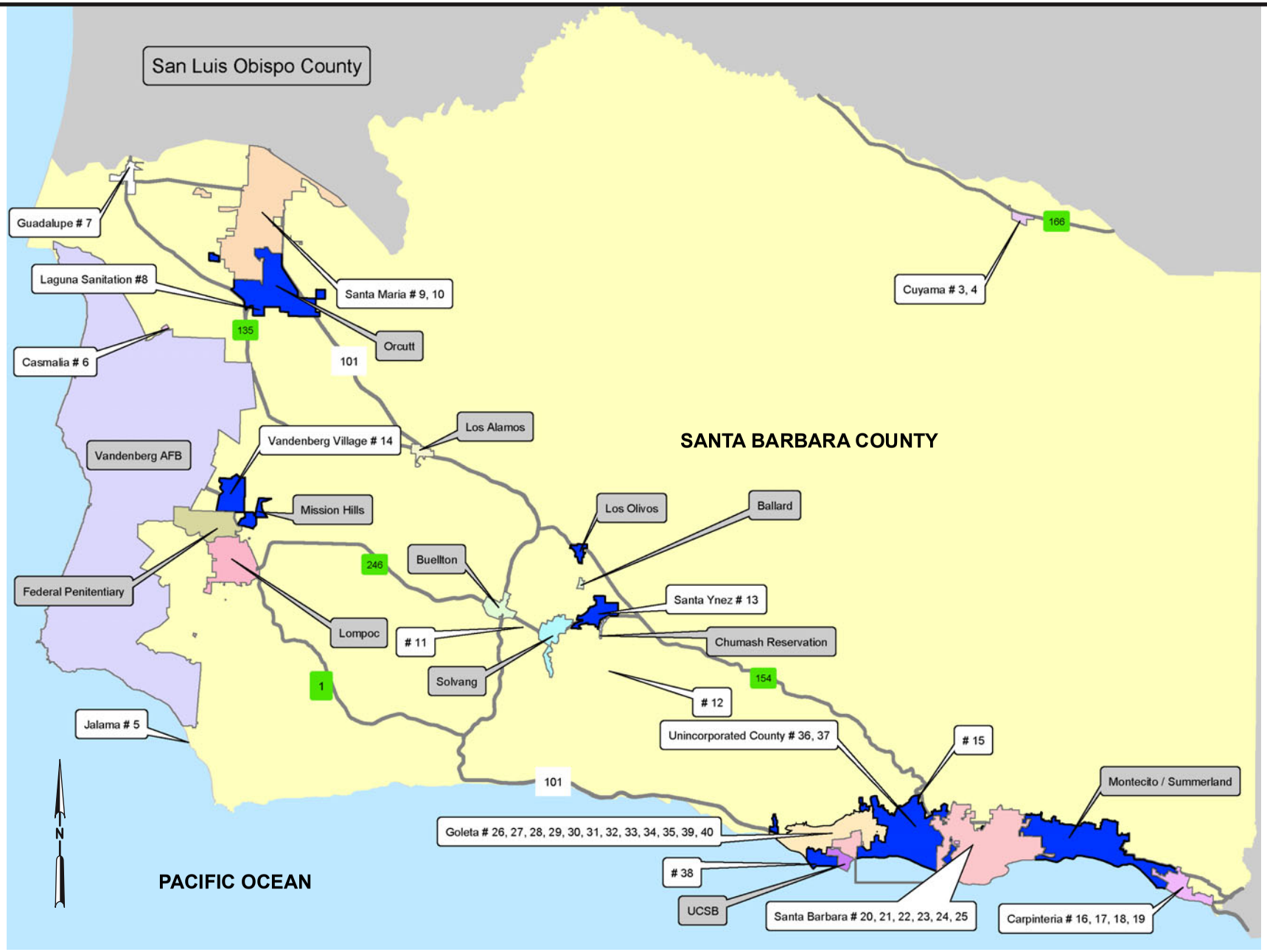

FIGURE 8-1
TIER I PROJECTS BY APPROXIMATE LOCATION
SANTA BARBARA IRWMP

Figures 8-2 and 8-3 illustrate the process that was used to identify projects and ensure that they were integrated, using a mix of plan objectives and water management strategies. The projects also were reviewed to ensure that they addressed the needs of individual geographic areas and the region as a whole; and would result in an array of integrated, multiple benefits. Additionally, projects were evaluated in terms of their potential to assist in meeting the following statewide priorities established by the California Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB):

- Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues
- Implementation of total maximum daily loads (TMDLs) that are established or under development
- Implementation of Regional Water Quality Control Board (RWQCB) Watershed Management Initiative Chapters, plans, and policies
- Implementation of the SWRCB's Nonpoint Source Pollution Plan
- Assist in meeting Delta Water Quality Objectives
- Implementation of recommendations of the Floodplain Management Task Force
- Implementation of recommendations of the Desalination Task Force
- Implementation of recommendations of the Recycling Task Force
- Implementation of recommendations of the State Species Recovery Plan
- Address environmental justice concerns
- Assist in achieving one or more goals of the CALFED Bay-Delta Program.

As shown in Table 8-4 and Appendix D-3, both the highest ranking projects and the entire suite of projects use a broad range of water management strategies to meet plan objectives, regional priorities, and statewide priorities. This plan is a living document, intended to provide a planning framework over the next 20 years, and as the longer-term projects included in Appendix C-2 become better defined, or as regional priorities change, they may be reclassified as higher priority projects through the adaptive management process outlined in Section 10. Additionally, the IRWMP will serve as a mechanism for identifying new projects designed in accordance with the regional objectives, priorities, and management strategies using the logic sequence outlined above.

TABLE 8-4
Summary of Overall Evaluation Matrix

Criteria		Total Number of Projects That Met Criteria	Total Number of Top Tier Projects That Met Criteria
Readiness to Proceed	CEQA Process Initiated or Completed	39	27
	Costs Adequately Estimated	44	30
	Schedule Prepared	36	22
	Overall Readiness to Proceed	55	37
One or More Regional Objectives Are Addressed		97	40
One or More Water Management Strategies Are Utilized		97	40
One or More State Priorities Are Addressed		76	40
One or More Regional Priorities Are Addressed		95	40
Lack of Significant Long-term Adverse Impacts, Including Impacts to Agriculture		65	40
Consistency with General Plans		82	40
Disadvantaged Community		4	4

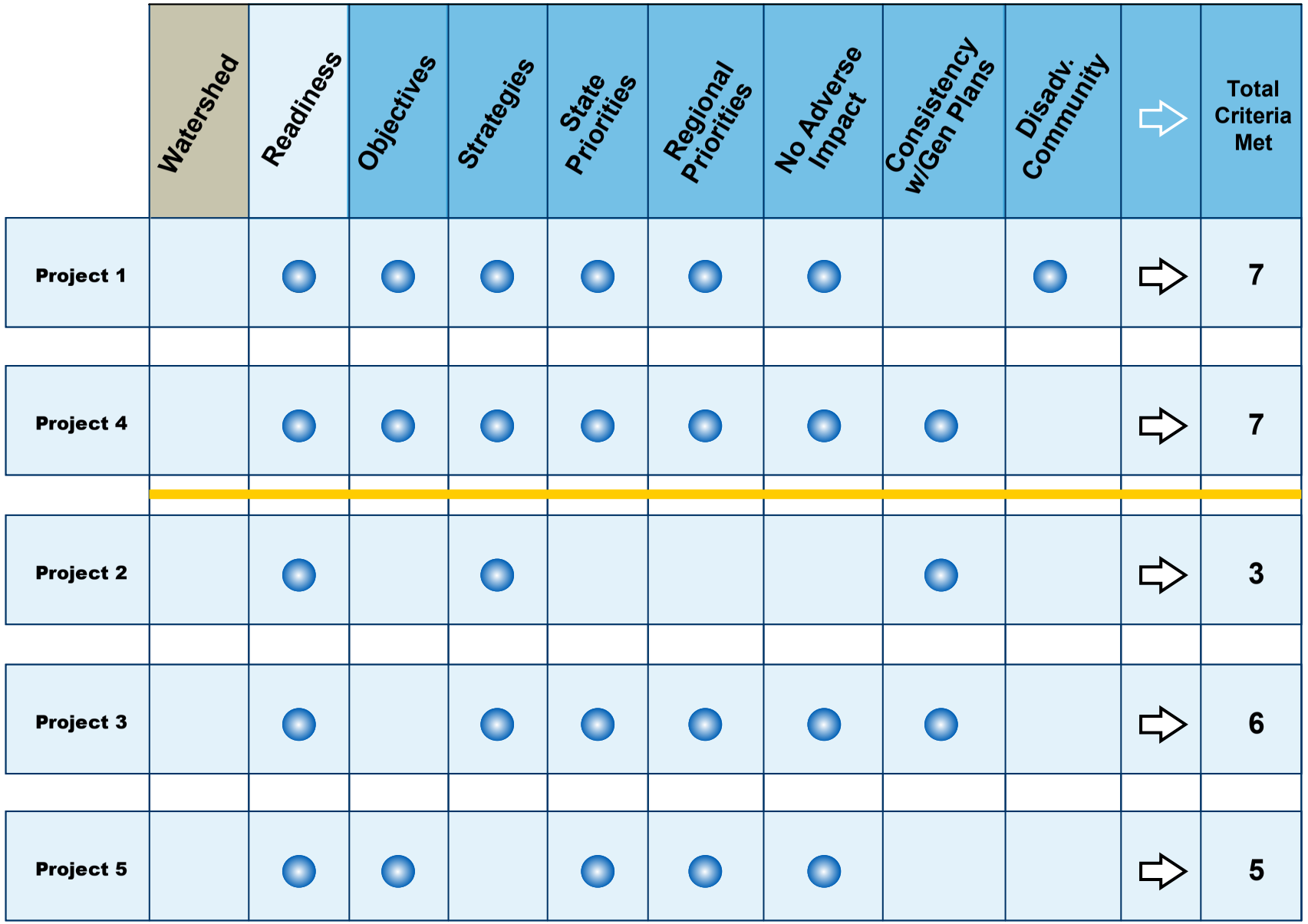

FIGURE 8-2
PROJECT EVALUATION PROCESS
SANTA BARBARA IRWMP

WB012007002RDD_8-1 (3/6/07)

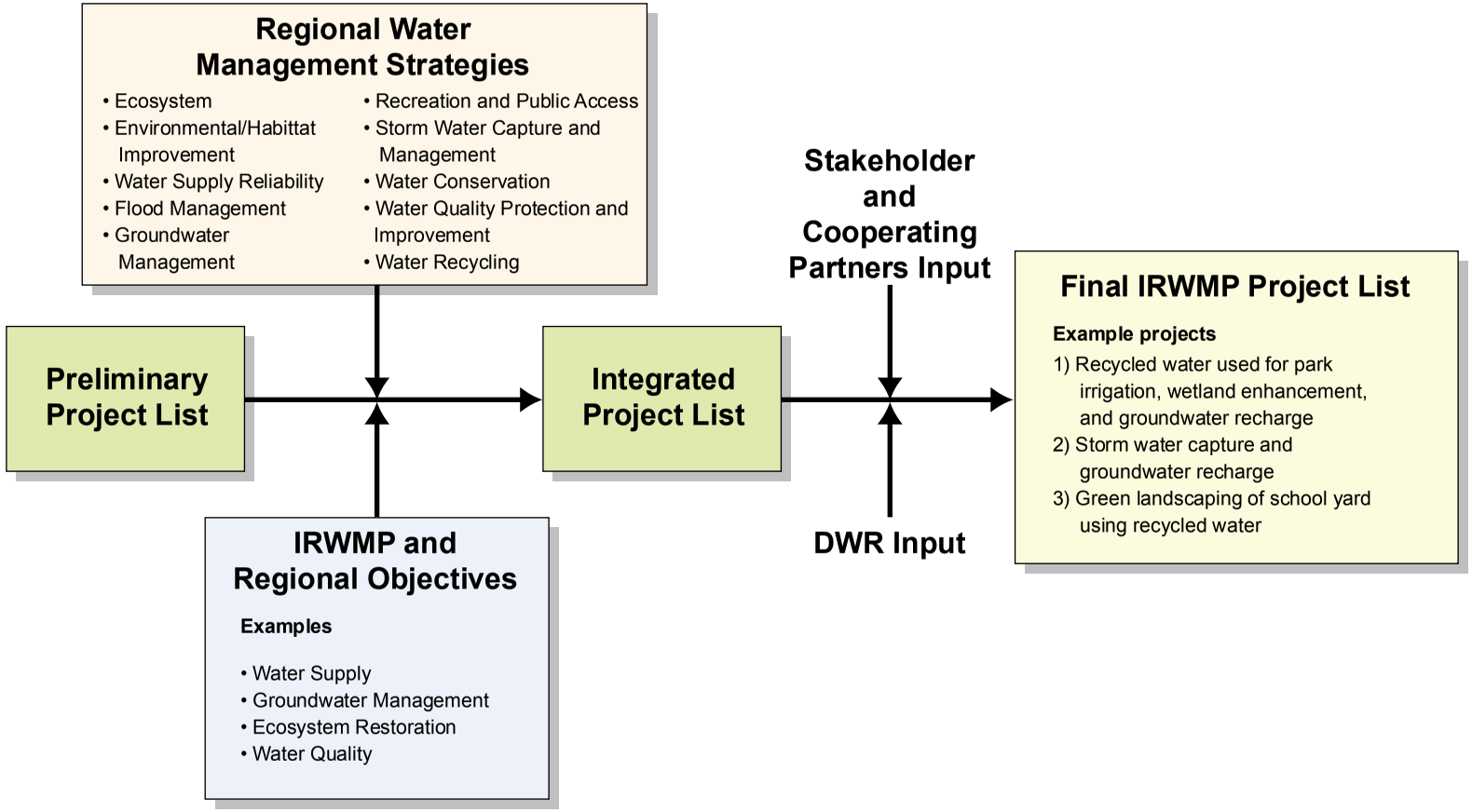

FIGURE 8-3
PROJECT INTEGRATION
SANTA BARBARA IRWMP

8.3 Descriptions of Current High Priority Projects

The projects described in detail on the following pages are currently considered to be the highest priority projects based on the evaluation process outlined above. Their locations are shown on Figure 8-1. These projects were identified by the Cooperating Partners based on their specific needs identified through technical studies, water quality monitoring, Capital Improvement Plans, Urban Water Management Plans, and other planning mechanisms; a number of projects also are required to meet regulatory standards. As such, they are considered technically feasible. Due to the number of projects included in the plan, costs for implementing each project have not been included at this time. Costs estimates for implementing specific projects will be provided as part of specific grant applications. Estimated start and end dates for each project are included in Table 8-5; the precise start dates will be dependent upon receipt of funding, with corresponding changes to the end dates.

