V. ORANGE COUNTY GAPS REPORT[1]

1.0 Executive Summary

1.1 Overall Results of Survey

The Watershed Planning Assessment entailed conducting an extensive survey with many individual stakeholders to determine who is doing what and where in the watersheds throughout the county, and identifying priority planning gaps. Stakeholders surveyed included the County of Orange Staff, City Staff, Agency Personnel and Watershed Organizations.

Upon reviewing the overall results of the first round of questionnaires, many questions still exist. To reach all the goals of the Watershed Planning Assessment will take a dedicated effort to administer the same questionnaire to as many stakeholders as possible within a particular watershed. While this may appear overwhelming on the surface, the groundwork has been laid in this initial analysis, and the goal is actually quite achievable over the next 12 months.

1.2 County Wide Perspective on Gaps

Watersheds in Orange County range in size from the 6.1-mile Salt Creek, to the Santa Ana River encompassing 153.2 square miles. Orange County has more than 42 miles of coastline, 3 harbors, and 3,000 sq. miles of watershed.

The County of Orange has been very successful in partnering with the U.S. Army Corps of Engineers (COE) on Watershed Management Studies. Studies completed, or underway with the COE include:

- San Diego Creek/Newport Beach Watershed
- San Juan Creek Watershed
- Aliso Creek Watershed
- San Gabriel River/Coyote Creek/Carbon Creek Watersheds
- Westminster Watershed.

The watersheds studied under this partnership have had to meet certain criteria. Each underwent a reconnaissance phase study to determine if there was a Federal (COE) interest in participating in cost shared feasibility phase studies of water resource problems and opportunities in the urbanized and coastal areas of the region. The reconnaissance studies resulted in the findings that there was a Federal interest in continuing the studies into the cost shared feasibility phase. The purpose of this Section 905(b) (WRDA) Analysis is to document the basis for this finding and establish the scope of the feasibility phase.

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[1] Prepared by Marilyn Thoms, Watershed Coordinator, Friends of Harbors, Beaches and Parks of Orange County/Orange County WRP Task Force.

Funding for this project has been provided in full or part through a contract with the State Water Resources Control board (SWRCB) pursuant to the Costa-Machado Water Act of 2000 (Proposition 13) and any amendments thereto for the implementation of California's Nonpoint Source Pollution Control Program. The contents of this document do not necessarily reflect the views and policies of the SWRCB, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

During each study, the six planning steps set forth in the Water Resource Council's Principles and Guidelines were repeated to focus the planning effort and eventually to select and recommend a plan for authorization. The six planning steps were: 1) specify problems and opportunities, 2) inventory and forecast conditions, 3) formulate alternative plans, 4) evaluate effects of alternative plans, 5) compare alternative plans, and 6) select recommended plan. The iterations of the planning steps typically differ in the emphasis that is placed on each of the steps. In the early iterations, those conducted during the reconnaissance phase, the step of specifying problems and opportunities was emphasized. That is not to say, however, that the other steps were ignored since the initial screening of preliminary plans that results from the other steps is very important to the scoping of the follow-on feasibility phase studies.

Not all of the watersheds in Orange County meet these criteria. Many times there is no jurisdictional reason for County Staff or the COE to be involved. In these cases, usually a City will take the lead, and many times, be supported by an organization such as Friends of Harbors, Beaches and Parks, Sierra Club, Surfriders, or Orange County Coastkeepers.

Orange County is working towards a more regional approach to watershed planning. They have recently designed a new and dedicated website: www.ocwatersheds.com. Each watershed has it's own section which includes a monthly meeting calendar, maps, reports/studies, and projects/grants. A section on the Wetlands Recovery Project is included on the website.

1.3 Priorities for Watershed Coordinator

This report only scratches the surface with available data. Countywide coordination will take the efforts of an individual who can work with County Staff, U.S. Army Corps of Engineers, Cities, Community and Environmental Groups to fulfill one goal, a comprehensive Watershed Assessment of the entire region.

More time needs to be spent on each individual watershed. Each watershed has its own set of unique characteristics. To fully assess the watershed, all existing reports and studies should be reviewed. Stakeholder meetings need to be attended. Additional interviews need to be administered.

The WRP Watershed Coordinator is in the perfect position to "Educate" the public on the topic of Watershed Management. As an independent representative, they can speak for the entire region, with no bias.

Although the counties new Watershed & Coastal Resources Department is dedicated to addressing watershed issues on a regional basis, they are short-staffed. Six new positions were approved with the new county budget, but it will be many months, if not a year, before these individuals will be on board and ready to make an impact to the program.

2.0 Orange County Overview

2.1 Setting

Orange County is divided into two distinct physiographic subregions. Southern Orange County extends from the San Diego County line up through Laguna Beach and is characterized by short, steep watersheds with few coastal wetlands. Northern Orange County is part of the Los Angeles Basin and has a much broader coastal plain with larger river systems and relatively large coastal wetlands. The northern subregion extends from the San Diego Creek watershed north to the San Gabriel River. The County of Orange recognizes 13 different watershed units, and combines them into 11 study areas.

Southern Orange County (San Juan Hydrogeologic Unit)

Southern Orange County falls within the San Juan Hydrologic Unit, which extends from San Mateo Creek north to Laguna Beach. Several of the coastal creeks in this subregion have been impacted by development in their watersheds. The U.S. Army Corps of Engineers, working with the County of Orange, has developed comprehensive watershed management and restoration plans for the San Juan and Aliso Creek Watersheds.

Included in the San Juan Hydrogeologic Unit are:

- Prima Deshecha & Segunda Deshecha Watershed
- San Juan Creek Watershed
- Salt Creek Watershed
- Aliso Creek Watershed
- Laguna Canyon Channel Watershed
- Los Trancos/Muddy Creek Watershed

Northern Orange County

In Northern Orange County, the coastal plain broadens, extending 30 miles or more inland. Three large watersheds dominate this portion of the County – San Diego Creek, the Santa Ana River, and the San Gabriel River. Historically, the Santa Ana and San Gabriel Rivers roamed freely over the coastal plain, periodically changing the location of their mouths. For example, the mouth of the Santa Ana River fluctuated from Anaheim Bay in the north to Upper Newport Bay in the south. These two large, free flowing rivers supported vast expanses of wetlands on the coastal plain. Remnants of these large coastal wetlands include Upper Newport Bay, the Santa Ana River/Huntington Beach Wetlands Complex, Bolsa Chica Wetlands, Anaheim Bay, and the Los Cerritos Wetlands complex.
The Army Corps of Engineers has been working with the County of Orange to develop comprehensive watershed management and restoration plans for the Westminster Watershed. Included in this study will be the Coyote Creek Watershed.

Watersheds in the Santa Ana River Watershed include:

- San Diego Creek/Upper Newport Bay Watershed
- Talbert/Greenville Banning Watershed
- Santa Ana River Watershed
- Westminster Watershed
- Coyote Creek Watershed

2.2 Watershed Organization

The Watershed and Coastal Resources Division (PFRD) is one of six units in the Public Facilities & Resources Department. As part of the County of Orange, they serve the residents, businesses, and visitors throughout Orange County.

The Watershed & Coastal Resources Division at the County of Orange was created in the spring of 2000. Before then, several different divisions had been working on water quality and watershed planning within the Public Facilities & Resources Department. In 2000, these groups were combined into one team to create the Watershed & Coastal Resources Division. Since then, more resources have been added to increase efforts on new projects and responsibilities.

The mission of the Watershed and Coastal Resources Division is to develop regional management strategies to preserve, protect, and enhance coastal resources and surface waters throughout Orange County. Their watershed approach considers the entire geographic area that a watercourse drains to and addresses a broad range of issues, including:

- Water quality in streams, channels, harbors, bays, and beaches
- Control of urban runoff
- Reduction of sedimentation and erosion
- Flood protection
- Habitat and species protection
- Public recreation and education.

In recent years, the focus of water quality and habitat enhancement efforts has shifted to initiatives conducted on a broader watershed basis that looks at a watercourse in its entirety. The U.S. Army Corps of Engineers is sponsoring three ongoing watershed studies in Orange County aimed at identifying water quality problems and resultant habitat degradation on the Aliso, San Diego, and San Juan creeks. New studies are beginning in 2002 for Carbon Creek, Coyote Creek, and Westminster watersheds. PFRD is supporting these multi-agency efforts and has received grant funding under the Clean Water Act to conduct further studies and to coordinate the watershed approach. Objectives include:

- Facilitate the preparation and implementation of watershed plans and projects for watersheds in Orange County.
- Identify and implement projects to improve the geomorphic stability and restore the water quality and habitat values of streams.
- Lead partnership programs for establishing cooperative funding arrangement among local, state and federal entities for the studies and projects.
- Maintain involvement of public interests in watershed projects for developing restoration projects and addressing the effects of non-point source pollutants.

The 1987 Water Quality Act holds municipalities responsible for the urban sources of pollutants that are discharged through their stormdrains. To reduce or eliminate sources of pollutants in Orange County, PFRD coordinates the efforts of the County and the 33 cities, including:

- Coordinating regional compliance with NPDES, the National Pollutant Discharge Elimination System program, serving as the principal municipality for the 33 city stormwater co-permitees.
- Conducting countywide water quality monitoring of creeks, channels, bays, and harbors; intensive inspections of elicit connections.

- Protect Orange County's rivers, creeks, bays, and estuaries by conducting water quality monitoring throughout the year, with emphasis on chemical constituents in stormwater runoff. Storms are of particular interest because that is the time when most pollutants are washed out of the air and off the land into the waters of Orange County.
- All runoff from our streets flows through creeks, channels, and harbors and eventually ends up in the Pacific Ocean. Unlike sewage, it receives no treatment. The intent of the monitoring program is to evaluate the impacts of stormwater and urban runoff on these receiving waters and the effectiveness of water quality control practices.
- Condition all new development with water quality protection requirements.
- Spills of chemicals, both accidental and occasionally otherwise occur throughout Orange County.
- Educate the public on household and business practices that are environmentally safe.

