

RECLAMATION

Managing Water in the West

Mid-Pacific Region
Overview
2005



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Mid-Pacific Region
Overview
2005

MP Region Overview

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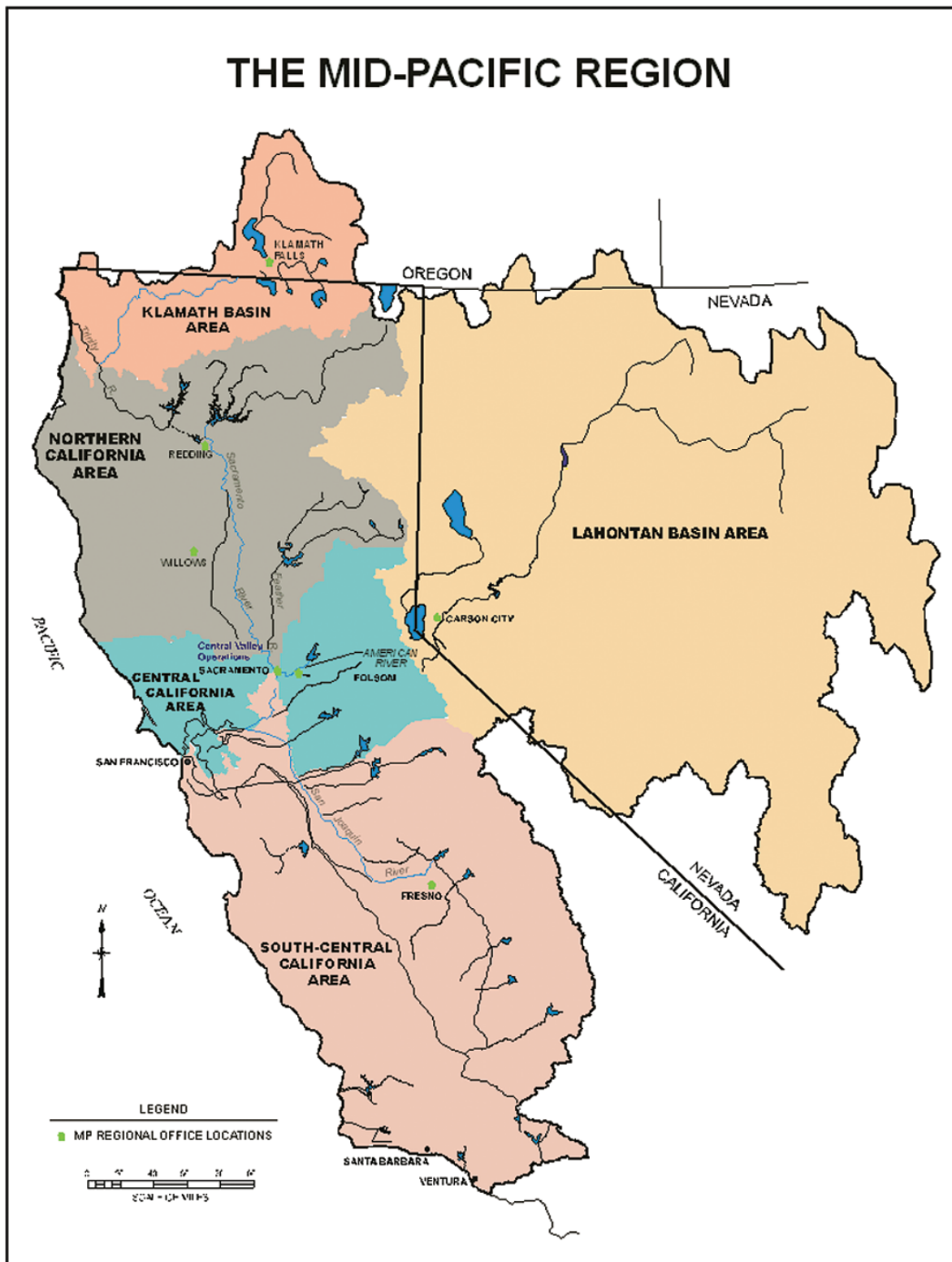
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Who We Are

The Mid-Pacific (MP) Region is one of five Bureau of Reclamation Regions in the 17 western United States. The MP Region was created by the Secretary of the Interior (Secretary) in December 1942 and is headquartered in Sacramento, California.

More than 900 people are employed throughout the Region in a wide range of positions including project managers, operations and maintenance personnel, and support staff. The Region's five Area Offices are located in Shasta Lake, Folsom, and Fresno, California; Carson City, Nevada; and Klamath Falls, Oregon. Supporting offices include the Central Valley Operations Office (CVO) in Sacramento and the MP Construction Office in Willows, California.

The MP Region includes all the lands drained by rivers flowing into the Pacific Ocean along the coast of California north of the Tehachapi Mountains and all the lands drained by the rivers that both begin and end in Nevada.

The Region also includes the small area in southern Oregon drained by the Klamath River. It covers the northern two-thirds of California, most of western Nevada, and a small portion of southern Oregon.

The Region provides more than 7 million acre-feet of water annually, and its goal is to balance many competing and often conflicting needs among numerous water uses and users. These include urban and industrial use, agriculture, fish and wildlife habitat, water quality, wetlands, endangered species issues, Native American Tribal Trust issues, hydropower generation, and recreation. The Region strives to develop and implement a balanced approach to water allocation, serving users while protecting the environment.

The MP Region manages the largest and best-known water project in California and the Nation – the Central Valley Project (CVP) – as

well as Oregon's Klamath Project; Nevada's Newlands, Humboldt, Washoe, and Truckee Storage Projects; and California's Cachuma, Orland, Santa Maria, Solano, and Ventura River Projects.

Reclamation and MP Region History

As the Nation turned 100 years old in 1876, the mostly arid West's population began to grow. With this growth came the need for dependable water supplies to slake the thirst of people, livestock, and crops. Investigations by the U.S. Geological Survey (USGS) and private parties beginning in the 1880s provided the basis for some of Reclamation's earliest irrigation projects.

In 1901, "reclamation" gained a powerful supporter in Theodore Roosevelt when he became President. Passed in both Houses of the Congress by wide margins, President Roosevelt signed the Reclamation Act on June 17, 1902. The agency, then called the U.S. Reclamation Service was created as a unit within the USGS. In 1907, the Reclamation Service obtained "Bureau" status and officially changed its name to the Bureau of Reclamation in 1923. By this time, many projects had been built, but some of the earliest were built in what would eventually become the MP Region:

- On March 14, 1903, the Secretary authorized the Truckee Carson Project. Bids for construction of a dam and canal were opened on July 16, 1903, and the very first water from a Federal project backed up on the Truckee River behind Derby Diversion Dam, completed on June 17, 1905. Water diverted from the dam coursed down a 30-mile long main Truckee Canal which conveyed it to the Carson River for irrigation use in northwestern Nevada. The Truckee Carson Project today is under the jurisdiction of the MP Region's Lahontan Basin Area Office (LBAO).



Derby Diversion Dam in the Newlands Project, Nevada

- Early residents in the Klamath Falls, Oregon, area had introduced irrigation in the late 1800s. In October 1903, the Oregon District Engineer of the Reclamation Service recommended a controlling dam at the lower end of Upper Klamath Lake to retain enough water to irrigate 200,000 acres. Congress passed legislation to begin the project in early 1905, and construction started in 1906. It was largely completed by 1910 and is now under the jurisdiction of the MP Region's Klamath Basin Area Office (KBAO).



Excavating a Canal in Klamath Falls, Oregon - 1906

- Irrigated farming took place in the north-central Sacramento Valley about 100 miles north-northwest of the city of Sacramento as early as 1880. On Stony Creek, 40 to

50 separate water diversions were built. In 1903, the Reclamation Service decided to develop 40,000-50,000 acres for irrigation along Stony Creek near the small town of Orland. East Park Dam was completed in 1910 and today is under the jurisdiction of the MP Region's Northern California Area Office (NCAO).

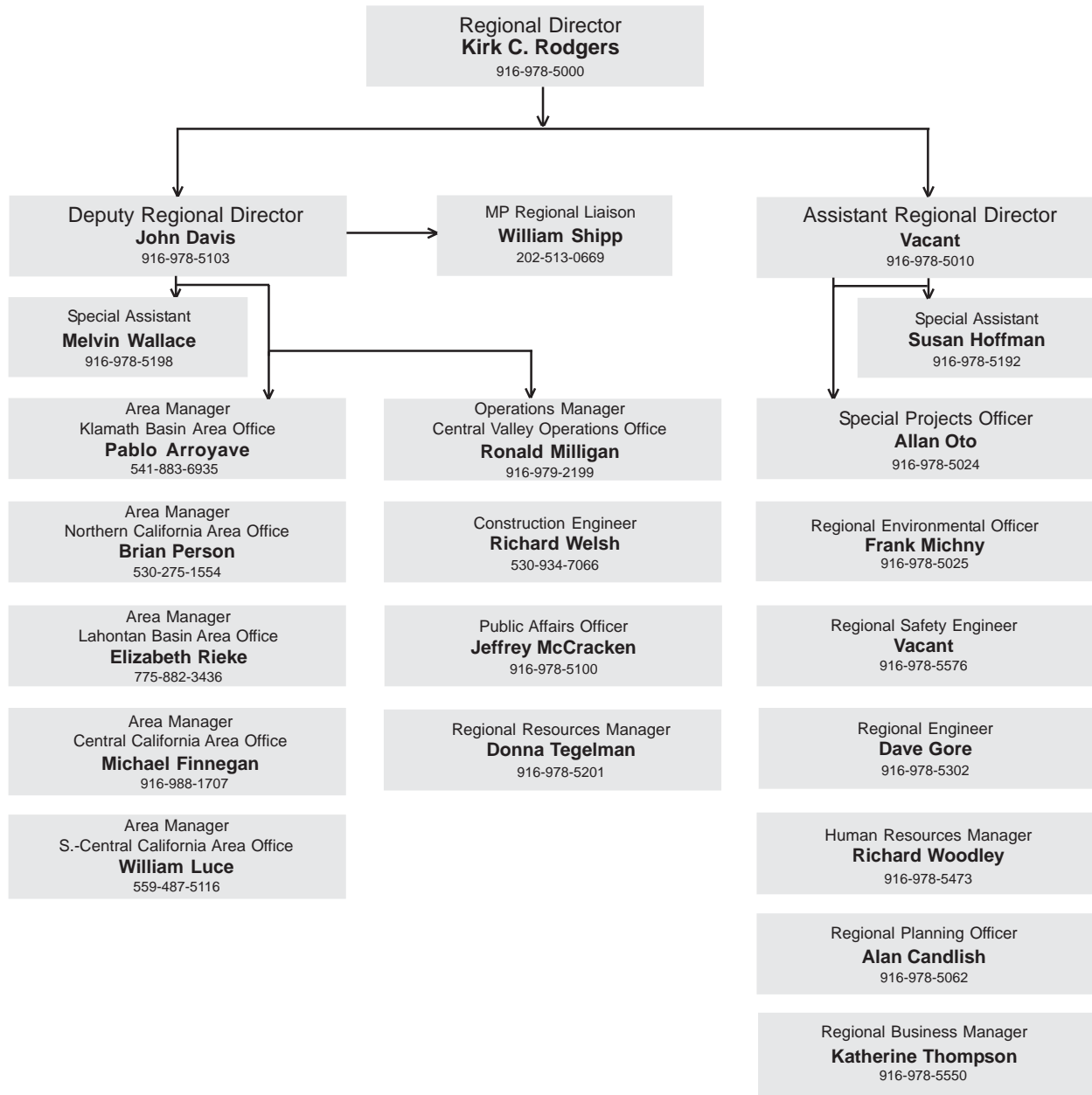
- During the Depression, Congress authorized almost 40 projects for the dual purposes of promoting infrastructure development and providing public works jobs. Among these projects were the beginnings of the CVP in California, the largest Reclamation project and one of the biggest irrigation projects in the world.



East Park Dam spillway

Today, Reclamation has more than 180 projects in the 17 Western states which provide agricultural, municipal, and industrial water to about one-third of the population of the West. Farmers on Reclamation projects produce about 13 percent of the value of all crops in the United States, including about 65 percent of vegetables and 24 percent of fruits and nuts. The MP Region works in partnership with States, tribes, water and power users, and other stakeholders to seek creative and collaborative solutions to Western water issues.

Mid-Pacific Region Organization



Regional Employees

As of the end of fiscal year 2005, the MP Region employed a staff of 924 permanent employees. Project managers take the lead in developing water policies, negotiating contracts, and implementing habitat improvements. Operations and maintenance personnel make water management decisions, monitor facilities instrumentation, oversee generator rewinds, and develop computer control programs. Support staff members provide design, construction, data processing, human resources, procurement, budget, and other essential services. Regardless of their positions, employees worked diligently to support the Region's overall critical mission requirements related to water and natural resources management.

Below are numbers of permanent staff members located throughout California, Nevada, and Oregon:

Office Location Employees

MP Regional Office

Sacramento, CA 367

Central Valley Operations Office

Sacramento, CA 58

MP Construction Office

Willows, CA 44

Weaverville, CA 2

Redding, CA 1

Folsom, CA 2

Lahontan Basin Area Office

Carson City, NV 24

Truckee, CA 1

Fallon, NV 4

Klamath Basin Area Office

Klamath Falls, OR 30



Folsom Dam powerplant employees

Central California Area Office

Folsom, CA 93

Lake Berryessa, Napa, CA 16

New Melones, Sonora, CA 14

New Melones, Jamestown, CA 5

Northern California Area Office

Redding, CA 117

Red Bluff, CA 11

Willows, CA 10

Elk Creek, CA 5

Weaverville, CA 12

South-Central California Area Office

Fresno, CA 50

Tracy, Byron, CA 42

Friant, CA 13

Cachuma, Santa Barbara, CA 3

Total 924

Regional Workforce Profile

At the end of fiscal year 2005, the MP Region's total employment stood at 986 employees, of which 924 were permanent employees. The permanent workforce is comprised of 64 percent males and 36 percent females. Considering race or ethnicity, 9 percent of the workforce identifies themselves as Hispanic or Latino, with the remaining workforce identifying themselves as: 77 percent White; 6 percent Black or African-American; 7 percent Asian, Native Hawaiian, or Pacific Islander; and 1 percent American Indian or Alaskan Native.

The MP Region has worked closely with agencies and institutions seeking to employ people with disabilities, with 8.4 percent of our total workforce claiming some form of disabling condition. The Region also continues to support hiring veterans, with approximately 29 percent of the total workforce claiming veterans' status. Of our veterans, approximately 5 percent are identified as disabled with 2.5 percent having a 30 percent or more compensable disability.

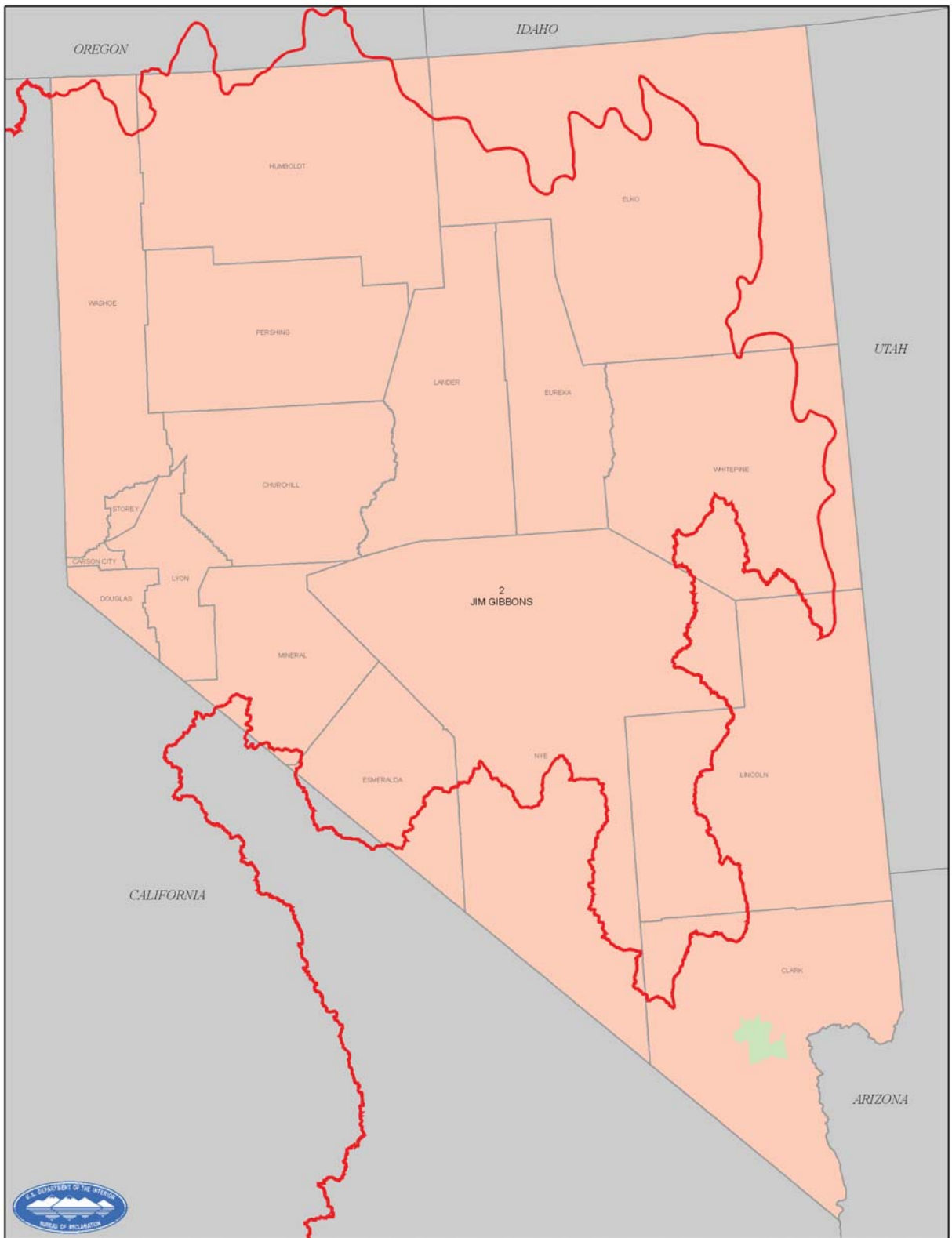
For additional information, contact the Human Resources Office at 916-978-5471 (TDD 916-978-5491).



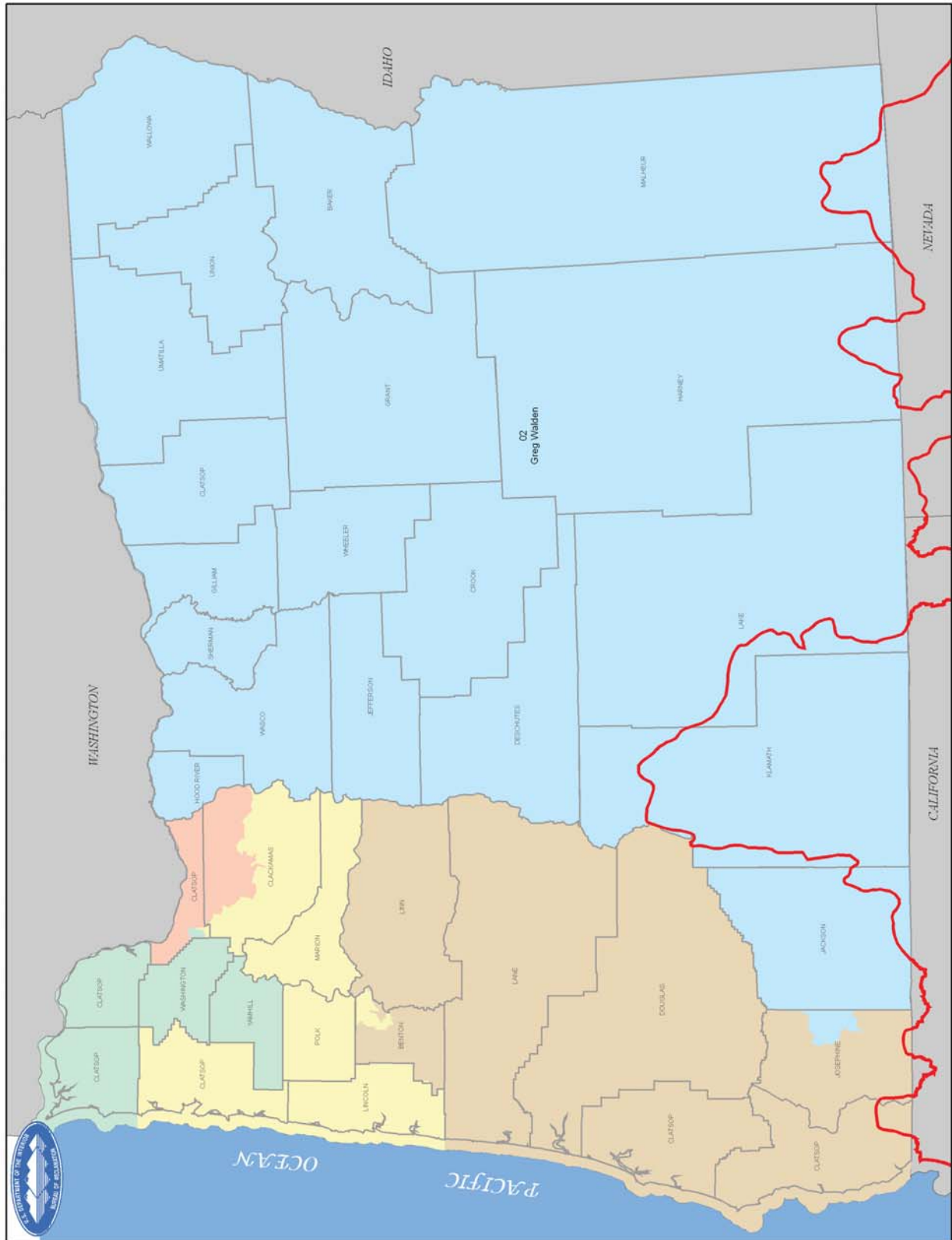
MP Region Congressional Districts



California Districts



Nevada Districts



Oregon Districts

What We Provide

The MP Region's goal is to balance competing and often conflicting needs among water uses and users. These include urban and industrial use, agriculture, fish and wildlife habitat, water quality, wetlands, endangered species issues, Native American Tribal Trust issues, power generation, and recreation.

With the CVP under its management, the MP Region encounters all the same controversies and pressures that characterize the State's water supply overall. The average annual rainfall ranges from 5 inches in the southern end of California's Central Valley – where a majority of the State's population lives – to more than 30 inches in the northern end, with more than three-fourths of the rainfall coming in a 5-month period from December through April. This condition produces seasonal floods and droughts with heavy winter and spring runoffs, leaving a shortage of water in the summer and autumn when it is most needed for irrigation.

The CVP provides the water used to irrigate more than 3 million acres of prime agricultural land in 6 of the top 10 agricultural counties in

the Central Valley of California, the Nation's leading farm state. This water grows crops such as grapes, apples, oranges, lemons, tomatoes, rice, almonds, peaches, figs, melons, lettuce, pistachios, broccoli, asparagus, corn, wheat, cotton, hay, flowers, and more. CVP water is also critical to the poultry, beef, and dairy industries.

Some two-thirds of California's population receives its drinking water from the San Joaquin/Sacramento River Bay-Delta (Delta). The Region provides clean water from its reservoirs to maintain water quality standards in the Delta by flushing out salinity from the estuary.

The Region's 11 Northern California hydroelectric powerplants provide in an average water year (WY) about 5.5 billion kilowatt hours of electricity, enough energy to supply the needs of about 1.5 million people. Millions of people also visit the Region's reservoirs each year to recreate. Folsom Reservoir, near Sacramento, is one of the most visited in the California State Parks system, with more than 2 million visitors each year.



Bay-Delta aerial view

MP Region Budget for Fiscal Year 2006

Summarized Financial Data	FY 2005 Enacted (in thousands)	FY 2006 Enacted (in thousands)	FY 2007 Request (in thousands)
Water and Related Resources	201,455	178,465	167,605
Policy and Administration	2,665	2,638	TBD
Permanent Appropriations	250	250	250
California Bay-Delta Restoration	0	37,000	38,610
CVP Restoration Fund	54,695	52,219	41,478
Revenues	39,833	44,871	30,877
Total Program Mid-Pacific Region	\$298,898	\$315,443	\$278,820

Regional Office Divisions

Special Projects Office (MP-120)

The Special Projects Office serves as the primary point of contact for the Region to develop and coordinate policy and action plans for a broad range of high-visibility programs to include the California-Federal Bay-Delta Program (CALFED) and the Central Valley Project Improvement Act (CVPIA). The staff implements the Region's policies in these areas and develops feasible and workable alternatives to proposed actions. The office functions as a coordination bridge between many entities including Reclamation offices; various Department of the Interior (Interior) bureaus; and other Federal, State, public, private, and Congressional entities.

Office of Public Affairs (MP-140)

The Office of Public Affairs manages the Region's public affairs, public involvement, and public education projects along with many internal employee information activities. Other responsibilities include meeting management, presentation planning, and exhibit development. The Public Affairs Officer is the Region's spokesperson, and the office is the point of contact for the news media, the public, and elected officials and their staffs. Staff members write speeches, briefing papers, and news releases; design fact sheets and brochures; and develop newsletters, annual reports, and other materials related to ongoing Regional projects and activities. The staff designs and implements communication plans and strategies for the public, Reclamation employees, and the news media, and provides oversight for the development and implementation of the MP Region's Internet site. Public Affairs actively manages the Region's Foreign Visitor Program and coordinates tours for members of Congress and their staffs. The staff also provides audiovisual support (including film-based and digital photography and videography) and maintains the Region's photo library.

Division of Environmental Affairs (MP-150)

The Division of Environmental Affairs ensures compliance with a variety of environmental statutes and provides policy and procedural guidance to other divisions and Area Offices. The major environmental issues center on the application and interpretation of the National Environmental Policy Act (NEPA) and the Endangered Species Act (ESA). The division is responsible for Region-wide compliance with the National Historic Preservation Act, hazardous materials statutes, data management, and wetlands and endangered species programs. It also acts as lead for the Inter-agency Ecological Program.



Ross' Geese at Lower Klamath National Wildlife Refuge

Office of Safety, Health, and Security (MP-160)

The Office of Safety, Health, and Security provides support for the Region's Occupational Safety and Health (OSH), Security, and Accessibility programs for the protection of employees and visitors, equipment and facilities, and contractor operations. The office ensures the conduct of Reclamation operations comply with Federal and Agency OSH standards and develops supplemental or additional Regional policy as needed. It provides technical guidance to field safety professionals, conducts accident investigations and OSH program evaluations, and promotes good safety practices.

The office assures the physical security of Reclamation facilities, employees, and operations. It also works to make Regional facilities accessible to all individuals.

Division of Design and Construction (MP-200)

The Division of Design and Construction works closely with the Denver Technical Service Center (TSC), Area Offices, outside entities, and others to provide a range of technical engineering, geologic, photogrammetric, and mapping support services. The division serves as the lead for the Regional Dam Safety Program. The staff prepares designs and specifications for new construction and for the modification or repair of existing facilities, provides engineering consultation services, engineering technical support for planning studies, and engineering support during construction. The staff also performs subsurface investigations and geologic analysis to support engineering designs, water resource planning efforts, operation and maintenance activities, and construction activities. The staff provides ground-water and geohydrologic support for all aspects of ground-water issues. The division's survey and photogrammetric mapping section supports design, planning, and structural monitoring activities.

Division of Resources Management (MP-400)

The Division of Resources Management is responsible for Regional activities related to water rights, administration of water service contracts, CVPIA, and Reclamation Reform Act compliance evaluations, real estate, Native American Affairs, land resources management, irrigation and drainage, Geographic Information Systems (GIS), and land classification. Division staff members are responsible for a broad range of programs including: water acquisition; water conservation; water rights for the Delta Division, the San Luis Unit, and

the San Felipe Division; title transfer; anadromous fish screens; Contra Costa Pumping Plant mitigation; Suisun Marsh; Regional recreation and wetlands coordination; maintenance of the Region's facilities; Replacements, Additions, and Extraordinary (RAX) Maintenance Program activities; Emergency Management Program; Native American Technical Assistance Program; CVP water transfer and banking activities; examination of facilities; and negotiation of long-term water service renewal contracts and renewal of the Sacramento River Settlement Contracts.

Human Resources Office (MP-500)

Human Resources Office (MP-500) The Human Resources Office functions as the Servicing Personnel Office for the Region's employees and offices and advises management on human resource issues. The Human Resources Office provides organization and position analysis, diversity consultation, and recruitment and staffing activities, and provides advisory services for employee conduct and performance issues, complaints, and grievances. The staff negotiates and administers collective bargaining agreements with employee unions, oversees employee training and development programs, coordinates payroll activities, and advises employees on retirement and benefit programs.