TABLE 8-5
Timeline for the Implementation of High Priority Projects

No.	PROJECT NAME	2008	2009	2010	2011	2012	2013	2014	2015
1	Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups	2008 through undetermined end date							
2	Regional Water Conservation Rebates, Incentives, and Promotion	In progress and continuing							
3	Cuyama Wastewater Treatment Plant Effluent Disposal Project	2008 through 2009							
4	Cuyama Water Tower Repair Project	2008 through 2009							
5	Jalama Beach County Park Septic System Improvements	2008 through 2009							
6	Casmalia Water System Improvements Project	2008 through 2009							
7	Guadalupe Wastewater Treatment Plant Reuse Improvements Project	2008 through 2010							
8	Santa Maria Wastewater Treatment Plant Expansion	2008 through 2010							
9	Laguna County Sanitation District Wastewater Reclamation Plant Upgrade	2008 through 2010							
10	Santa Maria River Levee Reinforcement	2008 through 2012							
11	Santa Ynez River Arundo Eradication Project	2008 through 2014							
12	Quiota Creek, Fish Passage Enhancements Project	2008 through 2009							
13	Gallery Well Filtration Facility	2008 through 2009							
14	Lompoc Regional Wastewater Reclamation Plant	2008 through 2010							
15	South Coast Conduit 2nd Pipeline - Upper Reach	2008 through 2009							
16	Bluffs Sewer Relocation Project	2008 through 2010							
17	Carpinteria Creek Overhead Crossing Replacement Project	2008 through 2009							
18	Central Zone Transmission Main/ASR Demonstration Well	2008 through 2011							
19	Recycled Water Feasibility Study	2008 through 2009							
20	Braemer Area Sewer Extension Project	2008 through 2009							
21	El Estero Swale Restoration Project	2008 through 2009 [1]							
22	Elings Park Solid Waste Assessment Test-Corrective Action Plan	2008 through 2009							
23	Las Positas Storm Water Management Project	2008 through 2011							
24	Lower Mission Creek Flood Control and Rehabilitation Project		2009 through 2014						
25	Old Mission Creek Storm Water Management and Restoration Project	2008 through 2009							
26	Fairview Avenue Sewer Line Installation Project				2011 through 2015				
27	Mattorral Way Creek Aerial Crossing Sewer Replacement Project	2008 through 2009							
28	Modoc Road New Sewer Line Installation Project				2011 through 2015				
29	Water Reclamation Facility 2007 Refurbishment Project	2008 through 2009							
30	ASR Well Rehabilitation and Construction Project		2009 through 2010						
31	Backwash Tank Replacement at 4 Wells Project	2008 through 2009							
32	Cathedral Oaks Pipeline Replacement Project			2010					
33	Corona Del Mar Water Treatment Plant – Sedimentation Basin Effluent Upgrades Project	2008 through 2009							
34	Downstream Reservoir Meters Project	2008 through 2009							
35	Interconnect with City of Santa Barbara Project	2008 through 2009							
36	Blended Irrigation Project	2008 through 2009							
37	Iron and Manganese Removal Plant Project	2008 through 2009							
38	Non-Storm Water Diversion, Isla Vista		2009 through 2010						
39	Las Vegas and San Pedro Creeks Flood Control Improvements	2008 through 2012							
40	San Jose Creek Flood Control Improvements	2008 through 2011							

LEGEND
In Progress and Continuing
Timeline

Funding assumed available October 1, 2008.

[1]The project can be implemented as soon as there is concurrence among various agencies regarding the resolution of issues associated with hazardous materials onsite.

Project Number and Name

No. 1 Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups

Project Sponsor

Southern San Luis Obispo and Santa Barbara Counties Agricultural Watershed Coalition

Watershed

All

Project Description

This project will fund seed money to form watershed working groups for the lower Santa Maria River/Oso Flaco Waterbodies, Santa Ynez River and the South Coast Beaches for the express purpose of managing the TMDL process in these watersheds. Fecal coliform, nitrate, and ammonia TMDLs for Santa Maria River Oso Flaco are in progress. Also, the following TMDLs are being investigated: Santa Barbara County Beaches Bacteria, Santa Maria River Pesticides and Santa Ynez River Nutrients. All of the above named TMDLS are scheduled to occur in the next 3 to 8 years. All TMDLs will require a substantial investment of resources from a variety of agencies, special districts, irrigated agriculture, ranchers and the general public. TMDLs have the potential to become controversial. Generally, the more controversial and contentious, the more expensive the process. Watershed working groups have the potential to create a collaborative approach to solve a specific set of problems as well enable disparate interests to formally chart a strategic course.

Need for the Project

At present, there are no organized watershed working groups organized on these specific waterbodies. There are watershed working groups on subwatersheds such as the Oso Flaco, Gaviota, San Jose, Carpinteria Creek, and Rincon Creek Watershed Working Groups. Consequently, there are no overarching vehicles to approach the larger TMDL process in a strategic and cost effective manner. Additionally, without formal, watershed working groups, it will very difficult to pursue outside funding sources to pay for professional fees or special projects.

Estimated Start and End Date

2008 through 2015

Potential Funding Sources

Grant funding will be used to form initial watershed working groups. The working groups will then pursue specific funding to pay for watershed specific projects.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

Aquatic life, wildlife, and birds will benefit from improved water quality as a result of the TMDL process. Drinking water supplies from nearby wells will be safeguarded by reducing surface water sources of contamination. Pathogen exposure of surfers and other people taking part in water recreation activities will be reduced along the South Coast of Santa Barbara County. Water quality will be improved at several state and county parks. Other projects may be an indirect result of the formation of watershed working groups.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement TMDLs

Implement RWQCB Watershed Management Initiative

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 2 Regional Water Conservation Rebates, Incentives, and Promotion

Project Sponsor

Water Purveyors and the County Water Agency

Watershed

All watersheds

Project Description

The program aims to generate water savings and achieve actual reduction in overall demand as well. Program elements include rebates for plumbing fixtures, irrigation devices, and new technology to promote conservation. The program rebates, incentives and promotions can apply in multiple sectors: residential, commercial, municipal, and industrial, depending on the specific rebate or incentive. Current demand is below 14,000 AFY, compared to demand of 16,300 AFY in 1988 when the current program began to be developed.

Need for the Project

Although water conservation programs have been in place and effective within Santa Barbara County, there remains considerable opportunity for new and expanded programs in all parts of the region, especially using rebates, incentives, and other promotions. The most promising sectors for such programs are in the commercial, industrial, and municipal sectors.

Estimated Start and End Date

In progress and continuing

Potential Funding Sources

Water rate revenue from participating purveyors with potential augmentation from grants, especially from Reclamation

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

Conservation not only offsets the need for additional water supplies, but also reduces costs associated with ordering water deliveries or reactivating water supply projects, and reduces the amount of additional transfers required from other parts of the state. Conserved water also means more water available for other purposes, such as environmental needs.

Statewide Priorities Addressed

Help achieve CALFED Bay Delta program goals

Project Number and Name

No. 3 Wastewater Treatment Plant Effluent Disposal Project

Project Sponsor

Cuyama Community Services District

Disadvantaged Community

Yes

Watershed

Cuyama

Project Description

The project involves installation of two percolating ponds for effluent disposal.

Need for the Project

NPDES Permit requires that Cuyama Community Services District complies with Effluent Limitation No. D.1. by May 31, 2007. If the District continues to dispose of effluent by discharging into Salisbury Creek, the result will be mandatory penalties, and the permit will not be renewed.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Grant funds, a waiver from matching funds is also being sought

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

Installation of appropriate effluent disposal mechanisms will guarantee protection of the environment downstream and ensure that the rate-paying customers, who are members of a DAC, are receiving service.

Statewide Priorities Addressed

Implement TMDLs

Implement SWRCB's Nonpoint Source Pollution Plan

Address environmental justice concerns

Project Number and Name

No. 4 Water Tower Repair Project

Project Sponsor

Cuyama Community Services District

Disadvantaged Community

Yes

Watershed

Cuyama

Project Description

The elevated water tower, which stands 100 feet tall, requires complete repair to the interior and additional repair to the exterior for its operation to continue. Cleaning and coating will be done, and new electric pump controls will be installed.

Need for the Project

The water tower is over 50 years old, and it has never been serviced. It provides the pressure for the water to the New Cuyama Townsite. If it is not repaired, it will reach the point where it will not function.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

Grant funds, a waiver from matching funds is also being sought

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

The water tower is an essential element of the Cuyama water supply, and its repair will allow water service to continue to this DAC.

Statewide Priorities Addressed

Address environmental justice concerns

Project Number and Name

No. 5 Jalama Beach County Park Septic System Improvements

Project Sponsor

Santa Barbara County Parks Department

Watershed

Santa Ynez

Project Description

Replace undersized septic tanks at eight locations within Jalama Beach County Park

Need for the Project

Installation will increase wastewater retention time in tanks, thus reducing the amount of solids entering the leach field system, particularly during peak use season. Existing leach fields risk becoming saturated under current conditions, causing park restrooms to close to preclude leach field overuse and contamination from surfacing wastewater.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

Proposition 50 Clean Beach Initiative Program

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

The project will continue to ensure that water quality in nearby Jalama Creek and the ocean is protected, and it will enhance recreational opportunities by keeping the park restrooms functional.

Statewide Priorities Addressed

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 6 Casmalia Water System Improvements Project

Project Sponsor

Casmalia Community Services District

Disadvantaged Community

Yes

Watershed

Santa Maria

Project Description

The town of Casmalia uses a well located approximately 4.5 miles north of the town off Black Road just north of Highway 1. The project involves the design and construction for replacement of water pipelines and tank facilities to replace deficient infrastructure, upgrading electrical building and facilities to comply with code requirements, and improvements to the existing well facility. The service connections will also be upgraded or replaced.

Need for the Project

Casmalia's water supply system is in serious need of upgrades in order to meet regulatory requirements and protect public health. Water samples collected in November 2006 indicated the presence of both total coliform and E. coli bacteria, and all residents were directed to boil their water before drinking it. The community of Casmalia was started as a company town with the water well and distribution system owned by the Casmite Corporation. The Casmite Corporation no longer operates these facilities, and therefore would like to transfer them to the Casmalia Community Services District, which to date only operates the service connections. In order to transfer the facilities, upgrades to comply with design and code requirements are necessary as well as a new distribution system located in legal rights-of-way. Once the complete system is updated and functional, the Casmalia Services District can take over full water service operation.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Grant funds

Percent of Matching Funding that Will Be Provided

Casmalia is a DAC, and a waiver from the matching funds requirement is being sought.

Regional and Local Benefits

The project is essential to providing Casmalia, a DAC, with a safe, secure water supply that is managed in an efficient manner. This project will also provide a public health improvement with respect to management and regulation.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Address environmental justice concerns.

Project Number and Name

No. 7 Guadalupe Wastewater Treatment Plant Reuse Improvements Project

Project Sponsor

City of Guadalupe

Disadvantaged Community

Yes

Watershed

Santa Maria

Project Description

The project will consist of (1) treatment improvements, (2) new effluent transfer capabilities, and (3) potential improvements at a 20-acre wetland site located within city limits. Treatment improvements will consist of alterations to the lagoon treatment process to limit effluent total suspended solids caused by algae growth. These improvements are currently under study, but may include headworks improvements, increased lagoon mixing, a chemically enhanced settling process, or lagoon covers. New effluent disinfection capability will be accomplished using either sodium hypochlorite chlorination, or ultraviolet disinfection. Effluent transfer capabilities will include piping and valve improvements to the existing effluent discharge location, and a new transfer pump station and approximately 3 miles of new pipeline routed to the wetland site. Improvements at the wetland site are being studied, but may include flow control structures and enhancements for public use.

Need for the Project

The project is intended to accomplish the following: (1) Allow compliance with effluent requirements for total suspended solids during periods when algae growth challenges compliance capability; (2) provide effluent disinfection to improve the health and safety of people and animals potentially coming in to contact with areas where effluent has been applied; and (3) increase opportunities for effluent reuse beyond the single application area currently employed. A planned use is for wetland enhancement within the city limits.

Estimated Start and End Date

Phase I: 2008 through 2009

Phase II: Completion - 2010

Potential Funding Sources

Local match from development impact fees

Percent of Matching Funding that Will Be Provided

30 percent

Regional and Local Benefits

The project will improve effluent quality in the City of Guadalupe, a DAC, and will improve health and safety at the sites where effluent is applied, through enhanced suspended solids removal and effluent disinfection. In addition, the introduction of additional water to the 20-acre wetland will improve this unique habitat site and provide a beneficial and attractive enhancement to the downtown Guadalupe area, potentially increasing tourism and development.

Statewide Priorities Addressed

Address environmental justice concerns.

Reduce water user conflicts/resolve water rights disputes

Implement floodplain management task force recommendations

Implement recycling task force recommendations

Project Number and Name

No. 8 Wastewater Treatment Plant Expansion

Project Sponsor

City of Santa Maria

Watershed

Santa Maria

Project Description

Revision to the current permit to allow for greater permitted flow, environmental review and completion of the expanded preliminary and final facility design, in order to begin construction in 2008. The project also includes a new wastewater supervisory control and data acquisition system. The actual construction will be budgeted in the next 2-year budget cycle, commencing in 2008 and projected for completion in 2010, at which point in time we expect the expanded facilities to be able to accommodate a 12.5 mgd flow capacity. Facilities envisioned for construction include, but are not limited to: new ponds for sludge drying and percolation, augmented pretreatment facilities, a new primary clarifier and trickling filter, standby power equipment, an updated telemetry system, and rehabilitation/reconstruction of infrastructure using outdated technology.

Need for the Project

The current daily flow at the wastewater treatment plant ranges from 8.5 to 9.0 million gallons per day (mgd) approaching the permitted capacity of 9.5 mgd. Phase I of the plant expansion, completed in 1997, increased the capacity by 3 million gallons and incorporated a new SCADA system, construction of head works, a sludge thickener, and additional drying beds. In order to maintain service levels, sustain current growth, and protect public health, the capacity of the facility must be elevated to 10.5 mgd by 2007 and to 12.5 mgd by 2010. The wastewater treatment plant expansion continues a long-term Utilities Master Plan project that meets the City's wastewater needs through 2016. Completion of this project maintains service levels, sustains projected growth, and protects public health.

Estimated Start and End Date

Construction will be completed in two phases. The first phase will begin in 2008, and the second will begin as soon thereafter as necessary to stay ahead of projected growth in the City. Both phases should be completed before the end of 2010.

Potential Funding Sources

The City matching funds will be paid from revenues procured from the collection of growth mitigation fees. The fees that will be used are those collected as conditions to the permits issued in the orderly development of Santa Maria.

Percentage of Matching Funds that Will Be Provided

50 percent

Regional and Local Benefits

Improvement of groundwater quality within the basin underlying the wastewater treatment plant.

The wastewater treatment plant is the central facility for treatment of sewage collected from rural development throughout Santa Barbara and San Luis Obispo counties. The City uses micro turbines to convert methane (a byproduct of sludge digestion in wastewater treatment) into electricity to reduce demand for energy from the grid. The project will initially include at least eight new percolation ponds. These ponds will be used to recharge the Santa Maria Groundwater Basin with resource of quality superior to the background with respect to total dissolved solids (TDS). The City has augmented the permanent open space in the valley by purchasing 260 acres of land for development as an open network of ponds and lagoons.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement TMDLs

Implement RWQCB Watershed Management Initiative

Implement recycling task force recommendations

Project Number and Name

No. 9 Laguna County Sanitation District Wastewater Reclamation Plant Upgrade

Project Sponsor

Laguna County Sanitation District

Watershed

Santa Maria

Project Description

The project involves plant capacity improvements and upgrades to facilitate treatment of wastewater and discharge of recycled water. The District provides wastewater, treatment, and disposal services to the Orcutt and southern unincorporated Santa Maria areas. The District's method of discharge has always been through the reuse of treated wastewater. Recently, the District completed an upgrade to reduce salt in the discharge and increase treatment to tertiary levels in order to comply with regulatory requirements and reuse water for enhanced beneficial uses. The proposed improvements will expand capacity by adding additional tertiary treatment and disinfection processes as well as new discharge distribution facilities.

Need for the Project

The District is anticipating significant growth in the very near future pursuant to the County's Orcutt Community Plan. An expansion from 3.7 million gallons per day (mgd) to 5.5 mgd is anticipated in 2010.

