

Chapter 1 Introduction

In 2004, the United States Department of the Interior, Bureau of Reclamation (Reclamation), was authorized to expend funds “for design and construction of the relocation of drinking water intake facilities to in-Delta water users” with passage of the CALFED Bay-Delta Authorization Act, Public Law 108-361. This report evaluates the extent of Federal interest and participation in construction of a new Delta intake for Contra Costa Water District (CCWD).

CCWD obtains its water supply exclusively from the Sacramento-San Joaquin Delta (Delta) and serves treated and raw (untreated) water to approximately 550,000 people in central and eastern Contra Costa County. The Alternative Intake Project (Project) is a water quality project for CCWD’s customers that also could provide fisheries protection and water supply reliability benefits. The Project would relocate some of CCWD’s diversions to obtain better source water quality.

Reclamation is the lead agency for National Environmental Policy Act (NEPA) compliance and CCWD is the lead agency for California Environmental Quality Act (CEQA) compliance for the Project, which is currently in the planning phase. On January 25, 2005, a Notice of Preparation was released and a Notice of Intent was published in the Federal Register (Vol. 70, No. 15, pp. 2557-2558). Public scoping meetings were held from February 15 through 17, 2005, and a scoping report was completed in May 2005. Informal consultation was initiated in spring 2005 with Federal and State fisheries agencies (National Marine Fisheries Service (NMFS), United States Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG)). The draft Environmental Impact Report /Environmental Impact Statement (EIR/EIS) was released for public comments in May 2006. The Final EIR/EIS was released in October 2006 and was approved by CCWD on November 15, 2006. The Notice of Determination (NOD) was received by the State Clearinghouse on November 16, 2006. Biological opinions for the project have been issued by NMFS and USFWS in April 2007, and USFWS completed its Fish and Wildlife Coordination Act Report on July 9, 2007. The Record of Decision (ROD) was signed by Reclamation on May 4, 2008.

Study Purpose and Scope

The primary purpose of this Special Study Report is to describe the formulation of alternatives to meet Federal planning objectives through an alternative water intake, determine if there is a Federal interest to participate in the construction of the Project, and if so, determine the extent of that Federal interest. The

information used to develop this report is largely based on the information contained in the Project EIR/EIS (CCWD and Reclamation, 2006).

The scope of the report includes the following topics:

- Description of water resources and related problems and needs in the study area warranting Federal consideration; planning objectives to address these problems and needs; and planning constraints, principles, and criteria used to help guide the study.
- Description of alternatives formulation to address planning objectives.
- Description of existing and likely future water resources and related conditions and potentially affected environment in the study area.
- Identification of public involvement considerations, and compliance with applicable laws, policies, and plans.
- Economics and cost allocation

Authorization

Reclamation is the Federal agency conducting this study. CCWD is the local agency that owns the existing intake facilities and the proposed alternative intake. The following sections discuss Federal authorization and legislation pertinent to the Project.

Federal Authorization

In October 2004, the Water Supply, Reliability, and Environmental Improvement Act, also known as the CALFED Bay-Delta Authorization Act (Public Law 108-361) was signed into law. Section 103 (f)(1)(E) of Public Law 108-361 states the following:

“Funds may be expended for design and construction of the relocation of drinking water intake facilities to in-Delta water users.”

Therefore, if Reclamation determines there is an interest for Federal participation in the Project, new legislation to authorize construction would not be necessary.

Central Valley Project Improvement Act

In 1992, Congress passed multipurpose water legislation, known as Public Law 102-575, which contains 40 separate titles providing for water resources projects throughout the West. The Central Valley Project Improvement Act (CVPIA), Title 34 of Public Law 102-575, mandates changes in management of the CVP, particularly for the protection, restoration, and enhancement of fish and wildlife. Federal interest in the Project is established under Section 3402(a) of CVPIA:

“to protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River basins of California;”

Background

The Central Valley Project (CVP) is the largest surface water storage and delivery system in California, with a geographic area covering 35 of California’s 58 counties. The project consists of 20 reservoirs with a combined storage capacity of approximately 11 million acre-feet (MAF); 8 powerplants and 2 pump-generating plants with a combined generation capacity of approximately 2 million kilowatts (kW); and approximately 500 miles of major canals and aqueducts. The CVP supplies water to more than 250 long-term water contractors in the Central Valley, Santa Clara Valley, and San Francisco Bay Area (Bay Area).