Watershed organizations working throughout Orange County include:

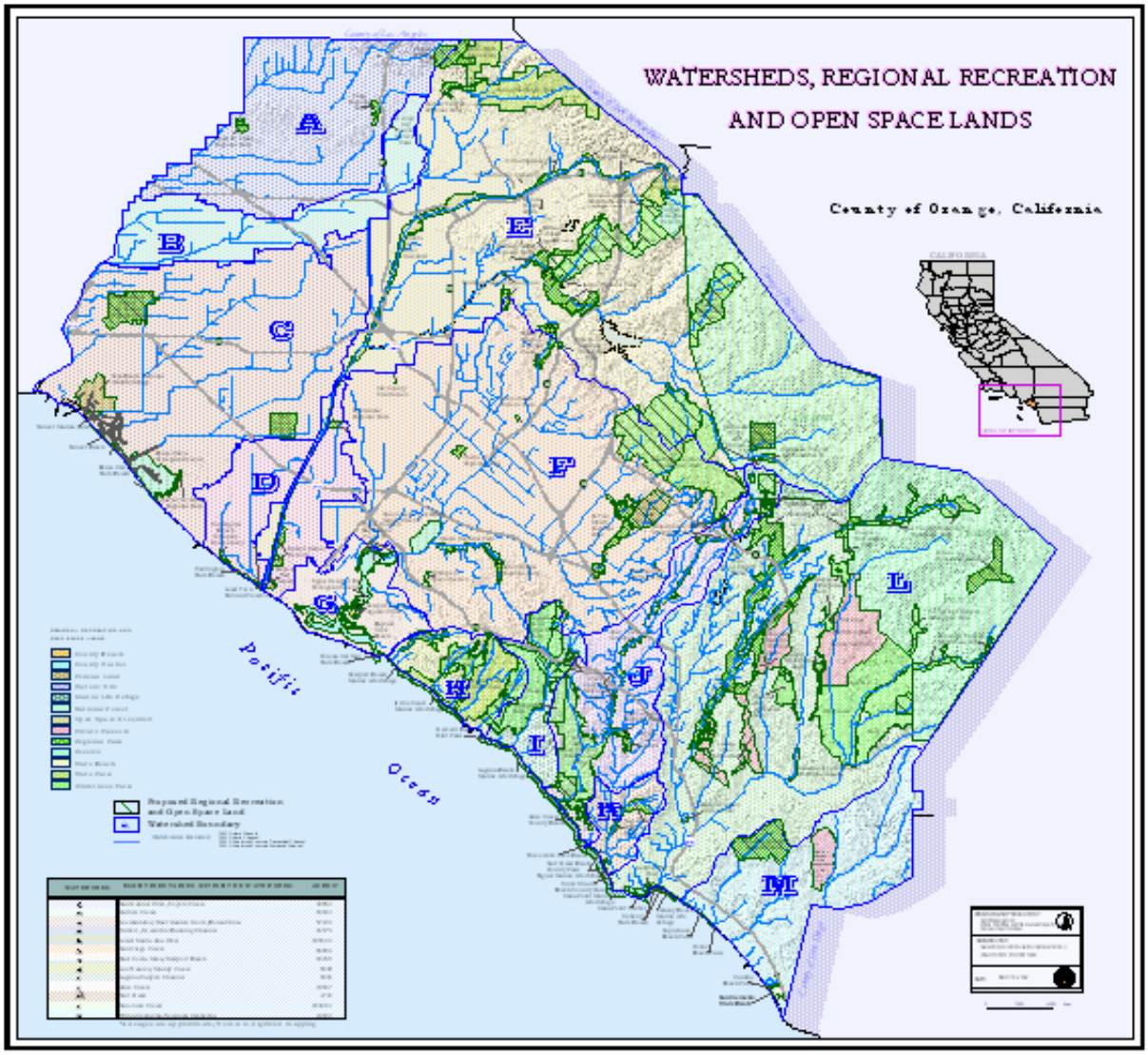
- Friends of Harbors, Beaches and Parks
- Orange Coast Coastkeepers
- Surfriders
- Trust for Public Land, Orange County
- Sea and Sage Audubon, Orange County
- Sierra Club
- Orange County Wild

2.3 Planning Activities

The County of Orange has been working with the U.S. Army Corps of Engineers on watershed studies for individual watersheds for several years. Recently, the cities of San Clemente, Laguna Beach, Huntington Beach and Santa Ana have commissioned consultants to prepare Watershed Management/Urban Runoff Studies for their respective city, as opposed to the entire watershed.

The County of Orange is currently implementing Third Term Permits for the National Pollutant Discharge Elimination System (NPDES). These permits, SAR R8-2002-0010 and SDR R9-2002-0001, were re-issued in January and February 2002, respectively. The new permits require the County and cities to continue to implement their existing stormwater quality management program and develop a multitude of additional programs in order to control pollutants in stormwater discharges.

2.3.1 Orange County Watershed Maps and Plans



WATERSHED AREAS WITH WATERSHED MANAGEMENT PLANS

A/B - San Gabriel/Coyote Creek/Carbon Creek Watershed Management Plan*
C – Westminster Watershed Management Plan*
D – City of Huntington Beach Watershed Management Plan*
F/G – Newport Bay/San Diego Creek Watershed Management Plan
H – Crystal Cove Watershed Management Plan
I – Laguna Beach Channel Urban Runoff and Watershed Management Plan*
J – Aliso Creek Watershed Management Plan
L – San Juan Watershed Management Plan
M – City of San Clemente Watershed Management Plan

*in preparation

2.4 Planning/Management Gaps

Many of the planning gaps in Orange County exist in the smaller watersheds. The Wetlands Recovery Project must reach out to these stakeholders, and assist then with setting up viable organizations in their area. A model can be established, and assistance with setting up stakeholders groups, funding issues, and local community involvement can be offered. It is the goal of the County of Orange to cooperative in the preparation of a countywide Watershed Management Plan.

2.5 Watershed Management Priorities

The priority of Orange County should be to work towards a regional plan. There is power in numbers, and if Orange County is to get their fair share of dollars from the many funding sources available, we must show that our strength lies in unity.

Orange County must, in the next 12 months, move many of its current projects out of the study mode and into construction. To take advantage of the potential flood of funding, we must identify projects ready to go to construction, watershed by watershed. Watersheds without such project lists should become a priority for the WRP.

The Orange County contingency should plan additional trips to Sacramento to educate elected officials on our progress in the area of watershed management.

3.1 San Gabriel River/Coyote Creek/Carbon Creek Watershed

3.1.1 Setting

The Coyote Creek Watershed covers 41.3 square miles in the northwest corner of Orange County. It includes portions of the cities of Brea, Buena Park, Fullerton, La Habra, and La Palma. Coyote Creek, its main tributary, flows from Riverside County and empties into the San Gabriel River. The Carbon Creek Watershed covers 21.4 square miles in west Orange County. It includes portions of the cities of Anaheim, Brea, Buena Park, Cypress, Fullerton, La Palma, and Los Alamitos. Carbon Creek, its main tributary, begins in the foothills and empties into the San Gabriel River.

The Coyote Creek Watershed and Carbon Creek Watershed are located immediately north of the Westminster watershed in both Orange County and Los Angeles County, are highly urbanized and drain approximately 165 square miles of densely urbanized residential, commercial and industrial development. The Coyote Creek Watershed is drained by its namesake, Coyote Creek, and two principal tributaries, Fullerton Creek and Brea Creek. Coyote Creek is a concrete-lined trapezoidal channel that ultimately drains into the San Gabriel River. The Carbon Creek Watershed is drained principally by Carbon Creek, Fullerton Creek, and Brea Creek. These three creeks vary between rectangular and trapezoidal concrete and riprap channels.

The COE has a total of three flood control dams in the Coyote Creek and Carbon Creek watersheds: one at the headwaters of Fullerton Creek (Fullerton Dam); one on Brea Creek (Brea Dam) and the other on Carbon Creek (Carbon Canyon Dam). In addition to the flood control dams, there are six detention basins along Carbon Creek that are used for groundwater recharge and flood control.

3.1.2 Watershed Organizations

The following organizations are active in the San Gabriel River/Coyote Creek/Carbon Creek Watershed. Contact information for each organization is included in Appendix A.

U.S. Army Corps of Engineers – Jim Hutchison
County of Orange – Kathie Matsuyama
City of Seal Beach – John Bahorski
Los Angeles and San Gabriel Rivers Watershed Council – Rick Harter
Los Cerritos Wetland Land Trust – Don May
Friends of Coyote Hills – Connie Spenger

3.1.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the Orange County sections of the San Gabriel River/Coyote Creek/Carbon Creek Watershed.

Pending/In Progress

Westminster Watershed Reconnaissance Study - In 2001, the U.S. Army Corps of Engineers initiated a comprehensive watershed study. A Reconnaissance Study was completed in June 2001. Although it is titled the "Westminster Watershed Reconnaissance Study", it covers three Orange County watersheds: Coyote Creek, Carbon Creek, and Westminster. In fall 2002, the COE is scheduled to begin the Feasibility Phase of the watershed study. This phase will cover both the Coyote Creek and Carbon Creek watersheds in one effort.

Los Cerritos Wetlands Conceptual Restoration Plan – Prepare conceptual restoration plans for the Los Cerritos Wetlands, including: assessment of existing resources; hydrologic analysis; identification of opportunities and constraints; an evaluation of alternatives for expanding tidal circulation; and restoring fresh and brackish water wetlands.

Los Cerritos Wetlands Acquisition Program – Continue to work towards acquisition of Hellman Ranch (100 acres), Bryant property (85 acres), and Bixby Ranch (181 acres).