Estimated Start and End Date

Detailed planning and permit review is expected to begin in 2008. Construction is anticipated from 2009 to 2010.

Potential Funding Sources

Grant funds and Connection Fees (developer impact fees).

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

The plant has a capacity of 3.7 mgd (4,145 AFY). The project will increase the capacity to 5.5 mgd (6,161 AFY). Current flow is 2.4 mgd (2,689 AFY) and the projected flow is 4.8 mgd (5,377 AFY) by 2019. 100 percent of the water is recycled.

The project will benefit water supply, water reuse, salt removal, water quality, drought protection, and potentially groundwater recharge.

Statewide Priorities Addressed

Implement recycling task force recommendations

Project Number and Name

No. 10 Santa Maria River Levee Reinforcement

Project Sponsor

Santa Barbara County Flood Control District

Watershed

Santa Maria

Project Description

The project includes modifications to the Santa Maria River Levee. The first phase would place a sheetpile wall, or other alternative, along the length of the Santa Maria River Levee between Suey Crossing and U.S. Highway 101, a distance of approximately 3,300 feet.

Need for the Project

The 24-mile-long Santa Maria River Levee, constructed of sand with a rock rip rap facing, has degraded over the 40 years since its completion in 1963. Degradation has reached the point of reducing the effectiveness of the levee in withstanding the forces of the river and increasing the risk of levee failure, which could flood adjacent neighborhoods as well as the City of Santa Maria.

Estimated Start and End Date

2008 through 2012

Potential Funding Sources

Grant funding

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will provide protection for people, property, and the environment from flooding.

Statewide Priorities Addressed

Implement floodplain task force recommendations

Project Number and Name

No. 11 Santa Ynez River Arundo Eradication Project

Project Sponsor

Agricultural Commissioner's Office, doing business as Santa Barbara County Weed Management Area

Watershed

Santa Ynez

Project Description

This project aims to define the extent of *Arundo donax and Tamarix spp*. on the Santa Ynez River and eradicate both species from the riparian corridor.

Need for the Project

Arundo donax and *Tamarix spp.* are noxious and invasive weeds. Both species are regulated by the California Department of Agriculture and the County of Santa Barbara Agricultural Commissioner as a noxious weed and are considered invasive by the California Invasive Plant Council. Both currently are limited in distribution on the Santa Ynez River, especially in comparison to other riparian systems in Santa Barbara County and California.

The Santa Ynez River is a major river within Santa Barbara County running along the entire width of the county. It is a primary source of water and recreation. Funding to control arundo, tamarisk, and other invasive weeds is needed to protect, restore, and conserve riparian habitat in the county before the problem gets out of hand. The County of Santa Barbara has an opportunity to control an incipient infestation, which is less expensive to control than a widespread infestation. The Santa Clara River in Ventura and Los Angeles counties serves as an example of the need for this project. The Santa Clara River is suffering from a major infestation of arundo; a multimillion dollar project is being proposed for an arundo eradication project there.

Arundo donax displaces native plants and associated wildlife species because of the massive stands it forms (Bell 1994, Gaffney and Cushman 1998). Competition with native species has been shown to result from monopolization of soil moisture and by shading (Dudley unpublished data). It clearly becomes a dominant component of the flora and was estimated to comprise 68 percent of the riparian vegetation in the Santa Ana River (Douthit, 1994). As *Arundo donax* replaces riparian vegetation in semiarid zones, it reduces habitat and food supply, particularly insect populations, for several special status species such as least Bell's vireo, southwestern willow flycatcher, and yellow-billed cuckoo (Frandsen and Jackson, 1994; Dudley and Collins, 1995). Unlike native riparian plants, *Arundo donax* provides little shading to the in-stream habitat, leading to increased water temperatures and reduced habitat quality for aquatic wildlife. At risk are protected species such as arroyo toad, red-legged frog, western pond turtle, Santa Ana sucker, arroyo chub, unarmored three-spined stickleback, tidewater goby, and southern steelhead trout, among others (Franklin, 1996). In the Sacramento-San Joaquin Delta region *Arundo donax* interferes with levee maintenance and wildlife habitat management (Perrine, personal communication).

Arundo donax is also suspected of altering hydrological regimes and reducing groundwater availability by transpiring large amounts of water from semiarid aquifers. It alters channel morphology by retaining sediments and constricting flows, and in some cases may reduce stream navigability (Lake, personal communication, TNC 1996).

Dense growth presents fire hazards, often near urbanized areas, more than doubling the available fuel for wildfires and promoting postfire regeneration of even greater quantities of *Arundo donax* (Scott, 1994; Gaffney and Cushman, 1998). Uprooted plants also pose clean-up problems when deposited on banks or in downstream estuaries (Douthit, 1994) and during floods create hazards when trapped behind bridges and other structures. Although often planted for erosion control, *Arundo donax* can promote bank erosion because its shallow root system is easily undercut and bank collapse may follow.

Continued on next page

No. 11 Santa Ynez River Arundo Eradication Project, continued

There is debate as to whether *Tamarix spp.* is a consequence (Anderson, 1996) or a cause (Lovich and de Gouvenain, 1998) of environmental changes associated with its presence and proliferation. Regardless, the presence of *Tamarix spp.* is associated with dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition, and native wildlife diversity. Geomorphological impacts include trapping and stabilizing alluvial sediments, which results in narrowing of stream channels and more frequent flooding (Graf, 1978). *Tamarix spp.* has been blamed for lowering water tables because of its high evapotranspiration rate, and, on a regional scale, dense *Tamarix spp.* groves use far more water than native riparian plant associations (Sala et al., 1996).

Soil salinities increase as a result of inputs of salt from glands on *Tamarix spp.* leaves. The dome-shaped glands consist of at least two cells embedded in the epidermal pits (Decker, 1961). Increased salinity inhibits growth and germination of native riparian species (Anderson 1996). Leaf litter from drought-deciduous *Tamarix spp.* increases the frequency of fire. *Tamarix spp.* is capable of resprouting vigorously following fire and, coupled with changes in soil salinity, ultimately dominates riparian plant communities (Busch, 1995).

Although *Tamarix spp.* provides habitat and nest sites for some wildlife (for example, white-winged dove, *Zenaida asiatica*), most authors have concluded that it has little value to most native amphibians, reptiles, birds, and mammals (Lovich and de Gouvenain, 1998).

Estimated Start and End Date

2008 through 2014

Potential Funding Sources

County of Santa Barbara, California Department of Fish and Game, U.S. Fish and Wildlife Service, National Fish and Wildlife Foundation, DWR

Percent of Matching Funding that Will Be Provided

30 percent

Regional and Local Benefits

The increasing spread of invasive weeds is a pressing concern throughout Santa Barbara County, and this is one of a number of efforts to eradicate such species in sensitive riparian habitats. The weeds are detrimental to habitat and water conservation and increase the risk of flooding and erosion in riparian systems. They displace native plants thus degrading habitat and reducing biodiversity. They use more water than native plants and increase the risk of fire, flooding, and erosion along riparian areas. Additionally, the Santa Ynez River has regional significance as one of the major rivers in the county, serving as a source of water, recreation, and habitat for a number of listed fish and bird species. Control of both arundo and tamarisk will benefit water quality, water use/groundwater, flood control, farming, recreation, and resource management. The Santa Ynez River is designated as a Critical Coastal Area (CCA).

Statewide Priorities Addressed

Implement floodplain task force recommendations

Project Number and Name

No. 12 Quiota Creek, Fish Passage Enhancements Project

Project Sponsor

Cachuma Conservation Release Board/Santa Ynez River Water Conservation District Improvement District No. 1

Watershed

Santa Ynez

Project Description

The project involves improvement of endangered steelhead passage on Quiota Creek by replacing two temporary bridges on Refugio Road that have damaged low flow (Arizona) crossings below, with prefabricated bridges that span the entire creek and re-grade the stream channel to restore natural conditions. This project is part of a broader watershed-scale planning effort that encompasses a comprehensive analysis of nine low flow passage impediments on Quiota Creek and proposed alternatives for each crossing considering passage flows, migration barriers, design criteria, and cost.

Need for the Project

There are two significant reasons to implement this project. First, the current Santa Ynez River steelhead run is estimated at 100 to 200 fish – perhaps the largest remaining population of southern steelhead, which was federally listed as endangered in 1997. These fish depend on the tributaries downstream of Bradbury Dam for spawning and rearing habitat. The quality of the lower watershed habitat is limited, however, by factors such as low surface flows, high water temperatures, passage impediments, sedimentation and lack of streamside canopy. Quiota Creek contains some of the best habitat in the Lower Santa Ynez River watershed, but fish have limited access due to passage impediments from low flow crossings along Refugio Road. Modifications of these impediments will open up approximately 3 miles of excellent stream habitat for steelhead. Removal of all nine Quiota Creek passage impediments was recommended in the Lower Santa Ynez River Fish Management Plan published in October 2000.

The second reason is that Refugio Road is an important access road for landowners along Quiota Creek, as well as for those residing at the top of the coastal mountains and on the coastal side of the watershed. The road is essential for fire fighting efforts and serves as a critical escape route for local landowners during emergencies such as fire, flood, or landslide. Providing local residents with a safe and reliable road is an important objective of the project and for the County of Santa Barbara.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

California Department of Fish and Game, Fisheries Restoration Grant Program, California Coastal Conservancy, National Marine Fisheries Service, and Cachuma Member Agencies

Percent of Matching Funding that Will Be Provided

20 percent

Regional and Local Benefits

The project will improve riparian and riverine environments along 1.3 miles of stream channel and improved access to approximately 3 miles of habitat for migrating steelhead/rainbow trout. The project also will offer reduced erosion potential and improved riparian corridor connectivity. The Lower Santa Ynez River Fish Management Plan identified improvements throughout the region that would improve steelhead habitat, including the removal of fish barriers along Quiota Creek. This project is part of a broader watershed-scale planning effort and, thus, will contribute to the improvement of steelhead habitat throughout Santa Barbara County. Improved riparian corridor is also a regional benefit. The proposed permanent bridges will help keep Refugio Road open during storm events. Refugio Road links the South Coast with the Santa Ynez Valley and is an important County access road for landowners and a critical access road for emergency vehicles, as well as an egress for residents during any type of emergency.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement RWQCB Watershed Management Initiative

Implement State Species Recovery Plan

Project Number and Name

No. 13 Gallery Well Filtration Facility

Project Sponsor

Santa Ynez River Water Conservation District Improvement District No. 1

Watershed

Santa Ynez

Project Description

The proposed Gallery Well Filtration Facility Project involves the construction of a packaged filtration facility inclusive of infrastructure designed to produce a capacity of 1 MGD (700 gpm) approximately matching the production of an existing Gallery Well. In addition to complying with the Department of Health Service (DHS) requirements to filter water under the Surface Water Treatment Rule, the Gallery Well Filtration Facility will control the Trihalomethamne (THM's) and meet the appropriate stage 2 disinfectant/disinfection by-product standard which will allow the District to provide potable water to its customers from a well that has been inactive.

Need for the Project

The Department of Health Services (DHS) requires filtration of all surface water sources and groundwater under the influence of surface water. The existing Gallery Well noted in this project is located within the Santa Ynez River alluvium basin and has been classified by DHS as a source requiring filtration. Since there are no filtration facilities within the District, the Gallery Well's production has been curtailed due to its lack of compliance with the EPA/DHS Surface Water Treatment Rule. Lack of production at this site has resulted in the indefinite suspension of 515 acre-feet per year of water production. Additionally, the District may not utilize the Gallery Well or Lake Cachuma source at any time without any additional filtration and disinfection treatment facilities being constructed in full compliance with the Surface Water Treatment Rule.

In 2004, the Santa Ynez Band of the Chumash Indians brought on-line its wastewater treatment plant, which treats .15 mgd. Effluent is discharged into Zanja de Cota Creek, which is a live stream tributary to the Santa Ynez River. The Gallery Well is located downstream of the confluence of the Zanja de Cota Creek and Santa Ynez River. Because of its Federal sovereign status, the Santa Ynez Band of the Chumash Indians only complies with Federal EPA standards with no State or local control. Filtration is needed to protect all District alluvium wells in the Santa Ynez River downstream of this new facility.

Estimated Start and End Date

2008 though 2009

Potential Funding Sources

Funding for this project will come from Prop 50 grant funding and the District's Construction Reserves.

Percentage of Matching Funds that Will be Provided

10 percent

Regional and Local Benefits

Reduction of THM's and UV disinfection will provide safeguards against water quality upstream.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Help meet Delta Water Quality Objectives/

Implement RWQCB Watershed Management Initiative

Implement recycling task force recommendations

Project Number and Name

No. 14 Lompoc Regional Wastewater Reclamation Plant

Project Sponsor

Vandenberg Village Community Services District

Watershed

Santa Ynez

Project Description

Upgrade the Lompoc Regional Wastewater Reclamation Plant to improve reliability and meet new, more stringent discharge requirements. Upgrade treatment level from secondary to tertiary (including nutrient removal). Construct two new oxidation ditches and three new secondary clarifiers. Replace influent pumping station and sludge thickening equipment. Replace the current chemical disinfection system with an ultraviolet disinfection system. Install a new supervisory control and data acquisition system.

Need for the Project

The plant was constructed in 1974 as a regional facility to treat wastewater from the City of Lompoc, Vandenberg Village, and Vandenberg Air Force Base. It has performed well but it is old and needs to be rehabilitated and upgraded. Vandenberg Village Community Services District depends on the regional plant to treat all the wastewater from Vandenberg Village, a civilian residential community of 6,000 people (only 2,400 ratepayers). A long-term agreement with the City of Lompoc conveys 17.8 percent of the plant capacity rights to the Vandenberg Village Community Services District. The District is required to fund 17.8 percent of capital improvements to the plant. The estimated construction cost of this project is $87.4 million making the District's 17.8 percent share $15.6 million. This places considerable financial strain on a relatively small number of ratepayers.

Estimated Start and End Date

2008 through 2010

Potential Funding Sources

User fees will pay for the 10 percent matching funding for this project, and all subsequent operations and maintenance expenses for the plant.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will improve the quality of the wastewater which is treated at the plant and then discharged into the San Miguelito Creek (a tributary to the Santa Ynez River). It will benefit the habitat of the river, downstream recreational users, and the Lompoc Groundwater Basin. About 90 percent of the treated wastewater percolates into this basin, which serves as the primary source of water supply for City of Lompoc, Vandenberg Village, and Mission Hills.

Statewide Priorities Addressed

Implement TMDLs

Project Number and Name

No. 15 South Coast Conduit 2nd Pipeline - Upper Reach

Project Sponsor

Cachuma Operation and Maintenance Board

Watershed

South Coast

Project Description

The 2nd Pipeline Project will improve the reliability, integrity, and capacity of the South Coast Conduit. This project consists of installing 7,800 feet of 48-inch pipe in the vicinity of the existing 48-inch South Coast Conduit and connecting the three control structures in this reach. This second pipeline will facilitate maintenance of the original pipeline, create redundancy, and increase the South Coast Conduit capacity to original design levels to better meet the water supply needs of the South Coast communities.