Division of Planning (MP-700)

The Division of Planning's primary responsibility is the preparation of multi-purpose water resource studies and plans for use in conserving water, land, power, and other associated natural resources. The Division conducts strategic planning, formulates alternatives and recommendations for resource studies, and is responsible for maintaining and improving CVP delivery capabilities through the CVP Yield Feasibility Investigation Program. It also evaluates improvements to water supply reliability through the Delta Program participation. Division staff are responsible for

reviewing, applying, developing, and maintaining mathematical computer models used for evaluating surface water supply and reliability, ground-water, sediment transport, water quality and temperature, and associated fishery impacts. The staff engages in review and use of these models and related computer applications, project planning, and management related to these models, hydrologic data development, research coordination, and documenting study results.

Business Resources Center (MP-3000)

The Business Resources Center's (BRC) mission is to support its regional customers by providing financial, acquisition, technological, and other professional services, information, and expertise while helping to ensure accountability. The BRC also provides specialized support to CVP water and power contractors and other Federal agencies, such as the U.S. Fish & Wildlife Service (Service). The BRC's functions include information technology management and security, budgeting, accounting, water rate setting, internal review, property and records management, and acquisition.

Specialized Offices

Central Valley Operations Office (CVO)

The CVO staff manages the daily operations of the CVP from the Sacramento Joint Operations Center (JOC), which is shared with the State Water Project (SWP) Operations Office, the Division of Flood Management of the California Department of Water Resources (DWR), the National Oceanic and Atmospheric Administration's National Weather Service Regional Office, and the River Forecast Center (RFC). This close proximity is crucial to the CVP and SWP's coordinated operation. The CVO staff performs operations forecasting and manages water supply operations, water quality and salinity, instream flows, and Sacramento-San Joaquin Delta

conditions. Staff members make the annual water allocation to irrigation and urban CVP contractors and coordinate flood operations with DWR, the RFC, and the U.S. Army Corps of Engineers (USACE). CVO forecasts monthly hydroelectric power generation and coordinates daily generation and project-use schedules and forecasts with the Western Area Power Administration (Western), the power marketing agency for our surplus power products. The staff also monitors and operates CVP powerplants and facilities from the centralized control system in the JOC.

MP Construction Office (MPCO)

The MPCO manages all pre-construction, on-site construction, and construction contract administration on new construction, rehabilitating existing facilities, extraordinary maintenance, concrete structures and buildings, safety of dams modifications, hazardous waste clean up and closure, fish screens, temperature control devices, fish facilities, canals and pipelines, pumping facilities, and storage dams and reservoirs throughout the Region. During 2005, MPCO maintained field stations at Folsom Dam (Folsom, CA), Shasta Dam (Redding, CA), American River Pumping Plant (Auburn, CA), Trinity River Restoration (Weaverville, CA), New Melones Dam (Calaveras County, CA), and Lauro Dam (Santa Barbara County, CA).



Dennis Edwards (L), construction Inspector from the Mid-Pacific Construction Office in Willows, California, shows contractor Tony Lynn of Berkeley Engineering (R) temporary water pumps to be used to provide the Placer County Water Agency with water from the American River North Fork near Auburn, California.

Area Offices

Klamath Basin Area Office (KBAO)

Located in south-central Oregon and north-central and northwestern California, the Klamath Project was authorized in May 1905 for irrigation of up

to 240,000 acres of family farms and ranches. Storage reservoirs are impounded by Link River Dam, Clear Lake Dam, and Gerber Dam, which provide 1,095,000 acre-feet of active storage in the Klamath River and Lost River Basins.

More than 1,400 miles of canals and drains provide water for users, including six National Wildlife Refuges (NWR). Additional water regulating facilities include Anderson-Rose Dam, Malone Diversion Dam, Lost River Diversion Dam and Channel, Miller Diversion Dam, Klamath Straits Drain, and the Tule Lake Tunnel and pump.



View of "A" Canal headgate and fish screen in Klamath Falls, Oregon

Northern California Area Office (NCAO)

The NCAO staff administers Reclamation lands, water service, and repayment contracts from north of Sacramento to the Klamath Basin. The office is headquartered at Shasta Dam. Shasta Dam is the second largest concrete dam in the country and impounds California's largest reservoir with a capacity of 4.5 million acre-feet. Field offices are located in Willows, Red Bluff, and Weaverville, California. NCAO staff oversees Shasta and Trinity Dams, powerplants, and reservoirs.



Shasta Dam

The NCAO staff provides the office and staffing for the Trinity River Restoration Program in the Trinity Basin. NCAO staff members administer the Trinity River Fish Hatchery, the Livingston Stone National Fish Hatchery, and the Coleman National Fish Hatchery. Staff members also administer Keswick Dam, Reservoir, and Powerplant; Lewiston Dam, Lake, and Powerplant; Judge Francis Carr Powerplant; Clair A. Hill Whiskeytown Dam and Lake; Stony Gorge Dam and Reservoir; East Park Dam and Reservoir; the Red Bluff Diversion Dam; the Corning Canal and Corning Pumping Plant; and the Tehema-Colusa Canal.

Central California Area Office (CCAO)

The CCAO main office is located 23 miles east of Sacramento within the Folsom city limits and has field offices at New Melones and Lake Berryessa. The CCAO staff manages water and land resources in 12 counties. Its jurisdiction extends from the California coast to the crest of the Sierras and from the American River Basin in the north to the Stanislaus River in the south. The staff is responsible for Folsom Dam, Folsom Lake, and Powerplant; Nimbus Dam, Lake Natoma, and Powerplant; New Melones Dam, Reservoir, and Powerplant; Monticello Dam, Lake Berryessa, and Powerplant; Putah Creek Diversion Dam; the Folsom-South and Putah South Canals; Sweeny, Suisun, and McCoy Creeks, and Green Valley Wasteways; and the

Nimbus Fish Hatchery. CCAO manages the recreation areas at Lake Berryessa and New Melones Lake and has a long-term lease with the California Department of Parks and Recreation (CDPR) to manage recreation at Folsom Lake and Lake Natoma.



Folsom Dam

Lahontan Basin Area Office (LBAO)

With headquarters in Carson City, Nevada's capital, LBAO covers about 80,000 square miles in northern Nevada and eastern California. The area extends from the Truckee, Carson, and Walker River drainages on the eastern slope of the Sierra Nevada range to the Great Basin National Park in eastern Nevada and from the Oregon-Nevada border to within 60 miles of Las Vegas.

The office is responsible for four Reclamation projects: the Newlands Project, which includes Lake Tahoe Dam and Reservoir, Derby Diversion Dam, and Lahontan Dam and Reservoir; the Washoe Project, which includes Stampede Dam and Reservoir, Prosser Creek Dam and Reservoir, Derby Dam Fish Passage and Marble Bluff Dam, and Pyramid Lake Fishway; the Truckee River Storage Project, which includes Boca Dam and Reservoir; and the Humboldt Project, which includes Rye Patch Dam and Reservoir.

South-Central California Area Office (SCCAO)

The SCCAO staff manages Reclamation activities from the Sacramento-San Joaquin Delta south to the Tehachapi Mountains and the south coastal counties of Santa Barbara and Ventura.

The office has jurisdiction over 2.5 million acres of irrigated land which accounts for 25 percent of Reclamation-wide total irrigated acreage. The SCCAO staff administers approximately 75 water service and repayment contracts. Staff is responsible for water conservation for the CVP Delta Division, San Luis Unit, and San Felipe Division; and makes water supply declarations for the Friant Division and the Cachuma Project. SCCAO's facilities include the Delta Cross Channel Canal, Contra Costa Canal, Tracy Pumping Plant, Delta-Mendota Canal (DMC), B.F. Sisk San Luis Dam and Reservoir, O'Neill Dam and Forebay, San Luis Canal, Friant Dam and Millerton Lake, Friant-Kern Canal, Madera Canal, Twitchell Dam, Bradbury Dam and Lake Cachuma, and Casitas Dam and Lake Casitas.



Friant Dam

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Regional Projects, Programs, and Activities

Central Valley Project (CVP)

CVP History

Investigation and development of irrigation in the Central Valley dates back to the 1850s when private interests first constructed canals to serve local areas near the rivers. Efforts at developing a comprehensive plan for the Central Valley date back to 1873, when USACE prepared a report on irrigation in the San Joaquin and Sacramento Valleys and Tulare Basin.

In 1919, a plan was submitted to the Governor of California for coordinated development of the water resources of the Central Valley. This created State-wide interest, and in 1921 the legislature made the first of a series of appropriations for investigating plans for the conservation, control, storage, distribution, and application of all waters of the State. In 1931, the Division of Water Resources submitted to the legislature the State Water Plan, which included a comprehensive plan for using the water resources of the Central Valley. The State legislature passed the California Central Valley Project Act in 1933, which authorized the sale of revenue bonds to construct the project, but during the Great Depression, bonds didn't sell easily.

Most of the water development envisioned by the State was accomplished by the Federal government beginning with the CVP's initial authorization in 1935. Construction of the CVP began in 1937 with the Contra Costa Canal, which began delivering water in 1940. The next facility was Shasta Dam, the key-stone of the project. Work on Shasta began in 1938, and water storage started in January 1944. Other major facilities were developed over the next 3 decades with the final dam, New Melones, completed in 1979.

The CVP Today

The CVP encompasses 35 counties in an area about 500 miles long and 60 to 100 miles wide. It contains some of the country's largest reservoirs, Shasta and San Luis among them. The CVP is a system of 20 dams and reservoirs, 500 miles of major canals, hydropower plants, pumping plants, and other facilities located mainly in the Sacramento and San Joaquin Valleys of California.

The CVP manages about 9 million acre-feet of water each year and delivers about 7 million acre-feet to irrigate more than 3 million acres of prime farmland annually in 6 of the top 10 agricultural counties in California. The CVP irrigates about one-third of all the land irrigated by Reclamation in the 17 western states, and one-sixth of the irrigated land in the United States. As a result, the Central Valley's annual farm production exceeds the total value of all the gold mined in California since 1848.

Some 600,000 acre-feet each year goes towards urban and industrial use, serving some 2 million individuals. The CVP also provides 800,000 acre-feet for fish and wildlife purposes. Eleven hydroelectric generators in the CVP produce about 5.5 billion kilowatt hours of clean, renewable hydropower each year. Flood control is another of the primary CVP purposes. For example, during the 1997 New Year's floods, CVP dams held back more than 2 million acre-feet of water that could have



San Luis Reservoir

caused more than \$1 billion in property damage. The CVP ranks first among Reclamation projects in value of flood damage prevention, having averted more than \$5 billion dollars in flood damage since 1950. Millions of people also enjoy boating, swimming, fishing, and other recreation at the Region's reservoirs.

Central Valley Project Improvement Act (CVPIA)

In one of its last actions of the session, the 102nd Congress passed multipurpose water legislation which was signed into law on October 30, 1992. Previously referred to as H.R. 429, Public Law 102-575 contains 40 separate titles providing for water resource projects throughout the West. Title 34, the CVPIA, mandates changes in management of the CVP, particularly for the protection, restoration, and enhancement of fish and wildlife.

Since 1992, Reclamation and the Service have worked to meet the challenges that the CVPIA presents. Its implementation has been afforded highest priority, and major strides have been made in accomplishing the Congressional mandates. Many of the CVPIA's provisions have been completed, and most of the others are well under way.

The CVPIA fundamentally changed authorization of the CVP by including fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement having equal priority with power generation. The ecosystem appears to be responding positively in the years since CVPIA implementation began. The numbers of anadromous fish returning to Central Valley rivers and streams has increased and salmon have returned to spawn in areas where they had not been seen for years. There has been a significant increase in the number of ducks, geese, and other migrating birds using the new wetlands, and avian diseases appear to be declining. While the ecosystem is

also responding to other factors, it is reasonable to assume that some of these beneficial effects are due to CVPIA implementation actions.

To date, implementation of the prescribed actions and programs has cost approximately \$801.2 million: Restoration Fund, \$485.5 million; Water and Related Resources funds, \$245.4 million; State cost-share, \$69.3 million; and donated funds, \$1 million. The Restoration Fund appropriation for fiscal year 2005 was \$54.6 million, and Water and Re-



Snow Geese

lated Resources was \$15.9 million. In fiscal year 2005, the largest amounts of money were obligated toward: Refuge Water Conveyance, Facility Construction, Refuge Wheeling, and San Joaquin Basin Action Plan (\$15.5 million); Level 4 Water Purchases (\$10 million); Trinity River Restoration (\$8.2 million); Ecosystem/Water Systems Operations Modeling (\$6 million); and the Anadromous Fish Screen Program (AFSP) (\$12.4 million).

Reclamation has developed many partnerships and extensive coordination linkages with local, State, and Federal agencies, the CALFED Program, Restoration Fund Roundtable, and private groups. CVPIA implementation continues to be coordinated with existing and ongoing restoration efforts such as the State of California's efforts to restore salmon and steelhead populations, the State Water Resources Control Board's (SWRCB) Water Quality Control Plan (WQCP), and CALFED.

Coordination with CALFED is particularly important as most of CALFED's actions have similar objectives and address many of the same natural resource and water management issues as the CVPIA. Close coordination and a focus on functional integration of CVPIA and CALFED have helped the MP Region achieve common goals and maximize benefits.

CALFED

The CALFED Program is a collaborative effort among 25 Federal and California State agencies and representatives of California's environmental, urban, and agricultural communities to improve water quality, fish and wildlife habitat, and water supply reliability in the Delta, the hub of the State's water distribution system.

The Delta is one of California's unique and valuable resources providing drinking water for more than 22 million Californians and supplying irrigation water for the State's \$27 billion agricultural industry. Its levees protect farms, homes, and infrastructure. As the largest wetland habitat and estuary in the West, it also supports 750 plant and animal species, some found nowhere else on the planet. Ultimately, California's trillion-dollar economy, the seventh largest in the world, is at risk if environmental and water management problems to restore the ecosystem are not resolved. The CALFED Program is the largest and most comprehensive water-management plan in the Nation and is being hailed as a national model of collaborative resource management.

Efforts to address the problems in the Delta began almost 12 years ago when State and Federal agencies with management and regulatory responsibility in the Delta estuary signed a Framework Agreement in June 1994 setting forth the Operating Principles for developing a long-term solution to the Delta's problems. Phase I concentrated on identifying and defining the problems confronting the Delta system and providing three alternatives for further



Bacon Island in the Delta

analyses in Phase II. Under Phase II, a preferred program alternative was developed and a comprehensive programmatic environmental review process on a broad level was conducted resulting in the release of the Final Programmatic Environmental Impact Statement/ Environmental Impact Report (PEIS/EIR) in July 2000. The Record of Decision (ROD) was then signed on August 28, 2000, beginning Stage I of Phase III – the first 7 years of a 30-year long-term implementation plan to restore the Delta ecosystem and improve water management.

On October 25, 2004, after 4 years of Congressional CALFED negotiations, President George Bush signed landmark bipartisan legislation that reauthorized the Program and authorized \$389 million in new Federal appropriations for this major environmental initiative to restore California's critical Delta

estuary while also addressing the needs of urban and agricultural waters users. CALFED agencies have spent \$1 billion over the last decade to significantly improve the ecological health of the Delta watershed by restoring and protecting habitat and enhancing the environment for fisheries and wetlands. This legislation ensures that CALFED will continue species and ecosystem restoration using the best available science, along with driving forward State and Federal efforts to modernize California's water-management infrastructure.

As one of 11 participating Federal CALFED agencies, Reclamation has implementation responsibility for water supply reliability, storage, water use efficiency, water transfers, the Environmental Water Account (EWA), and conveyance actions. During 2004, Reclamation made major progress in moving forward the storage investigations for four potential storage projects, advancing key conveyance projects through the Delta Improvements Program, facilitating water transfers, investing in water conservation projects, and protecting fish and reducing conflicts at Delta pumping facilities through the use of the EWA. Reclamation, along with other CALFED agencies, signed an agreement to extend the EWA through 2007 while a long-term EWA is being negotiated. Reclamation also signed an amendment to the CALFED Conservation Agreement extending the regulatory commitments through 2007. Reclamation additionally participated as one of the six Federal agencies on the California Bay-Delta Authority (Authority) Board – the State governing body for the CALFED Program.

For additional information, contact the Special Projects Office at 916-978-5024 (TDD 916-978-5608).

Central Valley Water and Power Operations

Water Operations

In the 2005 WY, classified as “above normal” in the Sacramento River basin, Reclamation managed the CVP to meet project water and power demands and also the CVPIA requirements, the ESA, Biological Opinions (BOs), CALFED objectives, and the water rights decision for the San Francisco Bay/Sacramento-San Joaquin Delta (Delta) (D-1641).

The CVP supported a water supply allocation of 100 percent for north-of-Delta agricultural and urban project water users, 85 percent for south-of-Delta agricultural project water users, and 100-percent for south-of-Delta urban water users. Allocations were 100 percent for the water rights holders, exchange contractors, and wildlife refuges. Reclamation also facilitated water transfers to CVP water districts. The CVP Eastside contractors were offered a 100-percent allocation.

In other actions, Reclamation continued coordination with DWR and other CALFED agencies in developing a proposal for improving the CVP and SWP integrated operations. These integrated operations consider the South Delta Improvement Plan, flexibility in the



San Joaquin River

Coordinated Operating Agreement with DWR, optimizing the San Luis Reservoir operations, and proposed DMC/California Aqueduct (CA) Intertie operation.

The CVP participated in various environmental programs during 2005. Reclamation is a co-lead agency in the annual Vernalis Adaptive Management Plan (VAMP), an ongoing 12-year program to evaluate the effects of pulse flows and export reductions on the San Joaquin River salmonids outmigration through the Delta. The 2005 VAMP did not have an official flow objective at Vernalis owing to ongoing flood releases in the San Joaquin River basin. In addition, the Head of Old River barrier was not installed due to the high flows in the San Joaquin River. The projects operated for a combined CVP/SWP export reduction to 2,250 cubic feet per second (cfs).

Since the updated decision on implementing the CVPIA Section 3406(b)(2) environmental account in 1999, CVP operations have accounted for dedication of 800,000 acre-feet of yield annually for restoring fish and wildlife habitat in accordance with (b)(2). This year also included the use of EWA water to compensate the CVP for environmental actions.

In 2005, Reclamation continued to play an active role in the SWRCB's periodic review of the WQCP for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and other water rights hearings and proceedings.

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For additional information, contact the Central Valley Operations Office at 916-979-2180 (TDD 916-979-2183).



Turbine runner replacement at Shasta Powerplant

Power Operations

On January 1, 2005, CVP power operations changed for the first time since the late 1960s due to the expiration of the Pacific Gas & Electric (PG&E) contract that integrated the CVP hydroelectric generation with PG&E's resources. The generation firming, load following, and transmission services provided by PG&E no longer exist.

The most significant change was that it became necessary for Reclamation to implement a daily process to schedule CVP generation forecasted 3 days in the future. This presented unique challenges to the CVP's water managers who were now required to forecast water management decisions 3 days in the future to allow accurate scheduling of the resulting generation. Considering the many water constraints that affect many of the water management decisions, processes were developed and refined in ways that power generation was optimized and all water delivery requirements within their constraints continue to be met.

Extensive efforts continued in 2005 to identify tools and create business practices that allowed CVP generation to not only provide energy "on peak" but also provide ancillary services that are needed to maintain power system reliability. These include creating schedules for spinning and non-spinning

reserve such that system operators always know with certainty the amount of generation that can be loaded immediately in the event of a power system emergency.

Other contract and regulatory changes were also under way in 2005 that required significant resources. PG&E unilaterally filed proposed language with Federal Energy Regulatory Commission (FERC) to implement new generator interconnection agreements for New Melones and San Luis facilities. In addition, PG&E filed with FERC to pass through certain California Independent System Operator control area costs to Reclamation having deemed those costs as "new services." Reclamation, its water customers, Western, and its customers are all participating directly or indirectly in these FERC proceedings.

Involvement of CVP stakeholders in the out year budgeting for the Region's power program continues to be very successful. CVP power customers meet several times each year and offer technical assistance and helpful suggestions as to work priorities that enhance energy efficiency or power generation reliability of the CVP facilities. Their advance funding has steadily increased so that additional generation rehabilitation projects or Operation and Maintenance activities can be undertaken.

Some of the major power projects under way or completed in 2005 include Shasta generator bus replacement (all five generator main buses), Shasta Unit 3 runner replacement, New Melones Unit 1 runner replacement and rehabilitation, New Melones digital governors, and specifications completed for runner replacements at Carr powerplant for fiscal year 2007, and Shasta Units 1 and 2 rewinds to begin in fiscal year 2006.

For additional information, contact the Central Valley Operations Office at 916-979-2180 (TDD 916-979-2183).

Business Resources Center Activities (BRC)

The BRC is the Region's principal supplier of financial, information technology, and administrative services and expertise. The BRC provides its customers with expert services and business advice so that they may successfully serve their customers.

Information Technology (IT)

The BRC successfully migrated to the new Windows XP operating system, established on-line computer training for regional staff to prepare to migrate to Active Directory (Interior's new standard IT infrastructure), and the new electronic mail system, Microsoft Outlook. The office also implemented Interior's new standard network and continued process improvement of data integrity and reporting for the Bureau of Reclamation Water Operations Record Keeping System.

IT security requirements were met, including certification and accreditation of a major decision-support system. The BRC also successfully implemented Interior's Vulnerability Assessment and Management tool to identify, track, and mitigate system vulnerabilities to the lowest degree.

Budget

The BRC continued to seek customer input into the formulation phase of Reclamation's budget. This budget formulation process is also being continually improved to provide more managerial involvement in the decision-making process. As the competition for available funds in the Federal budget increases, identifying new ways of more effectively using available funds has become increasingly important. Toward this end, the Regional Director identified unobligated carryover funds as a critical budget management item in 2004. In 2005, the Regional Director created a process to better prioritize the use of these funds resulting in less carryover and more effective management of Federal funds.

Financial Integrity

The BRC provides accounting services for the Region, including preparation of project financial statements, processing more than \$525 million in revenues, managing a \$52 million working capital fund, ensuring implementation of accounting policies and standards, and providing guidance, data, and support for the annual financial statement audit. This included the conclusion of a successful 5-year effort to reconcile land records with financial records. The 2005 audit of Reclamation's consolidated financial statements, which included the accounting records for the Region, resulted in an unqualified (clean) audit opinion.

Reclamation's leadership firmly believes that the timely implementation of Inspector General (IG) and General Accounting Office audit recommendations is essential to improve efficiency and effectiveness in its programs and operations and to achieve financial integrity and accountability goals. As a result, Reclamation has instituted a comprehensive audit follow-up program to ensure that audit recommendations are implemented in a timely manner. The Region continued to participate in Reclamation's efforts to implement Departmental and Bureau-wide recommendations.

Water Ratesetting and Cost Recovery

To meet customer needs, the BRC completed and posted the draft 2005 CVP water rates on the Internet on October 1, 2005. This effort provided the Region's 220-plus water contractors with detailed information on data used to develop water rates and each water contractor's net results of operations, including supporting data, for the most recent fiscal year.

For municipal and industrial water contractors, this involved completion of a retroactive adjustment from 1949 to 2003 as a result of a litigation settlement. Also, in consultation with the CVP Water Association Financial Affairs Committee, the BRC completed a re-

financed business practice for more even recovery of CVP capital costs and deficit amounts by 2030.

Records Management and Freedom of Information Act (FOIA)

From lessons learned working on past litigation, the BRC developed a standing operating procedure to assist customers and internal personnel in handling future litigations in a smoother and more standardized manner. Workload included processing more than 100 Congressional or priority documents, nearly 1,000 water or land contracts or agreements, receiving or sending 5,000 express packages, and inputting in excess of 100,000 documents in the document record keeping system. The BRC also processed more than 30 requests under FOIA. Thousands of pages of information were reviewed to determine whether the information should be released or denied.

Acquisition

The BRC issued more than \$150 million in contracts and grants during 2005. It also continued to maintain a vigorous Business and Economic Development Program that actively seeks and assists small businesses, veteran-owned small businesses, service-disabled veteran-owned small businesses, small businesses in historically underutilized business zones, small disadvantaged businesses, and women-owned small businesses participating in the contracting process.

The Acquisition Services Office greatly expanded the opportunities for receiving grants through the use of competitive procedures. Grant opportunities are advertised at www.grants.gov.

President's Management Agenda and Other Federal Initiatives

The BRC is also the Region's coordinator for implementation of the President's Management Agenda, including initiatives such as budget-performance integration, activity-based

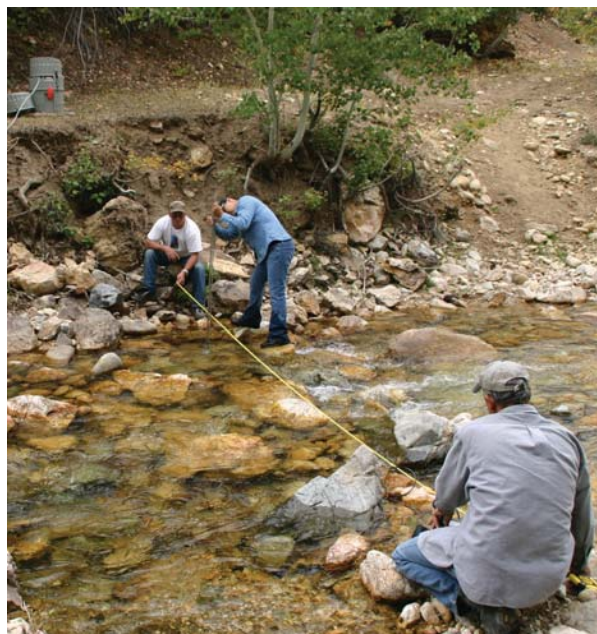
costing, and improving financial management. It has lead responsibility for reporting on such items as Government Performance and Results Act, management controls under OMB Circular A-123, and the Federal Activities Inventory Reform Act. It also facilitates the Region's effort to evaluate programs using the Office of Management and Budget Program Assessment Rating Tool process.

For additional information, contact the Business Resources Center at 916-978-5550 (TDD 916-978-5608).

Native American Affairs

In 2005, the MP Region's Native American Affairs Technical Assistance Program provided \$370,000 in funding assistance to five Federally recognized tribes for a variety of water resource needs. The projects ranged from water quality assessments for drinking water, ecosystems, and fisheries, to water contamination studies.

The federally recognized tribes assisted in 2005 were the Yurok Tribe, Karuk Tribe, South Fork Band Council of the Te-Moak Western Shoshone Indians, Duckwater



Reclamation, EPA, and a member of the South Fork Te-Moak tribe measure stream flows in a tributary of the South Humbolt River in Nevada.

Shoshone Tribe, Klamath Tribes (Klamath, Modoc, and Yahooskin Band of Snake Indians), and the Elko, Battle Mountain South Fork and Wells Bands of Te-Moak Western Shoshone Indians, who selected Reclamation as its consultant to develop a Water Resource Management Plan for the four Bands.

CALFED tribal activities in 2005 included MP Region Division of Resources Management Native American Affairs Office's (Office) participation with federally recognized California tribes in information meetings specifically for tribes. These included the Upper San Joaquin River Basin Storage Investigation (including a public scoping meeting hosted by the Table Mountain Rancheria), North-of-the-Delta Offstream Storage Investigation (NODOS), and Shasta Lake Water Resources Investigation.

The North-of-the-Delta meeting exclusively benefited the Grindstone Rancheria and the Cortina Rancheria, Colusa Rancheria and Paskenta Band of Nomlaki Indians, all of whom have an interest in the Investigation and have recently renewed grants with Reclamation to study potential benefits and impacts of North-of-the-Delta to Indian trust assets.

The Shasta Lake tribal meetings have included the Pit River Tribe and the Redding Rancheria. The Colusa, Cortina, Paskenta, Enterprise, Berry Creek, and Mooretown Rancherias were invited. The Authority's Tribal Coordinator also attended these meetings, as well as the Region's cultural resource staff. The Division of Resources Management also met with the non-federally recognized Winnemem Wintu group at the Shasta Lake public scoping meeting. The group expressed serious concerns over the Shasta Dam raise proposal in the Shasta Lake Water Resources Investigation.

The Upper San Joaquin tribal meeting, hosted by the Santa Rosa Rancheria, included the Tule River Tribe, Picayune Rancheria, Table Mountain Rancheria, and the Santa Rosa Rancheria. Also invited were the Cold Springs Rancheria, North Fork Rancheria, and Big Sandy Rancheria. The Authority's Tribal Coordinator also attended the meeting, as well as the Region's cultural resource staff.

The Office's activities under the Indian Self-Determination and Education Assistance Act, Title IV Self-Governance (P.L. 93-638) included Annual Funding Agreements (AFAs) with the Hoopa Valley, Yurok, Karuk, and Duckwater Shoshone tribes for the purposes of collecting data to improve tribal fisheries, water quality, and water resource development (respectively). Notably, the Hoopa Valley Tribe entered into its first Title IV AFA with the Region in fiscal year 2005.