3.1.4 Planning/Management Gaps

Opportunities exist for multipurpose water quality improvements, ecosystem restoration, recreation and education at El Dorado Park and golf course at the confluence of Coyote Creek and the San Gabriel River. Opportunities exist for both protection of park infrastructure and ecosystem restoration on Carbon Creek.

The only portion of San Gabriel River not currently being focused on in a comprehensively detailed manner is the Los Cerritos watershed and the river's historic estuary. A number of local groups have been fighting to save Los Cerritos Wetlands for decades, most notably Los Cerritos Wetlands Task Force, Surfrider of Long Beach, Long Beach Audubon Society, and Wetlands Action Network. None of these groups has land acquisition, remediation, or restoration plans in place. Development of a Los Cerritos Wetlands Conceptual Restoration Plan is currently on the SCWRP Tier 2 Work Plan list for FY 2002-03, but is far from certain to be funded. Similarly, the Colorado Lagoon Restoration Project is on the Tier 2 list, and has been for several iterations of the Work Plan. An effort to include the entire Los Cerritos sub-watershed among Proposition 13 WMP projects was unsuccessful, and consequently the Los Cerritos sub-watershed is the only area not currently programmed for development of a WMP.

3.1.5 Watershed Management Priorities

Los Cerritos and San Gabriel River Estuary - The most critical planning gap involves the lower San Gabriel River in the area once historically part of its estuary, from El Dorado Regional Park south to the river mouth. The area includes Los Alamitos Channel and drainages on the east side of the river as well as the Los Cerritos Channel and Wetlands on the west side of the river, and the Los Cerritos sub-watershed as a whole, including Colorado Lagoon and Alamitos Bay. The area is ripe for collaborative action spearheaded by the RMC and involving Orange County, LA County, City of Long Beach and other parties. The area is also ripe for innovative strategies for hydrologic connectivity and wetland / riparian restoration that could have bio-remediation value for the serious water quality issues facing Seal Beach and Long Beach. SCWRP Coordinator efforts should focus on promoting local capacity to develop an integrated vision and comprehensive plan for the area, to develop appropriate resource plans, and to identify projects that begin to realize restoration objectives, including:

- Improving water quality
- Repairing wetland/instream/terrestrial habitat
- Improving channel degradation and erosion
- Removing invasive species
- Improving flood drainage
- Exploring recreational opportunities

3.2 Westminster Watershed

3.2.1 Setting

The Westminster Watershed covers 74.1 square miles in the southwestern corner of Orange County. It includes portions of the cities of Anaheim, Cypress, Fountain Valley, Garden Grove, Huntington Beach, Los Alamitos, Santa Ana, Seal Beach, Stanton, and Westminster. Three main tributaries drain this watershed. The Los Alamitos Channel drains into the San Gabriel River. The Bolsa Chica Channel empties into the Anaheim Bay-Huntington Harbor complex. The East Garden Grove-Wintersburg Channel drains through Bolsa Bay into Huntington Harbor.

The Westminster watershed lies on a flat coastal plain, and is almost entirely urbanized with residential and commercial development. There are two main channel systems that collect runoff from portions of urbanized areas of Anaheim, Stanton, Cypress, Garden Grove, Westminster, Fountain Valley, Los Alamitos, Seal Beach, and Huntington Beach. The East Garden Grove-Wintersburg Channel (EGGW), with its principal tributary, the Ocean View Channel (OV), drains into Bolsa Bay. Two retarding basins (Haster and West Street) exist at the upstream reach of the EGGW channel. Bolsa Bay includes the Bolsa Chica Lowlands and Ecological Reserve, and is a major environmental resource in southern California. The Bay has been designated as an area of national significance, and is host to a wide assemblage of resident and migratory waterfowl and marine species including over 30 state and/or federal listed sensitive species that utilize the wetlands during all or part of their annual cycle.

The Bolsa Chica Flood Control Channel (BCFC), with its principal tributaries, the Anaheim-Barber City Channel and Westminster Channel, drains to Huntington Harbor. The BCFC Channel lies almost completely within the cities of Seal Beach and Huntington Beach, with a significant portion of property adjacent to the Seal Beach Naval Weapons Station of the U.S. Navy. Aside from the Navy facility, this portion of the watershed is almost entirely urbanized. Agriculture is still practiced under leases granted by the Navy on portions of their property. The BCFC Channel outlets into Huntington Harbor, but unlike EGGW, does not outlet into Bolsa Bay. The sole ocean outlet for both Bolsa Bay and Huntington Harbor is to the north at Anaheim Bay. Tidal influence in the lowermost portion of the BCFC Channel extends approximately 2 miles inland.

Before development, the watershed was largely comprised of grasses and trees, such as oaks, cottonwoods and sycamore. Early development was primarily agricultural with some residential. As of the early 1990's, 85 percent of the Westminster watershed was urbanized. Land use consists primarily of residential, commercial, military, light industrial, schools and parks, and transportation facilities. It is expected that in the next 50 years full development of the remaining agricultural and vacant land will occur. This future potential development is not expected to significantly affect the current flood conditions.

3.2.2 Watershed Organizations

The following organizations are active in the Westminster Watershed. Contact information for each organization is included in Appendix A.

- U.S. Army Corps of Engineers – Jim Hutchison
- County of Orange – Kathie Matsuyama
- Friends of Seal Beach Naval Weapons Station – Bruce Monroe
- Amigos de Bolsa Chica – Linda Moon
- Bolsa Chica Conservancy – Adrianne Morrison
- Bolsa Chica Land Trust – Evan Henry

3.2.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the Westminster Watershed.

Partially Completed

In 2000, the Anaheim Bay/Huntington Harbor Water Quality Assessment Study – Workplan - The overall goal of the study is to attain a comprehensive and current assessment of the water quality in Anaheim Bay/Huntington Harbor Complex. As part of this study. the Southern California BIGHT '98 Regional Monitoring Project continues to sample the water at over 60 locations.

Pending/In Progress

Westminster Watershed Reconnaissance Study - In 2001, the U.S. Army Corps of Engineers initiated a comprehensive watershed study. A Reconnaissance Study was completed in June 2001. Although it is titled the "Westminster Watershed Reconnaissance Study", it covers three Orange County watersheds: Coyote Creek, Carbon Creek, and Westminster. In fall 2002, the COE is scheduled to begin the Feasibility Phase of the watershed study on the Westminster Watershed while a separate Feasibility Study to be conducted for Coyote Creek and Carbon Creek watersheds.

Los Alamitos Pump Station Water Quality - The County of Orange is working on 2 related projects. The Los Alamitos pump station water quality element includes the possibility of wetland restoration using treated dry weather flows and/or diversion of low flows to a treatment facility. A Proposition 13 grant application for the wetland and diversion component was electronically transmitted in January, 2002. A Proposal Summary for a Wetland Restoration and Enhancement grant application was submitted to the Coastal Conservancy in February, 2002.

Seal Beach Trash Boom - Project is a debris boom on the San Gabriel River. The City of Seal Beach received Coastal Conservancy funding for the conceptual design, environmental, and permitting portions of the project. Construction will be funded through a multi-jurisdictional application for Proposition 13 monies.

The Bolsa Chica Wetlands Restoration Project: An interagency steering committee led by the California State Lands Commission, United States Fish and Wildlife Service, and the U.S. Army Corps of Engineers has recently finalized an EIS/EIR for a wetland restoration project on the Bolsa Chica Lowlands. The Bolsa Chica project area consists of 1,247 acres of the Bolsa Chica Lowlands in the Bolsa Gap between the Bolsa Chica Mesa on the northwest and Huntington Mesa on the southeast. Historically, Bolsa Chica was part of an extensive tidal marsh, including a mosaic of vegetated salt and brackish marsh, with associated tidal embayments, sloughs, and mudflats. Alterations have included the construction of a dike to prevent tidal exchange, filling, oil extraction, construction of flood control facilities and surface and subsurface hydrologic modifications. The purpose of the restoration project is to restore wetland and aquatic functions at Bolsa Chica as oil extraction is phased out and after contamination is removed. The project will serve as mitigation for federal and other expansion projects at the Ports of Long Beach and Los Angeles.

East Garden Grove Wintersburg Channel Treatment – Preparation of a feasibility study for diverting up to six million gallons per day from the East Garden Grove

Wintersburg Channel into wetlands in Huntington Beach Central Park. Water will be drawn from the Channel and will flow through three small lakes located in Central Park.

Huntington Beach Acquisitions – Acquire Coastal Magnolia properties (45 acres) and West of Magnolia property (16 acres).

3.2.4 Planning/Management Gaps

Several areas have been identified that have excellent potential for this program, including:

- Los Alamitos Naval Air Station
- Mile Square Regional Park
- Seal Beach National Wildlife Refuge

3.2.5 Watershed Management Priorities

The following priorities have been identified for the Westminster Watershed:

- Acquire additional Bolsa Chica Lands
- Increase the quantity of suitable habitat for threatened, endangered, and sensitive species in the Westminster Watershed including the California least tern and Belding's savannah sparrow.
- Increase passive recreation opportunities for environmental interpretation at West Street Basin, and the Haster Basin in Twin Peaks Park.
- Increase passive and active recreation opportunities along channel levees in the Westminster Watershed.
- Improve the aesthetic conditions in flood control channels.
- Educate the public on watershed related issues.

3.3 Talbert/Greenville Banning Channel Watershed

3.3.1 Setting

The Talbert/Greenville Banning Channel Watershed is comprised of 16,575 acres on the East side of the Santa Ana River and extends from the mouth of the Santa Ana River to about two miles inland from the coastline. The property is adjacent to the Cities of Costa Mesa, Newport Beach, and Huntington Beach. Landowners include the City of Newport Beach, City of Costa Mesa, Aera Energy, LLC, U.S. Army Corps of Engineers, Private Oil Firms, and the County of Orange.