The CVP can deliver about 7 MAF annually to agricultural and municipal and industrial (M&I) customers and for environmental purposes. Of this 7 MAF, about 6.2 MAF is for agricultural uses, 0.5 MAF for urban uses, and 0.3 MAF for wildlife refuges. However, while an annual delivery capability of 7 MAF exists, actual deliveries are currently much lower. For example, approximately 4.1 MAF were delivered to agricultural and M&I users in 2004, combined. Historically, about 90 percent of CVP annual deliveries have been to agricultural users, including prior water rights holders. Municipal customers include the cities of Redding, Folsom, Tracy, and Fresno; various agencies in the Sacramento metropolitan area; most of Santa Clara County; the East Bay Municipal Utility District (EBMUD) service area; central and eastern portions of Contra Costa County; and others. The CVP also provides flood control, navigation, power, recreation, and water quality benefits.

Several regulatory requirements and agreements affect operation of the CVP. Prior to passage of the Central Valley Project Improvement Act (CVPIA), (described below), operation of the CVP was affected by State Water Resources Control Board (SWRCB) Decisions 1422 and 1485 (D-1422 and D-1485), and the Coordinated Operations Agreement (COA). D-1422 and D-1485 identify minimum flow and water quality conditions at specified locations that are to be maintained in part through operation of the CVP. The COA specifies responsibilities shared by the CVP and California State Water Project (SWP) for meeting the requirements of D-1485. In December 1994, representatives of the Federal and State governments and urban, agricultural, and environmental interests agreed to implement a San Francisco Bay/ Sacramento-San Joaquin Delta (Bay-Delta) protection plan through the SWRCB that would protect the ecosystem of the Bay-Delta estuary. D-1641 superseded D-1485 in 1999 and was later amended in 2000 (see discussion under California SWRCB in this chapter). Coordinated operations of the CVP and SWP continue to be based on the COA.

CCWD is a public agency formed in 1936 by Contra Costa County residents. CCWD serves treated and untreated water to approximately 500,000 people in central and eastern Contra Costa County. CCWD is a CVP contractor, historically relying almost entirely on Reclamation to supply its water from the Delta. CCWD has a water service contract with Reclamation for the diversion of up to 195,000 acre-feet per year through the Rock Slough and Old River intakes, with a reduction in deliveries during water shortages. CCWD's Los Vaqueros water rights allow up to 95,850 acre-feet per year to be diverted from the Old River intake into storage in Los Vaqueros Reservoir during certain periods. CCWD has additional water rights for up to 26,780 acre-feet per year from Mallard Slough. CCWD's operations are governed in part by biological opinions for the protection of threatened or endangered species. Reclamation and CCWD recently renewed a long-term CVP water service contract, consistent with Reclamation authority and all applicable Federal and State laws, including the CVPIA (Public Law 102-575) (Reclamation, 2005).

CCWD's existing facilities and operations, including Delta water intakes, untreated water distribution and pumping facilities, reservoirs, water treatment plants (WTP), and treated water distribution facilities, span eastern Contra Costa County. CCWD maintains three Delta intakes: Old River near State Route (SR) 4, Rock Slough, and Mallard Slough. CCWD's major water storage facility is Los Vaqueros Reservoir, with 100,000 acre-feet of storage. CCWD operates three much smaller reservoirs: Martinez and Contra Loma (owned by Reclamation) and Mallard (owned by CCWD), with a combined usable storage of about 4,030 acre-feet. CCWD treats water at the Bollman WTP and Randall-Bold WTP.

All of CCWD's intakes are subject to variations in water quality caused by salinity intrusion, Delta hydrodynamics, and discharges into the Delta and its tributary streams from both point and nonpoint sources. The Old River intake is used most frequently because it has the best quality water and fish screens. Rock Slough is used as CCWD's secondary option for diversion, and relatively minor diversions are made from Mallard Slough in most years because salinity levels are frequently high at this intake. CCWD operates its intake facilities based on a long-term goal of delivering water with chloride concentrations of 65 milligrams per liter (mg/L) or better to its customers, given physical limitations of the existing infrastructure and consistent with environmental regulations and permit conditions. Water from the Mallard Slough intake exceeds this value throughout most of the year, and water from the Old River and Rock Slough intakes exceeds this value during periods of low Delta inflows, generally from July until January. Consequently, CCWD meets its delivered chloride goal by using high quality water from Los Vaqueros Reservoir to blend with Delta water when Delta chloride concentrations are above 65 mg/L. Los Vaqueros Reservoir is filled using the Old River intake during periods when water quality is high in the Delta, generally January through June.