The Office's activities under the Indian Self-Determination and Education Assistance Act, relating to Title I Self-Determination (P.L. 93-638) included a contract with the South Fork Band Council of the Te-Moak Western Shoshone Indians for an assessment of its existing irrigation system.

The Office advises the Region, on an as-requested basis, regarding the required disposition of Indian trust records as ordered by the Court, in *Cobell v. Norton*. The Office also provides written concurrence and guidance as to the potential impact the Region's actions have on Indian trust assets, as required by Departmental Manual 512.2. The Division of Resources Management provides this written concurrence for every NEPA action (more than 100 actions in fiscal year 2005) presented to it by the Region's five Area Offices.

For additional information, contact the Division of Resources Management at 916-978-5200 (TDD 916-978-5608).

Safety of Dams Program

A number of Safety of Dams activities for Regional dams were initiated or were ongoing in 2005. Comprehensive facility reviews have been performed for several dams. Issue evaluations are ongoing for a number of dams evaluating hydrologic, seismic, and static risks. Corrective action studies have been ongoing at Lauro, Stony Gorge, Folsom, Prosser Creek, Stampede, and Los Banos Dams. A significant portion of Reclamation's overall Safety of Dams Program is focused on MP Region dams in an effort to identify and reduce risks to the public.

A modification to Prosser Creek Dam was approved by the Commissioner, and construction of a wall on the crest of the dam was completed to prevent overtopping of the dam in a major flood event.

A Safety of Dams modification of Lauro Dam was approved by Congress, and a construction contract was awarded in September 2005.

The modification is to reduce the risk associated with a seismic event occurring at the dam and fault rupture in the foundation of the dam. Construction began in late 2005 and will be completed in 2007.

Final designs for modification of Stony Gorge Dam to reduce the risk of failure during a significant seismic event have been completed. A modification report for approval of the



Lauro Dam modification in late 2005 near Santa Barbara, California, under the Safety of Dams Program

project has been completed and has been submitted for Congressional approval by summer 2006. Award of a construction contract is scheduled for 2006.

Corrective action studies are ongoing for Folsom and Stampede Dams. These studies involve development of alternatives for modification, preparation of environmental documents, and negotiation of repayment contracts with the water users. Additional studies have shown that modifications are not needed at Los Banos Dam.

For additional information, contact the Division of Design and Construction at 916-978-5300 (TDD 916-978-5608).

Security, Accessibility, Occupational Safety, and Health Program

The Region continued in 2005 to place considerable emphasis on critical security areas, including facility protection and operational security improvements, and moved to implement a wide range of other security-related measures.

The Region's accessibility coordinator retired in 2005 and the accessibility program was revised. Facility components were analyzed to determine a viable strategy for meeting Reclamation's goal of 100-percent universal accessibility by the year 2010. Reclamation ended the year with 37 percent of places of employment and 17 percent of recreation areas universally accessible.

In 2005, the final components of the Region's Electrical Safety Policy were developed and finalized, including safe work practices and tools and equipment used for energized electrical work.

For additional information, contact the Regional Security, Accessibility, and Occupational Safety and Health Program Office at 916-978-5575 (TDD 916-978-5608).

Area Office Projects, Programs, and Activities

Klamath Basin Area Office (KBAO) Issues

Link River Fish Passage

A fish passage over Link River Dam was completed early in 2005 at a cost of \$2,239,000. The project allows endangered short nosed suckers and other fish species to continue their route north along the Link River through the dam. Slayden Construction Company of Stayton, OR – the same contractor that built the A-Canal in Klamath Falls, Oregon – began work on the Link River Dam Fish Ladder on July 1, 2004, and completed it in mid-2005.

Reclamation Commissioner John W. Keys III, members of the Klamath Tribe, Klamath County Commissioners, and the Klamath Water Users Association participated in a dedication of the fish passage in October 2005. The Fish Passage has already proven itself by allowing endangered Lost River and shortnose suckers and other species to navigate past the dam and back into Upper Klamath Lake. It replaces a ladder that was constructed in 1926 for red band trout that had proven to be a barrier to the endangered suckers.



Reclamation Commissioner John Keyes (R), and from (L), Klamath Water Users Association President Steve Kendra, 3 Klamath County Commissioners, and Klamath Tribes Chairman Allan Foreman, cut a net to symbolically open the Link Fish River Passage in October 2005.

Klamath Project 2005 Water Year

The 2005 Klamath Basin irrigation season started out to be one of the driest on record, but by late May steady rain provided adequate inflows into Upper Klamath Lake. Higher-than-expected inflows dictated a year-type designation improvement to “Below Average,” up from “dry” for Upper Klamath Lake. This improvement allowed the Klamath Project to fulfill all irrigation delivery obligations and remain in compliance with the current BOs on suckers and Coho salmon.

2005 Klamath Project Pilot Water Bank

KBAO continued the Klamath Project Pilot Water Bank to meet requirements of the National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) BO on the Klamath Project operation. In 2005, the BO required a Water Bank of 100,000 acre-feet to supplement river flows for ESA-listed coho salmon. KBAO contracted for approximately 112,305 acre-feet of water at a total cost of about \$6.5 million. The Water Bank consisted of land idling and groundwater substitution. Participants were paid an average of \$168.60 per acre for idling land and \$164.34 per acre for substituting well water for Klamath Project surface water. Approximately 22,817 acres were idled. Groundwater was used in lieu of Project water for 25,040 acres. Additionally, approximately 20,000 acre-feet of water was available for the water bank as a result of unexercised options contracts.

Conservation Implementation Program

Reclamation believes that resolution of the numerous natural resource management issues in the Klamath River Basin will require a basin-wide ecosystem restoration approach. KBAO staff worked with stakeholders throughout the basin during 2004 and 2005, including the Klamath, Yurok, Karuk, and Hoopa Valley Tribes, watershed groups, water users, and environmental groups to develop the Klamath River Basin Conservation Imple-

mentation Program (CIP). The CIP's aim is to coordinate the existing Klamath Basin restoration efforts, provide guidance and resources, facilitate information exchange, ensure that sound, peer-reviewed science guides restoration efforts, and establish minimum standards for the collection of water quality and fish population data.

In 2004, the governors of California and Oregon; the Secretaries of the Interior, Commerce, and Agriculture; and the Administrator of the Environmental Protection Agency (EPA) signed the Klamath River Watershed Coordination Agreement, which supports a CIP-like process. The second draft program document was reviewed in 2005 by multiple parties in 11 public meetings held across the Klamath Basin and in numerous meetings with special interest groups. The final draft will be crafted in a meeting of interested parties facilitated by a team of organization development specialists in 2006.

Natural Flow Study

A study of the effects of agricultural development on the Natural Flow of the Upper Klamath River is now available on KBAO's website at <http://www.usbr.gov/mp/kbao/>. The Natural Flow Study (NFS) provides a modeling tool for hydrologists, scientists, biologists, and other researchers to use to estimate what the monthly natural flow in the Upper Klamath River Basin would have been pre-development. The model will help evaluate changes in the relationship between inflow and outflow of water in the Upper Basin which have taken place since that time. A review of the NFS by the National Academy of Sciences will be complete by June 2007. Members of the KBAO staff and a team of scientists from Reclamation's Denver Technical Services staff conducted the NFS.

Government Accountability Report

A Report to Congress on the Klamath River Basin pilot water bank prepared by the Government Accountability Office (GAO) found that Reclamation met its water bank obligations and recommended that information provided to water bank stakeholders be improved. In response, Reclamation began issuing a bi-weekly Water Data Update that outlines flows at various points in the Upper Klamath Basin and expanding the KBAO website <http://www.usbr.gov/mp/kbao/> to include a description of the fundamentals of the Water Bank; an interactive map that shows real-time flow data from the USGS; a schedule of flows for the Klamath River from NOAA Fisheries; and water bank bidding information, applications, and contracts.

For additional information, contact the Klamath Basin Area Office at 541-883-6935 (TDD 541-883-6935).

Northern California Area Office (NCAO) Issues

Battle Creek Salmon and Steelhead Restoration Project

The Battle Creek Salmon and Steelhead Restoration Project provides an opportunity to restore approximately 42 miles of prime salmon and steelhead habitat on northern California's Battle Creek, plus an additional 6 miles on its tributaries, while minimizing the loss of clean and renewable energy produced



Battle Creek

by the Battle Creek Hydroelectric Project FERC Project 1121). The facility is owned and operated by PG&E.

A 1999 Memorandum of Understanding (MOU) between Reclamation, PG&E, NOAA Fisheries, the Service, and California Department of Fish and Game (DFG) established a proposed plan to modify the Battle Creek Hydroelectric Project so that restoration could occur while minimizing the loss of hydro-power production. The Restoration Project includes cooperative efforts between Reclamation and DWR to develop project designs and with the SWRCB and FERC for the completion of environmental compliance and hydro-power licensing activities. The Restoration Project is in the final stages of design, environmental compliance, and FERC license amendment processes.

Coleman National Fish Hatchery

Two multi-year projects are currently in the design phase at the Coleman National Fish Hatchery. The first project involves the rehabilitation of the hatchery's water intake system. With implementation of the Battle Creek Salmon and Steelhead Restoration Project expected to begin in 2008, large numbers of salmon and steelhead will now be spawning upstream of the hatchery. Rehabilitation of the water intake system will include the addition of fish screens at the intakes so that juvenile fish will not be drawn into the intakes, thus complying with ESA requirements. Rehabilitation of the intakes may also involve moving or upgrading certain intakes so that a reliable, high-quality water supply can be delivered to the hatchery. The project is currently being designed by engineers from the Denver TSC, NCAO, and MP Regional Office. The project is expected to be implemented in summer 2007.

The second project involves the major rehabilitation of the administration and shop buildings. Both buildings do not currently meet seismic standards and will require struc-

tural upgrades. In addition, options to increase the size of the administration building and to provide public outreach and education opportunities are being analyzed.

Emergency Management Activities

During 2005, recommendations from the Whiskeytown Dam "After Action" Exercise Evaluation Report were reviewed. As a result, improvements and enhancements to NCAO's emergency management and response measures were initiated.

In August 2005, NCAO conducted a multi-agency Emergency Action Plan functional exercise for Stony Gorge and East Park Dams. Before the exercise, a small design team comprised of NCAO staff, local emergency responders, and agencies developed a realistic exercise to ascertain how well they worked together and to explore possible problems. The design team assisted with conducting the exercise, as well as observing and evaluating the plan. The Emergency Operations Center and manual were both exercised during the EAP exercise. An "After Action" Exercise Evaluation Report was written and distributed in December 2005. Recommendations from this report will be reviewed, and many will be implemented in 2006.

Security Activities

A physical security plan was completed during 2005 for NCAO facilities. Security assessments were completed on Buckhorn, East Park, Stony Gorge, and Spring Creek Dams. Office of IG assessments of Shasta and Keswick Dams and Powerplants were completed in March 2005. The Shasta County Sheriff's Office and California Highway Patrol were provided familiarization training of the Shasta Dam project. At Trinity Dam and Powerplant, a closure order (effective April 10, 2005) was implemented to provide for protection of Federal property and ensure public safety at Reclamation facilities.

Northern California Area Office Capital Improvement Program

In fiscal year 2005, the NCAO stepped up an already aggressive capital improvement program. The goal is to extend the life of our facilities and to upgrade the powerplants with state-of-the-art technologies.

There are currently 63 projects totaling \$63 million either in progress, in contracting, or in planning through fiscal year 2011.

Recent accomplishments include:

- Roof damage repaired at the Trinity, J.F. Carr, and Spring Creek Powerplants
- Deteriorated roofing systems replaced at the Keswick and Shasta Powerplants
- Damaged lining repaired at the Clear Creek Tunnel between Lewiston Lake and the J.F. Carr Powerplant
- Three main unit transformers refurbished at the J.F. Carr Powerplant
- Severe erosion repaired on both sides of the Buckhorn Dam spillway
- An automated emergency generator system was installed for the Coleman Hatchery

Shasta Turbine Upgrade

From October 2004 through June 2005, the third of five turbine upgrade installations at Shasta Powerplant was completed. The work included:

- Disassembling the generator and turbine
- Removing and replacing the upper and lower seal rings (bored to size on site)
- Installing new wicket gates (existing bushings bored to size on site)
- Separating the old runner from the shaft
- Assembling the shaft and new runner with new bolts

- Installing the new runner with a precision fit in the new seal rings
- Full unit assembly

This work is part of a multi-year turbine upgrade program that will result in five “like-new” turbine and generator units at the Shasta Powerplant. The new units, rated at 142 megawatts (Mw) each, will be a significant upgrade from the current 125 Mw. They will be more efficient and less susceptible to cavitation damage; i.e., liquid-to-gas and gas-to-liquid phase changes that occur when the fluid dynamic pressures in areas of accelerated flow drop below the vapor pressure of the local water. Other aspects of the work include the recent replacement of the main electrical bus work, the installation of digital turbine governor systems, and improved turbine generator monitoring equipment.



Turbine runner replacement at Shasta Powerplant

NCAO Safety Committee Accomplishments

The reestablishment of the NCAO Safety Committee continues to be an asset to the overall safety program. Accomplishments made through the committee include replacing all handrails that did not meet the standard height requirements and the installation of a removable guard rail for the loading dock at the warehouse, which can also be utilized as a secondary means of egress. The committee also sought and received approval to build and

install a new ergonomically correct workstation for Reclamation Guides in the visitor center, which is scheduled to be completed by the end of fiscal year 2006.

Two employee safety suggestions were adopted. One addressed the hazard of applying metal locks to circuit breakers with exposed energized components. The committee suggested a priority listing of breakers to be modified or replaced, and electrical engineering will be involved in the design and procurement process. The complete implementation of this suggestion will be somewhat time-consuming but will be a significant safety enhancement. The other suggestion involved installing new metal locking frames on existing Direct Current circuit breakers.

Flame Resistant Clothing Policy

The NCAO Electrical Safety Workgroup was established and assigned the task of developing a flame resistant clothing and personal protective equipment program in compliance with the MP Regional Office's Shock, Arc Flash, or Flame Exposure Hazard Reduction Policy, as well as National Fire Protection Association Standard 70E, "Standard of Electrical Safety in the Workplace." Initially, coveralls, switching suits, lab coats, and other clothing items, were purchased for select employee groups for use in a trial period to test the clothing for comfort, heat exposure, and other factors. After the trial period, the committee determined that coveralls will be worn in Level 2 conditions and switching suits will be worn by the operations personnel when exposed to energized equipment at Level 4. It was determined that NCAO will enforce the general policy of Level 0, which for clothing is untreated cotton. Minimum Arc Thermal Protective Value ranges from 0 - 5. When arc flash studies are completed, these recommendations may be modified. With these implementations, NCAO provides a safer workplace to all of its employees when they are exposed to energized equipment.



C.A.S.T for Kids event at Lake Shasta

Catch a Special Thrill (C.A.S.T)

On June 4, 2005, 46 young people with special needs, accompanied by their parents or guardians, had the fishing opportunity of a lifetime – not just watching from the shoreline, but actually doing it.

At Shasta Lake's sixth annual C.A.S.T. for Kids Event, the children experienced firsthand the joy and pleasure of fishing. The children were smeared with sunscreen, fitted with life jackets, matched with their boat captains, posed for a quick photo, and then were off for a morning of fun. The excitement on their faces was apparent as they prepared to jet across the water with the early morning sun warming them.

Upon returning from the lake, the group was fed a lunch prepared by the local Elks Lodge as they shared their fish stories. After lunch, each participant received a plaque, goodie bag, and hugs. With another very successful C.A.S.T. for Kids barely completed, plans for next year's event were already under way.

Outreach at Shasta Dam

Reclamation Guides at Shasta Dam have successfully gone out into their community to educate thousands of students in all age groups. NCAO invites visitors to come to Shasta Dam to take part in on-site programs, including a presentation and tour from one of our many knowledgeable guides. Groups that are accommodated at Shasta Dam to participate in the educational opportunities provided here are of a diverse background.

Spreading the word of Reclamation and services that we provide to the public is an important task of Reclamation Guides. Through the outreach program, NCAO has the opportunity to teach visitors about water systems, electrical production, and agricultural benefits. These topics and the assigned California curriculums are the basis of the educational system at Shasta Dam. By expanding upon this program each year, NCAO now has a database of more than 150 schools.

Guides at Reclamation's Shasta Dam look forward to each new year when they will have the chance to see teachers and students from all over Northern California returning to the dam for more lessons about water. Each year, the Guides try to build on this program by adding new lessons and reaching out to more schools to bring this information to diverse audiences.

Lands and Water Division

Contract Renewal

- In February and March 2005, Reclamation signed long-term renewal contracts with 29 water service contractors, from Mountain Gate Community Services District, located just north of Redding, to Dunnigan Water District, located 15 miles north of Woodland. Total CVP water under contract is 398,510 acre-feet, which can be used for irrigation and/or municipal and industrial uses.

- In March 2005, Reclamation signed renewal contracts with 130 Sacramento River Settlement Contractors from the City of Redding to Natomas Central Mutual Water Company just north of Sacramento. Total base supply water is 1.7 million acre-feet, and total CVP water under contract is 333,510 acre-feet. The City of Redding is the only Settlement Contractor that has municipal and industrial uses as the purpose of use of the CVP water. The balance of the Settlement Contractors has irrigation as the purpose of use.

Water Conservation

Thirteen financial cost-sharing grants were issued in 2005 totaling \$456,558:

1. Anderson Cottonwood Irrigation District – Pilot Demonstration Project (2 grants)
2. Cal Poly – Technical Assistance with Corning Canal Automation
3. Chico State University – Sacramento Valley Water Management GIS
4. Glenn Colusa Irrigation District – Sacramento Valley Regional Water Management Plan
5. Glenn County Resource Conservation District (RCD) – Stony Creek Watershed Survey
6. County of Glenn – Stony Creek Groundwater Recharge Study
7. Kanawha Water District – Supervisory Control and Data Acquisition (SCADA) System
8. M&T Ranch – SCADA site
9. Proberta, Corning, and Thomes Creek Water Districts – Corning Canal Control System Upgrade
10. Tehama County RCD – Northern Sacramento Valley Mobile lab

- 11. Westside Water District – Landowner Incentive Program
- 12. Yolo County RCD – Mobile Water lab

2006 Goals

A 2006 goal is completion of eight additional channel rehabilitation projects, which not only increase available rearing habitat for salmonids, but in some locations also provide substantial flood reduction benefits to landowners during high flows.

For additional information, contact the Northern California Area Office at 530-275-1554 (TDD 530-275-8991).

Trinity River Restoration Program

Located in northern California, the Trinity River is one of the most beautiful in the State and nationally known for its salmon and steelhead fisheries. In 1964, the Trinity and Lewiston Dams were completed to provide water supplies and power generation for California’s Central Valley, resulting in the diversion and export of as much as 75 to 90 percent of the Trinity River’s flow for the past 4 decades.

The Trinity River Restoration Program (Program) was established in 1984, under Public Law 98-541, to restore and maintain the fish and wildlife stocks of the Trinity River Basin to those levels that existed just before the



Trinity River



Trinity River bridge construction under way in 2005.

CVP’s Trinity River Division construction. The CVPIA (P.L.102-575) acknowledged the Federal government’s trust responsibilities, increased instream flows to 340,000 acre-feet per year, and directed the Secretary to develop procedures for restoring and maintaining the Trinity River fishery. To do this, Reclamation plays a key role as a member of the Trinity Management Council, the decision-making body charged with setting policy for the Program.

The Trinity River Mainstem Fishery Restoration Final Environmental Impact Statement (EIS) was completed in October 2000, with the CALFED ROD signed on December 19, 2000. Shortly after the ROD was signed, a lawsuit was filed in Federal District Court by a group of Central Valley water and power users (Westlands Water District, Northern California Power Agencies, *et al*). On November 5, 2004, this litigation was resolved in favor of the Federal government when the U.S. Court of Appeals for the Ninth Circuit reversed the lower court’s decision, thus allowing full implementation of the ROD.

In the 5 years since the ROD was signed, restoration efforts have steadily advanced. Accomplishments in 2005 were especially noteworthy.

Completion of Four Key River Crossings – February 2005

One of the Program's top priorities has been modification of four bridges on the upper Trinity River to accommodate the higher peak flows prescribed in the December 2000 ROD. Greater flows to be released from Lewiston Dam would mean that bridges and homes would have to be elevated or moved to higher ground.

In 2004, two contracts totaling \$6 million (Steelhead Constructors, Redding, California, and Engineered Demolition, Coeur d'Alene, Idaho) were awarded to replace an old culvert and four privately owned bridges, with raised approaches, set at an elevation that would keep them above the water during high flows. Cost-share funds of \$2 million were acquired from the State to assist with these projects. At the end of 2004, the culvert and its approach were finished, and the first bridge was set in place. The bridge was opened to local traffic shortly afterwards. The other three bridges were completed in September 2005. Instead of being limited to the previous peak release of 6,000 cfs, bridges are now able to pass up to 11,000 cfs tributary flows.

Inventory, Acquisition, and Modification of Other Floodplain Structures – March 2005

In addition to the four bridges, other structures require modification or removal prior to release of higher flows. Negotiations with the owner of the most limiting property were successfully concluded in March 2005, with acquisition of the property by the Federal government. This set the stage for potential releases of high flows in both normal and wet WY (up to 8,500 cfs). A prioritized inventory of all structures (houses, pump houses, wells, out buildings, etc.) within the upper 40 miles of river potentially impacted by 8,500 and 11,000 cfs releases has been completed and will direct subsequent corrective actions in the coming year.

Peak Release of 7,000 cfs – May 2005

The flow schedule implemented in WY 2005 was the first one prepared without court-imposed constraints and was designed to meet normal water-year objectives outlined in the ROD. Because of the bridge crossings and other floodplain structure modifications, the schedule included a fishery restoration peak release of 7,000 cfs, the highest non-safety of dams release since Trinity and Lewiston Dams were completed in 1963.

Principals Conference – July 2005

Upper-level agency and tribal leaders representing members of the Trinity Management Council met on July 13-14, 2005, in Weaverville, California, to celebrate the Program's successes and discuss how to sustain progress into the future. During this 2-day results-oriented conference, the Hoopa Valley Tribe was recognized for its tireless efforts in acquiring higher flows for the Trinity River, and representatives of local property owner associations participated in a ribbon-cutting ceremony for the completed Poker Bar bridge.

Trinity River Restoration Program Website – August 2005

The result of months of effort, the Program's website (<http://www.trrp.net>) went online August 2, 2005. Already averaging more than 1,000 "hits" per month, the site is being updated on a monthly basis. The purpose is to provide useful information for everyone interested in the Program, including contacts for the staff, the Trinity Management Council, and the Trinity Adaptive Management Working Group; status reports of current projects; upcoming meetings; and links to our partners and other useful websites.

Hocker Flat Channel Rehabilitation Site – October 2005

Hocker Flat, the first of 47 channel rehabilitation sites, was completed in fall 2005, resulting in more than a three-fold increase in salmon-rearing habitat at that project location, which is more than 1 mile in length. Based on the Trinity River Flow Evaluation Report, it is believed that a three- to four-fold increase in juvenile rearing habitat throughout the upper river will be necessary to achieve a doubling of the naturally-spawning anadromous fish populations. The contract was awarded in late July and construction began in early September 2005. Over the ensuing 2 months, more than 80,000 cubic yards of material was removed, lowering the floodplain by approximately 4 feet and setting the stage for further modification by winter flows and spring fishery restoration releases. Revegetation of the upper terraces with a diverse mix of native plant species will take place during winter and spring 2005-2006. Planning, design, and environmental compliance actions for the next six to eight sites is under way, with construction planned for summer and fall 2006.

For additional information, contact the Trinity River Restoration Program Office at 530- 623-1800.

Central California Area Office (CCAO) Issues

American River Long-Term Contract Renewal Environmental Impact Statement (EIS)

The CCAO is providing project management for the EIS process for renewal of the American River Division long-term water service contracts, consistent with Reclamation authority and all applicable State and Federal laws, including CVPIA (H.R. 429, Public Law 102-575). The Final EIS was released in June 2005, and a ROD was signed in February 2006.

The alternatives present a range of water service agreement provisions that could be implemented for long-term contract renewals. The No Action Alternative consists of renewing existing water service contracts. Alternative 1 is based on the April 2000 proposal presented by the CVP water service contractors to Reclamation. Alternative 2 is based on the November 1999 proposal presented by Reclamation to the CVP water service contractors.

The primary differences in the alternatives relate to methods addressing tiered water pricing, definition of Municipal and Industrial (M&I) users, water measurement, and water conservation.

American River Pump Station Project

As part of the initial construction of the Auburn Dam, Reclamation removed a pumping plant owned by the PCWA that was used to convey water supplies from PCWA's Middle Fork Project. Reclamation and PCWA entered into an agreement that obligated Reclamation to provide a temporary pumping facility until Auburn Dam was completed. Since Auburn Dam was not completed, Reclamation, PCWA, and the State of California are constructing a replacement pumping plant. The goal is to have the new pumping plant functional in 2007 and the project completed in 2008.



Contractors work on the tunnel leading to the pumping plant in early 2005.

American River Water Education Center

The American River Water Education Center (ARWEC) at Folsom Dam received more than 12,550 visitors in 2005. Because of the high level of security, visitors are mainly school groups. These groups learned about Reclamation, its mission, water resources, and Reclamation's role in water conservation. More than 575 programs were conducted by staff and volunteers.

A Get Water Education Today (Get W.E.T.) event was held at the California State University, Sacramento Aquatic Center on June 5, 2005.

Many agencies presented water conservation exhibits and informative activities, among other items. Approximately 500 people attended. For the first time, the "Water Wizard" character made an appearance.

Teachers planning a field trip can go to the ARWEC website at <http://www.usbr.gov/mp/arwec/index.html> and download the information they need. Curriculum-based correlations are completed for many of the programs. A field trip to ARWEC meets many curriculum standards for teachers.

A new all-time record in the number of hours donated at ARWEC included a total of 26 ARWEC volunteers who contributed more than 1,840 hours in 2005.



Water Wizard at the Get W.E.T. event in June 2005

In addition to assisting with tours, classroom activities, and dam tours, the volunteers assisted with exhibit fabrication, 50th anniversary preparations, special events such as Get W.E.T., the Salmon Festival, and several other projects.

Eight former USACE and contract employees were interviewed and their stories recorded about Folsom Dam's construction. This oral history project is tied to the 50th anniversary celebration in 2006.

ARWEC staff participated and represented Reclamation in the following events in 2005:

- Creek Week – April
- Arts in Nature – April
- Walk on the Wildside – May
- Get W.E.T. – June
- Public Lands Day – September
- Make a Splash – September
- Yesterfest – October
- Salmon Festival – October

Auburn Project Lands/Auburn State Recreation Area - Fire Management Plan Strategy

Reclamation is responsible for managing lands within the Auburn Dam and Reservoir Project (Auburn Project Lands), which was originally authorized by Congress in 1965. Reclamation has management authority for approximately 26,000 acres within the American River watershed.

Much of this area runs adjacent to the communities of Auburn and Foresthill, along with other residential developments. The oak-chaparral environment within this area can be highly combustible under certain dry conditions, and the risk of wildland fires is a major concern as residential and recreational activity continues to increase.

Because of these concerns, through management agreements with the California Departments of Forestry and Fire Protection and State Parks and Recreation, Reclamation continues to develop and update a Comprehensive Fire Management Plan for the Auburn Project Lands/Auburn State Recreation Area.

Cosumnes River Flow Augmentation Pilot Project

The Cosumnes River Flow Augmentation Project (Project) is being undertaken by a coalition of interests to provide supplemental flows to the Cosumnes River as a 1-year pilot Project for fish passage improvements for fall-run Chinook salmon and for evaluation of ground-water recharge rates within the Cosumnes River channel.

The coalition consists of Reclamation, the Service, NOAA Fisheries, DFG, The Nature Conservancy (TNC), the Southeast Sacramento County Agricultural Water Authority (members include Omochumne-Hartnell Water District, Galt Irrigation District, and Clay Water District), the Sacramento County Water Agency, the Fisheries Foundation of California, and the University of California-Davis (UCD) Center for Integrated Watershed Science and Management.

The Project is facilitated by Reclamation releasing up to 5,000 acre-feet of CVPIA (b)(2) water through the Folsom-South Canal to the Cosumnes River to pre-wet the river channel prior to the onset of natural fall flows in the lower reaches of the river.

The Cosumnes River is a keystone of fishery conservation efforts in the North Delta. The Anadromous Fish Restoration Program (AFRP), TNC, and UCD, have sponsored numerous research projects on the health of the salmon fishery of the Cosumnes River. The AFRP has identified the Cosumnes as having potential for contributing to the fish doubling goals of the CVPIA. The AFRP has also set program objectives specifically di-

rected at the Cosumnes River and the acquisition and restoration of fish habitat, primarily directed at improving passage and spawning habitat for fall-run Chinook salmon.