The COE site, which is closest to the river mouth, is designated open space and recreation(al) by Orange County. The West Newport Oil site, to the east of the COE site, is designated open space in the Orange County General Plan and zoned for residential, business and light industrial with an oil production overlay zone over the area. The Talbert Nature Preserve, approximately 1.1 miles from the mouth, is designated for public use in the City of Costa Mesa's General Plan and zoned Institutional and Recreation.

Two main tributaries drain this watershed. On the western site, the Talbert and Huntington Beach Channels drain through the Talbert Marsh before emptying into the Pacific Ocean. On the eastern side, the Greenville-Banning Channel empties into the Santa Ana River.

3.3.2 Watershed Organizations

The following organizations are active in the Talbert Greenville Banning Watershed. Contact information is included in Appendix A.

- County of Orange – Mary Anne Skorpanich
- City of Huntington Beach – Debbie Cook
- City of Costa Mesa/Fairview Park Administrator - Ron Molendyk
- City of Newport Beach – Dave Keff
- Friends of Harbors, Beaches and Parks - Jean Watt
- Orange Coast River Park – Louise Greeley
- Friends of Fairview Park – Carol Proctor
- Sierra Club Santa Ana River and Estuary and Bluffs Task Force - Terry Welsh
- Santa Ana River Watershed Group- Lindell Marsh
- Santa Ana River Watershed Project Authority – Lindell Marsh
- County of Orange – Mary Anne Skorpanich
- South East Huntington Beach Homeowners Association – John Scott
- The Newport Conservancy – Mike Johnson
- Huntington Beach Wetlands Conservancy – Gordon Smith
- Talbert Nature Preserve – Patti Schooley

3.3.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the Lower Santa Ana River Watershed.

Completed

Talbert Marsh - As part of the Santa Ana River flood control project, the COE began restoration of 92 acres of salt marsh in 1989 as mitigation for biological impacts. Limited public access is allowed on the site. The COE site has tide gates at the both the northern and southern ends of the marsh, connected to the Santa Ana River. Tidal action within the COE site is muted, due to the elevation and operation of the tide gates. The Mobil Oil field marsh site is diked and not subjected to tidal influence.

Talbert Nature Preserve - To the north of the COE site lies the Talbert Nature Preserve, a facility owned and operated by the County of Orange. The Nature Preserve is separated from the Santa Ana River Channel by the Greenville-Banning Flood Control Channel. In 1991, Orange County adopted an Enhancement Plan for Fairview and North Talbert Parks (renamed Talbert Nature Preserve in 1995) that included wetland enhancement. Restoration work in the northern portion of Talbert Nature Preserve was completed in 1996. The sandy-bottom of the Santa Ana River Channel is under tidal influence up to Victoria Street Bridge. Elevations in the freshwater wetland area of North Talbert Nature Preserve are above high tide. Victoria Street Bridge separates the Talbert Nature Preserve into north and south sections. South Talbert includes a freshwater habitat known as Victoria Pond and associated seasonal wet meadow. Restoration around Victoria Pond was also completed in 1996. The balance of South Talbert Nature Preserve remains undeveloped.

Draft Local Coastal Plan - In 1991 the County of Orange developed a draft Local Coastal Program (LCP) for the West Newport Oil site located north and east of the COE mitigation area. These Mobil Oil Company fields contain severely degraded wetland and upland areas. The LCP, which was never finalized, identified enhancement potentials for the marsh and upland areas, residential areas, residential densities and recreational open space.

Partially Completed

Santa Ana Watershed Project Authority - The Santa Ana Watershed Project Authority (SAWPA) was formed in 1971 to develop a long-term plan to manage the area's water supply, and finance and build multi-agency water projects. SAWPA historically focused on water quality and ground water. In 1994, the Authority broadened its focus and participations to include issues of flood control, wildlife resources and interaction with other water agencies.

Pending/In Progress

Talbert Marsh Tidal Channel Enhancement Design – Huntington Beach Wetlands Conservancy is preparing a plan to enhance tidal exchange in the 25-acre Talbert Marsh. The project will include surveying the marsh and developing a current topographic map, comparing this to the original design contours, and determining the amount of material accumulated in the channels.

Fairview Park Master Plan Update – Fairview Park in the City of Costa Mesa is adjacent to North Talbert Nature Preserve. The park consists of 208 acres of open space currently used for walking, biking, jogging, flying model airplanes, model railroading, and picnicking. Approximately 13 acres of the site have been improved as passive park space with lawn, trees and parking. The remainder of the site is vacant. Work on this Master Plan was begun in July of 1996. The master plan presents a park for passive uses. Facilities are provided for individual and small group activities focused upon walking, biking, picnicking, quiet contemplation, interpretation of the archaeological and biological

resources, and the hobbies of kite flying, model glider airplane flying and riding the model railroad. Currently, the City of Costa Mesa is working with consultants to update the Fairview Park master plan. The update will include several public workshops to reconfirm public approval of the plan.

Fairview Park Enhancement, Final Design and Engineering – The City has hired a consultant to prepare final design and engineering plans for restoration of approximately 111 acres of riparian, grassland, and scrub habitat. The project includes creation of hydrologic connection between Fairview Channel and the Placentia Drain and restoration of approximately 11 acres of riparian habitat.

Huntington State Beach – Santa Ana River Dry Weather Diversion - The County of Orange is in the process of installing a year-round dry-season diversion of urban runoff to sanitary sewer for treatment in four locations: Huntington Beach Pump Station; Talbert Channel; the Santa Ana River; and Greenville-Banning Channel.

Huntington Beach Acquisitions – Acquire Coastal Magnolia properties (45 acres) and West of Magnolia property (16 acres).

Orange Coast River Park - In April 2002, The Friends of Harbors, Beaches & Parks (FHBP) prepared a "proposal" for the Orange Coast River Park Project. This project would create a 1,000+ acre park at the lower end of the Santa Ana River on lands owned and individually managed by three cities (Costa Mesa, Huntington Beach and Newport Beach); the County of Orange; several regional, state and federal agencies; and a few private entities. FHBP proposes a concept plan and program to coordinate development, operation and maintenance under a cooperative agreement – a compact – to provide for inter-connecting trails, shared support facilities and a wildlife habitat and park management program.

Talbert Marsh Tidal Channel Enhancement Design – Prepare plans to enhance tidal exchange into the 25-acre Talbert Marsh. Talbert Marsh was restored in 1989 with funding from the Coastal Conservancy. The final monitoring report from this restoration project made several recommendations to improve the viability of the marsh, including removal of accumulated silt from the main flood channel and tidal creeks. The project will include surveying the marsh and developing a current topographic map, comparing this to the original design.

3.3.4 Planning/Management Gaps

Santa Ana River Watershed Group – The Santa Ana River Watershed Group is comprised of representatives from Orange County, Riverside County, San Bernardino County, Santa Ana Watershed Project Authority, and the Orange County Sanitation District. They operate under a Memorandum of Understanding, with a mission to address various concerns, issues, and opportunities relating to the entire watershed. Their plan includes a "Three Nodes Strategy", focusing on efforts within three nodes along the River: the mouth-of-the-River (the Friends of Harbors, Beaches and Parks project), Chino-Prado Basins, and, the Upper-San Timoteo Watershed. The possibility will be explored to obtain matching funds to support Watershed Coordinators in each of these nodes for public/private sector collaborative strategies.

3.3.5 Watershed Management Priorities

The following projects are two of the watersheds highest priorities:

Orange Coast River Park - In April 2002, The Friends of Harbors, Beaches & Parks (FHBP) prepared a "proposal" for the Orange Coast River Park Project. This project would create a 1,000+ acre park at the lower end of the Santa Ana River on lands owned and individually managed by three cities (Costa Mesa, Huntington Beach and Newport Beach); the County of Orange; several regional, state and federal agencies; and a few private entities. FHBP proposes a concept plan and program to coordinate development, operation and maintenance under a cooperative agreement – a compact – to provide for inter-connecting trails, shared support facilities and a wildlife habitat and park management program.

Talbert Marsh Tidal Channel Enhancement Design – Prepare plans to enhance tidal exchange into the 25-acre Talbert Marsh. Talbert Marsh was restored in 1989 with funding from the Coastal Conservancy. The final monitoring report from this restoration project made several recommendations to improve the viability of the marsh, including removal of accumulated silt from the main flood channel and tidal creeks. The project will include surveying the marsh and developing a current topographic map, comparing this to the original design.

3.4 Lower Santa Ana River Watershed

3.4.1 Setting

The Lower Santa Ana River Watershed is the largest in Orange County, covering 153.2 square miles. The river begins almost 75 miles away in the San Bernardino Mountains, crossing central Orange County before emptying into the Pacific Ocean. The Orange County portion of the watershed includes portions of the cities of Anaheim, Brea, Huntington Beach, Orange, Placentia, Santa Ana, Villa Park, and Yorba Linda. The river serves as the main tributary to the watershed with Santiago Creek being the largest tributary within Orange County.

The Santa Ana River is one of the largest rivers in southern California. Channelization with high levee banks and other flood control measures upstream have greatly reduced the river as a source of seasonal floodwaters to the marshes. Flows are composed of storm water discharge and urban run-off. The two major upstream dams are Prado Dam (1941) and Seven Oaks Dam (1998).

3.4.2 Watershed Organizations

The following organizations are active in the Santa Ana River Watershed. Contact information for each organization is included in Appendix A.

- County of Orange CEO – Mike Wellborn
- Santa Ana River Watershed Group- Lindell Marsh
- Hills for Everyone – Claire Schlotterbeck
- Friends of Tecate Cypress – Connie Spenger
- Barnham Ranch Preservation Group – Marilyn Ganahl
- Santiago Creek Greenway Alliance – Howard Decruyenaere

3.4.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the Lower Santa Ana River Watershed.