Need for the Project

The 2nd Pipeline Project will improve the reliability, integrity, and capacity of the South Coast Conduit. The South Coast Conduit is the primary source of water for the 200,000 residents of the South Coast communities of Santa Barbara County. This system delivers water from Lake Cachuma through the Tecolote Tunnel to the South Coast Member Units (the City of Santa Barbara, Goleta Water District, Montecito Water District, and Carpinteria Valley Water District) through 26 miles of pipeline from Goleta to Carpinteria. The South Coast Conduit was installed in the 1950s and is constructed of reinforced concrete pipe. Over the years of service, the South Coast Conduit has been mostly trouble-free, but recently significant maintenance needs have been identified. One section of the South Coast Conduit is of primary concern; this section consists of 7,800 feet of 48-inch pipe and connects the South Portal of the Tecolote Tunnel to the Corona Del Mar Water Treatment Plant. The current plan is to add a second section of pipeline in the vicinity of the existing South Coast Conduit. This will allow continued water deliveries to be made through the existing pipeline with minimal interruptions during construction of the new pipeline. The new pipeline will improve system reliability by constructing a new modern pipeline with greatly improved integrity. It will improve long-term reliability by allowing either pipeline to be removed from service for maintenance without interruption of water deliveries through the other pipeline. This will facilitate improved maintenance and will reduce the number of unscheduled shutdowns due to emergency repairs. The increased capacity will help with delivery issues that have occurred over the last 30 years and as other infrastructure ages this added capability will greatly increase the reliability of the water supply to these communities. The improved South Coast Conduit reliability, redundancy, and capacity will ensure the ability of the South Coast Conduit to meet the current and future water demand requirements of the South Coast communities.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Local Member Unit Assessments, Long-term Capital Improvements Loan, and grant funding

Percent of Matching Funding that Will Be Provided

15 percent

Regional and Local Benefits

As noted above, the South Coast Conduit is the primary source of water for the 200,000 residents of Santa Barbara County South Coast communities. The 2nd Pipeline Project will improve the South Coast Conduit reliability, redundancy, and capacity will ensure the ability of the South Coast Conduit to meet the current and future water demand requirements of the South Coast communities.

Statewide Priorities Addressed

Reduce water user conflicts/reduce water rights disputes

Project Number and Name

No. 16 Bluffs Sewer Relocation Project

Project Sponsor

Carpinteria Sanitary District

Watershed

South Coast

Project Description

The project includes (1) relocation of approximately 6,000 linear feet of existing gravity sewer pipeline from the current location along edge of Carpinteria Bluffs to within Carpinteria Avenue, and (2) reconstruction of the inverted siphon crossing under Carpinteria Creek at Carpinteria Avenue. This pipeline is exposed within the creek bed, and flow has been temporarily diverted to another pipeline to prevent the discharge of sewage in the event the siphon is physically damaged.

Need for the Project

The existing sewer pipeline is located along the top edge of the Carpinteria Bluffs. A significant portion of the pipeline corridor is located within Environmentally Sensitive Habitat (coastal sage scrub). The pipeline is subject to surface erosion and has failed on at least one occasion, causing discharge of raw sewage to the Pacific Ocean. This failure required emergency realignment and construction within the banks of Garrapata Creek. The existing pipeline is difficult to access for maintenance and emergency response. Relocation to Carpinteria Avenue would significantly reduce the failure threat and would remove the sewer infrastructure from the Carpinteria Bluffs. The new pipeline would be easily accessible for maintenance purposes. Replacement of the inverted siphon crossing of Carpinteria Creek would remove the existing exposed pipe, which may be a barrier to the passage of southern steelhead trout. The new siphon would be more reliable and would have a lower potential for blockages and resultant sewer overflows into Carpinteria Creek.

Estimated Start and End Date

2008 through 2010

Potential Funding Sources

Development Impact Fees from future users (for example resort development), grant funding, and limited capital improvement funds.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

The Carpinteria Bluffs Preserve is important to the Santa Barbara region; local citizens joined with the Land Trust for Santa Barbara County and raised the money to purchase the land, which contains walking trails, a bikeway, and a 6-acre area for soccer and baseball fields. The Carpinteria Bluffs also contain undisturbed grasslands and coastal sage that serve as foraging grounds for birds. This project will eliminate the potential for pipe failure and sewage discharge to the Carpinteria Bluffs, Garrapata Creek, and the Pacific Ocean, benefiting ocean and creek water quality and biological resources. The removal of infrastructure will enhance the natural setting enjoyed by those who frequent the bluffs. The project also will eliminate the need to remove or impact Environmentally Sensitive Habitat for pipeline maintenance, emergency response or repair. Relocation of the pipeline will facilitate pipeline maintenance and reduce potential for sewer overflow and associated impacts to public health and the environment.

Statewide Priorities Addressed

Implement SWRCB's Nonpoint Source Pollution Plan

Help meet Delta Water Quality Objectives

Project Number and Name

No. 17 Carpinteria Creek Overhead Crossing Replacement Project

Project Sponsor

Carpinteria Sanitary District

Watershed

South Coast

Project Description

The project includes removal of an existing 14-inch diameter cast iron sewer pipe suspended over Carpinteria Creek, where it crosses a public bicycle path immediately north of U.S. Highway 101. Failure of pipe or pier supports would result in direct discharge of untreated sewage to Carpinteria Creek. Replacement of the suspended line would enhance the natural setting within the creek corridor.

Need for the Project

The existing sewer pipeline is a cast iron segmented pipe suspended over Carpinteria Creek. In addition to the visual impacts of this infrastructure on the natural setting, the suspended pipeline has a relatively high failure potential, and the resultant impacts to the Carpinteria Creek habitat are significant. The pipe has failed previously when the cable suspension system was damaged due to extreme temperatures during a brushfire. Replacement would provide for a much less vulnerable conveyance system.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Grant funding and limited capital improvement funds.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

As discussed in Section 2, Santa Barbara County creeks are at risk from a variety of factors, including sewage discharge. The project will eliminate the potential for pipe failure and sewage discharge to Carpinteria Creek. Removal of infrastructure will enhance the natural setting of the Carpinteria Creek corridor and surrounding environment. Replacement will minimize the potential for sewer overflows within this sensitive watershed. This project will have direct local benefits, but also contribute to the improvement of regional water quality and biological resources.

Statewide Priorities Addressed

Implement SWRCB's Nonpoint Source Pollution Plan

Help meet Delta Water Quality Objectives

Project Number and Name

No. 18 Central Zone Transmission Main and Aquifer Storage Recovery (ASR) Demonstration Well Project

Project Sponsor

Carpinteria Valley Water District

Watershed

South Coast

Project Description

Construct a large diameter water transmission main (18 to 22 inches in diameter) approximately 1.25 miles long connecting existing wells, Carpinteria Valley Water District distributions systems, the South Coast Conduit and a 3-million-gallon tank. Construct an ASR demonstration well and groundwater production facility with associated transmission piping.

Need for the Project

Carpinteria Valley Water District blends local groundwater with imported surface waters in order to meet state and federal health-related water quality regulations. These regulations require that water systems reduce total Trihalomethanes and Haloacetic acids to 80 parts per billion and 60 parts per billion on all of the worst sample sites in the system by 2012. In order to blend efficiently and leverage the limited groundwater supply, ultimately ensuring that that surface water entering the system will be blended with groundwater to reduce formation of TThms and Haa5s, the District has constructed a tank for groundwater storage, a new well, and a blending system. The missing piece to the current system is a transmission main that would allow the District to hook up one existing well to the new tank, a new ASR capable well, and filtration plant with some associated piping to connect to the proposed transmission main. This would provide redundancy to the system and ensure there will always be groundwater available for blending, as well as allow the District operations staff the flexibility to manage the water supply more efficiently. In addition to water quality benefits, the new system will allow the District to offset demands placed on the South Coast Conduit and Cater Treatment Plant by using local groundwater supply in high peak times rather than burdening the South Coast transmission system. Further in an emergency or natural disaster setting the District will be able to offset or provide water supply back towards the communities of Santa Barbara and Montecito as well as Carpinteria form its groundwater supply. Finally, the project is a first step in developing a potential groundwater banking project.

Estimated Start and End Date

2008 through 2011

Potential Funding Sources

Grant funds and revenues

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will complete the Carpinteria Valley Water District water system, provide redundancy, ensure groundwater availability for blending, and increase water management efficiency. The project therefore will benefit the District service area, but also will allow the District to offset demands placed on the South Coast Conduit and Cater Treatment Plant, thus providing a more regional benefit, as well. Additionally, during an emergency or natural disaster, the District will be able to offset or provide water supply to the communities of Santa Barbara and Montecito, as well as Carpinteria, from its groundwater supply. Finally, the project is a first step in developing a potential groundwater banking project. Other benefits to drinking water quality include lowered disinfectant byproduct s and improved taste and odor.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Project Number and Name

No. 19 Recycled Water Feasibility Study

Project Sponsor

Carpinteria Valley Water District

Watershed

South Coast

Project Description

The project is the study of the feasibility of developing a recycled water system in the Carpinteria Valley. The study will include an analysis of cost related to implementing a recycle project, the potential users of such a water supply, the economics of a recycled water supply verses the current and potential new water supplies, and the environmental benefits of a recycled water supply project.

Need for the Project

Carpinteria Valley is situated at the southerly end of Santa Barbara County's South Coast and receives water through the Cachuma Project, local groundwater, and the State Water Project. Reliance on local water sources can reduce continued dependence on imported water that has questionable reliability as California's water supply becomes more and more stressed. By critically looking at the feasibility of using some of the wastewater for irrigation uses, the Carpinteria Valley policy makers can better make decisions on how much to invest into this potential new water supply.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

Revenue from Carpinteria Valley Water District and grant monies.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

The project will reduce discharge of secondary wastewater into the ocean and increase water supply reliability through the creation of a new water supply. This also will reduce dependence on State Water Project water.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement TMDLs

Implement RWQCB Watershed Management Initiative

Help meet Delta Water Quality Objectives

Project Number and Name

No. 20 Braemer Area Sewer Extension Project

Project Sponsor

City of Santa Barbara

Watershed

South Coast

Project Description

The project involves extension of the City sewer system to serve approximately 100 properties not currently served by municipal sewer. A preliminary feasibility design study has been completed. The extension would include up to approximately 10,000 feet of 8-inch gravity sewer mains and up to 3,000 feet of 3-inch force mains. The area to be served is on the coastal plain adjacent to the ocean.

Need for the Project

The project would provide sewer connections for approximately 100 properties, most of which are currently occupied by single family residences served by septic systems. Some septic systems appear to be functioning adequately, while some have failed or are about to fail.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Property owner assessment, plus potential grant funding

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

Creek and ocean water contamination is a regional problem. Eliminating septic tanks through this project will remove existing sources of contamination, potentially improving creek and ocean water quality. The project will provide the infrastructure to allow approximately 100 residences to abandon septic tanks and connect to City sewer.

Statewide Priorities Addressed

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 21 El Estero Swale Restoration Project

Project Sponsor

City of Santa Barbara

Watershed

South Coast

Project Description

The project involves restoration and enhancement of a degraded wetlands and adjacent area next to El Estero Wastewater Treatment Plant. The area is classified as habitat for the southwestern pond turtle, a California Species of Concern.

Need for the Project

This project will achieve compliance with requirements under state and local wetlands protection regulations.

Estimated Start and End Date

The project will be implemented as soon as there is concurrence among various agencies regarding the resolution of issues associated with hazardous materials onsite.

Potential Funding Sources

Wastewater rate revenues and potential grant funding.

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

The loss of wetlands and habitat for special status species is a regional concern. This project will help achieve improvement in Laguna Channel water quality with wetlands restoration. Approximately 0.75 acres of habitat for southwestern pond turtle will be restored.

Statewide Priorities Addressed

Implement RWQCB Watershed Management Initiative

Implement State Species Recovery Plan

Project Number and Name

No. 22 Elings Park Solid Waste Assessment Test-Corrective Action Plan

Project Sponsor

City of Santa Barbara

Watershed

South Coast

Project Description

Elings Park is the site of one of the City's old open air dumps. Gas monitoring at the site shows methane gas above lower explosive levels. This dump was abandoned prior to the promulgation of landfill requirements. California Code of Regulations (CCR) Title 27 Section 20080(e) establishes that dumps abandoned/inactive on or before November 27, 1984, are not immediately subject to the Closure and Post-Closure Maintenance requirements of CCR Title 27. Additionally, Title 27, Section 20080(g) gives the Regional Board discretion in deciding if the persons/entity responsible for discharges of waste at the dump will be required to develop and implement a detection-monitoring program. Thus, if groundwater monitoring shows water quality is impaired, such persons/entity may be required to develop and implement an acceptable corrective action program. Depending on the level (extent and degree) of groundwater quality impairment, an acceptable corrective action program may include a proposal for the installation of a final cover system, a gas extraction system and/or the implementation of an acceptable groundwater treatment alternative.

Need for the Project

In 2005 and 2006, Solid Waste Assessment Testing Activities were performed in compliance with the above regulations and under direction from the County of Santa Barbara and the RWCQB. Groundwater monitoring reports from this project indicate that concentrations of volatile organic compound constituents were detected in groundwater samples collected from groundwater monitoring at the site. Volatile organic compound constituents detected in groundwater samples collected at the site include: benzene detected at a concentration of 1.2 micrograms per liter (µg/L); Chlorobenzene detected at concentrations of 5.3 µg/L and 3.1 µg/L; 1,4-Dichlorobenzene detected at concentrations of 5.7 µg/L (MW-3A) and 3.5 µg/L (PII1); cis-1,2-Dichloroethene detected at a concentration of 14.1 µg/L; PCE detected at a concentration of 14.8 µg/L; and TCE detected at a concentration of 4.3 µg/L. The benzene concentration detected is in excess of the drinking water MCL for benzene (1.0 µg/L). The cis-1,2-Dichloroethene and PCE concentrations detected are in excess of the drinking water MCL for cis-1,2-Dichloroethene (6.0 µg/L) and PCE (5.0 µg/L). Concentrations of other volatile organic compound constituents detected in groundwater samples collected at the site during the 4Q05 groundwater monitoring event do not exceed the applicable state drinking water MCLs for the respective volatile organic compound constituents.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

City of Santa Barbara and potential grant funding

Percent of Matching Funding that Will Be Provided

20 percent

Regional and Local Benefits

This project will lessen the impact of leachate from the dump to groundwater as well as potentially treat the groundwater, improving groundwater quality. This project will also benefit public health and safety, because this site is now a park used by numerous residents for varied purposes, including soccer, BMX, offleash dog walking, hiking, hang gliding, weddings, picnics, and summer camps. Due to the high levels of methane present, it is necessary to monthly monitor the gas levels. The project will eliminate the high methane levels.

Statewide Priorities Addressed

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 23 Las Positas Storm Water Management Project

Project Sponsor

City of Santa Barbara

Watershed

South Coast

Project Description

This is a low-impact development project that retrofits the existing Santa Barbara Golf Club with best management practices for water quality treatment and peak flow reduction. The primary purpose is to detain and treat urban storm runoff, which enters the golf course from surrounding neighborhoods, in order to improve water quality downstream in Las Positas Creek, the Arroyo Burro Estuary, and Arroyo Burro Beach.

Need for the Project

Extensive monitoring of Las Positas and Arroyo Burro creeks indicates concentrations of fecal indicator bacteria that exceed the recreational contact standards. Arroyo Burro County Beach Park, a popular beach located at the mouth of Arroyo Burro Creek, is posted frequently during low flow and storm conditions with warnings of bacterial pollution. Monitoring of storm water runoff entering and exiting the golf course shows that both sources contain high levels of indicator bacteria. Efforts to locate hotspots, such as a neighboring playground, have not helped to rule in or rule out specific sources of pollution. Elevated peak flows during storms, due to urbanization of the watershed, have led to increased erosion and sedimentation rates in Lower Arroyo Burro Creek. In addition to degrading the stream channel, high peak flows discourage the implementation of restoration or water quality improvement projects in the watershed.