Folsom Dam Combined Federal Effort

The CCAO continued coordination with the USACE on authorized flood control projects that will modify Folsom Dam to increase flood protection for Sacramento. CCAO's role is to work closely with the USACE to facilitate completion of the projects with minimum impact on Reclamation's ability to deliver water and power. Reclamation is also pursuing Safety of Dams corrective actions to Folsom Dam as a result of the 2000 Comprehensive Facility Review and subsequent risk analysis. Action is required to address hydrologic risks, seismic risks at Mormon Island Auxiliary Dam, and static risks on several of Folsom's earthen dams and dikes. Reclamation and the USACE are currently working together on a Combined Federal Effort to address the flood and hydrologic risk issues.

Folsom Dam Road Bridge

The Energy and Water Appropriations Act of 2004 authorized the USACE to design and construct a permanent Folsom Dam Road bridge. The City of Folsom wants the USACE to complete the project and have the bridge open to traffic by the end of calendar year 2007. Some alignments will likely require some of Reclamation's buildings to be relocated. Reclamation continued to work closely with the USACE on the bridge and at the end of 2005 was awaiting a decision from the USACE on the alignment.

Folsom Dam Road Closure

Reclamation completed the EIS process and signed a ROD on May 31, 2005, to keep the road closed except under certain conditions as described in the Preferred Alternative. That alternative included the development and operation of security facilities as an expense

born by the City of Folsom (Folsom). As of the end of 2005, Folsom had not proposed implementation of the Preferred Alternative.

The road was the subject of a Draft EIS dated December 2004, and a Final EIS dated April 2005. Public hearings for the Draft EIS were held in Folsom and Sacramento, and the 45-day public comment period for the Draft EIS closed Jan. 18, 2005. The Final EIS was released to the public and noticed in the Federal Register on April 22, 2005. The Final EIS describes and presents the environmental effects of a road closure alternative, the no-action alternative, and two additional alternatives for a restricted road opening. The two additional alternatives were developed by Folsom through a collaborative process with Reclamation. Reclamation designated alternative 2, a restricted access alternative, as the Preferred Alternative with a commitment by Folsom to bear all capital, operational and maintenance costs associated with implementation.

Folsom Pump 3 Overhaul

Pump 3 at the Folsom Pumping Plant underwent a complete overhaul in 2005. The pumps are used to provide the Cities of Folsom and Roseville, the San Juan Water District, and Folsom Prison with water rights and CVP water. Other pumps are scheduled for overhaul during the next 5 years.

Freeport Regional Water Project

CCAO provided Reclamation's project management for the Freeport Regional Water Project which completed a ROD in January 2005. The Final EIS, dated March 2004, was developed in compliance with NEPA. A Final EIR, developed in compliance with the California Environmental Quality Act (CEQA), was completed and certified in April 2004.

Reclamation's decision is to proceed with the Preferred Alternative, Alternative 5, as proposed by the Freeport Region Water Authority

(FRWA), as identified in the Final EIS. Reclamation's Federal action is to provide for the diversion of CVP water as identified in the East Bay Municipal Utility District Amendatory Contract at Reclamation's diversion point near Freeport on the Sacramento River. The amendatory contract provides for assignment of 30,000 acre-feet of CVP water from the Sacramento Municipal Utility District to the Sacramento County Water Agency, and provides for the use of the Folsom South Canal by the FRWA.

2004 Commissioner's Water Conservation Award

In 2005, Reclamation awarded the prestigious 2004 Commissioner's Water Conservation Award for excellence in water use efficiency to the Regional Water Authority (RWA). The RWA is a joint powers authority of 18 water suppliers located in Sacramento, El Dorado, and Placer Counties. One of RWA's objectives is to implement the Water Forum Agreement, which provides strategies for regional water supply reliability and Lower American River water quality through 2030. Water use efficiency best management practices (BMPs) are an integral element of the Water Forum Agreement and a major program of the RWA. The RWA's Efficiency Program is designed to directly implement measures to satisfy urban water conservation BMPs and to assist local water suppliers.

Now in its fourth year, the RWA Water Efficiency Program has shown success based on solid leadership, water efficiency expertise, and support by its member agencies.

Lower American River Revised Flow Standard

Reclamation is engaged in a collaborative planning process with State and Federal fisheries agencies and the Water Forum to formulate a flow management standard for the Lower American River. The Water Forum is a diverse group of business and agricultural



Lower American River

leaders, citizen groups, environmentalists, water managers, and local governments in Sacramento County. The group recently agreed on a more protective minimum flow standard that considers Reclamation's operational requirements, the use of CVPIA (b)(2) water supplies, and fish needs that will be advanced for further analysis of system-wide impacts and consideration by the California SWRCB for implementation.

New Melones Powerplant Overhaul

Work continues on the New Melones Unit 1 and 2 Overhauls. The overhaul includes the replacement of the turbine runners, new digital governors, repair of the stator and rotor, replacement of the butterfly valve bypass plug valves, and restoration of the transformers. Unit 1 was returned to service in July 2005 but had to be taken out of service in October due to a seal ring failure. Corrections are under way. Unit 2 will be taken out of service in October 2006 and is expected to be back in service in late spring 2007.

Reclamation Publishes the Final EIS for the Future Recreation and Use of Lake Berryessa - Visitor Services Planning Effort

Lake Berryessa is a reservoir formed when Reclamation built Monticello Dam on Putah Creek in 1957. The dam and lake provide water, flood control, and recreation. Seven concessionaires have contracts with the Fed-

eral government to provide recreation services at the lake. The services include 1,300 long-term sites (mostly privately owned trailers), 688 short-term sites (RV parks and campsites), marinas and boat ramps, and picnic areas. The concession contracts, in place since the 1950s, will expire in 2008/2009 at which time new contract opportunities will be developed for competitive bid. The existing concessionaires do not have preferential rights and will compete with other interested parties.

In 2000, Reclamation began the Lake Berryessa Visitor Services Planning Effort to determine the type of facilities and services needed for future long-term operations. These services include day-use needs, long- and short-term RV and trailer sites, marina and concession operations, and food services. It also includes overnight lodging, water activities such as fishing and swimming, and land activities such as camping and hiking.

The process continued in 2001 with formal public scoping, the initiation of contracts for facility condition assessments, and economic feasibility studies. At the end of 2002, there were four draft alternatives. The Preferred Alternative was chosen in 2003 upon completion of the Draft EIS.

On November 4, 2005, Reclamation published the Final EIS, collecting nearly 4,000 comments during two public comment periods lasting 7 months. After careful consideration of all comments, the Final EIS was completed with Alternative B remaining the Preferred Alternative. The subsequent ROD was released to the public in June 2006.

Lake Berryessa – Collaborative Conservation, Recreation, and Resource Management Efforts

The Lake Berryessa Field Office (LBFO) works collaboratively with several partners to increase effective management of the recreational, cultural, and natural resources in the greater Lake Berryessa area. These partner-



Lake Berryessa

ships include adjacent private landowners; non-governmental organizations; and local, county, State, tribal, and Federal governments. The geographic range of outreach efforts focuses on the Putah Creek watershed.

Lake Solano Park

Reclamation staff at the LBFO have worked with Solano County Parks Department for the management of Federal land that makes up Lake Solano Park. Lake Solano Park is a located along Putah Creek, between Monticello Dam and the Lake Solano Diversion Dam. The park is managed by Solano County Parks and owned by Reclamation. It provides a gateway location that has the potential to reach thousands of visitors traveling each year from north and central California to Putah Creek and Lake Berryessa. Reclamation recently awarded Solano County a matching grant of \$250,000 for a new Nature Center at Lake Solano Park. The new Nature Center will serve the common goals of Reclamation; Solano, Napa, and Yolo Counties; and the Putah Creek Discovery Corridor partnership. LBFO staff also share resources with Solano County, such as ranger training; assistance with special events; and providing educational, interpretive, and patrol services to benefit the visitors to Lake Solano and Lake Berryessa.

Putah Creek Discovery Corridor (PCDC)

The PCDC partnership focuses primarily on inspiring appreciation and respect for the diverse resources of the Putah Creek corridor through coordinated public outreach and learning opportunities. Reclamation provided \$50,000 in start-up funds for the PCDC. LBFO staff are involved in the steering committee that coordinates the partnership activities and in a variety of subcommittees involved in creating the regional education programs, providing direct education to hundreds of area school children each year. Staff members are also providing a consistent message of stewardship and conservation ethics to visitors throughout the corridor and creating a gateway visitor center at Lake Solano Park.

Blue Ridge Berryessa Natural Area (BRBNA)

The BRBNA is an open partnership currently encompassing more than 100 partners that “promote the conservation and enhancement of the expansive landscape that comprises the BRBNA by encouraging the sensitive management of its natural, agricultural, recreational, archaeological, and historical resources.” Specific projects that the LBFO is involved in through the BRBNA include resource-appropriate trail planning and implementation around Lake Berryessa, stewardship projects such as weed abatement and habitat restoration projects around the lake and in jointly managed properties, and providing outreach and educational materials and presentations that espouse the BRBNA messages and goals throughout the region. LBFO staff also actively participate on the steering committee to guide and enhance group activities and participation.

Cortina Rancheria Youth Environmental Campout

LBFO personnel, working with the Bureau of Land Management Ukiah, California office, California Department of Forestry, and the Napa County Sheriffs Department, provided logistical support and guidance for the 2005 Cortina Rancheria, Wintun Youth Environmental Campout. In 1999, The Cortina Tribe held its first environmental campout to get Tribal youth interested in preserving the sacred trust of native lands and their cultural heritage. Since 2002 Reclamation has hosted this annual event at Lake Berryessa. The campout lasted 4 days and brought together as many as 35 California Tribes.

The types of activities that took place included workshops on water conservation, native languages, basket weaving, canoeing, flint knapping, bow and arrow making, animal tracking, and plant identification. This year's event also included a "Take Pride In America" component.

Private Adjacent Landowners - Gamble Ranch

Reclamation met with rancher Tom Gamble to work on the issue of noxious weed control along the eastside road at Lake Berryessa. LBFO staff hope that out of this meeting a program can be created to control weeds on the shoulders of the road through grazing. There was also discussion on using cattle to reintroduce historical grazing for weed control in the Lake Berryessa Wildlife Area.

Berryessa Trails and Conservation Organization (BTC)

BTC is an off-shoot of the BRBNA. The BTC identifies what the need for recreation is in the BRBNA. BTC has worked with Reclamation to provide public outreach for recreation opportunities at Lake Berryessa.

California Division of Forestry (CDF)

Crews from Konocti Camp of the CDF worked at Lake Berryessa clearing fire lines, removing brush and fire hazards from Camp Berryessa, and rehabilitating trails in the area.

California Conservation Corp (CCC)

Crews from CCC have worked to build trail bridges and reopen long-abandoned trails at Lake Berryessa.

Take Pride In America at Lake Berryessa

Lake Berryessa introduced the Take Pride In America (TPIA) National Partnership to the Cortina Rancheria and Napa Dive and Sport events. During both events, the participants worked to collect trash and recyclables around the lake. Reclamation plans to incorporate TPIA into more of our annual events in the coming years.

Lake Berryessa Ranger Division Highlights

Cooperative Ranger Division Training Program

Park Rangers and Park Managers from New Melones, Lake Berryessa, and East Park and Stony Gorge Dams collaborated to create the first coordinated Annual Park Ranger Training Program for the MP Region. Rangers participated in training programs held at all three sites, and they were a resounding success for all parties involved. Park Rangers look forward to continuing this collaborative effort with other agency parks and continuing to enhance visitor services and staff safety in upcoming years.

Water Education and Information Station (WEIS)

The Water Education and Information Station (WEIS) opened to the public on the July 4 weekend inside the Foxtail area of Oak Shores Day Use Park. Lake Berryessa Park Rangers, with assistance from the Regional Graphics and Design Team and ARWEC in Folsom, designed and created all of the exhibits and text information panels for the trailer. It is staffed by Park Rangers on summer weekends. Exhibit subjects include personal floatation devices and how to use them; drinking and boating facts; what to carry on your boat; how to read buoys, boat lights, and horns when you're boating; importance of water conservation and how to conserve at home; water uses in the Berryessa region; and trash/recycling at the lake. All of the exhibits are designed to be interactive and appeal to family members of all ages and include games, questions, and a mini scavenger hunt through the exhibits with a safety-related prize at the end. The WEIS was created from the Century of Water in the West trailer that resided for several years in Folsom. It was repaired, moved, and set up by the Lake Berryessa Maintenance Division.



Educating on shore at Lake Berryessa

Environmental Education Field Study Program

The Park Rangers at Lake Berryessa are developing an environmental education school program for the park. The program meets Reclamation goals to promote greater resource appreciation and conservation habits and has a direct correlation with mandated State of California curriculum content standards. Initial implementation, to be piloted in spring 2006, will include an "on-site" and "off-site" program component for fifth grade students from schools in close proximity to Lake Berryessa (primarily Napa County and Winters). In the next couple of years, Park Rangers plan to expand the program to reach communities and students in the greater San Francisco Bay Area and Sacramento regions, areas from which Lake Berryessa draws heavy visitation.

The theme of the program is "Lake Berryessa: Protecting your future, One Drop at a Time." Program goals include helping students to understand and appreciate:

- The value of fresh water in their lives and in their community
- The importance of water quality and quantity and the effects both have on the ecosystem
- Their own impact on water resources and the importance of conserving this valuable resource
- The role of Reclamation in providing and protecting water resources in California and the Western half of the United States.

A teacher packet, including a series of "hands-on" lessons, pre- and post-site activities, program evaluation, and a test, is under development to meet program goals. On-site learning objectives in the packet will be Ranger-led and allow students direct interaction with the Lake Berryessa environment. Additional packet activities will help classroom teachers in meeting water resource-related content standards.

Junior Ranger Program

The Park Rangers introduced the Junior Ranger Program at Lake Berryessa during summer 2005. The program included an activity book full of fun activities for kids and a Junior Ranger badge that kids receive when they complete the booklet. The children also get to log their names in the “Official Junior Ranger Log Book” and have a Polaroid picture taken that they can take home or post on the wall of the Water Education and Information Station. The booklet was designed by Ranger Tom Christie to be appropriate for kids from 5-12 years old, with all original artwork and text by Ranger Nathan Kyle and graphics design assistance from the Regional Graphics and Design Team. Berryessa Administrative staffer Annabell Lupercio recently created a Spanish translation of the entire Junior Ranger Activity Book that will be printed and available soon.

Visitor Publications and Information Upgrades

The Park Rangers, in cooperation with other resource specialists and with invaluable assistance from the Graphics and Design Team at the Regional Office, created several new tools to provide up-to-date information on a range of subjects.

Supervisory Park Ranger Brandi Bradford coordinated with a Regional web designer to create the new Lake Berryessa Visitor Information website, with input from all staff members. This site was designed to be very user-friendly and provide all the information anyone would need to plan an enjoyable trip to Lake Berryessa. The site emphasizes visitor activities available, day use and overnight accommodations, program activities for Reclamation, and natural and cultural resources around the lake. Please visit us at http://www.usbr.gov/mp/ccaof/field_offices/lake_berryessa/index.html

New print publications were written and designed by Ranger staff for Lake Berryessa and are also available on the website. They include Lake Berryessa Natural History Guide, Visitor Safety brochure, Junior Ranger Activity Book, Oak Shores and Smittle Creek Park brochure, Snakes of Berryessa brochure, Wildlife brochure, Birding Checklist brochure, Fishing brochure, Spring Wildflower poster, and a comprehensive Plant Checklist brochure.

Visitor Center Remodel Under Way

The Facility Manager is coordinating a remodeling project for the existing Visitor Center at Lake Berryessa. The remodel incorporates ecology-friendly technology, a larger indoor and outdoor visitor exhibit space, more useable Ranger office space, and Americans With Disabilities Act- approved restrooms. Park Rangers will be designing new visitor exhibits in coordination with architects and exhibit design specialists in 2006. In addition, Park Rangers, working with the Natural Resource Specialist and Outdoor Recreation Planner, created an interpretive trail that winds in a loop from the Visitor Center to the lakeshore. Staff planned the trail, widened and smoothed the existing trail, planted native plants, and are writing exhibit text for a variety of trail signs that will be installed in 2006.

Lake Berryessa Concessions

Concessions started the year by installing new traffic counters at all the resorts to provide a more precise count of visitors to the lake and the resorts. The next project for the resorts, with their active participation, included new Criminal Trespassing signs designed to assist the Napa County Sheriff in enforcing laws and regulations inside the resorts. There were special quarterly health and safety inspections conducted in all the resorts with the aid of Area Office experts.

On March 28, 2005, the contract for Pleasure Cove Resort was terminated with Pleasure Cove Resort Asset Management Group, LLC

for failure to meet the multiple deadlines to submit a required \$750,000 bond. This caused the resort to be closed to recreation. In order to provide services to the visiting public, many who had paid the terminated contractor, LBFO staff opened the resort over the Memorial Day weekend. On June 1, 2005, an interim contract with Forever Resorts became effective until December 1, 2007. Under this contract, the long-term permittees were allowed to continue their exclusive use until November 1, 2005, and the deadline to remove their trailers was December 15, 2005.

The long-term uses at the Pleasure Cove Marina will be replaced with RV sites, park model cabin rentals, and additional parking for their expanded houseboat rental fleet and additional private houseboat allocations approved by Reclamation. Over the course of the last 8 years, Pleasure Cove has removed 213 exclusive use trailer sites, with 48 trailers remaining as of December 7, 2005.

The first National Marina Day was celebrated at Lake Berryessa with special booths set up at Coyote Beach in the Oak Shores Picnic Area. Resorts were invited to participate, and some offered reduced rates for the day to visitors who attended Oak Shore's festivities.

Energy Conservation – “Greening Lake Berryessa”

In an effort to “green” Lake Berryessa and meet Executive Order 13123, “Greening the Government through Efficient Energy Management” (June 3, 1999), Lake Berryessa installed a new photo-voltaic system. This first phase system decreases the dependence on fossil fuels and saves the government money on energy costs. In addition, Reclamation replaced its water treatment plant at the administrative area which services the government operations at the lake. The new Zenon system provides ultra-pure water with decreased energy demands.

Lake Berryessa is committed to reaching the goal of being International Standards Organization (ISO) 14001 certified. ISO 14001 is primarily concerned with “environmental management,” which, in plain language, means what the organization does to minimize harmful effects on the environment caused by its activities.

New Melones Recreation and Resource Division

New Melones Lake Resource Area Natural Resource Management

The eagles have landed at New Melones. The first documented bald eagle nests at New Melones were observed in spring and summer 2005. Bald eagles are normally migratory visitors at the lake, but this year two nests resulted in three fledgling bald eaglets. One became malnourished and had to be rescued by fishermen, who turned the eagle over to Reclamation Park Rangers for care. Working with a wildlife rehabilitation center, the eagle was nursed back to health and released to its habitat at New Melones. Every year, Park Rangers and volunteers survey the lake for eagles, osprey, and other birds of prey. In January 2005, the count was 19 bald eagles, 4 golden eagles, and 37 ospreys.



Bald Eagle release

Resource Management Plan

Plans are under way to begin updating the 1975 Master Plan for New Melones with a new Resource Management Plan. In preparation, Reclamation staff have been conducting preliminary tasks such as researching boundaries; cataloguing cultural resource sites; preparing maps and brochures for public involvement programs; and working with other Federal, State, and local agencies to obtain input into this important planning process. This multi-year project is expected to get under way in 2006, along with preparation of a programmatic Environmental Impact Statement.

An Environmental Assessment for the Peoria Wildlife Management Area Interim Management Plan is nearing completion. Implementation of the final plan will provide for resource protection and public enjoyment of this highly utilized, sensitive resource area.

Partnerships were developed and grants awarded for wildlife habitat enhancement work with Ducks Unlimited, California Deer Association, and others. Partnerships with community groups such as Master Gardeners, trails volunteers, and local youth groups have resulted in planting hundreds of trees, maintenance of miles of trails, and recycling thousands of pounds of aluminum and glass beverage containers.



Peoria Wildlife Area

Recreation – Facility Improvements and Visitor Services

Several recreation area facility improvements were completed in 2005. These include portable water and wastewater system upgrades; installation of vandal-resistant, accessible restrooms in outlying recreation areas; repairing paved roads; and renovating campsites, restrooms, and other facilities for accessibility.

Visitor safety, security, and resource protection were enhanced via law enforcement contracts with local county Sheriff Departments. These contracts provide needed law enforcement services so that Reclamation Park Rangers can focus on providing quality visitor services, interpretation, and resource protection to more than 800,000 visitors per year.

New Melones Park Rangers also perform public outreach services to promote boating and outdoor safety and participate in community events to promote resource stewardship, such as C.A.S.T. for Kids, National Public Lands Day, and Take Pride in America.

Road Improvements

In fiscal year 2005, the CCAO awarded three contracts for repairing and restoring roads. The first project involved repaving Folsom Dam Road. This included replacing the guard rails and resurfacing the road in anticipation of opening the road due to the preferred alternative in the ROD. The second job was rejuvenating the road along the Folsom South Canal. The third project was rejuvenating the road at Tuttle town Campground near New Melones Lake.

Water Conservation

During 2005, \$270,000 in cost-share grants were provided to 15 recipients as part of Reclamation's Water Conservation Field Service Program. These cost-share grants were matched by the recipients on at least a 50-50 basis and were used for water conservation

efforts such as public and school education, rebates for replacing inefficient washing machines and toilets, lining irrigation canals and ponds, funding water management plan updates, software to upgrade meter reading and billing, new irrigation methods, and automatic rain sensor shutoffs and controllers. Six water districts provided updates to their 5-year water management plan. Fifteen water districts provided updates to their annual reporting requirements.

For additional information, contact the Central California Area Office at 916-988-1707 (TDD 916-989-7285).

Lahontan Basin Area Office (LBAO) Issues

Desert Terminal Lakes Program

Funding was appropriated to Reclamation in 2002 to provide water to at-risk natural desert terminal lakes. Additional legislation in 2003 specified the appropriated funds were to be expended only on Summit, Walker, and Pyramid Lakes in Nevada.

In 2004, Reclamation committed funds to three projects that will help increase future Walker Lake inflows and obligated funds to four entities for legislative earmarks, primarily to assist with implementation of the Truckee River Operating Agreement (TROA). In 2005, Reclamation obligated more than \$1.7 million for three legislative earmarks that will improve both Walker and Pyramid Lakes. Also, through a competitive process, Reclamation considered multiple preliminary proposals to increase flows to Pyramid Lake and selected three to pursue further; the funds will likely be committed in 2006.

In mid-November 2005, an additional \$95 million was earmarked for four entities/programs, with the goal of increasing flows to Walker Lake: \$70 million to the University of Nevada for water and land acquisitions and

other activities; \$10 million to the Walker River Paiute Tribe for a water lease and purchase program; \$10 million for Walker River Basin tamarisk eradication, riparian area restoration, and channel restoration efforts; and \$5 million to the Service, the Walker River Paiute Tribe, and the Nevada Division of Wildlife to complete the design and implementation of the Western Inland Trout Initiative and Fishery Improvements in the State of Nevada with an emphasis on the Walker River Basin. The legislation also assesses a penalty of \$100,000 per day for each day beyond June 30, 2006, that the earmarked funds are not provided as directed.

In addition, the LBAO is participating in a Federal Indian water rights negotiation team formed in May 2002 to resolve water rights claims filed by the United States on behalf of the Walker River and Yerington Paiute Tribes, the Bridgeport Indian Colony, and various Federal entities. The negotiations involve the United States, the states of Nevada and California, the Walker River Paiute Tribe, the Walker River Irrigation District, and other key interests in the Walker River basin. The negotiations, which began in October 2002, seek a settlement that would resolve the water right claims to preserve Walker Lake's fresh water ecosystem and assist in the recovery of the threatened Lahontan cutthroat trout fishery.



Pyramid Lake

Fallon Freight Yard Title Transfer

Reclamation originally acquired the Fallon Freight yard property in Fallon, Nevada, in 1920 and used the 6 acres as a storage and rail yard for the Newlands Project. Beginning in 1926, the Truckee-Carson Irrigation District used the property for project purposes until they moved to their current location. The parcel is part of the Newlands Project but has not been used for Project purposes since 1983. Between 1984 and 2001, Reclamation leased this property to the City of Fallon for its use. The City of Fallon has long expressed a desire to obtain the property.

In 2002, Public Law 107-339 gave the Secretary authority to transfer title of this property to the City of Fallon for fair market value. Since then, Reclamation has performed an appraisal of the fair market value, and the City of Fallon has agreed to purchase the property. An Environmental Assessment (EA) was completed for the transfer; the public comment period on the EA ended November 28, 2005; and a Finding of No Significant Impact was signed in December 2005. Transfer of the parcel is expected to be completed in 2006.

Humboldt Project Title Transfer

The LBAO has been working with the Pershing County Water Conservation District (PCWCD), the State of Nevada (Nevada) and other interested parties to transfer title to the Humboldt Project to PCWCD, Nevada, and two counties. The proposed transfer has many public benefits, including allowing PCWCD to own and manage the Project facilities without Federal oversight. In addition, land will be transferred to Lander County for county facilities and public access to the Humboldt River, the Derby Airfield will be transferred to Pershing County, and land for wetlands and recreational purposes will be transferred to Nevada.

Congress enacted legislation in 2002 setting forth the criteria for the transfer of title of the

Humboldt Project to the Pershing County Water Conservation District (PCWCD), Lander County, Pershing County, and the State of Nevada. An MOU was negotiated between Reclamation and PCWCD to provide a framework for the transfer process. The Final EIS was completed in September 2005 and a Record of Decision was signed in March 2006. Transfer of title of the land will not occur until Environmental Commitments identified in the ROD are completed. Primary Environmental Commitments are compliance with Section 106 of the National Historic Preservation Act and numerous realty actions. An archaeological Sampling Plan was developed by Reclamation in consultation with the PCWCD and the State Historic Preservation Officer. Reclamation intends to contract the archaeology survey identified in the Sampling Plan.

Marble Bluff Dam Fish Conveyance: 2005 Cui-ui Spawning Run

More than 1.2 million endangered cui-ui swam through Reclamation's Marble Bluff Dam's fish conveyance and into the lower Truckee River by the end of May 2005. This run substantially surpassed the previous record of 585,000 fish set in 1999. In addition, biologists reported that the fish were larger and healthier than in previous years. Drought conditions didn't allow a spawning run for the cui-ui in 2004 or in 2001. There were limited spawns in 2002 and 2003.

The cui-ui, unique to Pyramid Lake, was declared endangered in 1967 after agricultural diversions lowered the lake level and a delta formed at the river's mouth, impeding spawning runs. A spawning run as successful as 2005 is very important to the Pyramid Lake Paiute Tribe who historically have relied on the cui-ui. Traditionally, members of the tribe are known as "cui-ui ticutta," or "cui-ui eaters," reflecting their ancestral food staple.

Reclamation's Marble Bluff Fish Conveyance was constructed to create an effective mechanism to convey fish around Marble Bluff Dam.

The facility is maintained by Reclamation and operated by the Service. Reclamation and the Service designed and modified an existing fish passage elevator into a lock system to reduce stress and mortality on the fish. The fish lock, which began operation in 1998, has easily passed more than 200,000 fish per day, many times the capacity of the replaced fish elevator previously in use.

Truckee River Operating Criteria and Procedures (Truckee River OCAP)

Irrigation and municipal diversions from the Truckee River have decreased the flow in the river, the only source of water for Pyramid Lake, a desert terminal lake in northern Nevada. The decreases in flow have contributed to a significant decline in the lake's elevation and to the listing of cui-ui as endangered and the Lahontan cutthroat trout as threatened. Among the many entities diverting water from the Truckee River is Reclamation's Newlands Project. The Newlands Project provides water to approximately 60,000 acres in the Lahontan Valley and uses include Indian and non-Indian agriculture and wetlands.

The Truckee River OCAP, first implemented in 1967 and most recently modified in 1997, are intended to provide sufficient water to Newlands Project water users to satisfy their water rights while maximizing the use of Carson River water and minimizing use of Truckee River water. The LBAO, in consultation with affected parties, administers the Truckee River OCAP.

In 1995, the United States filed a lawsuit contending that in the past Truckee-Carson Irrigation District (TCID) diverted a total of 1,057,000 acre-feet of water from the Truckee River in excess of diversions allowed under the applicable decree and the Truckee River OCAP. The lawsuit requested a remedy of recoupment of that volume of water plus interest in the form of water. In February 2005, the Nevada Federal District Court issued a judgment in the lawsuit to recoup from

TCID 197,000 acre-feet. In 2005, diversions of Truckee River water to the Newlands Project occurred only in January and December due to above-average Carson River runoff. TCID and the Pyramid Lake Paiute Tribe, with assistance from the Federal Water Master and Reclamation, negotiated an agreement resulting in TCID forgoing diversions in December 2005 and applying the foregone diversions as a first payment for the recoupment judgment. The agreement is a critical first step in finding ways to satisfy the judgment.

The possibilities of future diversions are heavily dependent on the amount of snow received in the Carson River basin and the resultant Carson River water supply for the Newlands Project.