Partially Completed

The Santa Ana Regional Interceptor (SARI) Program will construct a pipeline to convey 30 million gallons of wastewater daily from the upper reaches of the watershed in San Bernardino to Fountain Valley near the ocean. The purpose of the project is to transport non-reclaimable wastewater (high saline wastewater from the Upper Santa Ana River Basin to the ocean for disposal, after treatment, and to recover and protect water resources in the watershed.

Pending/In Progress

Removal of Arundo Dornax from the Santa Ana River – The County of Orange has requested funds for the removal of the invasive, non-native reed from the river bottom and restore riparian habitat. The project is located in the Santa Ana River canyon in the Yorba Linda area.

Prado River Road Wetlands Expansion - The Orange County Water District has requested funds to construct 200 acres of additional wetlands above River Road Bridge to treat main Santa Ana River flows. The wetlands allow for the reuse of SAR supplies traveling into Orange County.

Chino Creek Wetlands Expansion - - The Orange County Water District has requested funds to construct 100 acres of wetlands along Chino Creek just above the Prado Dam to treat main Santa Ana River flows. The wetlands allow for the reuse of SAR supplies traveling into Orange County.

Mill Creek Splatter Wetlands - - The Orange County Water District has requested funds to divert Mill Creek flows through the COE Splatter S Wetlands System. The system will allow for the reuse of SAR supplies traveling into Orange County.

Removal of Arundo Dornax from Featherly Park – The Orange County Conservation Corps has requested funds for the removal more than 700 acres of the invasive, non-native reed from the park, located adjacent to the river.

Orange County Water Use Efficiency Best Management Practice (WUE-BMP) Program – The Municipal Water District of Orange County has requested funds for a program that will include urban irrigation runoff water quality improvements.

Feasibility Report for Barham Ranch – Updated feasibility report and analyzed data from various city and county departments to determine if site was appropriate for school site.

3.4.4 Planning/Management Gaps

Several miles of the Santa Ana River are owned, operated and or maintained by entities of a unique nature.

For instance, along a six-mile section of the Santa Ana River that belongs to OCWD, a system of diversion structures and recharge basins captures most of the water that would otherwise flow into the Pacific Ocean. The district has 1500 acres of land for use in its recharge program.

A golf course utilizes another mile for the majority of its 9-hole course.

3.4.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the Santa Ana River Watershed Group and the Santa Ana River Watershed Project Authority and assist project stakeholders in identifying and implementing watershed management priorities. The purpose of the Santa Ana River Watershed Program is to gradually restore as much of the natural function of the river as possible, thereby maximizing natural resources. Current priorities are control of invasive species, particularly giant reed, and restoration of native species through selective planting and management of those species in greatest peril.

The goal of the watershed Program is to develop an endowment for perpetual funding of activities in support of natural resources. Problems such as the takeover of more than half the river habitat by Arundo, proliferation of nonnative fish and parasitic birds, diminution of the floodplain, unprecedented sedimentation rates, and the other ongoing effects of the sizeable, adjacent human population dictate the necessity for a perpetual plan.

3.5 San Diego Creek and Newport Beach Watershed

3.5.1 Setting

The Newport Bay/San Diego Creek Watershed encompasses an area of approximately 98,500 acres (154 square miles) in central Orange County with overland flows draining toward the Pacific Cost into Newport Bay. Major cities in the watershed include Newport Beach, Irvine, Tustin, and portions of Orange, Lake Forest, Laguna Hills, Costa Mesa and Santa Ana. The principle watercourse of the watershed is San Diego Creek, which accounts for 80% (122 square miles) of the watershed area. The San Diego Creek sub-watershed (including Serrano Creek) is the largest contributor of the bay's fresh water flows, sediment and other water quality problems. The other drainage areas include the Santa Ana-Delhi Channel sub-watershed, Peters Canyon Wash, Big Canyon and other local drainages.

Three different geographical areas characterize the watershed: rugged foothills, alluvial plains, and coastal plains. The rugged foothill regions are within the Santa Ana Mountains and the Santiago Hills. Existing land use in the watershed includes commercial, residential, light industrial, county and state open spaces and federal properties. It is estimated that approximately 7% of current watershed land use is agriculture. El Toro and Tustin Marine Corps Air Stations are both located within the study area.

3.5.2 Watershed Organizations

The following organizations are active in the Newport Bay/San Diego Creek (NBSD) Watershed. Contact information is included in Appendix A.

- U.S. Army Corps of Engineers – Jim Hutchison
- County of Orange Watershed & Coastal Resources – Kathie Matsuyama
- NBSD Study Management Team – Kathie Matsuyama
- City of Lake Forest – Bob Woodings
- Newport Bay Executive Management Committee – Chris Crompton
- Newport Bay Naturalists and Friends – Jack Keating
- Peter and Mary Muth Interpretive Center – Grace Yick
- Defend the Bay – Bob Caustin
- Stop Polluting our Newport – Claudia Owen
- Serrano Creek Conservancy – Matt Rayl
- City of Lake Forest -- Bob Woodings

3.5.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the San Diego Creek and Newport Beach Watershed.

Completed

Upper Newport Bay Ecosystem Restoration Feasibility Study- The Study was completed in 2000 and addressed restoration and preservation measures for the Upper Newport Bay Ecological Preserve. The recommended plan, estimated to cost $31 million, includes expanding and deepening the two in-Bay basins and relocating a tern island from the upper basin to the lower basin. Restoration measures include wetland creation along Northstar Beach, Shellmaker Island and a section of the northwestern edge of the upper basin. Side channels would be restored around the least tern island in the upper basin, New Island, Middle Island and Shoemaker Island. The total volume of material to be dredged from the Upper Bay is approximately 2.1 million cubic yards. The dredged material would be disposed of at the LA-3 offshore disposal site. Preconstruction, Engineering and Design is currently underway by the COE and PFRD staff. Construction is expected to commence in 2003.

Hydraulic/Sediment Analysis for San Diego Creek Watershed - This study was performed to investigate the sediment yield and transport characteristics of the San Diego Creek and Newport Bay watershed. Emphasis was placed on evaluation of available data produced from the sediment monitoring programs on-going within the watershed, and on assessment of the erosion and sedimentation characteristics of the lower Creek and Bay.

Partially Completed

Newport Bay/San Diego Creek Watershed Management Plan - The Orange County Public Facilities and Resources Department, Watershed & Coastal Resources Division, is local sponsor for a US Army Corps of Engineers comprehensive watershed study of the Newport Bay/San Diego Creek Watershed. The plan will identify feasible management projects to improve environmental and economic conditions in the watersheds and to reestablish a stable, healthy and sustainable watershed environment. The on-going watershed studies include the preparation of integrated watershed management plans that include both structural and non-structural projects. The process takes advantage of an existing alliance of fourteen regulatory, resource agencies and elected officials working to address protection and enhancement of watershed habitats, flood protection, water quality improvements, and reduction of erosion and sedimentation. The draft Baseline Conditions Report (F-3 Milestone) for the Newport Bay/San Diego Creek Watershed Management Plan has been prepared. The report summarizes the findings, results and data collected for the baseline (existing) conditions pertaining to hydrology, hydraulics, sedimentation, groundwater, geology, soils, economics, and the environmental setting. The Baseline Conditions Report is the first report in a series of deliverables leading to a Final Feasibility Report and a Watershed Management Plan. In 1998, the U.S. Army Corps of Engineers completed an expedited Reconnaissance Study of the Newport Bay/San Diego Creek Watershed. The report determined there was Federal interest in conducting a cost-shared feasibility study for the watershed. A project study plan was prepared in 1999 defining a plan of action for a more detailed cost-shared feasibility study. The Feasibility Study phase was initiated in 1999 and is expected to take 34 months and is estimated to cost $2,240,000.

Newport Bay/San Diego Creek TMDLs – Under Section 303(d) of the Clean Water Act, the Regional Water Quality Control Board (RWQCB) has identified Upper Newport Bay and San Diego Creek as water quality limited. The San Diego Creek and Upper Newport Bay are impaired because of excessive amounts of nutrients (nitrogen and Phosphorus), sediment, and toxic pollutants. Upper Newport Bay is also impaired due excessive amounts of fecal coliform, an indicator of pathogens. . These regulations will limit the "Total Maximum Daily Load" of sediments, nutrients, pathogens and toxics entering waters of the creek and bay.

Reconstruction of Sediment Basin and Weir in Lower San Diego Creek – The County of Orange was awarded a Proposition 13 Grant to correct current deficiencies in the trapping efficiency of the sediment in Channel Basins 1 and 2 in the lower San Diego Creek during larger magnitude storm events, resulting in protection of the habitat and navigational uses of Newport Bay. It will also, as a consequence, reduce nutrients (especially phosphorus) which are bound to sediment, contributing to load reductions required by the nutrient TMDL.

Serrano Creek Stabilization Phase I – The project will Stabilize Serrano Creek where erosion has occurred over the past decade, and will address the loss of important native vegetation, poor water quality due to increased volume of urban water runoff, and decreased vegetative cover that is a cause of elevated water temperatures. Total cost of the stabilization work is estimated to be $3,542,000. Of the 28 work elements identified in the Serrano Creek Conceptual Plan, 20 have the highest priority and estimated to cost $2,578.300. The elements of work include: rock stabilization structures; rock slope

protection; recreating with fill material the area of Serrano Creek Park lost during El Nino storms, bendway weirs and rock vanes, toe extensions of existing gunite and rock stream banks, and creek revegetation with native plant species. Existing grant funding of $926,600 is available for these elements. A Prop 13 grant of $570,000 and a Southern California Wetlands Recovery grant of $500,000 have been received for this project.

Serrano Creek Exotics Removal – This project will fund the removal of invasive non-native plants from approximately two miles of Serrano Creek between Lake Forest Drive and Bake Parkway.