Guidance in the CALFED Record of Decision

The principal objective of CALFED is to develop a comprehensive, long-term strategy to provide reliable water supplies to cities, agriculture, and the environment while restoring the overall health of the Bay-Delta. The CALFED ROD recommended numerous projects and actions to increase water supply reliability, improve ecosystem health, increase water quality, and improve Delta levee stability (2000). The water quality program element includes projects, programs, and operational changes that have the potential to improve Delta water quality and/or the quality of water diverted from the Delta for drinking water purposes. Intake relocation projects can be considered as conveyance projects that result in an effect on delivered water quality equivalent to improving Delta water quality.

The CALFED ROD states that the water quality program general target is to “continuously [improve] Delta water quality for all uses, including in-Delta environmental and agricultural uses.” Its specific target is as follows

“...providing safe, reliable, and affordable drinking water in a cost-effective way, to achieve either: (a) average concentrations at Clifton Court Forebay and other southern and central Delta drinking water intakes of 50 micrograms per liter ($\mu\text{g/L}$) bromide and 3.0 mg/L total organic carbon (TOC), or (b) an equivalent level of public health protection using a cost-effective combination of alternative source waters, source control and treatment technologies.”

Local Authorization for the Project

In 1993, CCWD formally adopted treated water quality goals to guide planning for future treatment requirements. Similarly, source water quality goals were approved in 1998. CCWD’s current water quality goals were revised in 2002 to reflect the requirements of the United States Environmental Protection Agency (EPA) Microbial and Disinfection Byproducts (M/DBP) Regulation and the Long Term Enhanced Surface Water Treatment Rule (LT2ESWTR).

To meet those objectives, CCWD is developing several major projects and programs, including the Project, to protect its future water quality needs and to improve the quality of drinking water delivered to its customers to evaluate other points of diversion from the Delta for the purpose of improving water quality (both for direct delivery and diversion to Los Vaqueros Reservoir).

Study Area Location and Description

The study area for this project is the Delta, in San Joaquin and Contra Costa counties. The study area encompasses CCWD’s service area and the surrounding area, including some of the central and south Delta area (see Figure 1-1 and Figure 1-2). The central and south Delta is roughly bounded by the San

Joaquin River on the north and the boundaries of the legal Delta to the south (as established in Section 12220 of the California Water Code).