The Truckee River OCAP sets target efficiencies for water deliveries in the Newlands Project. TCID, the entity that operates and maintains the Newlands Project, exceeded efficiency targets in the 2000, 2001, 2002, 2003, and 2004 irrigation seasons. These accomplishments are due to improved water management techniques and improved water measurement implemented by TCID and Reclamation.

Truckee River Operating Agreement (TROA)

Reclamation is one of a host of parties interested in reservoir operation on the Truckee River (Lake Tahoe, Prosser Creek Reservoir, Boca Reservoir, Stampede Reservoir, Donner Lake, and Independence Lake), that are negotiating a comprehensive operating agreement for the reservoirs. Parties participating in the negotiations include the States of California and Nevada, the Pyramid Lake Paiute Tribe, the Truckee Meadows Water Authority (water provider for the Reno/Sparks area), Washoe County Water Conservation District, the City of Fernley, and others. That draft agreement is called the TROA.

When implemented, the agreement will result in more efficient use of the Truckee River reservoirs and multiple benefits for a wide variety of Truckee River interests such as:

- Increased municipal and industrial drought water supply for the Reno/Sparks area and the Truckee River basin in California
- Enhanced habitat for endangered and threatened fish species in the Truckee River and Pyramid Lake
- A reduction in the variability of instream flow and enhanced seasonal instream flows
- Improved water quality and reservoir storage maintenance at levels that better serve recreational uses

The parties negotiating TROA completed a draft agreement in October 2003. Interior and the State of California, as co-lead agencies, completed a revised draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) in August 2004. Representing the co-lead agencies are Reclamation, the Service, Bureau of Indian Affairs, and the DWR. A Final EIS/EIR is expected to be completed in 2006.

For additional information, contact the Lahontan Basin Area Office at 775-882-3436 (TDD 775-882-3436).



Truckee River

South-Central California Area Office (SCCAO) Issues

Cachuma Project Title Transfers

In 2004, Congress passed legislation authorizing the transfer of title of certain Cachuma Project distribution facilities to Carpinteria and Montecito Water Districts. A public ceremony attended by Assistant Secretary Lynn Scarlet commemorated the upcoming transfer of title. Staff began working on the proposed transfer of neighboring facilities to the Goleta Water District and continued work on the transfer of the Humboldt Project and the Fallon Freight Yards, which was authorized by legislation enacted in 2002.

Tracy Fish Facilities Studies and Improvements

In accordance with the 1992 CVPIA, CVP, CVP/SWP OCAP, CALFED ROD objectives, and the Tracy Direct Loss Agreement with California DFG, Reclamation works to improve or eventually replace fish protection facilities at Tracy in the south Delta (Tracy Pumping Plant; DMC).

New technologies in debris removal and fish handling (including fish capture, holding, sorting by size, and transport back to Delta waters) require development before large expenditures are made on long term fixes to the fish-loss problems in the south Delta. Technologies to either replace or supplement existing fish behavioral-based louver facilities are being studied to assess potentials for further protection of Federal- and State-listed species. Existing fish-collection-facility efficiencies for various species of concern are also being studied to better grasp the present-day effectiveness of the existing facility. Consistent with the CALFED ROD, Reclamation, with interagency coordination and assistance, had previously proposed a Tracy Fish Test Facility (TFTF) adjacent to the Tracy Fish Collection Facility (TFCF) in a major attempt to provide new technologies, as well as half of

the eventual replacement of the existing fish facility, that would eventually be acceptable and workable. In 2005, the CALFED South Delta Fish Facilities Forum (SDFF) recommended holding off on construction of a test facility at this time due primarily to funding constraints. The SDFF has recommended looking at other, less costly alternatives to improving fish protection in the south Delta while still meeting fish population goals and export objectives.

Interagency Coordination

Monthly meetings involving Reclamation (lead), NOAA Fisheries, the Service, California DFG and DWR, CALFED, water users and university staff were again held in 2005, providing continued interagency communication and research planning. TFCF study efforts and operational improvement recommendations reflect the many desires and inputs from regulatory and water development agencies, as well as from local water authorities and fish facility experts.

Research and Testing

Tracy fish facilities research and testing continued in 2005 on many projects with cooperative efforts between Region and Denver Offices and universities. Much work was done on-site at Tracy (improved debris management, louver efficiency studies, fish predator behavior and movements, recessed tank swirl stress tests, water chemistry analysis, etc.). Testing was also performed at the lab in Denver with most of the work related to testing of an above-ground collection tank as an alternative to the existing recessed holding tanks. In addition, the Tracy fishery facility research web site continued in 2005 as well as continued publication of Tracy research results in the peer-reviewed Tracy Research Volume Report Series. This brought the total number to more than 27 volumes, with several more volumes in preparation. Technical and poster presentations from Tracy research activities were also presented at scientific forums.

Status and Future Process for TTF, and Overall Tracy Facilities Studies and Improvements

Recommendations for proceeding with or without a TTF in 2005 continued under the influence of the CALFED SDFF. Because of South Delta fisheries management complexity in the face of large water diversions and competing options for implementing various protective measures, the SDFF was developed and is chaired by top managers and decision makers from several agencies, including Reclamation. Emphasis for the Tracy facilities studies and evaluations has shifted to existing structures and operations as opposed to construction of new fish screens facilities (e.g. TTF), and how they may be improved or supplemented to meet the needs of the CVPIA, CVP/SWP OCAP, and CALFED.

For additional information, contact the South-Central California Area Office at 559-487-5116 (TDD 559-487-5933) or the Division of Planning at 916-978-5063 (TDD 916-978-5608).



Aerial rear view of Friant Dam

Office and Division Projects, Programs, and Activities

Central Valley Operations Office

Central Valley Automated Control System (CVACS)

Reclamation's CVACS provides the technology tools essential to the real-time coordination of hydroelectric power generation and water releases with interrelated infrastructures operated by other Federal, State, and local agencies. CVACS is a network of sensors and automation equipment enabling reliable, cost-effective generation of electric power, optimizing available water supply and efficiently managing water release operations for flood control, water quality, and environmental protection purposes.

For 2005, the Office of the IG reviewed 20 IT Systems in Interior for the annual evaluation of the Department's Information Security Program. CVACS was the only system with no Federal Information Security Management Act weaknesses identified. In addition, Reclamation installed a modern receiver for our hydro-meteorological and water quality telemetry, retiring an obsolete interconnection provided by the DWR.

Reclamation implemented several technology improvements supporting the Western/Reclamation joint effort to reengineer CVP power operations business practices for the 2005 transition to the Sacramento Municipal Utility District Control Area. This will result in less cost to CVP operations, and CVP generators will perform a greater role in providing power system regulation and reserves.

For additional information, contact the Central Valley Operations Office at 916-979-2180 (TDD 916-979-2183).

Division of Design and Construction

Battle Creek Salmon and Steelhead Restoration Project

The Battle Creek Salmon and Steelhead Restoration Project (Restoration Project), provides an opportunity to restore approximately 42 miles of prime salmon and steelhead habitat on northern California's Battle Creek plus an additional 6 miles on its tributaries, while minimizing the loss of clean and renewable energy produced by the Battle Creek Hydroelectric Project (FERC) Project 1121), owned and operated by Pacific Gas and Electric Company (PG&E).

A 1999 MOU between Reclamation, PG&E, National Oceanographic and Atmospheric Administration Fisheries Service, the Service, and the DFG established a proposed plan to modify the Battle Creek Hydroelectric Project so that restoration could occur while minimizing the loss of hydropower production.

The Restoration Project includes cooperative efforts between Reclamation and the DWR to develop project designs and with the California SWRCB and FERC for the completion of environmental compliance and hydropower licensing activities. The Restoration Project is in the final stages of design, environmental compliance, and FERC license amendment processes.

For additional information, contact the Division of Design and Construction at 916-978-5300 (TDD 916-978-5608).

Division of Environmental Affairs

2005 Central Valley Conservation Program/Habitat Restoration Program

The Central Valley Conservation Program was developed during the ESA Section 7 consultation process to ensure that the existing operation of the CVP, implementation of the CVPIA, and renewal of CVP water service contracts would not jeopardize listed or proposed species or adversely affect designated or proposed critical habitat.

The Program implements an aggressive adaptive management program that will protect, restore, and enhance special-status species and their habitats in areas affected by the CVP. Six conservation activities were funded in 2005 at a cost of approximately \$1.91 million. These projects included fee-title acquisition of sensitive habitats in Fresno and Butte Counties, restoration of vernal pool wetlands at Sacramento NWR, fencing of endangered species and habitats at the Buttonwillow Ecological Reserve, and construction of a “Wild About Wetlands” exhibit at the Effie Yeaw Nature Center in Sacramento, California.

The 1992 CVPIA authorized the protection, restoration, and mitigation of the CVP’s past fish and wildlife impacts. The goals of the Habitat Restoration Program are to stabilize and improve populations of native species impacted by the CVP that are not specifically addressed in the Service’s Restoration Activities section of the CVPIA. The focus is on Federal- or State-listed, proposed, or candidate species, or species of concern. These programs assist in facilitating ESA compliance and continued operation of the CVP. In 2005, 9 activities were funded with CVPIA restoration funds for a cost of approximately \$1.6 million.

These activities included fee title acquisition of sensitive vernal pool habitats in Butte County; research on endangered serpentine soil plants in Santa Clara County; surveys for giant garter



Ducks and wetlands

snake at Colusa NWR; study of State-wide vernal pool plant associations; California red-legged frog surveys in Placer and El Dorado Counties, restoration planning at Merced NWR; vernal pool restoration at Sacramento NWR; adaptive management and restoration at the Herbert Preserve in Tulare County; and restoration/easement planning on the Dos Rios Ranch in Stanislaus County.

Habitat Monitoring and Mapping for the CVP Renewal Contractors Endangered Species Act Compliance

Consistent with existing CVP and CVPIA BO, Reclamation implemented a habitat monitoring mapping program for its water service areas in 1999. This mapping was done to address issues of ESA consultations.

The Central Valley Habitat Monitoring (CVHM) Program data has been used to produce reports of habitat change within Federal water service contracts. These reports compare the CVHM 2000 habitat data with the CVHM 1993 habitat data.

Habitat change reports for water service contract boundaries have been completed for Long-Term Contract Renewal, Interim Contract Renewal, Sacramento River Settlement Contractors, and other miscellaneous groups.

Reclamation fulfilled its role by providing the Service with the following:

- Spatial data, including CVHM 1993 to 2000 habitat data, modifying the DWR land use data and providing riparian habitat data, satellite imagery, and water service contract boundaries.
- Mapping of water districts, species occurrence, and habitat change.

Additionally, a user-friendly report viewer was developed for staff to review all maps and reports relating to the contract renewals. These reports are available for the 292 CVP contract service areas. With GIS, approximately 1,332 reports and 530 maps were produced in a relatively short period of time. These reports and maps show the general trend of habitat conversion in acres, species occurrences, and critical habitat in and around the individual contract boundaries. This data has been used toward Reclamation's requirement in the BOs for the 2006 interim contract renewals.

The CVHM is developing methods for users to be able to determine any changes in land usage that occurred in 2005 within the boundaries of our Federal water contractors.

New technological developments have occurred since the development of the 2000 land cover dataset. Research is being conducted to determine the best method for extracting change and classifying the data. Satellite Imagery for 2005 has been purchased and object-oriented image analysis software has been ordered.

Hydrilla Detection and Eradication Program

Hydrilla is a rapidly spreading aquatic plant that has invaded thousands of acres of lakes, rivers, and canals throughout the United States. Well established, hydrilla clogs irrigation canals and municipal water systems, reduces water delivery, increases the likelihood of flooding, and diminishes water quality.

Reclamation continued its supportive effort to eradicate hydrilla from California waters in 2005. Clear Lake, which was extensively infested in past years with hydrilla, has undergone multi-year treatments and is now in its second year of being hydrilla free. Eastman Lake and the Chowchilla River in Madera and Mariposa Counties are approaching the eradication criteria with 3 years of treatment followed by 3 years without treatment. Treated this year, but still presumed infested with hydrilla, include the Yuba County Water District Canal and numerous ponds in Shasta, Calaveras, and Tulare Counties. California Department of Food and Agriculture began hand-pulling hydrilla late in 2005 on infested sites in the Imperial Irrigation District Canal drains that were previously thought to be controlled. Sixty-five presumed uninfested water bodies in 16 counties ranging in size from a quarter acre to 43,000 acres were surveyed this year for hydrilla in northern and central California with no detections made.

Interagency Ecological Program (IEP)

The IEP program elements were prioritized according to their relative importance, as defined by their status as a mandated activity per the SWRCB permits for Reclamation to divert water from the South Delta through CVP facilities. The elements were prioritized according to the requirements in BOs authored by the Service and NOAA Fisheries, associated with the operation of the CVP diversion facilities, and per requirements from Reclamation's CVP operations managers.

The IEP conducted the program elements as scheduled. Water quality and biological monitoring data were collected from stations throughout the Delta estuary and stored in an interactive database that is publicly accessible. This is a monumental accomplishment, involving the participation of six Federal and three State of California agencies in monitoring water quality, aquatic biota, and hydrody-

namics in the Delta. The IEP long-term database is recognized as an invaluable resource in estuary management, and its longevity and extent of parameters monitored is unique world-wide in estuarine management.

Reclamation's 46-foot vessel, Endeavor, performed flawlessly in all compliance monitoring activities. The Endeavor served as the sole vessel carrying out the environmental monitoring program activities during a protracted period that extended through the end of 2005, during which time the San Carlos, the companion vessel from the DWR, was rendered inoperable in dry dock while undergoing extensive overhaul and maintenance.

Dr. Erwin Van Nieuwenhuyse represented Reclamation as the co-lead with the DWR scientist in the conduct of the environmental monitoring program. He oversaw and participated in planning and preparation of all activities that were performed in the environmental monitoring program. Data were collected in routine monitoring of water quality, plankton, and benthos that will subsequently be reported to the SWRCB in compliance with permits to divert water.

Dr. Mike Chotkowski served as Reclamation's lead scientist in the conduct of the Pelagic Organisms Decline (POD) investigation. This activity was initiated by a review of the long-term IEP database and evolved into a critical activity with ramifications to water resource planning and management activities for the Delta and extending to the far reaches of northern and southern California. The POD investigation is directed at characterizing and determining the cause of a decline in the relative abundance of fishes and zooplankton in the Delta. A study program was prepared and conducted under extenuating circumstances that required immediate response. Preliminary results were presented at various venues and a program was prepared that describes the work to be performed in 2006 and 2007.

The annual IEP workshop was conducted in March 2005. More than 200 engineers, biologists, scientists, and managers from a variety of State and Federal resource agencies, municipal agencies, and special interest groups participated in the workshop. Findings were presented through oral presentations and posters on both IEP activities and activities related to the IEP.

Matheson Transfer Station Cleanup

Reclamation completed the \$2.5 million cleanup of the old Matheson transfer station on the banks of Keswick Lake below Iron Mountain Mine near Redding, California. The site, located on Reclamation land, was once used to store pyrite ore until it was loaded onto railroad cars and shipped. Contamination by high concentrations of heavy metals was both an immediate health threat to people utilizing the site for recreation as well as impacting water quality of the Sacramento River. The ore had



Aerial view of the Matheson Transfer Station cleanup. The Sacramento River is in the background.

been mined from Iron Mountain, now a Federal Superfund site. Crews in summer 2005 removed about 16,000 cubic yards of tainted soil and moved it to a disposal area at Iron Mountain.

Tahoe Regional Wetlands Development Program

Reclamation constructed Lake Tahoe Dam in 1913 and is responsible for its operation. The dam increased the water level of Lake Tahoe by 6 feet to provide water for urban and agricultural uses downstream. Reclamation therefore has an interest in the water quality of the lake to protect the beneficial uses of the water.

Lake Tahoe and its watershed have been degraded by many environmental disturbances over the past several decades. These disturbances, including rural and residential development, new transportation routes, increased human population, and increased numbers of motor vehicles, have degraded the integrity of the watershed in various ways. The purpose of the Tahoe Regional Wetlands Development Program is to assist in addressing the past degradation of Lake Tahoe and its watershed by undertaking projects, either directly or through financial assistance to others, to meet the environmental thresholds as defined in the Tahoe Regional Planning Agency's Environmental Improvement Program. The environmental thresholds are defined as the environ-



Lake Tahoe Dam

mental standards necessary to protect the natural environment and public health and safety within the Lake Tahoe basin.

Five conservation activities were funded in 2005 at a cost of approximately \$1.8 million. Funded projects included fish passage improvements, assessment and design phase of creek restoration, riparian hardwood stand restoration, Tahoe Yellow Cress reintroduction, and basin-wide Environmental Improvement Program planning.

For additional information, contact the Division of Environmental Affairs at 916-978-5037 (TDD 916-978-5608).

Division of Planning

CALSIM Model Development and Application

CalSim is the joint planning model for the California State Department of Water Resources (DWR) and Reclamation's MP Region. Reclamation's Division of Planning continues to work closely with DWR as a partner in the CalSim development effort. The CalSim-II model is used for planning studies and analyzing system-wide effects on the CVP and SWP.

The CalSim-II model development addresses both specific model application requirements and software/engine enhancements. The purpose of CalSim-II application development is to refine the level of detail for project-specific results. Alternatively, software refinements increase the efficiency of the model. Model development and maintenance ensures an effective and versatile tool for analyzing reservoir system scenarios. CalSim-II is a monthly time-step model that simulates a specific level of development (or demand) for a series of historical hydrologic events. CalSim-II results are used in storage investigation projects, alternative facilities, climate change, and other studies.

CalSim-II model development in 2005 included the following:

Application Development:

- Extension of the hydrology time-series from 1922 – 2003
- Public release of the CalSim-II San Joaquin River model (Peer Reviewed)
 - Detailed documentation of the East-Side of the San Joaquin River basin
 - Coordination of data and operations with local water districts and irrigation districts
 - “Land Use”-based demands as opposed to contract-based demands using GIS
 - San Joaquin River Water Quality Module (salinity)
- Plan Formulation Common Model Package development for CALFED ROD storage projects
 - Los Vaqueros Expansion Study
 - Upper San Joaquin River
 - Basin Storage Investigation
 - Shasta Lake Water Resources Investigation
 - Sites Reservoir - North of Delta Offstream Storage Investigation
- Coordination of CalSim-II and temperature modeling on the Sacramento River
- Long-Term EWA Study

Software Development:

- Development of the Water Resources Integrated Modeling System interface for the CalSim-II application

Central Valley Production Model

The Central Valley Production Model (CVPM) is a regional model of irrigated agricultural production and economics that simulates the decisions of agricultural producers in the Central Valley of California from the Redding area to the Kern County Water Agency/Bakersfield area. The CVPM includes 22 crop production regions in the Central Valley and 20 categories of crops. The model predicts cropping patterns, land use, producer profits, and water use within the Central Valley by considering land availability, water availability and cost, irrigation technology, market conditions, and production costs.

The model’s objective function maximizes producers’ net income and the value of agricultural products to consumers subject to the following relationships and restrictions:

(1) Linear, increasing marginal cost functions estimated using the technique of positive mathematical programming. These functions incorporate acreage response elasticities that relate changes in crop acreage to changes in expected returns and other information.

(2) Commodity demand functions that relate market price to the total quantity produced.

(3) Irrigation technology tradeoff functions that describe the tradeoff between applied water and irrigation technology.

(4) A variety of constraints involving land and water availability and other legal, physical, and economic limitations.

The model selects those crops, water supplies, and irrigation technologies that maximize profit subject to these equations and constraints. Profit is revenue minus costs. From #1 above, cost per acre increases as production increases. Revenue is irrigated acreage, times crop yield per acre, times crop price. From #2 above, crop price and revenue per acre decline as production increases. Relation #3 affects costs and water use through the selection of

the least-cost irrigation technology. Relation #4 ensures that the model incorporates real-world hydrologic, economic, technical, and institutional constraints.

In 2005, Reclamation performed the following tasks to update the CVPM:

- Most input data was updated, including data on cropping patterns, applied water, costs of production, evapotranspiration of applied water, project water deliveries, crop prices, price elasticities, and yields.
- GIS was used to determine the breakdown of county data into the 22 crop production regions.
- Work has been initiated to apply the CVPM to evaluate the potential agricultural economic benefits of proposed storage projects.

The CVPM input data and model code were undergoing significant revisions at the end of 2005.

Contra Costa Water District Alternative Intake Project

Reclamation is participating in planning studies to evaluate the Contra Costa Water District's (CCWD) proposed Alternative Intake Project. The project purpose is to protect and improve water quality delivered to CCWD's raw water and treated water customers.

The proposed action includes the construction of a new intake and fish screen in the Delta on Victoria Canal, a pumping plant, and an associated 2- to 4-mile-long pipeline from the new intake to CCWD's existing Old River conveyance system. The proposed action would involve adding a new point of diversion to certain existing water rights held by CCWD and by Reclamation. The new intake would tie into the existing Old River Intake and Pump Station and improve operational flex-

ibility to divert from either location to provide the highest water quality. The project would only seek to add a point of diversion with better water quality, but with no increase in water rights, capacity, CVP contract amounts or Los Vaqueros Reservoir filling or release rates.

Evaluating the relocation of Delta M&I intakes was included in the CALFED Delta Improvements Program Implementation Plan (August 2004) if seven other measures do not provide acceptable continuous improvements in Delta water quality. Those measures include South Delta Improvement Program (SDIP) permanent operable barriers, San Joaquin River salinity management, Vernalis flow, San Joaquin River dissolved oxygen, Old River and Rock Slough water quality improvement projects, Franks Tract, and Delta Cross Channel Canal Program. In October 2004, P.L. 108-361, Sec.103 (f)(1)(E) gave Reclamation design and construction authority for the "relocation of drinking water intake facilities" or to "take other actions necessary to offset degradation of drinking water quality in the Delta due to the SDIP."

CCWD is the overall project lead and the CEQA lead. Reclamation is the lead agency for NEPA compliance and all Federal requirements. Potential Reclamation actions associated with the proposed action are agreeing to a change in point of diversion of CVP water under Contract No. I75r-3401A-LTR1 and petitioning the California SWRCB for necessary water right changes regarding point of diversion.

Significant activities completed in 2005 include publication of a Notice of Intent (NOI) on January 24, 2005, and public scoping meetings held in February. A draft Environmental Impact Statement was released in May 2006.

Delta-Mendota Canal/California Aqueduct (CA) Intertie

The DMC/CA Intertie consists of constructing and operating a pumping plant and pipeline connection between the two canals. The DMC/CA Intertie alignment is proposed near DMC milepost 7.2, where the DMC and CA are about 500 feet apart.

The Intertie would be used in a number of ways to achieve multiple benefits, including meeting current water supply demands, allowing for CVP Delta export and conveyance facility maintenance and repair, and providing operational flexibility to respond to emergencies. The Intertie would allow flow in both directions, which would provide additional flexibility to both CVP and SWP operations.



Delta-Mendota Canal

The Intertie includes a pumping plant at the DMC that would allow up to 400 cfs to be pumped from the DMC to the CA. Up to 900 cfs flow could be conveyed from the CA to the DMC using gravity flow.

In 2004, Reclamation continued to develop the project design and released, in cooperation with the San Luis and Delta-Mendota Water Authority, a draft Environmental Assessment/Initial Statement for public comment. Reclamation finalized the environmental documentation and awarded a contract for construction in 2005.

Delta-Mendota Canal Recirculation Project

Reclamation is studying alternatives to recirculate water from the DMC to the San Joaquin River, in accordance with project objectives included in the CALFED Programmatic ROD and State Water Rights Decision 1641(D-1641). A DMC Recirculation Feasibility Study will be conducted to determine whether recirculation is the most effective and feasible method for meeting and/or augmenting the Vernalis flow objective and San Joaquin River water quality standards.

In August 2004, Reclamation and the San Luis and Delta-Mendota Water Authority conducted a 12-day pilot study to measure the changes in flow and water quality in the San Joaquin River with the release of up to 300 cfs of water from the DMC through the Newman Wasteway to be discharged into the river. Results from the pilot test indicated that recirculation could provide a reasonable means for meeting water quality and flow objectives in the San Joaquin River. A Plan of Study is currently being developed to establish steps for evaluating the feasibility of this project and completing the required environmental documentation.

Los Vaqueros Expansion Studies

The Los Vaqueros Reservoir expansion of up to 400,000 acre-feet is one of the projects identified in the CALFED ROD for further investigation. This project could provide water quality and water supply reliability benefits to San Francisco Bay Area water users. Planning studies were initiated in 2001. The studies are being completed in partnership with CCWD, the owners of the reservoir, and DWR. DWR is funding the activities of CCWD.

In 2003, with passage of P.L. 108-7, Sec. 215, Reclamation received Feasibility Study Authority. An Initial Alternatives Report (IAR) was completed in September 2005. The IAR describes the formulation of initial alternative



Los Vaqueros Reservoir

plans to address the problems, opportunities, and planning objectives identified for the study. The initial alternatives primarily involve enlarging the existing Los Vaqueros Reservoir in Contra Costa County. A draft feasibility report and EIS/EIR is scheduled for public release in late 2006.

Mokelumne River Regional Water Storage and Conjunctive Use Project

In 2005, Reclamation initiated an appraisal investigation to identify the Federal interest in a water storage/conjunctive use project, which will address the overdrafting and associated problems within the Eastern San Joaquin ground-water basin. Solving ground-water overdrafting has been identified by local water users as a key element in addressing their long-term water reliability problem. Completion of the appraisal report is anticipated in February 2006. Further study (e.g., feasibility investigation) cannot be initiated without Congressional authorization. In September 2005, H.R. 3812 was introduced by Congressman Richard Pombo to authorize the feasibility study.

North-of-Delta Off-Stream Storage Investigation

The North-of-Delta Off-Stream Storage (NODOS) Investigation (a.k.a. Sites Reservoir Investigation) is a potential off-stream surface water storage project identified for study in the CALFED ROD. Major NODOS objectives are to evaluate the potential for off-stream reser-

voirs to improve water supply reliability in the Sacramento Valley, as well as throughout the CVP and SWP systems, provide storage for the EWA, improve Delta water quality, improve Sacramento River flows during critical fish migration periods, restore riparian habitat, and provide water supply to wildlife refuges.

Reclamation is participating in planning studies and environmental evaluations of NODOS with DWR. DWR is the overall project lead and the CEQA lead. Reclamation is the lead Federal agency for NEPA compliance and Federal feasibility studies.

Reclamation initiated a feasibility study after passage of P.L.108-7 in fiscal year 2003. The feasibility study is divided into the following three study milestones which serve as decision points on whether or not to continue the investigation: Initial Alternatives Information Report (IAIR), Plan Formulation Report (PFR), and Feasibility Report with NEPA/CEQA compliance. The Initial Alternatives Information Study was begun in 2005 by DWR with oversight provided by Reclamation.

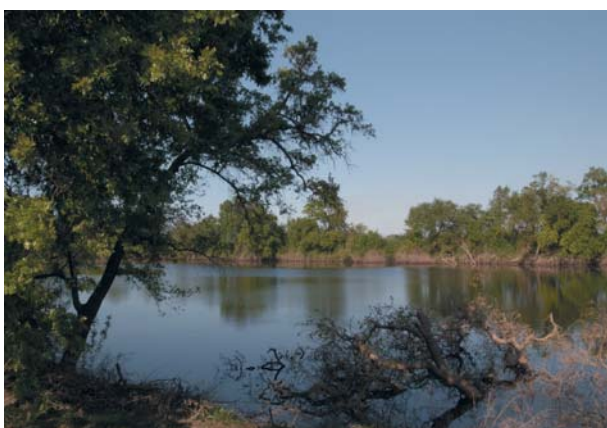
Due to contracting delays at DWR, the IAIR is scheduled for publication in early 2006. Reclamation initiated the Plan Formulation Study in October 2005, based on preliminary IAIR findings that indicated a potential Federal interest in a NODOS project. A PFR is scheduled for completion in fall 2007.

In 2005, Reclamation completed the development of a suite of predictive models that can evaluate the effects on changes in river flows and their effects on the Sacramento River. This suite of models will evaluate the effects of NODOS operational alternatives on channel migration, point bar formation, riparian vegetation establishment and survival, and erosion and deposition processes along the Sacramento River. DWR completed the "Sacramento River Flow Regime Summary Report and Evaluation Report" in 2005 which documented the historic changes in flow of the

Sacramento River and suggested recommendations on how to improve its ecosystem and habitat. The draft feasibility report and draft NEPA/CEQA compliance is scheduled for completion in spring 2008.

Sacramento River Diversion Feasibility Study (SRWRS)

Public Law 106-554, Appendix D, Division B, Section 103, directs the Secretary to conduct a feasibility study for a Sacramento River Diversion Project, consistent with the Water Forum Agreement dated April 24, 2000. The Water



Sacramento River

Forum Agreement objectives are pursuit of a Sacramento River diversion to meet Placer/Sacramento Region water supply needs while promoting ecosystem preservation along the lower American River. The goal of the SRWRS is to develop a water supply plan consistent with these objectives.