Pending/In Progress

Upper Newport Bay Ecological Restoration, Final Design Plans – The U.S. Army Corps of Engineers is preparing final design and engineering plans to dredge 2.1 million cubic yards of sediment from Upper Newport Bay. The project includes several enhancements to existing habitat areas, including dredging channels to promote tidal circulation and limit predator access to sensitive areas and expanding mudflat habitat in several locations to compensate for mudflats lost to dredging.

Urban Nutrient Source Identification and Best Management Practices Evaluation for the Newport Bay Watershed – This project will assess urban nutrient sources in the Newport Bay Watershed that are contributing to excess algae growth and oxygen depletion in the Bay and evaluate Best Management practices that can be implemented to reduce urban nutrient loads required by the adopted nutrient TMDL. The project is being funded by a Proposition 13 Grant and is due to start in the summer of 2002.

Erosion and Sediment Control Enhancement Program for Newport Bay – Program will reduce the sediment loading to San Diego Creek and Newport Bay from construction activities, resulting in protection of the habitat and navigational uses of the Bay and sediment load reductions required by the sediment TMDL. It will also, as a consequence, reduce nutrients (especially phosphorus) which are bound to sediment and contribute to load reductions required by the nutrient TMDL. A grant request for Prop 13 funds has been submitted.

Newport Bay Eco-system Restoration Project – This project will restore endangered species habitats and improve sediment-trapping basins. The project is being funded by the California Coastal Conservancy and the COE.

San Joaquin Marsh Enhancement Phase II Feasibility - The University of California, Irvine is preparing a feasibility study, conducting an environmental review, consulting with permitting agencies, and preparing final construction designs and contract documents for Phase II of San Joaquin Marsh Reserve restoration. Phase I, completed in January 2000, encompassed enhancement of seasonal ponds and restoration of coastal sage scrub habitat. Phase II will focus on enhancement of the approximately 120 acres of peremmial marsh.

Newport Bay Eelgrass – This is a cooperative project with the COE and the City of Newport Beach to restore eelgrass beds at up to 10 locations in Newport Bay as a pilot project to demonstrate that the water quality has improved sufficiently to support restoration. It will also provide for the establishment of mitigation areas for future projects proposed for Newport Bay. The City of Newport Beach has prepared a draft Eelgrass Management Plan and will be submitting for approval this year.

The Upper Newport Bay Restoration and Education Project is a pilot project for the California Coastal Commission for developing coastal restoration and education projects throughout California. Part of the project involves compiling a curriculum to teach participating school groups about the importance of coastal habitat and the impacts of human activities on that habitat. Hands-on restoration work will be included within the lesson plans to reinforce classroom instruction with experiential learning; all the while fulfilling state content standard requirements. This K-12 curriculum will be specific to

Newport Bay and available to educators in Orange County for free. The restoration program will proceed independently of the curriculum, serving the vital purpose of restoring the salt marsh ecology and critical species habitat of the Upper Newport Bay through the work of community volunteers. Events will be held twice a month, including projects such as: planting, weeding, building nest-boxes, or propagating native plants.

Natural Treatment System Master Plan – The Irvine Ranch Water District is developing this plan to construct and maintain a system of man-made wetlands and natural treatment systems throughout the San Diego Creek Watershed. It is intended to meet the water quality objectives for San Diego Creek and Upper Newport Bay through an integrated network of constructed wetlands throughout the watershed.

Big Canyon Creek Restoration - Prepare restoration plans for Big Canyon Creek, a tributary to Upper Newport Bay. The plan will address wetland habits, water quality, drainage and hydrologic issues, storm drain problems, tidal exchange needs, sedimentation, long-term system sustainability, and public access. The plan will evaluate the restoration potential of several habitat types, including tidal channels, mudflats, salt marsh, freshwater and brackish water marsh. The plan will also make recommendations for addressing drainage problems and water quality contamination form Big Canyon County Club golf course, bluff side homes and impervious urban watershed areas. The final document will include plans for detailed drainage improvements, dredging, revegetation, restoration of wetlands and related habitats, re-creation of tidal exchange, public access and trail construction.

Newport Bay Dry Weather Diversion – SWRCB committed $200,000 to this recently authorized Clean Beach Project.

3.5.4 Planning/Management Gaps

The comprehensive San Diego Creek/Newport Bay Watershed Management Planning effort will provide a careful evaluation of current and future gaps in the watershed.

3.5.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the Newport Bay and San Diego Creek Watershed Study Management Team during preparation of the San Diego Creek/Newport Bay Watershed Management Plan and assist project stakeholders in identifying and implementing watershed management priorities.

3.6 Los Trancos/Muddy Creek Watershed

3.6.1 Setting

The Los Trancos-Muddy Creek Watershed covers 11.2 square miles, chiefly in the unincorporated area between the Newport Beach and Laguna Beach. Los Trancos Creek and Muddy Creek, its main tributaries, drain the San Joaquin Hills.

3.6.2 Watershed Organizations

The following organizations are active in the Los Trancos/Muddy Creek Watershed. Contact information for each organization is included in Appendix A.

- Crystal Cove Conservancy – Brenda Stouffer
- Sierra Club – Bill Corcoran
- Friends of the Irvine Coast – Fern Pirkle
- Orange County Coastkeepers – Garry Brown

3.6.2 Planning Activities

The following is a list of watershed plans and activities pertaining to the Los Trancos/Muddy Creek Watershed.

Partially Completed

Crystal Cove Watershed Management Plan – Prepared for the Newport Coast/Crystal Cove area as part of Cease and Desist Order No. 00-87, requiring the Irvine Company, the California Department of Transportation, the California Department of Parks and Recreation, and the Laguna Beach Unified School District to comply with the Ocean Plan Prohibition of Discharges of Waste to the Irvine Coast Area of Special Biological Significance (ASBS) (Crystal Cove).

3.6.4 Planning/Management Gaps

The comprehensive Los Trancos/Muddy Creek Watershed Management Planning effort will provide a careful evaluation of current and future gaps in the watershed.

3.6.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the Irvine Company, the California Department of Transportation, the California Department of Parks and Recreation, and the Laguna Beach Unified School District and assist project stakeholders in identifying and implementing watershed management priorities.

3.7 Laguna Canyon Channel Watershed

3.7.1 Setting

The Laguna Canyon Watershed covers 10.5 square miles and includes portions of the cities of Aliso Viejo, Laguna Beach, and Laguna Woods. Its main tributary is the Laguna Canyon Channel.

3.7.2 Watershed Organizations

The following organizations are active in the Laguna Canyon Channel Watershed. Contact information for each organization is included in Appendix A.

- City of Laguna Beach – Steven May and Craig Justice
- Laguna Canyon Conservancy – Carolyn Wood
- Laguna Canyon Foundation – Mary Fegraus
- Laguna Greenbelt – Elisabeth Brown

3.7.2 Planning Activities

The following is a list of watershed plans and activities pertaining to the Laguna Canyon Channel Watershed.

Completed

Laguna Lakes Enhancement and Management Plan – The Laguna Greenbelt initiated this study to develop a restoration and management plan for Laguna Lakes, the only known natural lakes in Orange County. It describes the opportunities and constraints at the lake and considers various enhancement options. The Plan includes field data for vegetation and water quality. Data on wildlife is based on existing information. The Lakes are part of Orange County's Laguna Coast Wilderness Park. Access to the lakes is restricted to docent lead tours.

Laguna Canyon Road Widening/Realignment EIR - This document assesses the potential environmental impacts from a roadway improvement project along Laguna Canyon Road in the vicinity of Laguna Lakes. Biological resources, water resources, land use, traffic, and geology/soils are addressed. The information on water resources, land use and soils is based on existing data. The information on vegetation is based on original surveys and mapping from 1993.

Pending/In Progress

Laguna Beach Watershed Pollution Prevention Program - The purpose of the project is to develop and implement, over a two-year period, a watershed based program to more effectively clean and maintain beaches, storm drains, channels, v-ditches, parks and open-space trails. This will be a cooperative effort between the City, County of Orange and Orange County Conservation Corps. The project goal is to reduce pollutants such as sediment, trash, vegetation, and domesticated animal waste that may contribute to high bacterial levels in the Pacific Ocean. The pollutants removed during the project will be evaluated for source reduction opportunities. In addition, the effectiveness of the cooperative program will be assessed for long-term application and as a model for other watersheds. The preliminary cost estimate for the project is $250,00

City of Laguna Beach Monitoring and Testing - The City is proceeding with a project to install 5 continuous deflection separators (CDS) to remove gross pollutants from urban runoff flow before discharge to the ocean. The project-monitoring element includes monitoring and testing of the urban runoff at each of the 5 locations to determine potential pollutant constituents in the urban runoff and to determine the effectiveness of the CDS units. The contract will run for a two (2) year period from approximately October, 2003 to October, 2005. The appropriate EPA approved testing methodology shall be used for analytical testing.

Bluebird Canyon Creek Restoration Project - The project goal is to implement physical and natural improvements to a section of the creek to reduce pollutants and improve water quality for the protection of public health and the environment. This section of the creek has poor water quality and drainage. Children and community residents often visit this area from an adjoining community park. The preliminary cost estimate for the project is $350,000.

Coastal Storm Drain Pollution Control and Source Reduction Project - Includes construction of five (5) Phase 3 storm drain diversion units. The units will divert approximately 132 additional urbanized acres. Technology upgrades for year around pollution control have been incorporated into Phase 2 and proposed Phase 3 units. They include swirl separators manufactured by Continuous Deflection Separation (CDS) Technologies Inc. for removing gross pollutants and oil & grease, and (1) during the summer months discharge to the sewer system and; (2) during the winter months up to the CDS design capacity of 3 cfs discharge back to the storm drain and to the ocean. The goal of the proposed project is facilitate an understanding of the effectiveness of utilizing CDS technology and diversion to the sewer system as a Best Management Practice (BMP) to control and remove bacteria and pollutants that might otherwise go into the Pacific Ocean and collect on beaches. In addition, urban runoff water quality data and gross pollutants removed will be evaluated for each storm drain diversion location and related to their specific drainage area for source reduction and public education efforts.