Estimated Start and End Date

2008 through 2011

Potential Funding Sources

Grant funds will be pursued for construction. The City Creeks Division will fund final design and match funding for any grants that are received to construct the project. The City will identify the operating and maintenance costs during project design and set aside funds to operate and maintain the project beginning with the Fiscal Year 2008 budget.

Percent of Matching Funding that Will Be Provided

25 percent

Regional and Local Benefits

The project will treat 140 cubic feet per second, which is equal to 100 percent of a 10-year storm runoff over the 106-acre drainage area. By reducing sediments, pollutants, and peak flow rates, this project will improve water quality and beneficial uses such a recreation and wildlife habitat. Hydrology studies show that the project will reduce peak runoff volumes during 100-year storm events by over 50 percent. During smaller events; that is, up to 10-year events, the project will detain and treat nearly 100 percent of the runoff. Depending on how long storm water is detained, up to 90 percent of sediment and associated pollutants could be removed during detention. Runoff from smaller storms (approximately two per year) and nuisance flows will be treated primarily by filtration through a series of bioswales, which are predicted to remove 20 to 80 percent of suspended pollutants. Therefore, a substantial reduction in indicator bacteria concentrations is expected in flow exiting the golf course. Furthermore, reduced peak flows will decrease erosion and sedimentation downstream. Lower on Las Positas Creek, flow will be reduced by 10 percent during a 100-year event.

The project will establish native landscapes that can support bird populations and enhance the 100-acre open space of the golf course. The project will be implemented in conjunction with maintaining playability and aesthetic standards for the public golf course. The project will also serve as a demonstration on natural treatment systems for the Santa Barbara residents that use the golf course as well as school groups and other educational institutions.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement RWQCB Watershed Management Initiative

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 24 Lower Mission Creek Flood Control and Rehabilitation Project

Project Sponsor

City of Santa Barbara and Santa Barbara County Flood Control District

Watershed

South Coast

Project Description

This 1.3-mile-long project includes the removal of concrete channel walls, banks, and bed to be replaced with natural stream bed features and vegetated, stabilized banks, using the "joint planting" strategy, where live riparian cuttings are used to stabilize and reinforce the soil upon which large boulders and other natural elements are stacked. The project includes replacement of several bridges that span over Mission Creek, including Mason Street, Haley Street, Cota Street, and Ortega Street bridges.

Need for the Project

Lower Mission Creek is one of the deteriorated urban creeks in the region with the potential to provide habitat and passage for endangered species, migratory birds, and aquatic life. The project will improve and ultimately protect habitat and passage for the endangered steelhead trout and tidewater goby. Both of these endangered species have been documented and tracked in lower Mission Creek, and the opportunity to provide fish passage up the watershed has been a County and City goal for numerous years. The project will also significantly reduce flood risks for the lower urban area of Santa Barbara, improve water quality, and improve ground water percolation.

Estimated Start and End Date

2009 through 2014

Potential Funding Sources

Santa Barbara County Flood Control South Coast Zone Assessment, City Streets Program, U.S. Army Corps of Engineers, Continuing Authority Program ($7 million, maximum), and City Creeks Division (Measure B).

Percent of Matching Funding that Will Be Provided

50 to 80 percent

Regional and Local Benefits

In addition to restoring the creek channel, improving habitat, and providing fish passage up the watershed, the project also includes removal of invasive and non-native plants and trees and installation of native plants and trees. The restored stream channel will also reduce stream velocities and increase the wetland area. This not only improves water quality and habitat for aquatic life and birds, but also improves urban runoff filtration and natural treatment of pollutants.

Statewide Priorities Addressed

Implement RWQCB Watershed Management Initiative

Implement SWRCB's Nonpoint Source Pollution Plan

Implement State Species Recovery Plan

Project Number and Name

No. 25 Old Mission Creek Storm Water Management and Restoration Project

Project Sponsor

City of Santa Barbara

Watershed

South Coast

Project Description

The project includes construction of wetland detention ponds to filter storm water runoff from a 700-acre subwatershed and restoration of approximately two acres of riparian habitat along Old Mission Creek, including stabilization of 700 linear feet of creek channel, construction of 0.3 acres of new wetland habitat, and removal and replacement of non-native plants with native plants.

Need for the Project

The Old Mission Creek Storm Water Detention and Creek Restoration Project is a priority project because water quality in Old Mission Creek is high in bacteria and provides significant flow to the main Mission Creek Channel. The high bacteria levels contribute to water quality problems in Mission Creek and ultimately the city beaches, which frequently exceed the water contact standards. The project site is also located immediately downstream of an existing creek restoration project at Bohnett Park, as well as a newly constructed low flow ultraviolet water quality treatment project, providing the opportunity to link these two important habitat areas and treat all the low flow and storm water runoff within this subwatershed. In addition, the site is one of the largest floodplains available in the city to implement storm water treatment and has been identified as an ideal location for water quality treatment and restoration by a number of technical studies.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

City of Santa Barbara and IRWMP

Percent of Matching Funding that Will Be Provided

25 percent

Regional and Local Benefits

The project will result in treatment of 700 acres of urban storm water runoff with high bacteria levels. An additional benefit will result in the primary water supply to Lower Mission Creek and estuary during the low flow dry season (May through October).

The project will result in restoration of over 700 liner feet of creek channel and channel banks and will include removal of invasive non-native plants and trees and installation of native plants and trees. It will also result in construction of approximately 3 acres of new wetland habitat.

Statewide Priorities Addressed

Implement RWQCB Watershed Management Initiative

Implement SWRCB's Nonpoint Source Pollution Plan

Implement State Species Recovery Plan

Project Number and Name

No. 26 Fairview Avenue Sewer Line Installation Project

Project Sponsor

Goleta Sanitary District

Watershed

South Coast

Project Description

Install approximately 6,340 feet of new sewer line along Fairview Avenue in Goleta, Santa Barbara County. The current sewer line in this area ranging from 8 to 15 inches in diameter will be abandoned in place. The location of the new sewer pipeline will be moved to the east and placed in a less environmentally sensitive area.

Need for the Project

The length of sewer line proposing to be replaced along Fairview Avenue has a relatively high volume of inflow and infiltration of storm water into the sewer system, which will be eliminated by replacing this sewer line. The new location will be located away from a tributary to Goleta Slough which is an environmentally sensitive area and a Critical Coastal Area.

Estimated Start and End Date

2011 through 2015

Potential Funding Sources

Goleta Sanitary District Capital Project Fund and Grant Funding

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

The replacement of this sewer line will reduce inflow and infiltration of storm water that results in increased capacity for conveyance and treatment of sewage downstream, which may reduce sewer line surcharges and needs for increased capacity. It will reduce and/or eliminate the sanitary sewer overflows that have the potential to directly impact waters of the state. This project will help protect the environmentally sensitive Goleta Slough, a Critical Coastal Area, and enhance recreational activities at the Goleta Beach County Park, whose recreational activities include swimming, fishing, boating, and scuba diving.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement SWRCB's Nonpoint Source Pollution Plan

Implement recycling task force recommendations

Project Number and Name

No. 27 Mattorral Way Creek Arial Crossing Sewer Replacement Project

Project Sponsor

Goleta Sanitary District

Watershed

South Coast

Project Description

Replace the sewer pipe and bridge which crosses San Antonio Creek north of U.S. Highway 101. The existing bridge and abutments are no longer structurally sound due to earth movement, erosion, and deterioration of the concrete and steel materials.

Need for the Project

The existing bridge crossing and pipe have structural deficiencies jeopardizing the structural integrity of the sewer creek crossing. Structural failure would cause serious environmental damage to the San Antonio Creek ecosystem.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

Goleta Sanitary District Capital Project Fund and Grant Funding

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will protect the local environment from interruption raw wastewater conveyance and protect the San Antonio Creek waterway from spills resulting from structural failure affecting the sewer line.

Statewide Priorities Addressed

Implement recycling task force recommendations

Project Number and Name

No. 28 Modoc Road New Sewer Line Installation Project

Project Sponsor

Goleta Sanitary District

Watershed

South Coast

Project Description

Install approximately 5,918 feet of new sewer line along Modoc Road near Cieneguitas Creek in Goleta, Santa Barbara County. The new sewer line in this area will range in size from 6 to 8 inches in diameter.

Need for the Project

The new sewer line proposed for this area will serve a future housing project that may be developed in the area bound by Modoc Road, Vista Clara Road and Encore Drive.

Estimated Start and End Date

2011 through 2015

Potential Funding Sources

Goleta Sanitary District Capital Project Fund and Grant Funding

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

Installation of appropriate wastewater conveyance will avoid the use of septic tanks for planned developments, helping protect local environment from potential nonpoint source pollution. ‘

Statewide Priorities Addressed

Implement SWRCB’s Nonpoint Source Pollution Plan

Project Number and Name

No. 29 Water Reclamation Facility 2007 Refurbishment Project

Project Sponsor

Goleta Sanitary District

Watershed

South Coast

Project Description

Refurbish the filter valves and automated valve operators located in the reclaimed water filter process. The scope of the work will include the purchase and installation of 16 valves, valve shafts and electric valve operators.

Need for the Project

The water reclamation facility provides recycled wastewater to the Goleta Valley for primarily irrigation uses. The use of reclaimed water has reduced the demand on the potable water supplies. This project is necessary to refurbish the primary mechanical components of the reclamation filters ensuring a reliable and dependable recycled water supply.

Estimated Start and End Date

2008; will be completed within one year

Potential Funding Sources

Goleta Water District

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will ensure reliable recycled water supply reducing the demand on potable supplies. It will also provide irrigation water for parks and recreation areas throughout Goleta.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Implement SWRCB's Nonpoint Source Pollution Plan

Implement recycling task force recommendations

Project Number and Name

No. 30 ASR Well Rehabilitation and Construction Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

Rehabilitate one existing well and construct one new well, to more efficiently manage the Goleta Groundwater Basin and the Goleta Water District conjunctive use program.

Need for the Project

In order to efficiently manage the Goleta Groundwater Basin and the Goleta Water District conjunctive use program, one existing well needs to be rehabilitated and another well needs to be constructed.

Estimated Start and End Date

2009 though 2010

Potential Funding Sources

Goleta Water District general fund and grant funding

Percent of Matching Funding that Will Be Provided

40 percent

Regional and Local Benefits

This project will improve conjunctive use capability through improved efficiency of groundwater supply management.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Help meet Delta Water Quality Objectives

Implement recycling task force recommendations

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

No. 31 Backwash Tank Replacement at 4 Wells Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

The project includes replacement of undersized backwash tanks used in treatment of groundwater for four wells. When replaced, larger tanks will reduce and potentially eliminate waste of water to drain. Water used for backwash can be retreated and injected to groundwater basin and/or supplied for potable use instead of wasting.

Need for the Project

The backwash tanks are currently undersized. When replaced, larger tanks will reduce and potentially eliminate waste of water to drain. Water used for backwash can be retreated and injected to groundwater basin and/or supplied for potable use instead of wasting.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Goleta Water District general fund and grant funding

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

The project will provide conservation of water supply, offsetting potable water use and will reduce the production of wastewater.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

32 Cathedral Oaks Pipeline Replacement Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

Replace 1,800 feet of 12-inch-diameter pipe with 20-inch-diameter pipe. This project will reduce pressure losses and thereby increase volume flow to meet peak demands and emergency fire flows.

Need for the Project

Reduce pressure losses and thereby increase volume flow to meet peak demands and emergency fire flows.

Estimated Start and End Date

2010; will be completed within one year

Potential Funding Sources

Goleta Water District general fund and grant funding

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

Benefits for this project include increased emergency water supply and fire fighting capability.

Statewide Priorities Addressed

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

No. 33 Corona Del Mar Water Treatment Plant – Sedimentation Basin Effluent Upgrades Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

The proposed project will include modifications and upgrades to the District's existing Corona Del Mar Water Treatment Plant. Modifications will include:

- Replacement of deteriorated and inefficient effluent launders
- Installation of new plate settlers within the sedimentation basin
- Modification and upgrade of the combined effluent channels for improved efficiency
- Replacement of the deteriorated filter backwash troughs

Need for the Project

The District's Corona Del Mar Water Treatment Plant has been in service for over 30 years. Although upgrades to the plant have occurred over the last several years, many components of the plant are deteriorated and still in need of replacement and upgrade. The upgrades described above will significantly improve the plant efficiency and quality of water produced by the plant.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Goleta Water District Capital Improvement Project Fund and Grant Funding

Percent of Matching Funding that Will Be Provided

25 percent

Regional and Local Benefits

The proposed improvements will reduce the amount of flocculent that reaches the filters and reduce the amount of filter aid required during the filtration process. This in turn will reduce the amount of sludge produced during filter backwash.

The modifications and upgrades will result in significant improvement to the plant's overall treatment efficiency. Maintenance tasks will be simplified saving time and money. Less filter aid (chemical) will be used also reducing operating costs by approximately $5,000 annually. The project will replace several plant components that have outlived their design life, such as the launders and filter backwash troughs. This will improve reliability by replacing aging unreliable components of the plant.

Statewide Priorities Addressed

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

No. 34 Downstream Reservoir Meters Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

Install meters downstream of Goleta Water District storage reservoirs to measure area demands, determine areas of unaccounted water, minimize losses and optimize efficiency.

Need for the Project

Measure area demands, determine areas of unaccounted water, minimize losses and optimize efficiency.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Goleta Water District general fund and grant funding

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

The project will reduce loss of water in the distribution system, and optimize the efficiency of serving water which will offset needs for other sources of potable water.

Statewide Priorities Addressed

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

No. 35 Interconnect with City of Santa Barbara Project

Project Sponsor

Goleta Water District

Watershed

South Coast

Project Description

The project includes a pipeline and pump station connection between the water systems of Goleta Water District and City of Santa Barbara. This will provide the ability to supply water from one agency to the other during big peak demands and emergencies. This will also increase the amount of water that can be delivered to other agencies downstream from the City of Santa Barbara.

Need for the Project

This project provides the ability to supply water from one agency to the other during big peak demands and emergencies. It will also increase the amount of water that can be delivered to other agencies downstream from the City of Santa Barbara.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

Goleta Water District, City general fund, and grant funding

Percent of Matching Funding that Will Be Provided

50 percent

Regional and Local Benefits

Increased water supply reliability to several water districts and cities: Goleta Water District, City of Santa Barbara, Montecito Water District, and City of Carpinteria.

Statewide Priorities Addressed

Reduce water user conflicts/resolve water rights disputes

Help achieve CALFED Bay-Delta Program Goals

Project Number and Name

No. 36 Blended Irrigation Project

Project Sponsor

La Cumbre Mutual Water Company

Watershed

South Coast

Project Description

Use of nonpotable groundwater from a well exceeding iron and manganese levels by blending with water from a 31-acre lake located on a golf course, to offset the state water usage. The proposal is to install a wet well, intake structure, and variable frequency drive pump station to pump lake water into the irrigation system.

Need for the Project

The proposed lake pump house would make available a source of groundwater currently unusable for domestic use. This would further diversify the La Cumbre Water supply and free higher quality water for more appropriate uses. Currently during peak demand periods, La Cumbre Water is at full capacity. The Blended Irrigation Project would allow La Cumbre Water to meet peak demand at 62 percent capacity and provide 38 percent reserve capacity for reliability.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

La Cumbre Mutual Water Company funding and grant funding

Percent of Matching Funding that Will Be Provided

100 percent

Regional and Local Benefits

This project will provide a greater percentage of State Project Water and increased water quality water for domestic customers. It will also provide more appropriate use of lower quality water for recreational uses.