Milestones achieved in 2005 include:

- Release of the IAR in March 2005, documenting refinements of the preliminary findings, results of initial analyses and screening of preliminary alternatives for further study. The IAR is the basis for the feasibility report being developed for Federal and local decision-making.

- Completion of draft Biological Assessments for the Service and NOAA Fisheries
- Enabling continued progress on the informal ESA consultation process.
- Resolution of and consensus among NOAA Fisheries, California Department of Fish and Game, Service, Natomas Mutual Water Company (NMWC), and the SRWRS cost-sharing partners on the concept of a consolidated diversion. The concept of consolidated diversion included a portion of NMWC's diversion capacity under the American Basin Fish Screen and Habitat Improvement Project (ABFSHIP) to be combined with SRWRS facilities to reduce the cumulative impacts of the diversions planned in SRWRS and ABFSHIP, however, the local entities could not resolve the issues of the project schedule, funding, operations, and ownership. All parties agreed to remove this option from further consideration.
- Discussion among the Service, local land-use authorities, and SRWRS cost-sharing partners to resolve indirect effects on ESA-listed species from SRWRS proposed action. The local land-use authorities and SRWRS cost-sharing partners are developing a Memorandum of Agreement with the Service to develop a process that would preserve the conservation opportunities in the Placer-Sacramento County area, allow early input from the Service on conservation strategy during land-use decision processes, and allow the SRWRS proposed water infrastructure plan to proceed.

It is anticipated that the Final Biological Assessments will be available in summer 2006 to begin formal ESA consultation. A Draft EIS/EIR is scheduled to be completed in summer/winter 2006.

San Luis Drainage Feature Re-evaluation

Reclamation is developing a plan to provide drainage service to the CVP San Luis Unit (Unit). Over the past 4 decades, Reclamation has formulated and reformulated different plans to provide drainage service to the Unit pursuant to Section 1(a) of the San Luis Act. In 1995, a Federal judge held that the San Luis Act mandated that Interior provide drainage and ordered Reclamation to apply for a discharge permit to complete the San Luis Drain to the Delta (*Sumner Peck Ranch, Inc. et. al. v. Bureau of Reclamation, et. al.*).

In April 2001, Reclamation, on behalf of Interior, completed a “Plan of Action” outlining a strategy to provide drainage to the Unit. A comprehensive review of all drainage service options defined in previous years is being conducted, including a review of drainage water treatment technologies developed in recent years. The project purpose is to provide agricultural drainage service to the Unit that achieves long-term sustainable salt and water balance in the root zone of irrigated lands.

A long-term, sustainable salt and water balance is needed to ensure sustainable agriculture in the Unit and the region. In December 2001, a Preliminary Alternatives Report was completed outlining potential alternatives to provide drainage for water in-valley and out-of-valley.

A PFR was completed in December 2002 that set forth the analysis of alternatives for providing drainage service to the Unit. Because of stakeholder comments, Reclamation prepared a Supplemental PFR in 2004. The Supplement included alternatives for land retirement. In coordination with stakeholders, Reclamation submitted a new Plan of Action Schedule to the Court. A scoping report was completed in July 2004. The major findings of the Supplemental PFR were as follows:

- By 2050, approximately 379,000 acres will need drainage service (343,000 acres in the Unit and 36,000 acres in the northerly area outside the Unit).

- Cost-effective on-farm and in-district drainwater reduction measures and regional drainwater reuse could reduce drainage volumes by nearly 80 percent.
- Retirement of all or a portion of drainage-impacted land could be an effective component of drainage service.

A Draft Environmental Impact Statement (EIS) was completed in May 2005. The Final EIS and ROD are scheduled for completion in July 2006. Feasibility-level designs and cost estimates are currently being prepared for two of the in-valley disposal alternatives.

The implementation of drainage service will require further Congressional action to increase the appropriations ceiling authorized by the San Luis Unit Act of 1960.

San Luis Lowpoint Improvement Project

The San Luis Lowpoint Improvement Project is identified as a complementary action in the CALFED ROD. Working under a grant from the State of California, the Santa Clara Valley Water District (SCVWD) has undertaken the role of implementing agency for this project.

Reclamation has agreed to be the NEPA lead for this study. In 2005, Reclamation completed a draft Appraisal Report and initiated the Plan of Study for a Feasibility Study. Reclamation completed the Plan of Study in early 2006. The feasibility study is expected to begin in Fall 2006.

Shasta Dam Enlargement

Reclamation is conducting feasibility level studies for the enlargement of Shasta Dam primarily for increased water supply and operational flexibility as part of the CALFED Surface Storage Program. It is one of the five projects identified CALFED ROD. Increases in demand for water supplies and attention to ecosystem needs in the Central Valley have renewed interest in expanding the facility.



Shasta Dam

The study is being conducted under the general authority of Public Law 96-375, which authorized the Secretary to engage in feasibility investigations of certain water resource developments (1980); Public Law 102-575, the CVPIA (1992); and Public Law 108-361, which authorized the Secretary to implement water supply technology and infrastructure programs aimed at increasing and diversifying domestic water resources (2004). Reclamation is the project lead, responsible for the NEPA compliance and Federal planning studies.

Shasta Reservoir could be expanded by 290,000 acre-feet by raising Shasta Dam 6.5 feet or up to 630,000 acre-feet for an 18.5-foot raise. Such an expansion would increase the pool of cold water available to maintain upper Sacramento River water temperatures needed by certain anadromous fish and provide other water management benefits, such as water supply reliability.

One of the issues related to raising Shasta Dam is the potential for adverse impacts to a 24-mile reach of the McCloud River that is provided protection under a 1989 California Public Resources Code. Under the Code, other than the DWR, participation by State agencies is limited in feasibility studies that could result in a project that could adversely affect the free-flowing conditions of the McCloud River or its wild trout fishery. Studies to date have shown that a 6.5-foot

Shasta Dam raise would periodically inundate about 9 acres of riverine habitat and about 1,400 feet (1 percent) of the McCloud River. An 18.5-foot Shasta Dam raise would periodically inundate 27 acres of riverine habitat and about 2/3 of a mile of the McCloud River.

About 10 miles upstream, there is a wild trout fishery of major concern. This area would not be affected by a mini-raise of Shasta Dam. By comparison, Reclamation estimates that the Shasta mini-raise with ecosystem restoration features would create about 150 acres of riverine habitat and 500 acres of ecosystem restoration around Shasta Lake and along the upper Sacramento River. This ecosystem restoration would create far more habitat than would be impacted on the McCloud River.

Reclamation continues to refine project alternatives, economic studies, cost and benefit analysis, potential impacts, and mitigation strategies. Reclamation is continuing stakeholder coordination with the public and key local, State, and Federal agencies.

A significant activity completed in October-November 2005 was public scoping on behalf of NEPA. The Region is continuing to conduct environmental studies, systems modeling, and technical studies to evaluate potential storage, operations, and conjunctive management alternatives, and hold public outreach briefings and workshops. A draft feasibility report/Environmental Impact Statement is scheduled for completion in 2007.

South Delta Improvement Program (SDIP)

Reclamation and the DWR completed environmental studies for the SDIP to provide increased deliveries for the SWP and CVP water service contractors while addressing the Delta fisheries and local in-Delta agricultural water user needs. The SDIP is a component of the Conveyance Program of the Delta Program. Expanded conveyance through the SDIP is critical to improve CVP South-of-

Delta allocations to at least 65 percent, consistent with the objectives of the CALFED ROD, and to alleviate the CVPIA delivery impacts.

The SDIP major components are increasing the allowable diversion capacity at the SWP's Clifton Court Forebay to 8,500 cfs; constructing permanent operable flow control barriers to improve water level and water quality available for agricultural diversions in the south Delta; dredging portions of Middle River, Old River, and West, Grantline, Victoria, and North Canals to improve flows in south Delta channels; and constructing a permanent operable fish control barrier at the head of Old River to reduce fish movement into south-Delta channels.

The decision-making process for the preferred project will be accomplished in two stages. The staged decision is to respond to the uncertainties regarding the causes of the pelagic organism decline in the Delta estuary and allow time to incorporate new information on the reasons for the decline of Delta pelagic fishes.

Stage 1 is focused on the preferred physical/structural component and began with the release in November 2005 of the public Draft EIS/EIR. For this decision, Reclamation and DWR will assume the existing operational rules, including the permitted limit for SWP diversions at Clifton Court Forebay. DWR will issue a Notice of Determination (NOD) and Reclamation will issue a ROD for the decision regarding the actions and mitigation needed to implement any physical/structural component adopted during the Stage 1 decision-making process.

The decision-making process for Stage 2 will begin after the Stage 1 decision is made. Assuming a physical/structural component is selected in Stage 1, Stage 2 will include the selection of the preferred operational component, based upon the operational scenarios presented in the Draft EIS/EIR and incorporating public input and additional information

collected on the condition of pelagic organisms in the Delta estuary. During this stage, and before the selection of the preferred operational component, the public will be provided the opportunity to comment on the preferred 8,500 cfs operational component. A second NOD from DWR and ROD from Reclamation regarding the selection of the preferred operational component will complete the environmental compliance work on the SDIP.

Significant activities conducted in 2005 included interagency coordination with the Service, NOAA Fisheries, and the DFG under the Federal and State ESAs. Completion of Stage 1 environmental documentation is anticipated in fall 2006, with implementation of any project construction in 2007 and subsequent operation beginning in 2009/2010.

Technical Assistance to the State – Model Development

Urban Water Use Model

In 2005, Reclamation developed routines for the California Land and Water Use database. These routines, developed for the DWR, compute and store data on urban public supply water use. The California Land and Water Use database compiles information on agricultural and urban water use, which is essential to the California Water Plan Update (DWR Bulletin 160).

CALSIM III Utilities

In conjunction with Reclamation's Technical Services Center, additional utilities were developed for the database that contains Water Resources Integrated Modeling System input code for CALSIM III. These utilities generate reports of data input for clarifying model assumptions and documenting CALSIM studies.

Title XVI - Water Reclamation and Reuse Program

The Division of Planning manages the Title XVI, Water Reclamation and Reuse Program, for the MP Region. Projects under way include the following.

Watsonville Water Recycling

With the feasibility study completed, design studies nearly complete, and construction scheduled to start in 2007, this project will reduce salinity for agricultural irrigation in the Pajaro Valley coastal area by recycling up to 4,000 acre-feet of effluent per year for blending with 10,000 acre-feet of higher quality water. The project includes the construction of tertiary treatment facilities, a pipeline transmitting the tertiary effluent from a recycled water facility to a blending facility, an operations center, a water quality laboratory, and a maintenance facility. Upon the issuance of a cooperative agreement by Reclamation in 2004, Watsonville initiated design studies which continued throughout 2005. Final designs were ongoing in 2006, with start of construction in early 2007. The Federal cost-share is 25 percent of the total estimated cost of \$72 million.

North San Pablo Bay Restoration and Reuse Project

Reclamation and the Sonoma County Water Agency (SCWA) have evaluated opportunities for water recycling supply, storage, and distribution in the northern San Pablo Bay region. The proposed regional water recycling project would link at least five wastewater treatment plants by a regional pipeline to transport recycled water for blending with the salt water solution in the former Cargill Salt Ponds, for discharge into San Pablo Bay. Once the ponds have been restored, the recycled water would be conveyed as a source of irrigation water to between 10,000 and 15,000 acres of agricultural lands consisting primarily of vineyards. Existing water supplies would be expanded, while leaving more flows during summer months for anadromous fish restoration. The feasibility

study is being completed in phases. In completed Phase I, the stakeholders formulated recycled water supply alternatives. In 2005, Phase II was notably narrowed to three alternatives for consideration, grower outreach was developed, and an MOU was signed establishing the Recycled Water Authority of the North Bay. All phases of the feasibility study, which include NEPA compliance and a statement of financial capability, are scheduled for completion in 2008.

North Sonoma County Agricultural Reuse Project

In 2005, Reclamation and the SCWA continued the feasibility study to evaluate opportunities for recycled water, storage, and distribution in the Alexander, Russian River, and Dry Creek Valleys in the vicinity of Santa Rosa, California. The project will evaluate a regional approach to providing recycled water to 25,000 acres of agricultural lands (primarily vineyards). The objective is to provide an alternative source of agricultural water to reduce reliance on surface water and ground-water supplies. Six wastewater treatment plants from six different wastewater treatment districts would be linked by a regional pipeline system to provide recycled water. Work continued with the development of alternatives and the initiation of NEPA/CEQA compliance. The feasibility study is scheduled for completion in 2007. The final feasibility study report will select a preferred alternative, develop a project cost estimate, include NEPA/CEQA compliance, and include a statement of financial capability.



The Mid-Pacific Region provides water for agriculture.

Bay Area Regional Water Recycling Program (BARWRP)

Title XVI of Public Law 102-575, the Reclamation Projects Authorization and Adjustment Act, directed the Secretary in 1992 to, “undertake a program to investigate and identify opportunities for reclamation and reuse of municipal, industrial, domestic, and agricultural wastewater, and naturally impaired ground and surface waters, for the design and construction of demonstration and permanent facilities to reclaim and reuse wastewater and to conduct research, including desalting, for the reclamation of wastewater and naturally impaired ground and surface waters.” Section 1611 authorized the San Francisco Area Water Reclamation Study which has become known as the BARWRP.

BARWRP, consisting of local water agencies, completed a Master Plan in 1999. This plan represents a long-term regional water recycling program to augment water supplies in San Francisco, San Mateo, Santa Clara, Alameda, and Contra Costa counties. It recommends the phased implementation of recycled water projects to supply 125,000 acre-feet per year by 2010 (estimated at \$735 million); 240,000 acre-feet by 2025; and between 400,000 and 600,000 acre-feet by 2040. Distribution of recycled water would occur through several regional pipelines.

Title 1 of Public Law 108-361, the Water Supply, Reliability, and Environmental Improvement Act, requires the Secretary to determine for each project identified in BARWRP if existing planning and environmental documentation demonstrate that the projects will contribute to improving water supply reliability in the CALFED area and meet the requirements of Section 1604 of the Reclamation and Ground-water Study and Facilities Act. In January 2005, the MP Region distributed letters to 37 water and wastewater agencies that may sponsor a water recycling project associated with BARWRP. These letters requested information regarding

their water recycling project. Of the 37 entities, 19 replied, but none of their projects met the requirements of Section 1604. A report of these findings was provided to Congress in April 2006.

Upper San Joaquin River Basin Storage Investigation

The CALFED ROD of August 2000 recommended evaluating additional storage in the upper San Joaquin River watershed through enlargement of Millerton Lake/ Friant Dam or a functionally equivalent storage program. The primary objectives for storage and management of water from the upper San Joaquin River are to contribute to restoration of the San Joaquin River and improvement of water quality, facilitate conjunctive management and water exchange opportunities, and improve CVP water supply reliability. Secondary objectives and benefits include potential for increased management of flood flows at Friant Dam, contributions to long-term EWA water supply, generation of hydropower, and opportunities for recreation.

The Upper San Joaquin River Basin Storage Investigation is being prepared in two phases by Reclamation and the DWR. Phase 1, which included preliminary screening of 17 initial storage sites, was completed in October 2003. The findings in the Phase I Report revealed that six surface storage sites (with multiple reservoir sizes or measures at each site) appear technically feasible and were retained for further analyses and study.



Friant Dam and the San Joaquin River

Phase 2 began in early 2004 with formal initiation of the NOI to commence the NEPA process and will continue through completion of all study requirements. Four NEPA scoping meetings were held in Spring 2004, and the Scoping Report was finalized in December 2004. Sixteen agencies were formally invited as cooperating agencies under NEPA in early 2005, and the technical teams are assisting with preparation of the Feasibility Report (FR) and the EIS. An IAIR was completed in June 2005. The IAIR screened 24 water storage measures and resulted in six measures retained for further study. The IAIR also described preliminary water operations scenarios and the status of ground-water storage measures development.

The Upper San Joaquin River Basin Storage Investigation team has begun the PFR phase, which has a scheduled completion date of summer 2007. The PFR will quantify the performance and benefits of the retained measures, formulate and compare alternatives, evaluate environmental impacts in greater depth, and identify a Tentatively Preferred Plan (TPP). An economically feasible set of alternatives (approximately 2-3), which includes the TPP, is anticipated for evaluation in the Draft FR/EIS. The Draft FR/EIS is expected to be completed in summer 2008, the Final FR/EIS in summer 2009, and the associated ROD in fall 2009.

Various landowners, agencies, and businesses in the San Joaquin Valley have expressed support for the Upper San Joaquin River Basin Storage Investigation. Local Congressional interest and support has been strong as well. In contrast, some groups have expressed concerns over the potential environmental impacts and costs of constructing a new reservoir and believe that ground-water banking and/or non-structural measures should be considered.

Water Quality Coordination

The Water Quality Group in the Division of Planning coordinates and manages water quality activities related to State and Regional Water Quality Control Board permits, ESA, Clean Water Act, and CVP operations. The Water Quality group strives to ensure minimum impact to Reclamation's operations and its ability to meet customer needs.

In 2005, the Water Quality Group participated in the following water quality activities:

- Reclamation participated in multi-agency/private stakeholder processes for several CWA activities:
 - Salt and Boron Total Maximum Daily Load (TMDL) in the Lower San Joaquin River
 - Dissolved Oxygen TMDL in the San Joaquin River Deepwater Ship Channel
 - Methyl and Total Mercury TMDL in the Francisco Bay/Sacramento-San Joaquin River Delta (Delta)
 - Upstream of Vernalis Salinity Standard
 - Conditional Agricultural Waivers Program
 - 303(d) listing and delisting workshop/hearing
 - National Pollutant Discharge Elimination System permit for Sliger Mine (an abandoned mine located on Reclamation property near the Auburn Dam site)
 - Warren Act Contract for DMC and Friant-Kern Canal.
 - Completion of the Pilot Recirculation study report

- San Joaquin River Water Quality Management Group – address critical water quality problems in the San Joaquin River Basin
- Water User Technical Work Group
 - address critical water quality problems in the Central Valley using the current water quality models
- Reclamation participated in multi-agency planning and scoping sessions regarding water quality issues (within or near Reclamation facilities) that may impact daily operations:
 - California Bay-Delta Authority Drinking Water Subcommittee
 - Freeport Regional Water Project
 - EWA
 - South Delta Water Quality Standards
 - Shasta Enlargement Program
 - Los Vaqueros Expansion Project
 - DMC water quality monitoring for selenium TMDL
 - South Delta Improvement Plan
 - Delta Improvement Plan
 - City of Fernley Storm Water Runoff and Drainage
 - Sacramento County Regional Water Transfers
 - Consumnes River Flow Augmentation Project
- The MP Region participated in Reclamation’s Water Quality Work Group. The Work Group addresses various water quality issues pertinent to Reclamation facilities and operations:

- Reclamation water quality related policies
- EPA water quality related policies
- Reclamation Storm Water Policy

Water Supply Improvement Efforts

In all but the driest years, the design capacity of the CVP is approximately 7 million acre-feet. The enactment of Public Law 102-575, the CVPIA, dedicated 1,200,000 acre-feet of CVP yield to fish and wildlife purposes and charged Reclamation with identifying actions to replace that yield.

In 2005, Reclamation continued its efforts under Sec. 3408(j) of CVPIA with the release of a report titled *A CVP Yield Feasibility Investigation Report: The Delivery Impact of CVPIA* (May 2005). The report refines the impact of CVPIA on water deliveries and demonstrates the relationship between storage and conveyance for improving CVP water deliveries. The report examined various levels of north-of-Delta and south-of-Delta storage against three levels of Delta conveyance for replacing the delivery impact of CVPIA on CVP users. Refinements to the CALSIM II hydrologic model enabled Reclamation to better quantify impacts to CVP users resulting from the dedication of CVP water supplies to environmental purposes.

In 2005, the *Water Supply and Yield Study* (WSAYS) was initiated, as required by Public Law 108-361, Title 1, Sec 103 (d)(1)(C). The *WSAYS Interim Report* and *Final Report* will focus on new firm yield and water supply improvements for the CVP water service contractors. The *WSAYS Interim Report* and *Final Report* will incorporate and revise, as necessary, the results of the 1995 Least-Cost Plan and will identify new firm yield and water supply improvements, which will serve to minimize the impact of CVPIA on CVP water service contractors. Projects and water management actions will be taken from mul-

multiple sources, including the CALFED Program Plan and State planning efforts. Actions and projects will be grouped together to form alternatives. Beneficiaries of the alternatives will be identified, and an analysis of the willingness of the beneficiaries to pay the costs will be performed. Together, these will assist Reclamation to identify and pursue a future course of action for the CVP.

Other significant efforts in 2005 included the continuation of the Eastside Integrated Resource Management Plan (IRMP), which is a strategic planning effort focused on identifying and describing the current and future CVP water supply gap in the Eastside region and identifying opportunities, strategies, and partnerships to close the gap. The IRMP is tasked with establishing three baseline water supply conditions for the Eastside region: 1992 pre-CVPIA, current conditions, and projected 2030 conditions. The IRMP will identify and evaluate water supply actions for filling supply gaps, and the baseline conditions will serve as a basis for determining the effectiveness of water supply actions. Actions may include demand reduction, supply increases, conservation, operational changes, transfers, exchanges, and/or conjunctive use.

WESTSIM Ground-water Model

WESTSIM is a ground-water simulation model of the Federal contract lands on the San Joaquin Valley's western side from Tracy in the north to Kettleman City in the South. Salinization, ground-water overdraft, and land subsidence threaten agricultural productivity in this region.

The model now under development uses finite element techniques to simulate the hydrologic cycle's various components and simulates how these components interact. The most important components are the stream/aquifer interaction, subsurface drainage simulation, and soil moisture accounting.

The model consists of 61 sub-regions that include both water districts and wildlife refuges. GIS technology was used to define the various model characteristics. Once completed, the model will give Reclamation a better understanding of ground-water movement and quality that is critical to the region's economic viability.

In early 2003 a model peer review of the original Integrated Ground-water Surface Water Model (IGSM) code by the California Water and Environmental Modeling Forum revealed serious deficiencies in the stability of the original IGSM model for sub-regional model domains. A new model code was released publicly in early 2004 and WESTSIM and CVGSM2 are the first applications with the new model code. The model code was renamed Integrated Water Flow Model (IWFM) in September 2005. Reclamation has been co-chair of the IWFM User's group for the past 2 years.

Reclamation completed the following major tasks in 2005 towards development of a final calibrated WESTSIM model:

- The SHEDTOOL application was completed with WESTSIM to improve Reclamation's management of well log, water level, and water quality data and to allow more rapid processing of the data necessary for modeling purposes. The water balance post-processor was modified to be consistent with the format used by the Water Conservation Office providing the Water Conservation Office with an enhanced tool for evaluating water district-level water conservation programs.
- Private wetlands are being considered for the first time in any west-side ground-water model as distinct sub-regions within the WESTSIM model. Inclusion of wetlands results in a more realistic simulation of San Joaquin Basin hydrology and improves the simulation of stream-aquifer interactions

and ground-water contribution to the San Joaquin River. A steady-state monthly wetland operations spreadsheet model (WETMANSIM) was developed and used to provide target hydrology for WESTSIM. The current WESTSIM model treats wetlands as small lakes – future work will add more control of wetland levels to better simulate wetland operations and allow simulation of year-to-year changes in wetland operations.

- The new hydrology for CALSIM is based on WESTSIM hydrology. WESTSIM has established the drainage flow paths to the San Joaquin River, which has allowed correct assignment of drainage flows to the new CALSIM nodes for the San Joaquin Basin. The new CALSIM hydrology has incorporated WETMANSIM to simulate wetlands in the San Joaquin Basin. It is envisioned that in the next hydrology upgrade of CALSIM, output from WESTSIM will be used to replace the code based on WETMANSIM.
- Reclamation was invited to make a presentation on WESTSIM at the annual conference of the California Ground-water Association.

For additional information, contact the Division of Planning at 916-978-5060 (TDD 916-978-5608).

Division of Resources Management

Anadromous Fish Screen Program (AFSP)

Under the CVPIA Section 3406 (b)(21), the Secretary is required to develop and implement measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin Rivers, their tributaries, the Delta, and the Suisun Marsh.

Since 1994, Reclamation and the Service have been assisting the State of California through the AFSP to install fish screens on unscreened diversions in the Central Valley.

To date, 20 fish screening projects have been completed with cost-share funds from the AFSP. Several additional fish screen projects were in the design phase in 2005. At the end of 2005, AFSP-funded fish screen projects were preventing the entrainment of fish from roughly 4,000 cfs of water diverted for municipal and agricultural purposes.

Construction of a fish screen at the Sutter Mutual Water Company Tisdale Pumping Plant was initiated in summer 2005. At 960 cfs, it is the largest unscreened diversion on the Sacramento River. When completed, this fish screen project will protect from entrainment out-migrating spring, fall, and winter-run Chinook salmon; Central Valley steelhead; and Sacramento splittail; as well as resident game and non-game fish.

Long-Term Contract Renewals

In 2003, the MP Region and its contractors resumed negotiations for renewing renewal of approximately 113 long-term water service contracts. During 2004, negotiations were completed at the division/unit levels, and negotiations with individual contractors were concluded with all but four contractors. The negotiated contracts were made available for a 60-day public review and comment

period. Twenty-seven long-term renewal contracts with Friant Division and Hidden and Buchanan Units, executed in February 2001, are not involved in the current negotiation process.

Beginning in early 2005, the Region began executing the negotiated contracts and required environmental documentation, including ESA consultations and NEPA documents, were finalized. The new Operations Criteria and Procedures were finalized in late 2005, allowing the Service and NOAA Fisheries to concentrate on completion of ESA consultations for the individual contracts. Fifty-two contracts were executed in 2005. Environmental documentation on the remaining contracts will be completed during the summer 2006, and contracts will be signed as final environmental documentation is received. These renewal contracts involve approximately 5.6 million acre-feet of water for irrigation and M&I purposes.

Long-Term Contract Renewals M&I Water Shortage Policy

The CVP has more than 250 water service contracts (including the Sacramento River Water Settlement Contracts). The water shortage provisions in these contracts vary, and potential inequities could exist when CVP water is allocated using the various shortage provisions. Since December 1991, Reclamation has held many meetings and workshops with the CVP water users and the public to develop a CVP-wide M&I Water Shortage Policy that will provide a minimum level of water supply to M&I contractors. A draft M&I Water Shortage Policy was released to the public in February 1994, for review and comment. The CVPIA Administrative Proposal for Urban Water Supply Reliability, dated June 9, 1997, addressed several of the major issues regarding the 1994 draft M&I Water Shortage Policy, and supported the development and adoption of a final M&I Water Shortage Policy.

By Federal Register notice in October 2001, Reclamation released a draft M&I Water Shortage Policy, dated September 11, 2001, for public review and comment. A significant number of comments were received during the 30-day review period. The comments were reviewed and considered by Reclamation in the final policy development. Reclamation has used modeling studies to assess the impacts of the proposed policy, and the necessary environmental documentation has been completed. Throughout 2006, Reclamation will conduct a series of technical sessions with interested parties in an effort to finalize the policy.

Reconciliation of Land Records

The MP Region successfully concluded a 5-year effort in September 2005 that involved reconciling all the land records for acquired lands with the Financial Records System. This has significantly improved the Region's ability to provide good information on capital land assets for Reclamation's annual financial statements and other related land management activities and annual reports.

Refuge Water Conveyance Program (RWCP)

The CVPIA has improved the amounts and reliability of water supplies to maintain and improve wetland habitat areas on Federal, State, and private refuges in California's Central Valley. The Refuge Water Conveyance Program (RWCP) is responsible for conveying



Waterfowl in flight

this water to the refuges through water supply contracts with the refuges and cooperative agreements with conveying (wheeling) entities. The RWCP is a joint effort of Reclamation and the Service.

The CVPIA provides water supplies to the refuges, known as Level 4, to meet optimum habitat management requirements. The Level 4 water supplies consist of “Level 2” water which is usually provided by CVP yield and “Incremental Level 4” water acquired through purchase from willing sellers. Delivering this water requires access to and use of the conveyance facilities of local water districts that can deliver water to the refuge boundaries.

Reclamation provides conveyance funding for a total of ten long-term conveyance agreements (one under Service administration) and one interim conveyance reimbursement agreement.

Of the current ten long-term agreements, Reclamation executed nine agreements (with seven-50-year terms) with local, non-Federal entities to deliver the water to the refuge boundaries.

In 2005, negotiations were completed with the DWR for water conveyance to the Kern NWR and with the DFG for an amendment to an existing agreement for reimbursement of deep-well pumping costs on the Gray Lodge Wildlife Area to meet Level 2 needs.

All refuges have received their respective Level 2 water allocations each year following enactment of CVPIA, except for reductions due to conveyance capacity, distribution system limitations at some refuges, and reductions specifically requested and scheduled by refuge managers.

Two South-of-Delta refuges and two North-of-Delta refuges cannot receive full Level 2 deliveries until Reclamation completes conveyance facilities construction, currently scheduled for completion in 2012, pending funding availability.