No Plan/Gap

Laguna Coast Wilderness Park lies within some of the last remaining coastal canyons in Southern California. The park ecosystem is primarily Coastal Sage Scrub, with Maritime Chaparral, Oak Woodlands, Riparian habitats, and the ONLY natural lakes in Orange County. The park is also enrolled in the Natural Community Conservation Planning program designed to protect various endangered species (California Gnatcatcher, Cactus Wren, Orange-Throated Whiptail) by preserving large tracts of the rapidly diminishing coastal sage ecosystem. As Laguna Coast Wilderness Park increases in area (it is currently 2000 acres and will eventually cover 12,000 acres) a master plan will need to be developed.

3.7.4 Planning/Management Gaps

The City of Laguna Beach has historically flooded during heavy rains. The City Council recently rejected a Flood Control Plan prepared by the County that would have constructed a new flood control channel beneath Laguna Canyon Road. The City Council's decision to abandon the ambitious public works project came after officials said they could not resolve how much contaminated soil existed around the channel, how much it would cost to remove it and who would pay for the cleanup.

3.7.5 Watershed Management Priorities

The mission of the City Urban Runoff Water Quality Program is to protect and preserve the community public health and the environment through implementation of activities to

eliminate sources of urban runoff pollution from industrial, commercial, new development/ construction, and residential areas that may enter the storm drainage system. Plans are to:

- Provide continuous pollution prevention public education and outreach to develop community awareness and environmental stewardship.
- Protect and preserve streams, ocean, shoreline/beaches, and reef ecosystems from pollutants.
- Provide Best Management Practices (BMPs) to the community on ways to reduce the amount of urban runoff pollution from various activities.
- Achieve and maintain compliance with the City urban runoff permit issued by the San Diego Regional Water Quality Control Board.
- Implement a cost effective program that is sustainable.
- Enforce urban runoff water regulations and municipal code.

3.8 Aliso Creek Watershed

3.8.1 Setting

The Aliso Creek Watershed covers 30.4 square miles and includes portions of the cities of Aliso Viejo, Dana Point, Laguna Niguel, Laguna Woods, Laguna Beach, and Lake Forest. Its main tributary, Aliso Creek, originates in the Santa Ana Mountains inside the boundaries of Cleveland National Forest. Smaller tributaries include Wood Canyon, Sulphur Creek, the Aliso Hills Channel, and English Channel. The terrain is characterized as hilly with the creek descending 2,400 feet from the crest in the Cleveland National Forest 20 miles to the beach. Much of the upper and lower watershed is reserved as open space, while the middle reaches are highly urbanized.

Concerns for the water quality of Aliso Creek at the County's beach park have been a priority issue in this watershed. The bacteria levels of the creek waters during dry weather are frequently above the body contact standards.

3.8.2 Watershed Organizations

The following organizations are active in the Aliso Creek Watershed. Contact information is included in Appendix A.

- U.S. Army Corps of Engineers – Jim Hutchison
- County of Orange CEO – Michael Wellborn
- County of Orange – Kathie Matsuyama
- Aliso Creek Watershed Study Management Team – Michael Wellborn
- Surfrider Foundation, Laguna Beach – Christian Morris-Smith
- Clean Water Now – Roger Von Butow

3.8.3 Planning Activities

The following is a list of watershed plans and activities pertaining to the Aliso Creek Watershed. All are either Pending or In Progress.

Aliso Creek Watershed Management Plan – The Orange County Public Facilities and Resources Department, Watershed & Coastal Resources Division, is local sponsor for a US Army Corps of Engineers comprehensive watershed study of the Aliso Creek Watershed. The plan will identify feasible management projects to improve environmental and economic conditions in the watersheds and to reestablish a stable, healthy and sustainable watershed environment. The on-going watershed studies include the preparation of integrated watershed management plans that include both structural and non-structural projects. Existing and future conditions are identified as well as watershed problems, opportunities and solutions. The program encompasses a regional or multi-jurisdictional geographic area that involves local citizens, landowners, and governmental agencies utilizing a collaborative process of interaction. The U.S. Army Corps of Engineers completed the Reconnaissance Report in February 1997. The Feasibility Study phase began in January of 1998 and a draft of the final Feasibility Study report called the Aliso Creek Watershed Management Plan (WMP) was circulated in November 2001.

The (WMP) is a collection of recommendations that have been developed with the advice and participation of community representatives; Federal, State, and local agency representatives; private citizens; and local citizen interest groups. These recommendations help develop practices that would assist the citizens of the Aliso Creek

watershed maintain a healthy, sustainable natural resource system. The objectives of the WMP include:

- Promote stream stabilization
- Reduce soil erosion
- Increase biological diversity
- Encourage land stewardship
- Improve aquatic and riparian habitat
- Reduce invasive species
- Improve Water Quality

Aliso Beach Clean Beach Initiative Project - The project will install package water quality treatment systems at two locations along Aliso Creek. The purpose of the treatment system is to harvest water from Aliso Creek and reduce the total dissolved solids TDS (salts). The treated creek water will be either 1) be blended with secondary effluent from a local water treatment plant and then used to irrigate a golf course or 2) the treated water can be returned to Aliso Creek.

Dairy Fork Biofiltration Basin in Aliso Creek Watershed - The proposed project is the design and construction of a vegetated water quality treatment system in lower Dairy Fork. The treatment system consists of a series of three flow-through biofilters constructed of large rock, which will serve to slow down and filter the water in Dairy Fork. The biofilters will act by providing a surface for algae to grow on, which will then uptake nutrients and adsorb bacteria and sediment will settle out behind the filters. The biofilters will function at flows less than a 10-year flood and will be submerged during higher flows. Additionally, a low flow channel will be constructed to meander through the biofilters and contain the flow in a narrower channel, which can more effectively be vegetated and shaded. The margins of the low flow channel will be vegetated with emergent marsh vegetation (sedges, rushes, cattails) and the remaining 100 foot wide buffer will be revegetated with native trees and shrubs (willows, alders, cottonwood, mulefat, etc.). Some wetland and riparian vegetation may further reduce nutrient, bacteria and sediment loading as well as providing shade to directly reduce temperatures. A variety of wildlife species can be expected to utilize the revegetated corridor including warblers, sparrows, goldfinches, wrens, thrushes, hawks, lizards, Pacific treefrog, raccoons, weasels, and other small mammals.

Narco Channel Aquatic Ecosystem Restoration Project – The project involves converting up to 2,700 feet of Lower Narco Channel from an unlined trapezoidal channel to a constructed wetlands with associated water quality and flood control benefits through the removal of flood flow obstacles, establishment of stabilized riparian-vegetated terraces, installation of a trash/debris removal device, and restoration of aquatic habitat in a meandering low-flow channel.

Munger Storm Drain Biofiltration Basin in Aliso Creek Watershed – This pilot project is an underground sandfilter with four chambers designed to treat water discharged from Munger Storm Drain into Aliso Creek. The filter will treat urban nuisance flows and bypass the larger storm flows.

Wood Canyon Stream Stabilization and Restoration – This project will restore degraded riparian habitat along approximately 3.5 miles of Wood Canyon Creek and its lower order tributaries from its origin in the northern section of the Aliso and Wood Canyons Wilderness Park to its confluence with Aliso Creek. Wood Canyon is characterized by its rugged hillsides, oak woodlands, freshwater marshes, riparian corridors and abundant wildlife. The project consists: 1) modification of an existing

detention basin at the upstream boundary of the Wilderness Park which is contributing to erosion in Wood Canyon; 2) re-routing and revegetating approximately 2.75 miles of a tributary stream; and 3) removal of non-native species. In addition to habitat benefits, the project will provide water quality benefits by increasing the capability of Wood Canyon Creek to filter non-point source pollution.

Aliso Creek Dry Weather Diversion and Wetland Treatment of Runoff – Project recently funded by SWRCB under Clean Beach Project.

3.8.4 Planning/Management Gaps

The comprehensive Aliso Creek Watershed Management Planning effort will provide a careful evaluation of current and future gaps in the watershed.

3.8.5 Watershed Management Priorities

- SCWRP Coordinator will work closely with the Aliso Creek Watershed Study Management Team during preparation of the Aliso Creek Watershed Management Plan and assist project stakeholders in identifying and implementing watershed management priorities.

- Implement watershed solutions identified in the Aliso Creek Watershed Management Plan including those specific to water quality problems in the Aliso Creek Watershed.

- Continue to develop and implement watershed education projects for the Aliso Creek Watershed.

3.9 Salt Creek Watershed

3.9.1 Setting

The Salt Creek Watershed is the smallest watershed in Orange County, covering 6.1 square miles. Salt Creek or “Arroyo Salado” is its main tributary. Located north of the Dana Point headland is a fun beach break at Salt Creek, nestled in some of the only remaining giant kelp beds south of Palos Verdes,

3.9.2 Watershed Organizations

The following organizations are active in the Salt Creek Watershed. Contact information for each organization is included in Appendix A.

- City of Dana Point – Bob Warren
- Orange County Coastkeepers – Garry Brown

3.9.2 Planning Activities

The following study comprises the sole planning activity in the Salt Creek Watershed. It is partially completed.

Monarch Beach/Salt Creek Source Control Study – The City of Dana Point is conducting a baseline assessment for the Salt Creek Watershed.

3.9.4 Planning/Management Gaps

Salt Creek needs to have a comprehensive Watershed Management Planning effort, which will provide a careful evaluation of current and future gaps in the watershed.

3.9.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the City of Dana Point to organize a Salt Creek Watershed Team to see the benefits of preparing a Salt Creek Watershed Management Plan and assist project stakeholders in identifying and implementing watershed management priorities. The main goal will be to identify ways to reduce or eliminate bacteria.