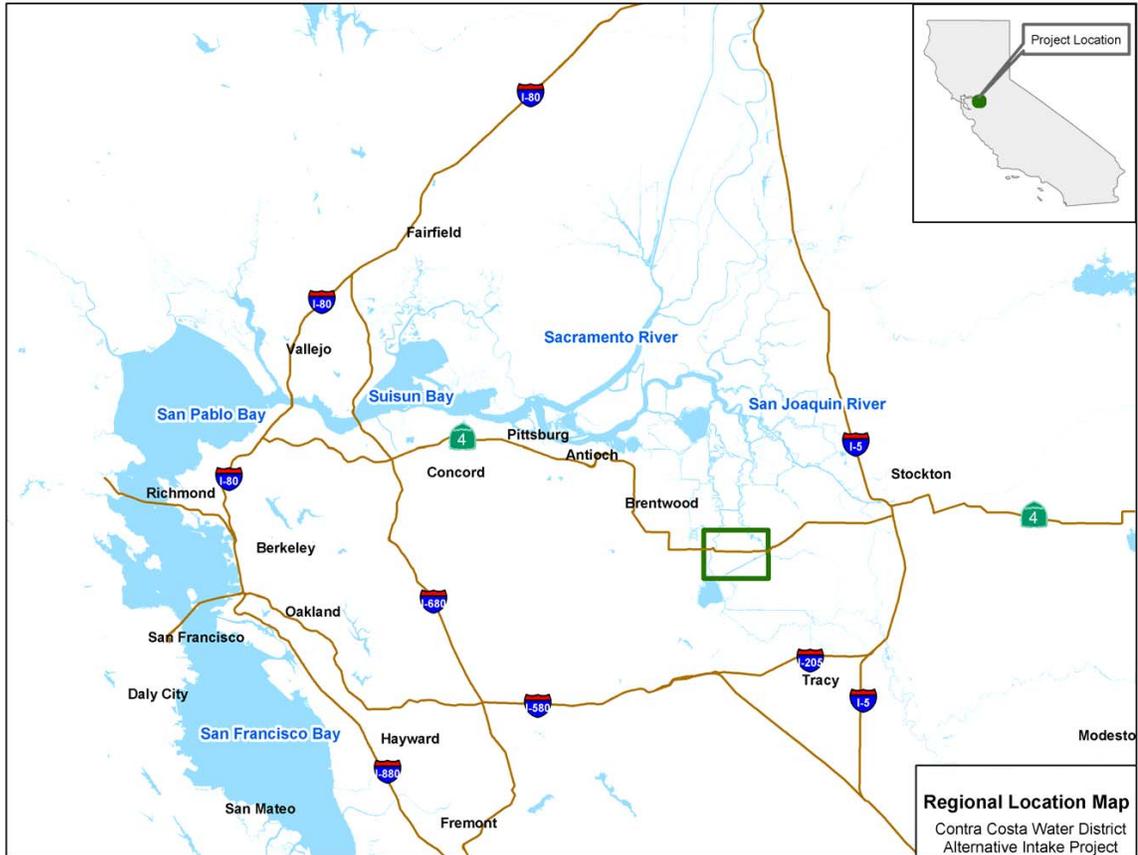
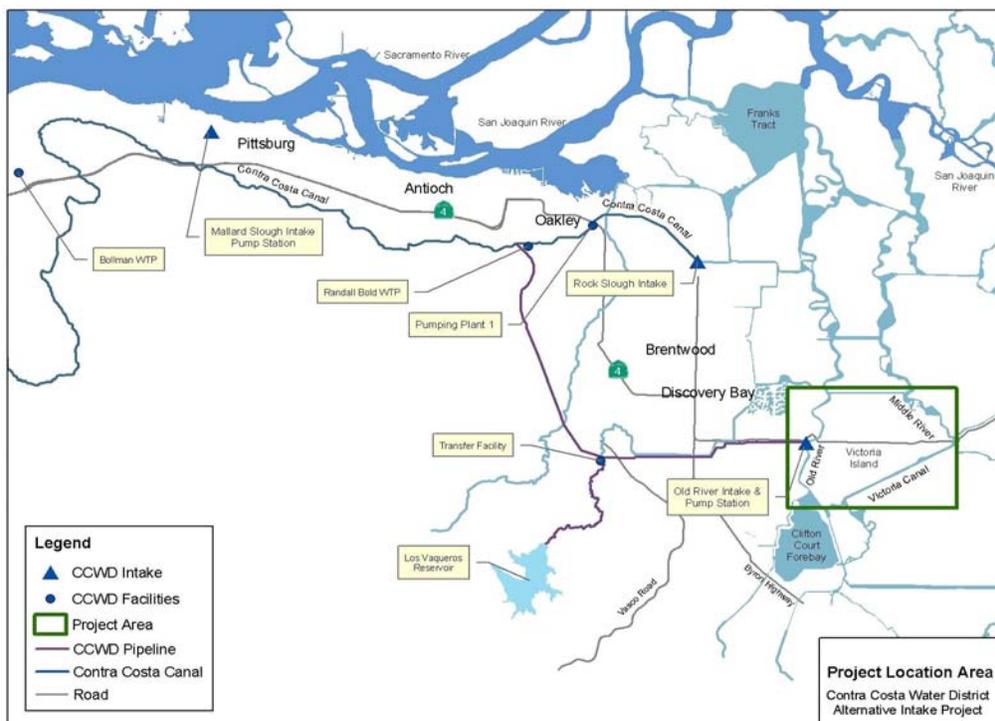


Figure 1-1. Regional Location Map



Source: CCWD and Reclamation (2006)

Figure 1-2. Project Location Map

Prior Reports and Existing Projects and Programs

This section summarizes related activities of various Federal, State, and local agencies and other working groups within the study area. Many of these entities, including Reclamation, are currently performing studies, projects, and programs that are directly or indirectly relevant to the proposed project.