Provision of additional and/or more “firm” water supplies to Central Valley refuges has allowed managers to respond better to the habitat requirements of wetland-dependent species.

Increased water supply to 48,348 acres of seasonal marsh, permanent wetlands, and riparian habitat has provided refuge managers the ability to irrigate for high-quality stands of moist-soil food plants and maintain required water levels for optimal wildlife foraging.

Replacements, Additions, and Extraordinary (RAX) Maintenance and Deferred Maintenance

The initial CVP RAX Program budget for fiscal year 2005 was \$20.1 million; however, the CVP RAX Program successfully expended \$25.3 million due to funds being made available from other programs within Reclamation. This indicates that the CVP RAX need is generally greater than available funds.

Design and construction began on several large projects including replacement of the excitation systems at O’Neill Pumping/Generating Plant; Spring Creek, J.F. Carr, and Trinity Powerplants; and rewind of the main unit generators 1 and 2 at Shasta Powerplant.

Furthermore, CVP RAX accomplishment has helped to reduce MP Region’s deferred maintenance from approximately \$16 million in fiscal year 2004 to \$14.9 million in fiscal year 2005.

CVP RAX consists of approximately 170 items with an estimated cost of more than \$115 million. The CVP RAX Program has consistently assured that all available dollars are applied to the highest priority items first, ultimately reducing the amount of deferred maintenance that is being reported by the MP Region and successfully sustaining its aging infrastructure.

Sacramento River Contract Renewal Process

Approximately 145 Sacramento River Settlement contracts (Contractors) were scheduled to expire on March 31, 2004. Because the CVP/SWP OCAP could not be completed in time to allow new contracts to be signed before the existing contracts were scheduled to expire, Congress provided that the Secretary would extend the existing contracts for up to 2 years to provide for continued water delivery to the Sacramento River Settlement Contractors.

Of the 145 contracts, 16 are with water or irrigation districts and 129 are with individual diverters on the Sacramento River. The contracts encompass 2.2 million acre-feet of water, of which approximately 1.8 million acre-feet is classified as base supply water (water that may be diverted by the contractors free of charge) and approximately 380,000 acre-feet is CVP water (water for which the Contractors must pay the United States). Twenty Sacramento River Settlement Contractors (primarily districts) control approximately 95 percent of the water under contract.

Negotiations between Reclamation and the Contractors were initiated on May 1, 2002. During 2003, agreement was reached with the Contractors on a form of contract, and Negotiations were essentially have been concluded with all but one “long-form” of the contractors



Nancy Anderson, in the Region's Water Rights and Contracting Branch, organizes Sacramento River Settlement renewal contracts.

in 2003 and the “short-form” contract has been accepted by nearly all of the short-form contractors. The completed contracts were released for a 60-day public review and comment period. The CVP/SWP OCAP was completed in 2004 and environmental documents, including those required by the NEPA and ESA, were received in early 2005. There were 124 renewal contracts signed in 2005; 12 contractors indicated they would not renew. Final action is pending on the remaining five contracts.

San Joaquin River Agreement/Vernalis Adaptive Management Program (SJRA/VAMP)

The SJRA/VAMP is a scientifically-based adaptive fishery management plan that is helping to determine the relationships between water flows, exports, and other factors on salmon survival in the Delta.

Specifically, State and Federal fishery biologists and other stakeholders developed VAMP in 1998 to gather the best available scientific information on the impact of flows and CVP and SWP export rates on salmon smolts in the lower San Joaquin River and to determine what impact the Head of Old River Barrier has on salmon smolt survival.

In 2005, Reclamation, in cooperation with the Service and DWR acquired 110,000 acre-feet of water for VAMP; however, due to relatively high flow conditions in the San Joaquin River basin and tributary basins, no supplemental water was released by the SJRA group agencies. An annual report describing all facets of the 2005 VAMP program was released in April 2006. The report provided conclusions and recommendations for the technical elements and the annual VAMP monitoring policy and management elements. The VAMP Policy and Technical Teams will consider the recommendations identified in the annual report for incorporation into the 2006 VAMP monitoring program.

In the event that SJRA/VAMP is terminated for some unforeseen reason in accordance with Section 13 of the SJRA/VAMP, Reclamation negotiated with Merced Irrigation District (MEID), and in cooperation with the Service, DFG, and DWR a backstop measure to preserve spring and fall pulse flows on the Merced River, which accounts for slightly more than half of the VAMP flows. This measure is called the Merced River Adaptive Management Program Agreement, which was signed in August 2002.

VAMP is implemented pursuant to the SJRA, which is a cooperative, multi-interest partnership of State and Federal agencies, various water and irrigation districts including some SWP and CVP contractors (collectively known as the San Joaquin River Group Authority (SJRGA), and environmental parties. Pursuant to the SJRA, Reclamation and DWR (via a cost sharing agreement in accordance with the CVPIA) provide an annual payment of \$4 million, escalated annually per the Consumer Price Index-Urban to the SJRGA. In return, the SJRGA provides up to 110,000 acre-feet of increased flow on the San Joaquin and its tributaries during a 31-day period in April-May to meet the SJRA specified VAMP flow targets.

The SJRA also annually provides additional quantities of water that Reclamation has agreed to purchase for fishery protection and other project purposes. MEID, a member of the SJRGA, provides 12,500 acre-feet annually in the fall to augment the Merced River's instream flows for migrating anadromous fish species. Oakdale Irrigation District, also a member of the SJRGA, provides between 15,000 and 26,000 acre-feet to Reclamation in New Melones Reservoir.

A Federal ROD along with the Final EIS/EIR, "Meeting Flow Objectives for the SJRA, 1999-2010, Final EIS/EIR," was completed for the SJRA/VAMP in February 1999. A supplemental Final EIS/EIR, "Acquisition of Addi-

tional Water for Meeting the SJRA Flow Objectives - 2001 through 2010," and its ROD were completed in November 2001 and provides for the acquisition of up to 47,000 acre-feet of additional test flows for VAMP, which is a SJRA objective, during double-step years. Acquiring additional test flows is required because some double-step target flows may not be met without flows in excess of the 110,000 acre-feet guaranteed by the SJRA. The SJRGA must notify Reclamation by March 1 each year if there is additional water available for purchase.

For additional information on the VAMP monitoring program, contact the Central Valley Operations Office at 916-979-2180 (TDD 916-979-2183).

Settlement Agreement - Water Quality Control Plan (WQCP) for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

On May 22, 1995, the SWRCB adopted the WQCP for the San Francisco Bay/Sacramento-San Joaquin Delta (Delta) which contains the current water quality and flow standards for the Delta. Subsequently, the SWRCB initiated the Delta water right proceedings to determine responsibility for meeting WQCP standards that until this time had been the sole responsibility of the CVP and DWR SWP. Phases 1-7 of the Delta water rights proceedings involved the San Joaquin Valley and other Delta issues and resulted in D-1641.

Phase 8 of these proceedings would have ultimately determined the responsibility of Sacramento Valley water right holders other than the CVP/SWP to meet those standards. It was envisioned that the Phase 8 proceedings would have been lengthy, and controversial, and ultimately resulted in litigation. Reclamation and DWR claim that certain water rights holders in the Sacramento Valley must cease diversions or release water from storage to help meet Delta water quality standards. Sacramento Valley water users contend their



Delta Cross Channel Canal

use has not contributed to water quality problems in the Delta and so, as senior water right holders and water users within the watershed and counties of origin, they should not be responsible for meeting these standards. Reclamation and DWR agreed to voluntarily meet the water quality standards pending the SWRCB's final decision regarding responsibility for meeting these standards.

The SWRCB encouraged the parties to resolve issues of responsibility through negotiated settlement. In March 2003, the involved parties, including the Northern California Water Association, DWR, Reclamation, and various CVP and SWP contractors, entered into a Short-Term Settlement Agreement. Under this agreement, the Sacramento Valley water rights holders will provide up to 185,000 acre-feet of water in most WYs to both CVP and SWP. The Sacramento Valley water users will provide this water by pumping groundwater in lieu of diverting surface water supplies or by re-operation of existing reservoirs.

Additional activities will be required over the next 2 years to begin implementation of the Short-Term Settlement Agreement. These activities are the completion of the EIS/EIR for the Sacramento Valley Water Management Program and some of the early short-term implementation agreements. Ultimately, the parties must develop a long-term work plan to increase benefits for all parties and provide the basis for a long-term settlement agreement.

Suisun Marsh Preservation Agreement

The Suisun Marsh Preservation Agreement and its companion Suisun Marsh Mitigation Agreement and Suisun Marsh Monitoring Agreement were revised in June 2005. The signatory agencies are the DWR and DFG, Suisun Resource Conservation District, and Reclamation. The costs to implement the revised agreements are shared by the State of California through DWR (60 percent) and by Interior through Reclamation (40 percent).

The purpose of the original agreements (March 2, 1987) was to ensure that a dependable water supply from the CVP and SWP would be maintained to mitigate adverse impacts on the marsh and a portion of the adverse effects of other upstream diversions. The revised agreements update the original agreements to reflect events and changed conditions, including effective operation of the Suisun Marsh Salinity Control Gates under SWRCB Decision-1641 (1999) which implements flow objectives for the Bay-Delta Estuary.

Decision-1641 reduced the need for additional large-scale water conveyance facilities, CALFED ROD, and the need for interim and future management actions to improve marsh habitat in lieu of construction of previously planned large-scale conveyance facilities.

Water Acquisition Program (WAP)

The CVPIA directs that Reclamation, in coordination with the Service, provides water supplies, known as Level 4, for wildlife refuges in the California Central Valley. The Level 4 water supplies consist of "Level 2" water which is usually provided by CVP yield and "Incremental Level 4" water acquired by the WAP. This water provides optimum habitat management levels at the refuges for the benefit of migratory and wetland-dependent wildlife.



San Luis Wildlife Refuge

Under the WAP during 2005, Reclamation purchased 67,962 acre-feet of Incremental Level 4 water from willing sellers for refuges. The Incremental Level 4 water allows for optimum development and management of wetlands to provide better water quality, habitat diversity, and a longer winter flooding period. This results in improved habitat conditions and an increase in the survival rate and breeding success of migratory waterfowl.

WAP continued evaluating the potential of using ground-water, either directly or through conjunctive use opportunities, as an alternate water supply for Central Valley wildlife refuges. Both on-site and off-site sources are being investigated. This WAP study is part of an overall effort to diversify sources of Incremental Level 4 water and seek reliable long-term economical acquisitions to meet Incremental Level 4 refuge water supply needs. Study results may also help to diversify Level 2 refuge water supplies, especially for San Joaquin Valley wildlife refuges.

Water Conservation

In 2005 Reclamation's Water Conservation Team (Team) announced the revision of the Conservation and Efficiency Criteria (Criteria) for 2005. The Criteria was developed by Reclamation in response to the CVPIA and in accordance with the Reclamation Reform Act of 1982.

The CVPIA required Reclamation to review the Criteria periodically, "but no less than every 3 years, with the purpose of promoting the highest level of water use efficiency reasonably achievable by project contractors using best available cost-effective technology and best management practices." The initial Criteria were developed in 1993 and have been revised in 1996, 1999, and 2002.

The "Regional Criteria for Evaluating Water Management Plans" were developed in 2004. The Team is currently working with the Sacramento Settlement Contractors in reviewing the Regional plan. Also in 2004 the "Criteria for Developing Refuge Water Management Plans" were developed. All 12 refuges required to submit plans under the new criteria submitted them by December 2005.

In addition to Criteria and Plan management, the Water Conservation Program provides assistance to water districts in the areas of Water Management Planning, Conservation Education, Demonstration of Innovative Technologies, and Implementation of Conservation Measures. In 2005, the Team provided approximately \$2.5 million in grants to participating districts. This includes approximately \$1 million in financial assistance that was awarded through www.grants.gov.

For the first time, financial assistance through the Water Conservation Field Services program was awarded through a competitive Internet process. These participants, in return, provided approximately 50 percent in cost-share funding.

Throughout 2005, the Team continued the interagency partnerships with CALFED's Water Use Efficiency Program and the Urban and Agricultural Water Management Councils. Additionally, the Team is focusing on measurement issues and is working with California Polytechnic State University, San Luis Obispo, to develop options for measurement of water deliveries to customers.

Water Transfers

From March 1 through November 30 of WY 2005, approximately 623,000 acre feet of CVP water was approved for transfer under the water transfer provisions of the CVPIA. These transfers were used to meet agricultural, municipal and industrial, and fish and wildlife purposes within the Central Valley. Approximately 73,000 acre feet was transferred for use by the CVPIA WAP to meet CVPIA Level IV refuge water supply demands.

The CVPIA Water Transfer Program assisted in the review and approval of three water banking programs involving the banking of up to 85,000 acre-feet of CVP water by CVP contractors in ground-water banking facilities owned and operated by non-Federal entities. Two of these programs involved the short-term banking of up to 45,000 acre-feet of CVP water by Santa Clara Valley Water District and Westlands Water District in ground-water banking facilities owned and operated by the Semitropic Water Storage District. A third program involved the long-term, 25-year banking of up to 40,000 acre-feet of CVP water by Kern Tulare and Rag Gulch Water Districts in the Rosedale-Rio Bravo Water Storage District and the North Kern Water Storage District ground-water banking facilities. All of these programs involve the banking of CVP water by CVP contractors outside their authorized service area boundaries. The banked water will be returned to the districts to meet future and/or dry year needs.

The “On-Tap” website, an on-line water transfer information source to improve public access to information on water transfers operated jointly by Reclamation, DWR, and the SWRCB under the CALFED Water Transfer Program, has been deactivated due to lack of State funding for DWR to host and maintain the website. The “On-Tap” website was initially maintained and hosted by Reclamation but was transferred to DWR in 2003. On-Tap was a key component of the CALFED Water

Transfer Program’s Water Transfer Information Clearinghouse and provided up-to-date information to the public on water transfer activities by Reclamation, DWR, and the SWRCB, the three Federal and State agencies in California who have the primary regulatory responsibility for approval and oversight of water transfers.

The website will be unavailable for public access until appropriate funding is secured for continued operation by DWR. Reclamation’s transfer database is continuing to be operated by the CVPIA Water Transfer Program. This database is the primary source to provide up-to-date information on water transfers activities within the CVP.

The CVPIA Water Transfer Program, in conjunction with DWR, facilitated the 2005 approval for eight Sacramento River water right settlement contractors to transfer approximately 114,000 acre-feet of Sacramento River water to export areas south of the Delta. Approximately 34,000 acre-feet was approved for transfer to Westlands Water District, a San Luis Division CVP contractor, for agricultural purposes, and approximately 80,000 acre-feet was approved for transfer to the Metropolitan Water District of Southern California for municipal and industrial demands.

The transferred water was made available by land idling, crop shifting, and ground-water substitution programs implemented by the Sacramento River contractors. None of the water approved for transfer was actually delivered, however, due to the unusually high water supply conditions that existing within the Central Valley during the 2005 WY and the non-availability of pumping capacity to move transferred water at the State and Federal Delta pumping plants.

For additional information, contact the Division of Resources Management at 916-978-5200 (TDD 916-978-5608).

MP Construction Office

Lauro Dam Construction Project

Safety of Dams investigations conducted in 1979 and 1983 and field investigations conducted in 1998 concluded that movement could occur near Lauro Dam as a result of a large magnitude earthquake and cause a surface fault displacement through its foundation. A \$3.9 million contract was awarded in September 2005, to A.J. Diani Construction Inc., Santa Maria, California, to reduce the risk by placing a sand filter layer and gravel filter and drain layer over the area where the fault could crack the embankment. This contract is anticipated to be completed in September 2006.



Lauro Dam aerial view

American River Pumping Plant

On October 6, 2003, the Steve Manning Construction Company of Redding, California, started work on Phase I of the American River Pump Station Project on the north fork of the American River near Auburn, California. Work continues on Phase I that is anticipated to be completed in September 2006. The \$17 million contract, in conjunction with Phase II, will make up to 35,000 acre-feet of American River water available to the PCWA's service area.

In addition to the pumping station, the project includes an intake tunnel and wet well, discharge pipeline, and restoration of the currently unwatered riverbed created when the river was diverted through a tunnel in 1977 in anticipation of building Auburn Dam. Excavation for the project will involve some 750,000 cubic yards of material. There were no bids received on Phase II, and the contract will be solicited again in 2006.

Red Bluff Pumping Plant Expansion and Upgrade

The Red Bluff Research Pumping Plant, completed in 1996, was originally constructed with three pumping units, but was designed for four. A contract to install the fourth and final pump was awarded to Macro-Z Technology Co., Santa Ana, California, on September 29, 2004. The installation of this pump will reduce water delivery problems during the spring and fall. The contract is scheduled to be completed during summer 2006.

Security Upgrades at MP Region Dams

Two contracts were awarded to Adesta of Omaha, Nebraska, to upgrade the security at Shasta, Keswick, and Folsom Dams. A \$6.5 million contract for the Shasta and Keswick upgrades and a \$4.6 million contract for Folsom upgrades were awarded. These upgrades include active vehicle barriers, installation of an uninterruptible power supply system, under-floor raceway system, re-refrigerant piping, intrusion detection system, and other upgrades. These contracts are anticipated to be completed in December 2006.

Shasta Powerplant Turbine and Generator Rehabilitation

The turbines and generators at the Shasta Powerplant are old and in need of replacement. In order to update the Shasta Dam Powerplant turbine and generator rehabilitation for Station Service Units 1 and 2, a contract was awarded in May 2004 to American Hydro Corp. This contract is anticipated to be completed in November 2006. A \$13,750,000 contract was awarded in September 2005 to Alstrom Power, Inc. to rehabilitate the Shasta Powerplant. This contract began in early 2006 and is anticipated to be completed in June 2008.

For additional information, contact the MP Construction Office at 530-934-7066 (TDD 530-934-1345).

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Acronyms

ABFSHIP	American Basin Fish Screen and Habitat Improvement Project
AFRP	Anadromous Fish Restoration Program
AFSP	Anadromous Fish Screen Program
ARWEC	American River Water Education Center
Auburn Project Lands Authority	Auburn Dam and Reservoir Project California Bay-Delta Authority
(b)(2)	Central Valley Project Improvement Act Section 3406(b)(2)
BARWRP	Bay Area Regional Water Recycling Program
BO	Biological Opinion
BRBNA	Blue Ridge Berryessa Natural Area
BRC	Business Resource Center
BTC	Berryessa Trails and Conservation Organization
CA	California Aqueduct
CALFED	California-Federal Bay-Delta Program
C.A.S.T.	Catch a Special Thrill
CCAO	Central California Area Office
CCC	California Conservation Corp
CCWD	Contra Costa Water District
CDF	California Department of Forestry
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
cfs	Cubic Feet Per Second
CVACS	Central Valley Automated Control System
CVHM	Central Valley Habitat Monitoring Program
CVO	Central Valley Operations Office
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
CVPM	Central Valley Production Model
CVP/SWP OCAP	CVP/SWP Operations Criteria and Plan
Delta	San Francisco Bay/Sacramento-San Joaquin River Delta
DFG	California Department of Fish and Game
DMC	Delta-Mendota Canal
DWR	California Department of Water Resources
EA	Environmental Assessment
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EWA	Environmental Water Account
FERC	Federal Energy Regulatory Commission
FOIA	Freedom of Information Act
Folsom	City of Folsom
FR	Feasibility Report

FRWA	Freeport Region Water Authority
GAO	Government Accountability Office
Get W.E.T.	Get Water Education Today
GIS	Geographic Information Systems
IAIR	Initial Alternatives Information Report
IAR	Initial Alternatives Report
IEP	Interagency Ecological Program
IG	Inspector General
IGSM	Integrated Ground-water Surface Water Model
Interior	Department of the Interior
Investigation	Upper San Joaquin River Basin Storage Investigation
IRMP	Eastside Integrated Resource Management Plan
ISO	International Standards Organization
IT	Information Technology
IWFM	Integrated Water Flow Model
JOC	Joint Operations Center
KBAO	Klamath Basin Area Office
LBAO	Lahontan Basin Area Office
LBFO	Lake Berryessa Field Office
MEID	Merced Irrigation District
M&I	Municipal and Industrial
MOU	Memorandum of Understanding
MPCO	MP Construction Office
Mw	Megawatt
NCAO	Northern California Area Office
NEPA	National Environmental Policy Act
Nevada	State of Nevada
NFPA	National Fire Protection Association
NFS	Natural Flow Study
NMWC	Natomas Mutual Water Company
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
NODOS	North of Delta Off-stream Storage
NOI	Notice of Intent
NWR or Refuge	National Wildlife Refuge
OSH	Occupational Safety and Health
PCDC	Putah Creek Discovery Corridor
PCWA	Placer County Water Agency
PCWCD	Pershing County Water Conservation District
PEIS/EIR	Programmatic Environmental Impact Statement/Environmental Impact Report
PFR	Plan Formulation Report
PG&E	Pacific Gas & Electric
POD	Pelagic Organisms Decline
RAX	Replacements, Additions, and Extraordinary Maintenance Program
Restoration Project	Battle Creek Salmon and Steelhead Restoration Project
RFC	River Forecast Center
ROD	Record of Decision

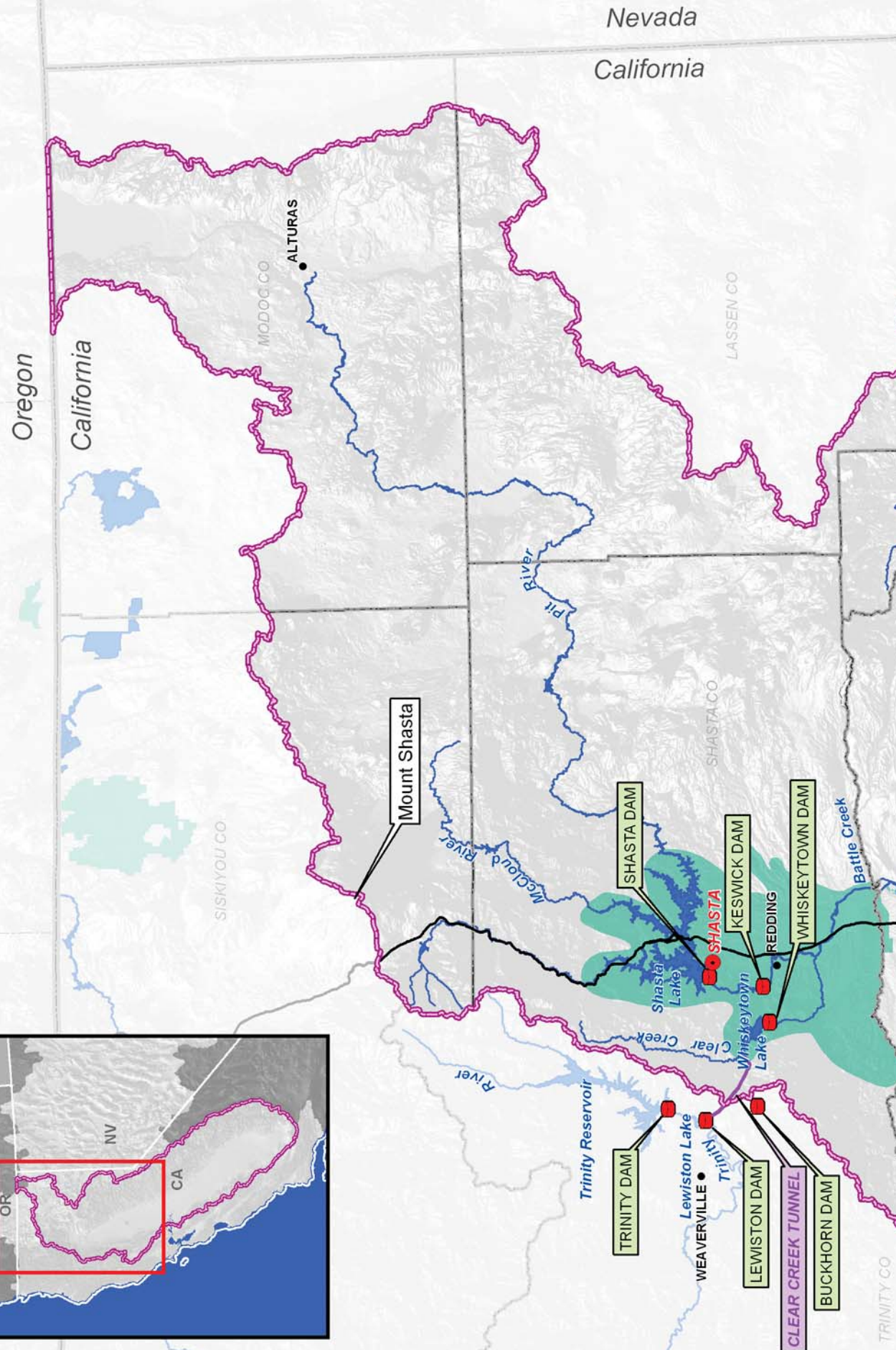
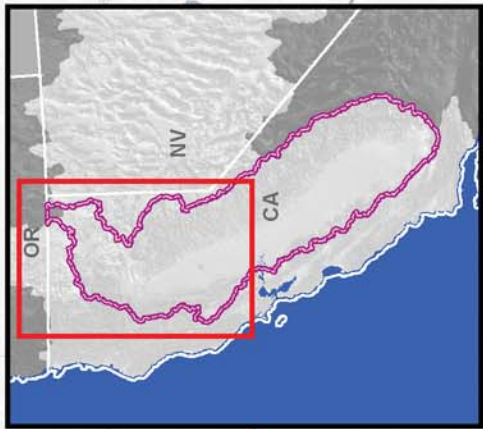
RWA	Regional Water Authority
RWCP	Refuge Water Conveyance Program
SCADA	Supervisory Control and Data Acquisition
SCCAO	South-Central California Area Office
SCWA	Sonoma County Water Agency
SDFP	South Delta Fish Facilities Forum
SDIP	South Delta Improvement Program
Secretary	Secretary of the Interior
Service	U.S. Fish & Wildlife Service
SJRA	San Joaquin River Agreement
SJRG	San Joaquin River Group Authority
SRWRS	Sacramento River Diversion Feasibility Study
SWP	State Water Project
SWRCB	State Water Resources Control Board
TCID	Truckee-Carson Irrigation District
TDD	Telephone Device for the Deaf
TFCF	Tracy Fish Collection Facility
TFTF	Tracy Fish Test Facility
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
TPIA	Take Pride in America
TPP	Tentatively Preferred Plan
TROA	Truckee River Operating Agreement
Truckee River OCAP	Truckee River Operating Criteria and Procedures
TSC	Technical Service Center
UCD	University of California-Davis
Unit	CVP San Luis Unit
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
VAMP	Vernalis Adaptive Management Plan
WAP	Water Acquisition Program
WEIS	Water Education and Information Station
Western	Western Area Power Administration
WQCP	Water Quality Control Plan
WY	Water Year

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Central Valley Project North Half

- CVP Water Service Area
- CVP Boundary
- Dam
- Canal
- Tunnel
- River - Stream
- Area Office
- City



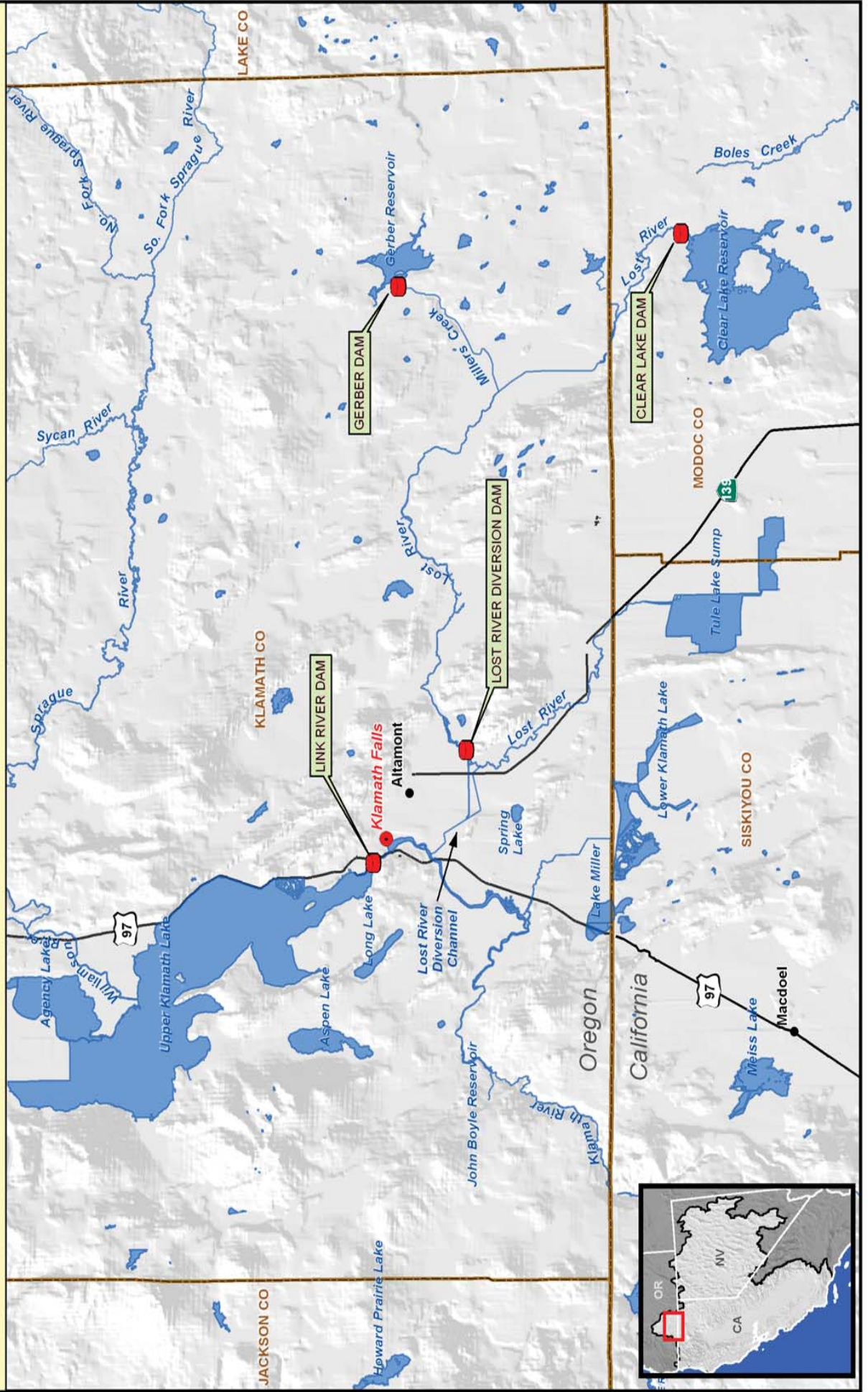
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Klamath Project