3.10 San Juan Creek Watershed

3.10.1 Setting

The San Juan Creek Watershed covers 133.9 square miles and includes portions of the cities of Dana Point, Laguna Hills, Laguna Niguel, Mission Viejo, Rancho Santa Margarita, and San Juan Capistrano. Its main tributary, San Juan Creek, originates in the Santa Ana Mountains district of the Cleveland National Forest in the easternmost part of Orange County. The Arroyo Trabuco, Oso Creek, and are smaller tributaries.

3.10.2 Watershed Organizations

The following organizations are active in the San Juan Creek Creek Watershed. Contact information for each organization is included in Appendix A.

- U.S. Army Corps of Engineers – Jim Hutchison
- County of Orange CEO – Michael Wellborn
- Aliso Creek Watershed Study Management Team – Michael Wellborn
- Dana Point Harbor Task Force – Kathie Matsuyama
- Orange County Coastkeepers – Garry Brown
- Audubon Society – Pete DeSimone
- Friends of Arroyo Trabuco Golf Course – Gail Prothero

3.10.2 Planning Activities

The following is a list of watershed plans and activities pertaining to the San Juan Creek Watershed. All are either Pending or In Progress.

San Juan Creek Watershed Management Plan – The Orange County Public Facilities and Resources Department, Watershed & Coastal Resources Division, is local sponsor for a US Army Corps of Engineers comprehensive watershed study of the San Juan Creek Watershed. The study of the creek and its watershed will result in development of a rehabilitation plan that will accomplish stream stability, habitat restoration, flood and embankment protection and improve water quality. A conceptual list of projects has been developed for the watershed. The list outlines three proposal areas – flood damage reduction, stream stabilization, and environmental restoration.

San Juan Creek Watershed Bacterial Study – The San Juan Creek Watershed comprises 103,683 acres that empty into the Pacific Ocean at Doheny Beach. The ocean water at the mouth of San Juan Creek regularly fails State bacteriological standards. To characterize the bacteriology of the San Juan Creek Watershed and to determine the sources of bacterial pollution, the State Water Resources Control Board is funding a bacteriological study that includes bacteriological source tracking studies. The study has three purposes: 1) Provide a bacterial survey of the water quality of the San Juan Creek watershed in dry weather conditions and locate any areas with bacteriologic water quality problems. 2) Determine the source of the bacteria found in the problem areas using bacterial source tracking. 3) Compare two different techniques of bacterial source tracking, Ribotyping and Antimicrobial Resistance Testing (ARA) to determine the accuracy of these techniques.

Dry Weather Diversion and Tidal Circulation Feasibility Study - The project is to mitigate bacteriological contamination and postings at Baby Beach. The source of bacteria is elusive at this beach. Numerous BMPs have been attempted but to no avail. In this project, three studies will be completed in order to identify the source of

bacteria and select appropriate BMPs to mitigate those bacteria: a data mining and evaluation study that includes GIS, a bacteriological source tracking study, and a tidal circulation study. Following the studies, BMPs will be selected, designed, implemented and monitored. Additionally, the Ocean Institute adjacent to Baby Beach has recently initiated a renovation in which stormwater BMPs have been installed. The installation and monitoring of these BMPs is also a part of this project because of their positive impact on water quality at Baby Beach.

Dana Point Harbor Water Quality Task Force – The Task Force is made up of about 40 merchants, residents, and county, state and city officials. The Task Force studies sources of water pollution in the Harbor including: urban runoff; water quality in the commercial core of the harbor; potential runoff from development of the 121- acre Headlands bluff north of the harbor; dredging projects; fuel contamination; sewer lines; and contamination from boat holding tanks.

Dana Point Harbor Marine Life Refuge - Beginning at the west end of Dana Point Harbor and stretching around the Headlands, The Dana Point Marine Refuge offers the visitor a look at an unspoiled California coastal ecosystem. Tidepools rich in marine life such as anemones, starfish and hermit crabs are abundant at low tide. The Dana Point Harbor Task Force is including this site in their Water Quality study.

Doheny State Beach Dry Weather Diversions and Pollution Abatement – Alipaz Stormdrain Treatment and Diversion – Recently funded by the SWRCB.

Doheny State Beach Dry Weather Diversions and Pollution Abatement – Del Obispo Diversion - Recently funded by the SWRCB.

3.10.4 Planning/Management Gaps

The comprehensive San Juan Creek Watershed Management Planning effort will provide a careful evaluation of current and future gaps in the watershed.

3.10.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the San Juan Creek Watershed Study Management Team during preparation of the San Juan Creek Watershed Management Plan and assist project stakeholders in identifying and implementing watershed management priorities.

3.11 Prima Deshecha/Segunda Deshecha Watershed

3.11.1 Setting

The Prima Deshecha/Segunda Deshecha Watershed covers an area of 31.8 square miles in the southernmost corner of Orange County. It includes the City of San Clemente, a small portion of the City of San Juan Capistrano, and a large portion of unincorporated territory. Its main tributaries are Prima Deshecha Canada and Segunda Deshecha Canada.

3.11.2 Watershed Organizations

The following organizations are active in the Prima Descheha/Segunda Descheha Watershed. Contact information for each organization is included in Appendix A.

County of Orange – Tom Rossmiller
City of San Clemente – Tom Bonigut
Coastal Advisory Committee – 7 local citizens
Sierra Club Task Force – Bob Joseph
Rancho Mission Viejo Conservancy – Laura Cohen
Friends of the Foothills – Brittany McKee
Endangered Habitats League – Dan Silver
Surfriders San Clemente - Mark Cousineau

3.11.2 Planning Activities

The following is a list of watershed plans and activities pertaining to the Prima Deshecha/Segunda Deshecha Watershed.

Partially Completed

The Urban Runoff Management Plan (URMP) provides guidance for improving water quality in terms of controlling urban runoff and storm water. This plan covers the City of San Clemente only, not the entire watershed.

Pending/In Progress

Clean Beach Initiative – Poche Beach Project - The County of Orange is presently in the design stage for biofiltration systems that will be built as demonstration projects in the Aliso Creek Watershed. If these projects demonstrate early effectiveness, then they will be considered as options for bacterial loading reduction. The City of San Clemente and the County of Orange are investigating the available options by first determining water quality trends; base flow rate variations; treatment plant capacity, sewer line capacity, treatment and reuse technology and siting and habitat issues. Additional SWRCB funding was recently secured for dry weather diversions.

Source Control Plan - Surfrider Foundation and some local business sponsors are investigating the watershed on a pipe-by-pipe basis to quantify the volume of water and relative bacterial concentrations of sub-watershed areas. The output will be a GIS map of the watershed layered with data that will assist the City and County in source control efforts. Based on the findings of these investigations, a strategy for dealing with the total watershed base flow will be developed.

3.11.4 Planning/Management Gaps

The comprehensive Prima Deshecha/Segunda Deshecha Urban Runoff Management Planning effort will provide a careful evaluation of current and future gaps in the watershed. Of particular interest will be the effect from the runoff at the headwaters located at the Prima Deshecha Landfill.

3.11.5 Watershed Management Priorities

SCWRP Coordinator will work closely with the Coastal Advisory Committee during preparation of the Prima Segunda/Segunda Descheha Watershed Management Plan and assist project stakeholders in identifying and implementing watershed management priorities. The priorities include reducing postings, closures and urban runoff at the local beaches without altering the flow.

APPENDIX A

Ventura County Watershed Planning Organizations

Region-Wide

Forest Service, Los Padres National Forest
California Coastal Conservancy
California Department of Fish and Game
California Department of Parks and Recreation
California Department of Transportation
California Department of Water Resources
California Regional Water Quality Control Board
California Trout
National Fish and Wildlife Foundation
Natural Resources Conservation Service
National Marine Fisheries Service
National Park Service
U.S. Army Corps of Engineers
U.S. Bureau of Reclamation
U.S. Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Geological Survey
Wildlife Conservation Board

County-Wide

California Native Plant Society, Channel Islands
Environmental Defense Center
Southern California Steelhead Coalition
Southern California Water Company
Southern California Wetlands Recovery Project
Surfrider Foundation
Tri-County Fish Team
Ventura County Arundo Task Force
Ventura County Audubon Society
Ventura CoastKeeper
Ventura County Department of Public Works
Ventura County Flood Control District (Watershed Protection)
Ventura County Planning Department
Ventura County Resource Conservation District

- Ventura County Transportation Department
- Ventura County Wetlands Task Force

Ventura River Watershed
- Casitas Municipal Water District
- ChannelKeeper
- City of Ojai
- City of San Buenaventura
- Friends of the Ventura River
- Matilija Coalition
- Matilija Dam Removal Study Team
- Meiners Oaks County Water District
- Ojai Basin Groundwater Management Agency
- Ojai Valley Land Conservancy
- Ojai Valley Sanitation District
- The Crew (Ojai)
- Ventura River County Water District

Santa Clara River Watershed
- Castaic Lake Water Agency
- City of Fillmore
- City of Piru
- City of San Buenaventura
- City of Santa Paula
- Friends of the Santa Clara River
- Keep the Sespe Wild
- Santa Paula Creek Task Force
- United Water Conservation District

Calleguas Creek Watershed
- Business Industry Association
- Calleguas Municipal Water District
- Camrosa Water District
- City of Camarillo
- City of Moorpark
- City of Thousand Oaks
- City of Simi Valley
- Conejo Recreation and Park District
- Pleasant Valley County Water District
- Pleasant Valley Park and Recreation District
- Point Mugu Naval Air Base
- Rancho Simi Recreation and Park District
- Santa Monica Mountains Conservancy
- Ventura County Economic Development Association

Ormond Beach Watershed
- City of Oxnard
- Ormond Beach Observers

Malibu Creek Watershed
- City of Malibu
- Malibu Creek Watershed Council