Federal and State Projects/Actions

Los Vaqueros Reservoir Expansion Project

An expanded Los Vaqueros Reservoir could provide water to SCVWD, which would reduce demands on San Luis Reservoir during months when water levels fall below the functional low point. The Federal, State, and Contra Costa Water District sponsored investigation into the expansion of the Los Vaqueros Reservoir is determining the feasibility of developing additional storage capacity at Los Vaqueros Reservoir. The purpose of the investigation is to:

1. Develop water supplies for environmental water management that supports fish protection, habitat management, and other environmental water needs.

2. Increase water supply reliability for water providers within the San Francisco Bay Area, to help meet municipal and industrial water demands during drought periods and emergencies or to address shortages due to regulatory and environmental restrictions.

Secondary Objective:

1. Improve the quality of water deliveries to municipal and industrial customers in the San Francisco Bay Area, without impairing the project's ability to meet the environmental and water supply reliability objectives stated above.

Franks Tract Project Feasibility Studies

A potential CALFED project is located at Franks Tract in the north central Delta. Franks Tract flooded in 1936 and again in 1938 as the result of a levee breach. Preliminary water quality modeling studies conducted by DWR and its consultants have demonstrated that reconfiguring Franks Tract could potentially reduce the extent of salinity intrusion in portions of the north central Delta. The project purposes of Franks Tract include water quality improvement and fish protection. Federal CALFED legislation authorizes Franks Tract for feasibility study. CALFED also authorizes study of Delta Cross Channel (DCC) Reoperation and feasibility study of Through Delta Facility (TDF), both of which could similarly reduce salinity and protect fish in the north central Delta. Therefore, the Federal feasibility study is analyzing Franks Tract, DCC, and TDF as alternatives to address the same problem and a feasibility study entitled the North Central Delta Improvement Study was initiated on this basis.

South of Delta Improvements Program

The South Delta Improvements Program (SDIP) could affect water deliveries from the Delta to San Luis Reservoir. SDIP is one element of the preferred CALFED Program which was identified in the CALFED ROD as part of the programmatic solution to achieving the goals of water supply reliability, water quality, ecosystem restoration and levee system integrity. The SDIP is analyzed in the December 2006 Final EIR/EIS which proposed the Project to be implemented in two stages and that only Stage 1 proceed at this time.

Stage 1 will include making a decision on the physical/structural component. The physical/structural component includes:

- Replacing the seasonal barrier with a permanent operable fish control gate on the head of Old River
- Replacing the three inefficient seasonal agricultural control barriers with permanent operable gates on Middle River, Grant Line Canal, and Old River

- Dredging portions of Middle River, Old River, West, Grant Line, Victoria and North Canals to improve flows in the south Delta channels

Stage 2 will include making a decision on the operational component after the pelagic organism decline is remedied at a later date in time. The operational component includes:

- Increasing the permitted limit for diversions into Clifton Court Forebay from 6,680 cfs to 8,500 cfs

Rock Slough Fisheries Mitigation Actions

The CVPIA includes a requirement for Reclamation to develop and implement a program to mitigate fishery impacts resulting from operation of Contra Costa Canal Pumping Plant No. 1 (Public Law 102-575 Sec 3406[b][5]). This program may include a fish screen at Rock Slough, modified operations, or other measures to mitigate fishery impacts. The timing and elements of the program and any changes to environmental requirements associated with it are highly uncertain, and no funding has been appropriated for its development and implementation.

CCWD Projects/Actions

The following subsections describe existing reports, projects, and programs associated with CCWD.

Alternative Intake Evaluations

CCWD evaluated a total of 14 intake sites in the Delta in the early 1990s as part of the original Los Vaqueros Project environmental documentation (CCWD, 1992; CCWD and Reclamation, 1993). Middle River alternatives had substantially better source water quality but were infeasible because of additional costs associated with adding expanded intake and conveyance facilities to the planned Old River intake and Los Vaqueros Reservoir. Alternatives to the Los Vaqueros Project included a stand-alone Middle River intake (without reservoir storage), but this alternative was eliminated due to such factors as high cost and minimal water supply reliability during emergencies.

CALFED Rock Slough and Old River Water Quality Improvement Projects

Agricultural drainage from Veale Tract discharged in the past into Rock Slough, near one of CCWD's three drinking water intakes, through a centralized drainage system. This drainage was high in salinity, organic carbon, and nutrients, relative to the ambient water in Rock Slough. The CALFED Rock Slough Water Quality Improvement Project moved the discharge 2 miles from its previous location to an area on the south side of Veale Tract where local currents convey the drainage farther away from Rock Slough. This new discharge location also has higher flows that dilute the drainage to ensure that there are no redirected impacts on other water users or to the ecosystem. The

new drainage system at Veale Tract is operational, and discharges into Rock Slough from Veale Tract have ceased.