Statewide Priorities Addressed

Implement recycling task force recommendations

Project Number and Name

No. 37 Iron and Manganese Removal Plant Project

Project Sponsor

La Cumbre Mutual Water Company

Watershed

South Coast

Project Description

This project includes construction of a 2,150-gallons per minute iron and manganese removal treatment plant, treating groundwater for domestic potable water service. The source water is approximately four times limit for these parameters. Treated water would offset state water usage and provide approximately 38 percent reserve capacity for reliability to domestic users.

Need for the Project

Currently the plant is at maximum capacity in the summer time. Adding a treatment plant would create a needed margin of safety to keep up with demand if one of our wells were to fail during high peak demand periods. Currently during peak demand periods, La Cumbre Water Company is at full capacity. The Iron and Manganese Removal Plant would allow La Cumbre Water Company to meet peak demand at 62 percent capacity.

Estimated Start and End Date

2008 through 2009

Potential Funding Sources

La Cumbre Mutual Water Company funding and grant funding

Percent of Matching Funding that Will Be Provided

100 percent

Regional and Local Benefits

This project makes groundwater available for potable domestic service, offsetting imported water needs.

Statewide Priorities Addressed

Help meet Delta Water Quality Objectives

Project Number and Name

No. 38 Non-Storm Water Diversion, Isla Vista

Project Sponsor

County of Santa Barbara

Watershed

South Coast

Project Description

The project is located in Isla Vista, one of the most densely populated communities in California and home of the UCSB campus. Most runoff in Isla Vista is treated with a trash/gross solids separator. There are four such solid separators. Pollutants that are smaller than 0.185 inch are passed through the separators. These pollutants are then discharged, untreated, onto the beach. Due to commercial and residential water use (i.e., landscape overwatering, car washinig, hosing paved surfaces, etc.) low flows are discharged from the storm drain system and onto the beach on a daily basis year-round. This project will divert flows from the storm drain system into the sanitary collection system during dry periods, eliminating all non-storm water discharges and its associated pollutants. Educational signage and student-oriented information will be provided to communicate benefits of project.

Need for the Project

An unhealthy assemblage of pollutants is generated from runoff on urban surfaces. Discharges off gutters, driveways, and commercial areas occur year-round. Pollutants that are carried by these non-storm water flows range from vehicle emissions (oil drips, cleaners, copper, zinc, etc.) to food wastes and bird droppings hosed off outside areas of restaurants and bars. Regular testing of bacteria from non-storm water runoff shows elevated levels of indicator bacteria, which means beachgoers in Isla Vista are exposed to a higher risk of illness. This project will protect ocean water quality and human health at the beaches in Isla Vista during non-rainy periods.

Estimated Start and End Date

2009 through 2010

Potential Funding Sources

County of Santa Barbara's Project Clean Water program, Shoreline Preservation Fund (a UCSB student grant source)

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

Santa Barbara County is responsible for water quality in storm drain discharges in the area of Isla Vista. This project will achieve the objectives of the municipal operations section of the County's Storm Water Management Program by treating and removing pollution conveyed by the storm drain system. The protect will human health and improve ocean water quality by preventing pollutants from being discharged onto the beach. The project will improve water quality of urban runoff into the Santa Barbara Channel, an area used for fishing and water contact sports. This project addresses D-7 Water Quality Priorities related to beach closure issues and implementation of Phase II of the NPDES Storm Water Program. It also addresses Urban Management 3.6A by improving controls for existing surface water runoff through pollution prevention. The results will be quantifiable through ongoing monitoring of diverted flows.

Statewide Priorities Addressed

Implement TMDLs

Implement RWQCB Watershed Management Initiative

Implement SWRCB's Nonpoint Source Pollution Plan

Project Number and Name

No. 39 Las Vegas and San Pedro Creeks Flood Control Improvements

Project Sponsor

Santa Barbara County Flood Control District

Watershed

South Coast

Project Description

This project consists of the construction of two improved reinforced concrete box culverts along San Pedro Creek and Las Vegas Creek in Goleta.

Need for the Project

During storm events, parts of Calle Real and U.S. Highway 101 are sometimes closed, and numerous homes and businesses are subject to flooding. The cleanup costs associated with the flooding in past storm events is significant. Construction of these culverts will greatly improve the capacity of the drainage system and reduce the flood hazard to adjacent properties.

Estimated Start and End Date

2008 through 2012

Potential Funding Sources

Caltrans, South Coast Flood Zone

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will provide protection for people, property and the environment from flooding.

Statewide Priorities Addressed

Implement recycling task force recommendations

Project Number and Name

No. 40 San Jose Creek Flood Control Improvements

Project Sponsor

Santa Barbara County Flood Control District

Watershed

South Coast

Project Description

The project includes modifications to the San Jose Creek, primarily affecting the tops of the existing banks, in order to increase channel capacity.

Need for the Project

Large portions of Old Town Goleta need to be protected from risk of flooding because they are within the San Jose Creek's 100-year flood zone, an area mapped by the Federal Emergency Management Agency as a special flood hazard area.

Estimated Start and End Date

2008 through 2011

Potential Funding Sources

The City of Goleta is likely to submit this project to the Federal Emergency Management Agency for a Pre-Disaster Mitigation Grant.

Percent of Matching Funding that Will Be Provided

10 percent

Regional and Local Benefits

This project will provide protection for people, property and the environment from flooding.

Statewide Priorities Addressed

Implement floodplain management task force recommendations

9

9 Compliance with Statewide Priorities, Benefits, and Impacts from IRWMP Implementation

This section summarizes the overall compliance of Santa Barbara County's ongoing and future water management actions with the statewide priorities, describes the overall benefits that will result from the implementation of the IRWMP, as well as the beneficial and adverse impacts that could result from implementing the IRWMP, focusing on the impacts to individual environmental resources from the implementation of specific projects. This section also addresses obstacles to IRWMP implementation.

9.1 Compliance with Statewide Priorities

As described in preceding sections, the issues facing the Santa Barbara countywide region are consistent with those identified as being important to the state; and the project prioritization process considered whether individual projects included in the IRWMP complied with the statewide priorities identified in the state's Proposition 50 Guidelines. Each statewide priority identified in the Guidelines is shown below in italics, followed by a description of how the IRMWP complies with the priority. In some cases, compliance is occurring through established programs or agreements described in this IRWMP; in others, compliance will occur through the implementation of specific projects.

Reduce conflict between water users or resolve water rights disputes, including interregional water rights issues

After decades of contentious disagreements and litigation, conflicts between water users and water rights disputes are being addressed through a series of agreements, including the Cachuma Project Settlement Agreement, Upper Santa Ynez River Operations Agreement, Wright Suit Settlement, and the Santa Maria Adjudication (Section 3). Development and implementation of projects through the IRWMP will demonstrate the ability of multiple entities to work together effectively in ways that honor the water rights covered by these various agreements.

Implementation of TMDLs that are established or under development

No Total Maximum Daily Loads (TMDLs) are currently in place in Santa Barbara County; however, several are under development, including TMDLs in Santa Maria and Oso Flaco for both nitrates and fecal coliform, Santa Barbara County beaches for bacteria, Santa Maria River for pesticides, and Santa Ynez River for nutrients. Table 2-3 identifies impaired water bodies within the county, and Appendix A identifies scheduled dates for the implementation of specific TMDLs. The Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups Project, described in Section 8, will fund seed money to form watershed working groups for the lower

Santa Maria River/Oso Flaco Waterbodies, Santa Ynez River, and the South Coast Beaches for the express purpose of providing input to the TMDL process in these watersheds. Projects that will help address specific water quality impairments are shown in Table 9-1. Additionally, the IRWMP provides a mechanism for developing additional projects to address issues such as water quality concerns in the impaired water bodies.

TABLE 9-1
Projects with Linkages to TMDLs or 303(d) Listed Water Bodies

Project Name	Sponsor	Location	Water Body	Impairment Addressed
Bluffs Sewer Relocation Project	Carpinteria Sanitary District	Eastern portion, City of Carpinteria	Carpinteria Creek, Pacific Ocean	Pathogens (creek) Fecal coliform (ocean) Total coliform (ocean)
Guadalupe Wastewater Treatment Plant Reuse Improvements Project	City of Guadalupe	Western Santa Maria basin	Santa Maria River, Estuary	Proposed TMDLs: Bacteria Nitrate
Braemar Area Sewer Extension	City of Santa Barbara	Calle Real/Hope Avenue area	Arroyo Burro Creek, Pacific Ocean	Pathogens (creek) Total coliform (ocean)
Las Positas Stormwater Management	City of Santa Barbara	Calle Real/ Las Positas Road area (golf course)	Arroyo Burro Creek, Pacific Ocean	Pathogens (creek) Total coliform (ocean)
Cuyama Effluent Disposal	Cuyama Community Services District	Cuyama Valley	Tributary to Cuyama River/ Santa Maria River	Proposed TMDLs: Bacteria Nitrate
Jalama Beach Park Septic System Improvements	County Parks Department	Mouth of Jalama Creek	Pacific Ocean at Jalama Creek	Fecal coliform (ocean) Total coliform (ocean)
Watershed working groups (countywide)	Agricultural Watershed Coalition	Countywide	Countywide	Proposed TMDLs: All 303(d) listings
Lompoc Regional Wastewater Reclamation Plant	Vandenberg Village Community Services District	North side, Lompoc basin	Lower Santa Ynez River	Nutrients

Implementation of Regional Water Quality Control Board (RWQCB) Watershed Management Initiative chapters, plans, and policies

The Central Coast Watershed Management Initiative chapter is in the process of being revised, although the Water Quality Priorities have been updated and include the following:

Agriculture – Addressing water quality impacts from irrigated agriculture, a major land use in the region that has been identified as a potential source of impairment for many of the

waterbodies on the 303(d) list (constituents of concern include nutrients, pesticides and sediment) by implementing the conditional waiver for irrigated lands.

In Santa Barbara County, runoff from commercial, irrigated lands is being addressed through the Central Coast RWQCB's Conditional Waiver for Irrigated Lands program, and will be addressed through TMDLs, which are in development (Sections 2 and 5). Groundwater quality impacts from agricultural activities are being addressed through the mobile lab program (Section 5) and the Conditional Waiver program through the implementation of management measures.

TMDLs – Developing and implementing TMDLs throughout the region

See the discussion under TMDLs above.

Urban Runoff – Addressing beach closure issues, implementing Phase II of the National Pollution Discharge Elimination System (NPDES) Storm Water Program.

Urban runoff and beach closure issues are being addressed through Project Clean Water and Storm Water Management Plans developed by Santa Barbara County and individual cities, as well as through programs and educational efforts by local agencies (Section 5). The IRWMP also includes projects to address this issue, including the Las Positas Storm Water Management Project, which will detain and treat urban storm runoff from surrounding urban areas that enters a golf course to improve water quality downstream in Las Positas Creek, the Arroyo Burro Estuary, and Arroyo Burro Beach. Additionally, the Lower Mission Creek Flood Control and Rehabilitation Project will improve urban runoff filtration and the natural treatment of pollutants, and the Old Mission Creek Storm Water Management and Restoration Project will result in the treatment of 700 acres of urban storm water runoff. These projects could help reduce beach closures.

Implementation of the State Water Resources Control Board (SWRCB) Nonpoint Source Pollution Plan

The Nonpoint Source Pollution Plan adopts a number of management measures as goals for six Nonpoint Source Pollution categories (agriculture, forestry, urban areas, marinas and recreational boating, hydromodification, and wetlands/riparian areas/vegetated treatment systems).

In agricultural areas, runoff is being addressed through the Central Coast RWQCB's Conditional Waiver for Irrigated Lands program (Section 5).

Urban runoff and beach closure issues are being addressed through Project Clean Water and Storm Water Management Plans developed by the County and individual cities, as well as through educational efforts by local agencies (Section 5).

Nonpoint Source Pollution in the Los Padres National Forest is addressed by the U.S. Forest Service through its management plan.

Nonpoint Source Pollution in the Santa Barbara marina is addressed through the Clean Marina Program (Section 3).

A number of projects involving the restoration of wetlands and riparian areas are underway in Santa Barbara County, some examples of which are included in Section 2. Additionally, a

number of projects that will improve water quality through wetland restoration are included in this IRWMP, including the El Estero Swale Restoration Project, Lower Mission Creek Flood Control and Rehabilitation Project, and the Old Mission Creek Storm Water Management and Restoration Project.

Assist in meeting Delta Water Quality Objectives

Decision 1641 is an action by the SWRCB to establish water quality objectives for water uses in the Delta. The Bay/Delta Water Quality Control Plan was developed as a means to attain these water quality objectives and includes the following components: implementation of flow objectives for specific water quality criteria in the Bay-Delta Estuary; a petition to change the point of diversion for the Central Valley Project and State Water Project in the southern Delta; and a petition for change in place of use and purpose of use of the Central Valley Project. The potential for actions within Santa Barbara County to assist in achieving these goals is through the increase in the reliability of local water supplies, as will result from a number of projects included in the IRWMP, thereby reducing the potential need for additional imported water supplies from the Bay-Delta region. Projects that will increase water supply reliability include: Santa Ynez River Arundo Eradication; South Coast Conduit 2nd Pipeline; Central Zone Transmission Main; Santa Ynez River Arundo Eradication; South Coast Conduit 2nd Pipeline - Upper Reach; Central Zone Transmission Main; Carpinteria Valley Water District's Recycled Water Feasibility Study; Casmalia Water System Improvements; Regional Water Conservation Rebates, Incentives, and Promotion; Cuyama Water Tower Repair, Goleta Sanitary District's Water Reclamation Facility 2007 Refurbishment Project; Goleta Water District's Aquifer Storage and Recovery (ASR) Well Rehabilitation and Construction, Backwash Tank Replacement at Four Wells, Cathedral Oaks Pipeline Replacement, Corona Del Mar Water Treatment Plant-Sedimentation Basin Effluent Upgrades, Downstream Reservoir Meters, and Interconnect with City of Santa Barbara; La Cumbre Mutual Water Company's Blended Irrigation Project and Iron and Manganese Removal Plant; Santa Maria River/Oso Flaco, Santa Ynez River, and South Coast Beaches TMDLs Watershed Working Groups; and Vandenberg Village's Lompoc Regional Wastewater Reclamation Plant.

Implementation of recommendations of the floodplain management task force

Recommendations include, but are not limited to, floodplain mapping, land use planning in areas affected by flooding, alluvial floodplain management, repetitive loss reduction, and flood warning and local community flood response programs.

Such programs are already in place in Santa Barbara County, and the IRWMP includes additional projects that will enhance flood protection, including the Santa Ynez River Arundo Eradication Project, Lower Mission Creek Flood Control and Rehabilitation Project, Las Vegas and San Pedro Creeks Flood Control Improvements, and Santa Maria Levee Project.

Implementation of recommendations of the desalination task force

Recommendations include use of desalination, where economically and environmentally appropriate, as an element of a balanced water supply portfolio, which also includes conservation and water recycling to the maximum extent practicable.

As discussed in Section 4, the City of Santa Barbara owns a desalination plant, which could be reactivated as needed to supplement ongoing conservation and recycling programs.