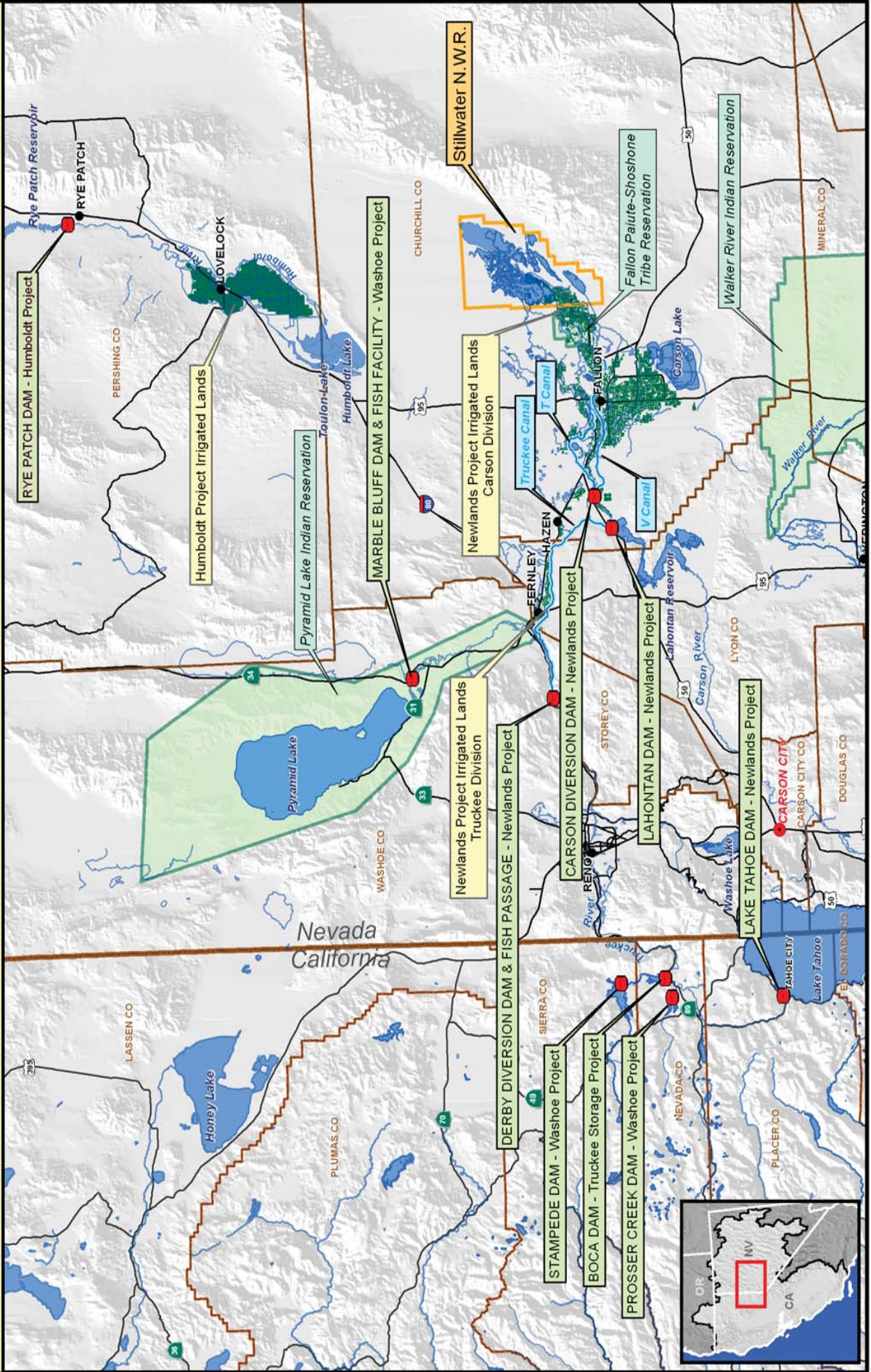
- Dam
- River - Stream
- City
- County
- Area Office





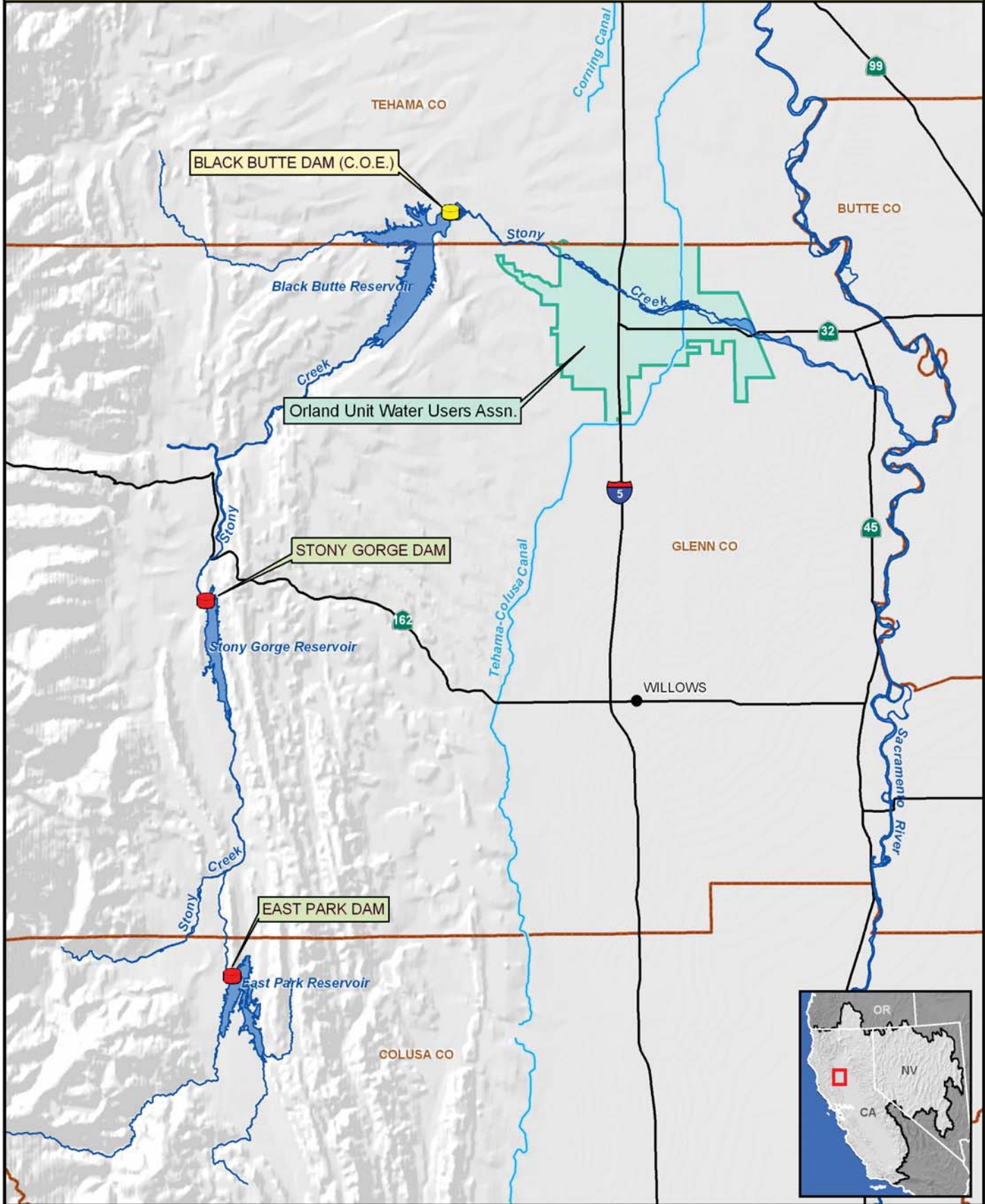
Washoe, Truckee Storage, Newlands, and Humboldt Projects

- Dam
- Canal
- River - Stream
- Area Office
- City
- County
- Wildlife Refuge
- Indian Reservation



- Dam (Corp. of Engineers)
- Dam
- Canal
- River - Stream
- City
- County

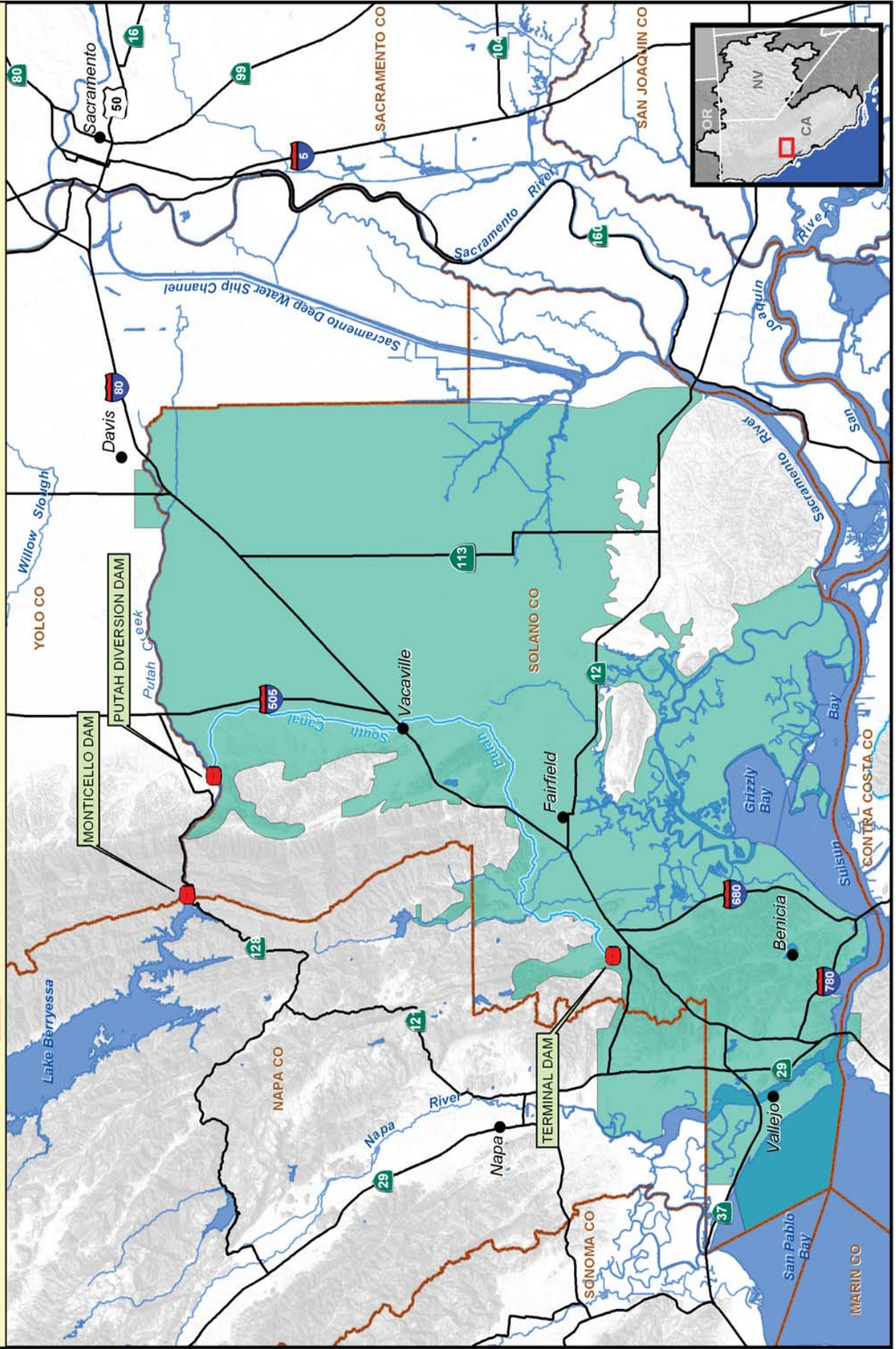
Orland Project





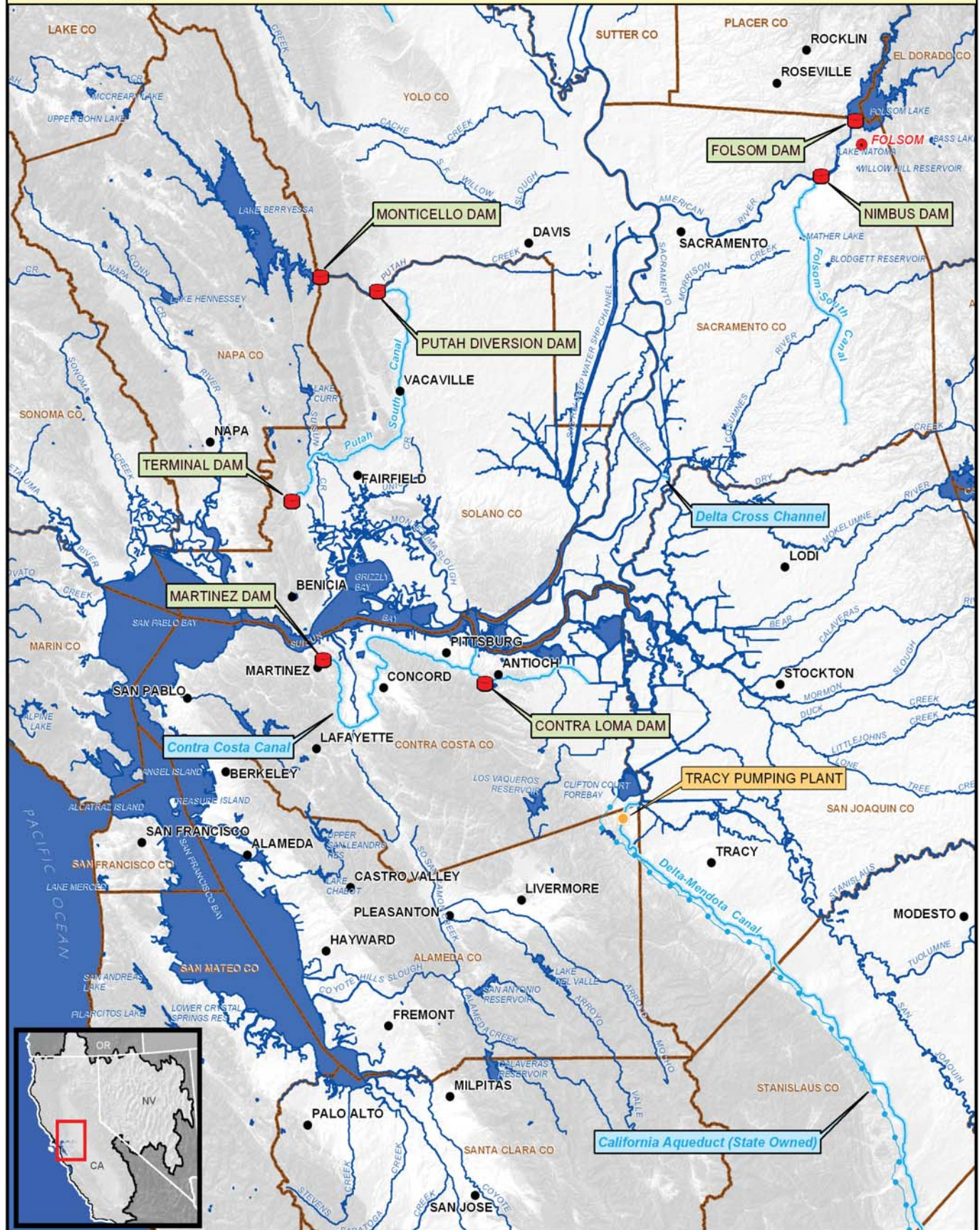
Solano Project

- Solano Project Water Service Area
- Dam
- Canal
- River - Stream
- City
- County



- Dam
- Area Office
- Pumping Plant
- City
- Canal
- County
- River - Stream

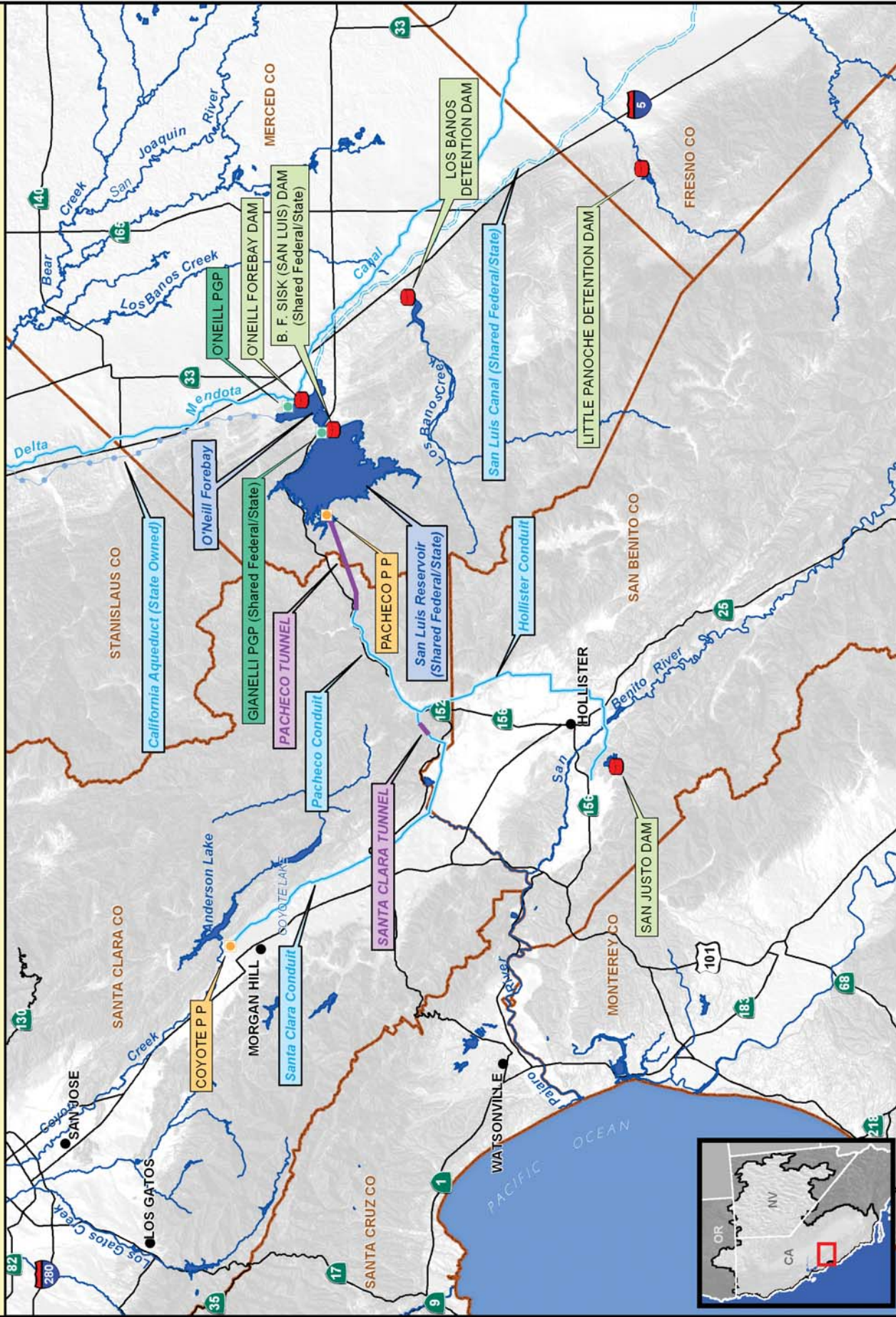
Bay - Delta



San Felipe Project



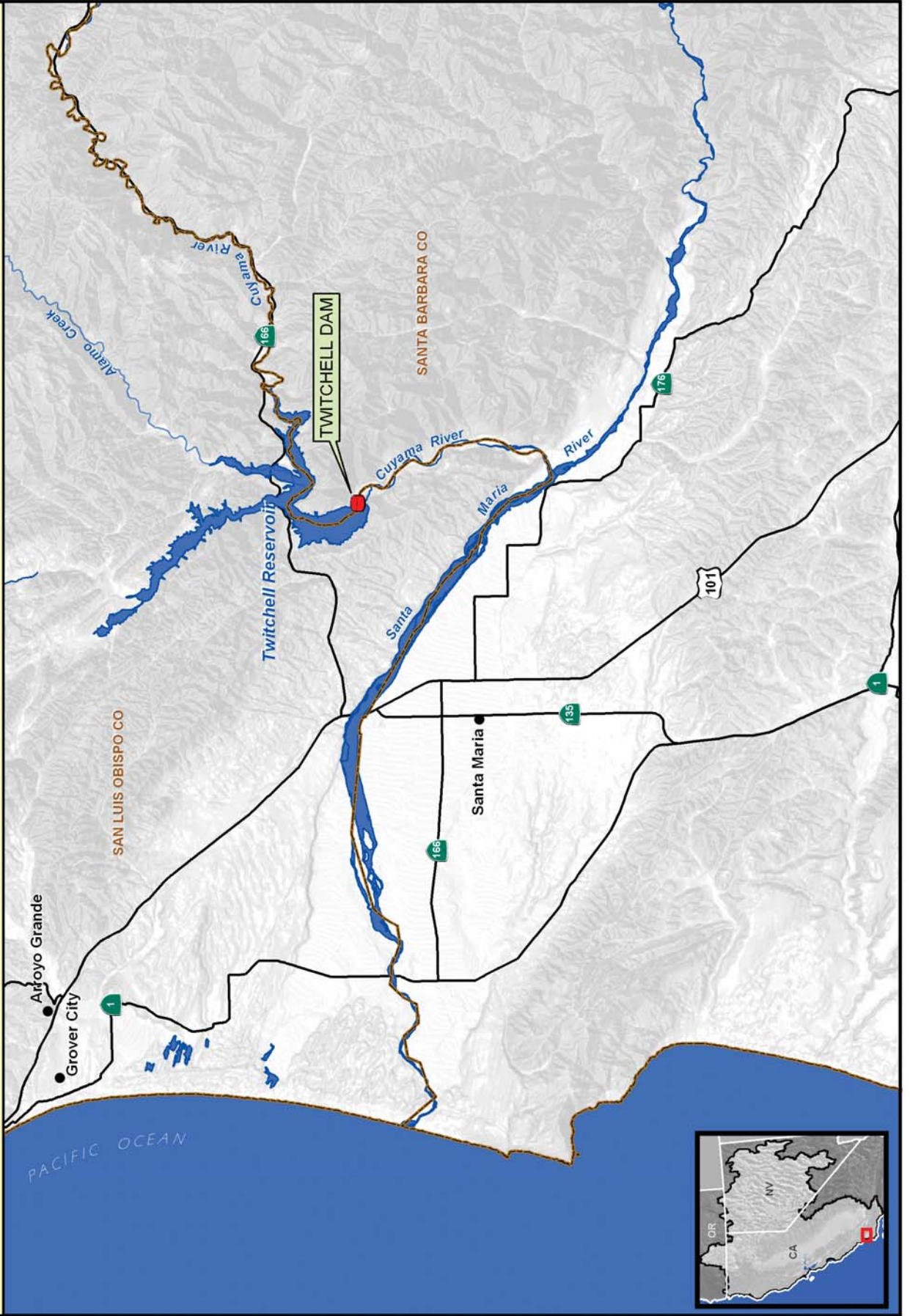
- Dam
- Pumping Generating Plant
- Pumping Plant
- Canal
- Tunnel
- City
- County





Santa Maria Project

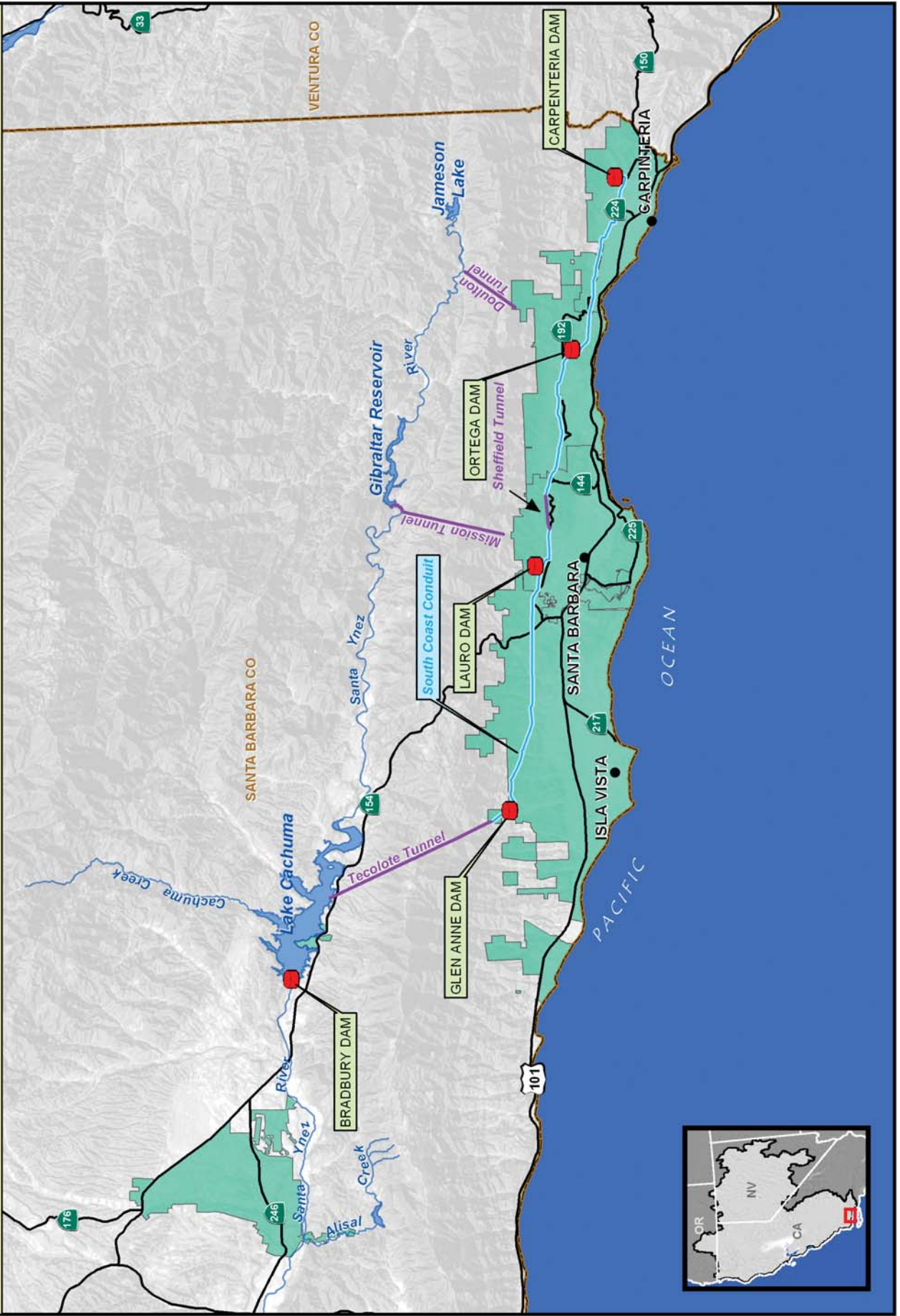
- Dam
- River - Stream
- City
- County





Cachuma Project

- Cachuma Project Water Service Area
- Dam
- Canal
- Tunnel
- River - Stream
- City
- County



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