The CALFED Old River Water Quality Improvement Project involved constructing a new pump station to provide a longer outfall for agricultural drainage from Byron Tract into Old River, near CCWD's Old River intake. The new Byron Tract agricultural drainage outfall extends an additional 150 feet to the centerline of Old River, where dilution flows effectively eliminate detection at CCWD's intake. The Byron Tract drainage outfall was completed in December 2004. Construction of the pump station to finish the project was completed in late 2005.

It is anticipated that the CALFED Rock Slough and Old River Water Quality Improvement Projects will reduce salt loadings at CCWD's intakes from these agricultural drainage sources by about 90 to 100 percent.

Contra Costa Canal Encasement Project

The Contra Costa Canal Encasement Project is being pursued by CCWD to protect and improve water quality in the unlined Contra Costa Canal from nonpoint source degradation. The project also improves flood control and public safety and ensures compatibility with adjacent land use. Historical land use adjacent to the canal was predominantly agricultural but is rapidly changing. Future land uses will include residential and commercial development and extensive wetlands restoration projects, including the CALFED Dutch Slough Tidal Restoration Project.

The unlined portion of the Contra Costa Canal will be modified by replacing the existing canal with a buried pipeline within Reclamation's right-of-way or immediately adjacent to it. These modifications will effectively isolate the canal from groundwater and surface water runoff. Improvements in water quality will result in reduced formation of regulated disinfection byproducts (DBP) in drinking water. The project will also improve water operations of the CVP and SWP because the project area includes a water quality compliance location at Pumping Plant No. 1. Reducing local water quality degradation allows the Federal and State water projects to use less water to meet existing water quality requirements.

The CEQA Mitigated Negative Declaration for the project was approved in November 2006 and NEPA Finding of No Significant Impact (FONSI) was completed in August 2007. The first phase of the project has been funded and construction has started in October 2007.

Regional Multistakeholder Projects/Actions

Existing projects and actions with regional effects or implications or that involve more than one stakeholder are described in the following sections.

CALFED Delta Region Drinking Water Quality Management Plan

CCWD partnered with the City of Stockton and Solano County Water Agency to develop a plan for managing the quality of water that all three agencies deliver to their customers. The partnership received a \$250,000 grant from CALFED to fund the first phase of this work. The plan focuses on improving water quality to meet urban customers' drinking water needs. Some of the methods for improving water quality identified in the plan include relocating intakes to locations with better water quality, using advanced treatment processes to remove organic carbon and reduce formation of potentially harmful DBPs, and protecting source water to prevent contamination.

Freeport Regional Water Project

EBMUD and Sacramento County Water Agency (SCWA) agreed to jointly pursue development of the Freeport Regional Water Project (FRWP) to divert water from the Sacramento River. The Freeport Regional Water Authority (FRWA), a joint powers agency formed under State law by EBMUD and SCWA, proposed to construct and operate a water supply project, the FRWP, to meet regional water supply needs of EBMUD and SCWA. FRWP facilities include an intake structure on the Sacramento River near Freeport, conveyance facilities located in central Sacramento County, a terminal facility located at a point of delivery to the Folsom South Canal (FSC), and pump stations and pipelines to convey water from the FSC to EBMUD's Mokelumne Aqueduct (Freeport Regional Water Authority, 2003).

To settle disputes regarding the FRWP, an agreement was entered into by CCWD, FRWA, EBMUD, and SCWA in January 2004 that provides for wheeling up to 3,200 acre-feet annually of CCWD's water through FRWA and EBMUD facilities into Los Vaqueros Reservoir. The purpose of this agreement is to ensure that the water quality objectives for CCWD can continue to be met by offsetting water quality degradation expected at CCWD's intakes from implementing the FRWP. In conjunction with the settlement, an intertie will be constructed to connect the CCWD Los Vaqueros Pipeline to the EBMUD Mokelumne Aqueduct. The intertie would also function as an emergency connection between CCWD and EBMUD, enabling both agencies to share water resources in the event of an emergency. CCWD-EBMUD intertie construction was completed in 2007 and is currently operational.