Implementation of recommendations of the recycling task force

Recommendations include:

- Local agencies should engage the public in an active dialogue and participation using a community value-based decision-making model in planning water recycling projects. Public participation activities should go beyond the minimum requirements of state and federal environmental laws, perhaps being reinforced by state funding agencies requiring a comprehensive public participation process as a condition for receiving state funds.
- Local agencies should create well-defined recycled water ordinances. Local regulatory agencies should effectively enforce these ordinances.
- Local agencies should maintain strong source control programs and increase public awareness of their importance in reducing pollution and ensuring a safe recycled water supply.
- Local agencies are encouraged to perform economic analyses in addition to financial analyses for water recycling projects to provide transparency regarding the true costs and benefits of projects.

Santa Barbara County has several sources of recycled water (Section 4), and the IRWMP contains several more projects that will enhance use of recycled water, including the Guadalupe Wastewater Treatment Plant Reuse Improvements Project, which will use treated wastewater to provide water to a 20-acre wetland site, and the Water Reclamation Facility 2007 Refurbishment Project, which will provide the infrastructure upgrades needed to ensure a reliable supply of recycled water. Additionally, the IRWMP has resulted in new dialogues between water and wastewater providers within the county (refer to Section 6), and resulting suggestions included performing a market study to determine the potential for using more recycled water.

Implementation of recommendations of the state species recovery plan

Santa Barbara County contains a number of listed species (Section 2), and a number of habitat enhancement projects are ongoing (e.g., those in Carpinteria Marsh, Goleta Slough, Devereux Slough, and Arroyo Burro). The IRWMP contains a number of projects that will enhance habitat in areas containing listed species, including the Santa Ynez River Arundo Eradication Project, Quiota Creek Fish Passage Enhancements Project, Bluffs Sewer Location Project, El Estero Swale Restoration Project, Las Positas Storm Water Management Project, and the Lower Mission Creek Flood Control and Rehabilitation Project.

Address environmental justice concerns

The IRWMP includes four high priority projects that will improve much-needed water and wastewater treatment services in the three disadvantaged communities (DACs) present in Santa Barbara County, thereby addressing environmental justice concerns. The City of Guadalupe has inferior water and wastewater systems that are in need of upgrading. The City of Guadalupe Wastewater Treatment Plant Reuse Improvements Project will improve the quality of wastewater discharge, benefiting the health and safety of community

members, and allowing the treated water to be used for a wetland enhancement project. The community of Casmalia has a critical need for water system improvements that will ensure it has a safe, secure water supply. In December 2006, bacterial contamination of its drinking water resulted in a "boil water" order. The Casmalia Water System Improvements Project will replace deficient infrastructure such as water pipelines and tank facilities, update buildings and facilities to comply with design and code requirements, and make improvements to the existing well facility. Two essential projects also will improve water quality and drinking water in Cuyama. The Wastewater Treatment Plant Effluent Disposal Project will allow Cuyama to avoid mandatory penalties and have its NPDES permit renewed. Additionally, if Cuyama's 50-year-old water tower is not repaired, it will soon reach the point where it will not function.

Assist in achieving one or more goals of the CALFED Bay-Delta Program

The CALFED Bay-Delta Program objectives focus on water quality, ecosystem quality, water supply reliability, and levee system integrity in the Bay-Delta area. The potential for actions within Santa Barbara County to assist in achieving these goals is through the increase in the reliability of local water supplies, as will result from a number of projects included in the IRWMP, thereby reducing the potential need for additional imported water supplies from the Bay-Delta region. Projects that will increase water supply reliability are described under "Assist in meeting Delta Water Quality Objectives."

9.2 Overall Benefits of the IRWMP

9.2.1 Projects that Address Specific Regional Issues and Challenges

The key issues and challenges facing Santa Barbara County were identified by the Cooperating Partners through the IRWMP process, and they are reflected in the objectives, regional priorities, and water management strategies identified in this plan. Projects that met these objectives and regional priorities were then developed using a variety of water management strategies. Example projects are shown in Tables 8-1 and 8-2, and the complete list of highest priority projects is shown in Table 8-3. The plan also includes an adaptive management element, described in Section 10, which outlines a process for modifying and developing new projects to reflect changing regional needs.

9.2.2 Projects that Are Consistent with State of California Program Preferences

The benefits of the IRWMP also are demonstrated by the following discussion, which shows the consistency of the plan with the program preferences established by the state.

Include Integrated Projects with Multiple Benefits

Integration can occur through multiple means, as discussed below.

Integration through Use of Multiple Water Management Strategies

The integration between the IRWMP's water management strategies, regional objectives, and regional priorities, and the multiple benefits that result from such an approach are discussed in Section 7. As shown in Table 8-4 and Tables D-1 through D-5 in Appendix D, the highest priority projects and the entire suite of projects included in the IRWMP use a

wide range of water management strategies to achieve the plan objectives and meet regional priorities, thus, resulting in an inherently integrated plan.

Integration through Use of the Same Water Management Strategies

Other ways of achieving integration are through the implementation of multiple projects using the same water management strategy. For example, several IRWMP projects will enhance recycled water supplies, and thereby countywide water supply reliability (Guadalupe Wastewater Treatment Reuse Improvements; Regional Water Conservation Rebates, Incentives, and Promotion; Water Reclamation Facility 2007 Refurbishment). Additionally, a number will remove invasive weeds, remove barriers to fish passage, and restore riparian areas (Santa Ynez River Arundo Eradication, Lower Mission Creek Flood Control and Rehabilitation, Old Mission Creek Storm Water Management and Restoration, Quiota Creek, Fish Passage Enhancements). Together they contribute to a greater benefit to the affected resources than if they were implemented in isolation.

Integration Resulting from Projects with Multiple Benefits

Additionally, most projects included in the IRWMP have multiple regional and local benefits (Section 8), and each project is therefore integrated through the linkage of resources that will benefit from its implementation. For example, eradicating *Arundo donax* and *Tamarix spp*. along the Santa Ynez River will reduce the risk of flooding, erosion, and fire, and increase biodiversity, improve water quality, minimize water consumption, and increase groundwater availability, improve soil chemistry, and improve river access for recreational users. The Quiota Creek Fish Passage project, for example, will improve riparian and riverine environments along 1.3 miles of stream channel and improve access to approximately 3 miles of habitat for migrating steelhead/rainbow trout. The project also will offer reduced erosion potential and improved riparian corridor connectivity, and the proposed permanent bridges will help keep Refugio Road open during storm events. Refugio Road links the South Coast with the Santa Ynez Valley and is an important County access road for landowners and a critical access road for emergency vehicles, as well as an egress for residents during any type of emergency.

Integration with Other Projects Not in the IRWMP

Integration also occurs through linkage with other projects, including those that are not part of the Plan. For example, several IRMWP projects will benefit Arroyo Burro and Goleta Slough and will complement other restoration projects in those areas. Mission Creek, which runs through downtown Santa Barbara, also represents a prime opportunity to integrate the goals of flood control, habitat enhancement, and recreational opportunities, as well as complement other ongoing creek improvements, both upstream and downstream. After years of debate, planning, and design, the Lower Mission Creek Flood Control and Restoration Project is ready to move ahead, and will address a 1.3-mile length of Lower Mission Creek. It will be a multiphase project designed to increase the carrying capacity of the creek from an 8-year event to a 20-year event, remove concrete channels, create a wider channel and natural streambed features for bank stabilization, replace several bridges, improve creek water quality, and remove invasive and non-native vegetation. Habitat and fish passage for several endangered species (southern steelhead trout and tidewater goby) will be enhanced as a result of the project, while also reducing the potential for severe flooding, which occurred in the downtown area in 1995 and 2005. The project has integrated

a variety of funding sources, including federal highway grants, County Flood Control assessments, City street repair funds, and potential Army Corps of Engineer funding.

Integration with Other Management Plans and Programs

The IRWMP is also integrated through linkage with other Santa Barbara County water management plans and programs described in Section 3, including General Plans, Urban Water Management Plans, Storm Water Management Plans, Water Shortage Contingency Plans, Capital Improvement Plans, and Operations Agreements, as well as weed management programs. The IRWMP contains projects and strategies that are either specifically included in these plans or that help meet the Plan goals and objectives. As an example, the projects that will remove fish barriers from local creeks (the Quiota Creek Fish Passage Project, Bluffs Sewer Relocation Project) are part of a watershed-scale planning effort to improve steelhead habitat throughout Santa Barbara County.

Geographic Integration

Integration also can occur geographically; for example, multiple projects have been included in the IRWMP that will increase tidal circulation and reduce storm water discharges into Goleta Slough, which is a 303(d) impaired water body. Other projects will benefit riparian areas within Carpinteria or the City of Santa Barbara.

System Integration

IRWMP projects sponsored by individual agencies also are integrated through their role in the overall system of which they are a part. For example, the Central Zone Transmission Main Project will complete the Carpinteria Valley Water District water treatment and distribution system, allowing it to comply with state and federal health standards, while providing redundancy to the system. The South Coast Conduit 2nd Pipeline Project also is an essential element of the Cachuma Operation and Maintenance Board system and is needed to improve the South Coast Conduit reliability, redundancy, and capacity to ensure the ability of the conduit to meet the current and future water demand requirements of the South Coast communities. The improvements to water systems in the DACs (Casmalia, Cuyama, and the City of Guadalupe) are critical elements needed to ensure that these communities have safe and reliable water and wastewater systems.

Integration through Interagency Cooperation

Integration also can occur through cooperative efforts between agencies, as exemplified by the Goleta Water District and City of Santa Barbara Interconnect Project, which will provide the ability to supply water from one agency to the other during big peak demands and emergencies. Additionally, the Central Zone Transmission Main and ASR Demonstration Well Project will provide a means to supply water to the southern (downstream) communities of the South Coast Conduit reach in the event its capacity is reached or interrupted. This project will further increase the water supply reliability of the South Coast Conduit system.

Support and Improve Local and Regional Water Supply Reliability

The IRWMP includes a number of projects that will improve water supply reliability. For example, the South Coast Conduit 2nd Pipeline Project will improve the reliability, integrity, and capacity of the Conduit, which is essential to the delivery of water supplies to the current and future population of the South Coast. As noted immediately above, the Central Zone Transmission Main and ASR Demonstration Well Project will further increase the

water supply reliability of the South Coast Conduit system. Other projects will improve treatment and distribution systems, allowing them to comply with state and federal health standards, while increasing reliability. Operation of the Santa Barbara County Regional Water Conservation Program, which increases reliability of water supplies through a reduction in water consumption, also is included as a project. Specific projects that will improve water supply reliability are listed above under "Assist in meeting Delta Water Quality Objectives."

Contribute Expeditiously and Measurably to the Long-term Attainment and Maintenance of Water Quality Standards

Several projects meet this program preference. One IRWMP project will fund seed money to form watershed working groups for the lower Santa Maria River/Oso Flaco Waterbodies, Santa Ynez River and the South Coast Beaches for the express purpose of managing the TMDL process in these watersheds. Other projects will provide infrastructure improvements that allow water and wastewater purveyors to meet regulatory standards (Central Zone Transmission Main and ASR Demonstration Well, Casmalia Water System Improvements, Corona Del Mar Water Treatment Plant – Sedimentation Basin Effluent Upgrades, Vandenberg Village Lompoc Regional Wastewater Reclamation Plant). Another project involves groundwater assessment testing and development of a Corrective Action Plan (Elings Park Solid Waste Assessment Test-Corrective Action Plan).

Eliminate or Significantly Reduce Pollution in Impaired Waters and Sensitive Habitat Areas, Including Areas of Special Biological Significance

The IRWMP includes a number of infrastructure projects that will reduce pollution in sensitive habitat areas by relocating infrastructure that has previously discharged sewage into those areas; other projects will improve discharges to Goleta Slough, a 303(d) listed water body. The plan also includes a number of habitat restoration projects and creek rehabilitation projects that will improve water quality.

Include Safe Drinking Water and Water Quality Projects that Serve Disadvantaged Communities

The IRWMP includes four high priority projects that will serve DACs. The community of Casmalia has a critical need for the water system improvements that will ensure that it has a safe, secure water supply. The City of Guadalupe Wastewater Treatment Plant Reuse Improvements Project will improve the quality of wastewater discharge, benefiting the health and safety of community members, and allowing the treated water to be used for a wetland enhancement project. Two essential projects also will also improve water quality and drinking water in Cuyama. The Wastewater Treatment Plant Effluent Disposal Project will allow Cuyama to avoid mandatory penalties and have its NPDES permit renewed. Additionally, if Cuyama's 50-year-old water tower is not repaired, it will soon reach the point where it will not function.

Include Groundwater Management and Recharge Projects

Several long-term projects are included in the plan, including the Vandenberg Village Community Services District Lompoc Groundwater Basin Recharge Study, and the Central Coast Water Authority Groundwater Banking Opportunities Study, which will identify agencies that may benefit from a groundwater banking program both within the Water Authority service area and in the central valley of California. The study also will identify and prioritize benefits, risks, and costs associated with several scenarios. The Water Authority also submitted a project for the design and construction of a groundwater bank

near the Polonio Pass Water Treatment Plant in San Luis Obispo County. This plan will be dependent on the results of the recently initiated Paso Robles Groundwater Basin Water Banking feasibility study and additional studies yet to be determined. In most years, several thousand acre-feet of State Water Project water are lost because they cannot be taken into storage. This study will identify mechanisms to better utilize State Water Project water supplies and maintain reserves for use during droughts. Another project submitted, the Central Zone Transmission Main and ASR Demonstration Well Project will be a first step in evaluating and demonstrating the viability of artificial recharge in a local groundwater basin using treated surface water, which may lead to a regional groundwater banking program within the South Coast area.

9.2.3 Beneficiaries of IRWMP Implementation

The projects included in this IRWMP will benefit the residents of Santa Barbara County as a whole, as well as those residing in specific watersheds. The disadvantaged communities of Casmalia, Cuyama, and Guadalupe will benefit from the implementation of four water and wastewater projects that will ensure that service is provided in a manner that meets regulatory requirements and protects public health. As shown in Tables 8-3 and 8-4, the highest priority projects will directly address those issues of the most pressing concern in Santa Barbara County, and residents will benefit from the improved ability to manage water resources, including specific improvements in water supply reliability, ecosystem restoration, water quality, emergency preparedness, and the strategic rehabilitation and replacement of aging infrastructure. Additionally, the IRMWP provides a mechanism for ongoing coordination between those entities that manage water resources, as well as for the identification of additional projects in the future to address water resources concerns. These factors will result in more efficient water management planning, benefiting all county residents.

9.3 Resource-specific Impacts

Each project included in the IRWMP is required to undergo the appropriate level of review under the California Environmental Quality Act (CEQA) and where there is federal involvement, the National Environmental Policy Act (NEPA). Mitigation measures for significant environmental impacts will be developed at that time, as needed, and projects also will be required to obtain permits including conditions that will minimize impacts. Opportunities for public comment on project impacts will be provided as part of the CEQA/NEPA process.

The following is a preliminary overview of the types of impacts that could occur from the implementation of the projects included in this IRWMP. The project evaluation criteria include “lack of significant long-term adverse impacts, including impacts to agriculture,” and based on the preliminary evaluation performed, most projects are not expected to result in long-term adverse impacts. Adverse impacts generally would be short-term, resulting from construction activities, while long-term impacts generally are expected to be beneficial, because sensitive habitats, including habitats for sensitive species, would be enhanced; surface and groundwater quality would be improved; water supply reliability would be increased; flood protection would be increased; and the ability to provide water during emergencies would be enhanced.

9.3.1 Aesthetic/Visual Resources

Overall, impacts from plan implementation will be beneficial, because a number of projects will restore degraded areas. Most infrastructure improvements will be located in already developed areas and will not contribute to an adverse impact to visual resources. Areas disturbed by pipeline construction will be required to be revegetated; thus, no long-term visual impacts will occur.