Joint Study to Identify Projects of Mutual Benefit to Sacramento Regional County Sanitation District and Water Agencies

Sacramento Regional County Sanitation District and several urban water agencies, including CCWD, are conducting a study with the goal of identifying reasonable and feasible projects that improve water quality near drinking water intakes. Candidate projects at this time are broad concepts without specific implementation plans and will need considerably more development.

Central Valley Drinking Water Policy

The Central Valley Regional Water Quality Control Board (CVRWQCB) passed a resolution on July 9, 2004, supporting development of a drinking water policy for the Delta and upstream tributaries. The Central Valley Drinking Water Policy is an ongoing CALFED project led by CVRWQCB that could potentially lead to new water quality standards or regulatory requirements. This multiyear effort is not expected to produce substantive regulatory changes until 2009, at the earliest.

SWRCB Water Quality Control Plan Periodic Review

As part of SWRCB periodic review of the 1995 Water Quality Control Plan (WQCP) for the Delta, SWRCB is exploring potential revisions to Delta standards. In comments provided to SWRCB in February 2005 during the periodic review of the current Delta WQCP, CCWD proposed implementing a new drinking water quality objective for bromide. SWRCB is currently reviewing the collected public comments and will formulate and implement a revised WQCP over the next several years.

Advanced Treatment Demonstration Project

CCWD is leading a partnership with the United States EPA, the American Water Works Association Research Foundation, and other Bay Area water agencies that use Delta water to study combinations of disinfectants that reduce the formation of harmful DBPs. The study also involves a side-by-side comparison at the demonstration scale (0.5 million gallons per day (mgd)) of two leading ultraviolet (UV) technologies to test lamp fouling rates with Delta water and sensor reliability. Other Bay Area agencies in the study include the Santa Clara Valley Water District, Alameda County Water District, Zone 7 Water District of Alameda County, Solano County Water Agency, and the cities of Napa and Fairfield. The final report is expected by early 2008. Results of this research will provide CCWD and other water agencies with information that will assist with future investment decisions related to advanced treatment and other water quality improvement projects.

Other Related Delta Actions/Projects

The Delta is an area of competing interests that serves as a drinking water source to two-thirds of the State's residents, an agricultural irrigation supply, habitat for fisheries and other wildlife, and a recreation area. Numerous other projects and CALFED actions are under development in the Delta with multiple project purposes (e.g., supply reliability, ecosystem restoration, recreation enhancement, agricultural water quality improvement). Some of these projects that have potential to affect Delta drinking water quality or CCWD facilities are discussed below.

Bay Area Regional Desalination Feasibility Study

The Bay Area Regional Desalination project includes CCWD and three other Bay Area water agencies. The regional project may consist of one or more regional desalination facilities with an ultimate capacity of up to 65 mgd. Three

viable sites have been identified and the agencies are currently conducting a feasibility study to more closely define project facilities, and an institutional framework to share the costs and benefits of the project.

San Joaquin River Water Quality Management Group

The San Joaquin River Water Quality Management Group is a group of stakeholders working together to develop cooperative solutions to achieve water quality objectives in the San Joaquin River, specifically for salinity at Vernalis and dissolved oxygen in the Stockton Deep Water Ship Channel. The group is studying multiple strategies for realizing these goals, and is in the process of drafting formal recommendations to Reclamation and DWR. CCWD supports these efforts as part of the overall improvement of Delta water quality. However, because of Delta hydrodynamics, changes in San Joaquin River water quality are not expected to result in drinking water quality improvements at CCWD intakes, but will primarily benefit local agricultural water users in the south Delta.

Planning Process and Report Organization

The basic planning process for Federal water resources studies and projects consists of several distinct steps that are depicted in Figure 1-3. The planning process includes identifying water resources problems, needs, and opportunities in the study area that help in formulating planning objectives. Resource management measures to achieve study planning objectives are identified and used to formulate potential alternative plans. Formulated plans are then compared and evaluated to advance NED plan for further consideration and development.

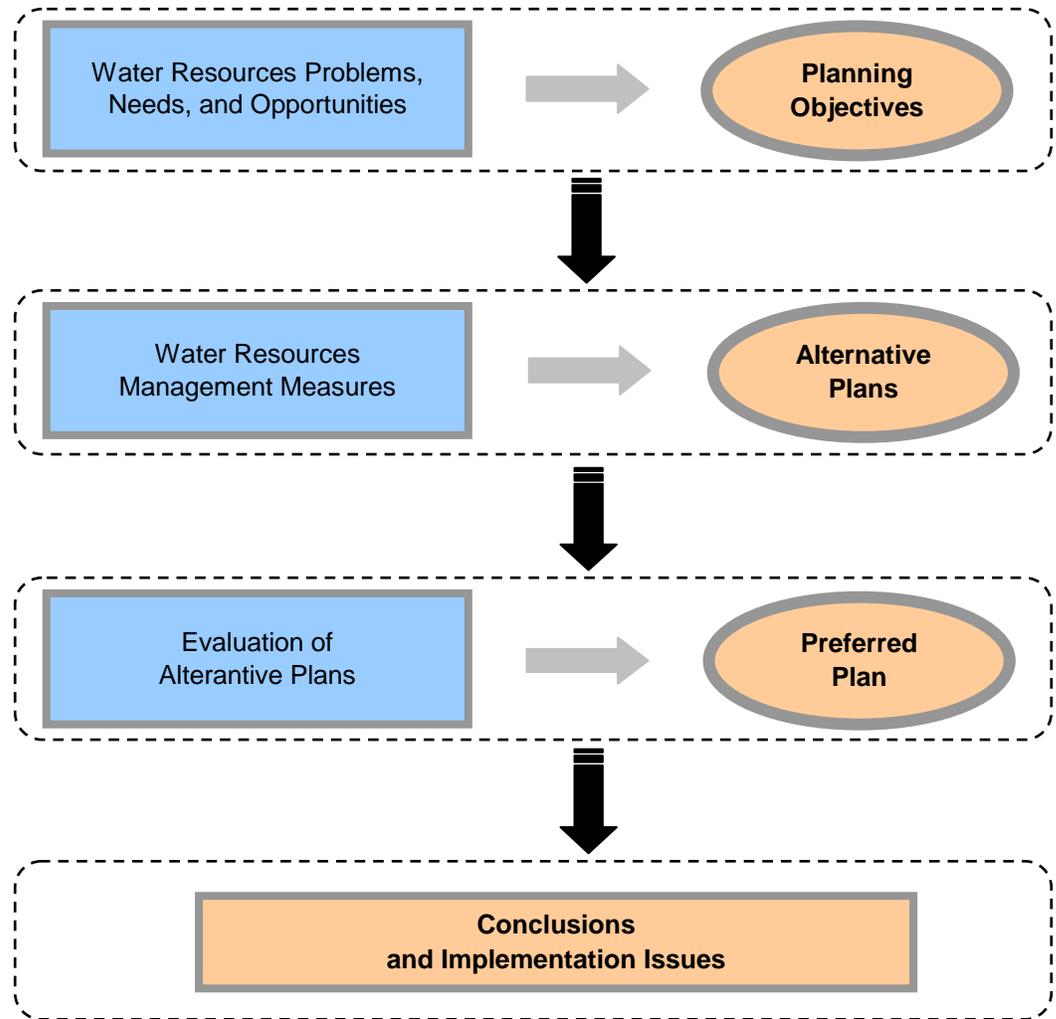


Figure 1-3. Planning Process Flow Chart

This report comprises nine chapters that document the findings of this study:

- **Chapter 1** provides background information about the Project, purpose and scope of the Special Study Report, study area location, study authorization and defining legislation, and related prior reports and existing projects and programs.
- **Chapter 2** identifies the fundamental water resources issues being addressed in the study, including reliability and quality of Delta water supplies and related water resources problems and needs. It also describes existing and projected future without-project environmental resources conditions in the study areas.

- **Chapter 3** describes the plan formulation process, planning objectives and conditions, and constraints and criteria for formulating and evaluating alternatives. It includes a description of the identified resources management measures to address the study objectives, and formulation and evaluation of alternatives.
- **Chapter 4** documents comparison methodology for developed alternatives, plan costs and accomplishments, and comparative evaluation.
- **Chapter 5** describes in detail the NED plan resulting from the comparison and evaluation of alternatives described in Chapter 4, including features and accomplishments, design and construction considerations, real estate requirements, operations and maintenance (O&M) considerations, an economic summary, including cost allocation, environmental consequences, and institutional considerations.
- **Chapter 6** describes implementation requirements and issues associated with the NED plan, including public involvement, cost apportionment, and financial analysis.
- **Chapter 7** summarizes the major findings of this report.
- **Chapter 8** lists references.

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