9.3.2 Agricultural Resources

The IRWMP will not result in adverse impacts to agricultural resources; projects will not result in the loss of agricultural lands, nor will agricultural water supplies be adversely affected.

9.3.3 Air Quality

Short-term air quality impacts will result from construction, but contractors will have to comply with the County Air Pollution Control District's requirements, which will minimize impacts. No long-term air quality impacts are expected.

9.3.4 Biological Resources

Short-term impacts to some biological resources could occur during construction activities, but it is anticipated that they could be mitigated through measures such as scheduling construction to avoid breeding seasons, use of best management practices and other standard measures. Overall, the IRWMP will result in beneficial impacts to biological resources because it includes a number of habitat restoration projects, including the removal of barriers to steelhead passage and weed eradication projects. It also includes a number of infrastructure projects that will result in reduced risks from sewage spills and maintenance activities in environmentally sensitive areas.

9.3.5 Cultural Resources

Impacts to cultural resources could occur during construction, but it is anticipated that they could be mitigated through standard measures, such as conducting site record searches and surveys prior to construction, monitoring sensitive areas, avoiding known sites, and data recovery.

9.3.6 Environmental Justice/Disadvantaged Communities

The IRWMP includes four high priority projects that will improve much-needed water and wastewater treatment services in the three disadvantaged communities (DACs) present in Santa Barbara County, thereby addressing environmental justice concerns. The City of Guadalupe has inferior water and wastewater systems that are in need of upgrading. The City of Guadalupe Wastewater Treatment Plant Reuse Improvements Project will improve the quality of wastewater discharge, benefiting the health and safety of community members, and allowing the treated water to be used for a wetland enhancement project. The community of Casmalia has a critical need for the water system improvements that will ensure that it has a safe, secure water supply. In December 2006, bacterial contamination of its drinking water resulted in a "boil water" order. The Casmalia Water System Improvements Project will replace deficient infrastructure such as water pipelines and tank

facilities, update buildings and facilities to comply with design and code requirements, and make improvements to the existing well facility. Two essential projects also will also improve water quality and drinking water in Cuyama. The Wastewater Treatment Plant Effluent Disposal Project will allow Cuyama to avoid mandatory penalties and have its NPDES permit renewed. Additionally, if Cuyama's 50-year-old water tower is not repaired, it will soon reach the point where it will not function.

9.3.7 Geology and Soils

All construction will be required to comply with the appropriate engineering standards given the soils and seismic hazards present at each construction site, which will mitigate impacts to geology and soils.

9.3.8 Hazards and Hazardous Materials

Construction could potentially result in spills of hazardous materials (for example, fuels, oils, and lubricants), but these impacts could be mitigated through the use of best management practices. Facilities, such as water and wastewater treatment facilities, use hazardous materials, but they will be used in accordance with all regulatory requirements, which will mitigate any potential impacts.

9.3.9 Hydrology and Water Quality

Overall, impacts to hydrology and water quality will be beneficial, because a number of IRMWP projects will improve groundwater, surface water, or drinking water quality. Additionally, the IRMWP contains a number of projects that will improve flood control and enhance the production and use of recycled water. Some include habitat restoration elements, which will have beneficial impacts to biological resources; others will enhance flood protection by adding improvements to areas that have already been modified.

9.3.10 Land Use and Planning

No significant land use changes or inconsistencies with policies are anticipated.

9.3.11 Noise

Noise will be limited to short-term construction activities, and impacts will be reduced through adherence to local restrictions on hours of construction.

9.3.12 Population and Housing

No impacts to housing will occur. The IRWMP will increase the reliability of supplies needed to serve the projected population growth.

9.3.13 Public Services

Public services (for example, fire and police protection) will not be adversely affected by the IRWMP. Beneficial impacts to fire protection will occur to the extent that the reliability of water supplies is enhanced, redundant systems are developed, and water supplies are available at the appropriate pressure.

9.3.14 Recreation

The IRWMP will have an overall beneficial impact to recreation by improving water quality at local beaches (for example, Arroyo Burro, Goleta Beach) and by providing irrigation water for parks; TMDLs will also improve water quality at recreational areas.

9.3.15 Transportation and Circulation

Transportation impacts will be limited to short-term impacts from construction activities.

9.3.16 Utilities/Service Systems

Beneficial impacts to water and wastewater treatment, water supplies, and storm water management will result from the implementation of IRWMP projects. Conversion of septic systems to sewer systems and other projects will benefit water quality, as will the enhancement of water and wastewater treatment processes. Storm water management will be enhanced through the projects that will improve the region's ability to manage urban runoff.

9.4 Possible Obstacles to IRWMP Implementation

Implementation of the IRWMP could face several potential obstacles. The lack of grant funding from Proposition 50 would be a significant obstacle. Those agencies included in the Santa Barbara countywide team believe that with the completion of the IRWMP in late May 2007, the region will be in a good position to compete for Proposition 50 Round 2 funding. The region is optimistic that most of the Cooperating Partners and other organizations will support the adoption of the IRWMP and that this will not become an obstacle to state agency support of the region's Proposition 50, Round 2, Step 1 application.

Lack of agreement among the Cooperating Partners on a number of issues could become an obstacle. However, to date, the Cooperating Partners have been able to resolve all challenges, including differing priorities and objectives, with full consensus. The Cooperating Partners are meeting regularly to develop a future governance structure; prepare for the administrative and consulting support needed to prepare the Proposition 50 application; keep up regular outreach; and to develop the necessary supporting information for a successful grant application.

Public stakeholders have participated throughout the IRWMP development process. All Cooperating Partner meetings have been open to the public; a series of eight public stakeholder meetings were expressly organized to reach out to the public; the public review period for the draft IRWMP exceeded that mandated by the state; and information has been made available to the public through the IRWMP Web site. The Cooperating Partners hope to further increase public participation as the IRWMP process grows and matures. Lack of participation by key public organizations could be an obstacle to truly integrated solutions to regional challenges.

Once the final list of projects is selected for the Proposition 50 Round 2 process, there could be disagreement over the inclusion of certain types of projects. For example, a project supported by one agency may not find the same level of support from some members of the environmental community or permitting agencies. If not resolved, this could present a

potential obstacle to implementation of the IRWMP. In order to avoid this potential problem, public input will be obtained prior to selecting projects to be included in grant applications. The public and agencies will have an opportunity to comment on individual projects during their environmental review and permitting processes, and opportunities will be available during this time to modify the projects to avoid or minimize impacts to the environment.

9.5 Ongoing Support and Financing

Potential sources of financing for each Tier I project are described in Chapter 8. Each implementing agency will be responsible for obtaining funding for its own projects, including funding for operation and maintenance of those projects requiring construction. Projects that do not require construction, such as studies and working groups, will not require ongoing operation or maintenance. However, recommendations and related work flowing from these studies will be the responsibility of the agencies identified throughout the studies.

9.6 The IRWMP's Role in Future Planning Efforts

As an added benefit, development of the IRWMP has served as a catalyst for discussions between the Cooperating Partners and other stakeholders regarding ways to increase integrated water resource management planning within Santa Barbara County. Some of these discussions led to some of the projects included in this plan; others resulted in the identification of issues and needs to be further explored in the future through the cooperative structure established by the IRWMP. The IRWMP will also serve as a mechanism for further evaluation of regional issues and the means to resolve those issues through the adaptive management process outlined in Section 8. Issues currently under consideration include:

- The need to conduct a market analysis to determine if there is sufficient additional demand for recycled water, requiring the capacity of existing facilities to be more fully utilized or expanded along with expansion of distribution systems.
- The need to rethink ways of co-managing improvements in water quality, environmental protection, and food safety during crop production. Food safety issues associated with food-borne E. coli outbreaks from the consumption of leafy greens has created an apparent conflict between water quality management practices and food safety/good agricultural practices.
- Consideration of the use of the City of Santa Barbara' desalination facility; in the event of a drought, it could be further utilized under an inter-regional partnership where areas with significant groundwater resources fund operation of desalination facility and exchange for State Water Project water during wet years (allowing recharge of basins), with desalination capacity reserved for South Coast use during droughts.
- The need to develop additional water resources and better integrate adjacent water system infrastructure in the Santa Ynez watershed, including infrastructure serving the

City of Solvang and Santa Ynez River Water Conservation District Improvement District No. 1.

- Ways of improving the effectiveness of water conservation programs:
  - How to evaluate the effectiveness of existing water conservation programs
  - How to improve educational outreach programs, especially for high schools
  - How to develop more effective water conservation programs for the commercial/industrial sector
  - How to coordinate with the state's emphasis on water conservation through landscape-related programs
  - How to incorporate water conservation measures into new residential and commercial development
- The need to review groundwater data in the County archives to determine groundwater quality trends in several watersheds (e.g., Santa Maria, Santa Ynez, and Carpinteria).

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10 Plan Performance, Data Management, and Ongoing Coordination

This section describes the methods that will be used to evaluate projects and plan performance, as well as adaptive management strategies that will be used to add new projects and modify the current list of projects and overall plan as needed. Methods used to manage data obtained through the plan implementation are also covered in this section as is ongoing coordination with local, state, and federal agencies.

10.1 Technical Analysis and Plan Performance

Local agencies and organizations have conducted numerous studies and developed a considerable amount of information related to water management within Santa Barbara County that serves as the foundation of this IRWMP. This IRWMP incorporates an adaptive management approach intended to allow it to stay current in light of evolving needs, local and statewide priorities, management strategies, technology, and funding requirements. Adaptive management is a planning and implementation framework in which ongoing monitoring is used to evaluate implementation and change course to optimize results when necessary. It is based on an iterative feedback loop of plan adjustment, implementation, and monitoring. Resource managers learn from experience and adjust appropriately as new knowledge, priorities, and issues come to light. Through adaptive management, the IRWMP will be a dynamic document that may redefine regional objectives, priorities, water management strategies, and projects as needed to respond to changing conditions. It also will allow for the continuing development of solutions to ongoing issues.

Individual elements of the IRWMP already include adaptive management, and changes to those elements will be coordinated with the overall IRWMP adaptive management strategy. For example, several other planning procedures have regular review and re-evaluation, including the Urban Water Management Plans and Santa Barbara County's Groundwater Report, which summarizes monitoring information described in Section 3. As required by the Urban Water Management Planning Act, California Water Code, Section 10610 et seq., Urban Water Management Plans must be updated every 5 years, in years ending in zero and five. Additionally, Santa Barbara County's Groundwater Conditions Report is updated biennially. Summary reports on these activities will be coordinated with the IRWMP management process.

The IRWMP's overall adaptive management framework will be implemented in the following manner in accordance with the established governance practices described in Section 1:

1. IRWMP managers will conduct a biennial review and produce a 5-year report summarizing progress made in achieving IRWMP goals, including the tracking of funded projects, modifications to projects, and development of new projects as a result

of the plan. The results of the biennial review and the 5-year report will be posted on the IRWMP Web site (http://www.countyofsb.org/pwd/water/irwmp.htm). The performance of implemented projects will be compared to original project objectives to ensure objectives were met.

2. IRWMP objectives, priorities, and water management strategies will be evaluated during the biennial review and modified appropriately. The need to develop different projects to better meet the plan objectives and regional issues will be considered, as will the need to modify existing projects. Projects that may be deleted (for example, because their purpose has been met through another project or because conditions have changed) also will be considered at this time.

3. Minor adjustments to planning assumptions, operations, or actions will be adopted as necessary. If significant changes to the approved IRWMP are found to be required in the biennial review or the 5-year IRWMP report, the plan will be revised and submitted for approval by Cooperating Partners as necessary.

4. IRWMP managers will supplement the sections of the IRWMP affected by changes to Urban Water Management Plans and the Groundwater Report every 5 years.

5. Stakeholder outreach will continue on an annual basis during IRWMP implementation, both to inform local stakeholders of progress and to solicit feedback regarding plan effectiveness and evolving priorities. In addition, IRWMP managers will solicit input via the Web site and e-mail from all interested parties and distribute that information at stakeholder meetings.

6. IRWMP managers will continue to develop the adaptive management framework itself by periodically reviewing its effectiveness and adjusting accordingly. For example, should it come to light that outreach or updates occur too frequently or infrequently, the schedule will be adjusted.

10.2 Data Management

The management of data is an integral component of the IRWMP process. The Santa Barbara IRWMP has three major goals relating to data management: (1) to facilitate timely sharing of information to stakeholders as well as state and federal databases; (2) to provide for consistent monitoring techniques and data quality; and (3) to identify where data gaps exist. Available data in the Santa Barbara area is currently maintained using Geographic Information System (GIS).

Information from the Santa Barbara IRWMP will be available to stakeholders through the use of a Web site, which will be supported by the Water Agency. This will continue the existing warehousing of water resources-related data that the Water Agency has currently undertaken for the region. The Water Agency will ensure data accessibility at other relevant County Web sites through the Water Agency site. IRWMP stakeholder meetings will serve as the primary venue for information sharing. Other settings where information can be shared include quarterly project progress meetings, monthly agency coordination meetings, public workshops, e-mail subscription lists, and monthly e-mail newsletters. These forums will serve to continue to facilitate the ongoing data sharing between stakeholders as well as the expansion of the existing Water Agency data warehousing activities.

Santa Barbara County will maintain existing water resources-related and IRWMP-related data and will make it available to the public on the Santa Barbara County Water Agency Web site located at: http://www.countyofsb.org/pwd/water/index.htm. This site will also provide the forum for sharing of reports, public meeting dates, agendas, meeting minutes, and annual reports. All data used to support development of the IRWMP will be outlined in a database and available for review on the Web site, which also will provide links to information available on partner agency Web sites.

The County has been asked by the Cooperating Partners to act as the administrative agency for data management. In this capacity, the County would track, review, manage, and report on pertinent issues related to the IRWMP, as well as report and track project progress. The management of existing data will be incorporated into the County GIS system. The relevant data will be revised and updated as part of future IRWMP efforts. In addition, where appropriate, data management will be coordinated with state and federal databases in a format consistent with the Surface Water Ambient Monitoring Program (SWAMP) and Groundwater Ambient Monitoring Assessment (GAMA). This coordination could include submission of annual reports regarding groundwater and surface water monitoring. As part of the IRWMP process, partner agencies will also work to determine specific reporting requirements and formats to facilitate more effective and efficient future data sharing.

Existing reports and data are under review as part of this effort to determine their applicability to the IRWMP and identify gaps in existing data. Identification of existing data gaps is a vital component of the IRWMP process. The process of identifying data gaps will continue throughout the IRWMP process, because new issues will arise as information is gathered and projects are formulated and refined. Once data gaps have been identified, recommendations regarding how best to address them will be developed. The Cooperating Partners also will compile and develop consistent procedures for data collection and monitoring.

10.3 Ongoing Coordination

As previously described, the County of Santa Barbara, water and wastewater entities, and all cities within Santa Barbara County, except one, are Cooperating Partners; additionally, local planning decision makers have been involved in the preparation of this IRWMP through regular communications through the Cooperating Partners and periodic reviews of the plan. Land use planning decision makers will continue to be involved, particularly through review, approval, and permitting of individual projects as they are developed and implemented.

Most Cooperating Partners have a long history of working with state and federal agencies, such as State of California Department of Water Resources (DWR), State Water Resources Control Board (SWRCB), Regional Water Quality Control Board (RWQCB), California Department of Fish and Game, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the U.S. Bureau of Reclamation to address water management issues in the county. This coordination will continue as the IRWMP is implemented, particularly through the process of reviewing and permitting individual projects.

11

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