CENTRAL COAST WATER AUTHORITY

2010
Urban Water Management Plan

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Central Coast Water Authority
2010 Urban Water Management Plan

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TABLE OF CONTENTS

TABLES

FIGURES

GRAPHS

APPENDICES

ACRONYMS

AF	Acre-Foot
APA	Administrative Procedure Act
BDCP	Bay Delta Conservation Plan
BMP	Best Management Practices
BO	Biological Opinion
BRP	Business Resumption Plan
CCWA	Central Coast Water Authority
CEQA	California Environmental Quality Act
CUWCC	California Urban Water Conservation Council
CVP	Central Valley Project
D-1641	SWRCB's Water Rights Decision 1641
DBP	Disinfection Byproducts
DEIR	Draft Environmental Impact Report
Delta	Sacramento-San Joaquin Delta
DFG	Department of Fish and Game
DMM	Demand Management Measures
DPH	Department of Public Health
DWR	Department of Water Resources
DWR Form 38	Public Water System Statistics Form
ERP	Emergency Response Plan
ESA	Endangered Species Act
FEIR	Final Environmental Impact Report

FWS	United States Fish and Wildlife Service
IRWMP	Integrated Regional Water Management Plan
maf	Million Acre-Feet
MIB	2-methylisoborneol
MOU	Memorandum of Understanding
MWQI	Municipal Water Quality Investigations
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
OES	Office of Emergency Services
PPWTP	Polonio Pass Water Treatment Plant
RPA	Reasonable and Prudent Alternative
RWEP	Regional Water Efficiency Program
SCADA	Supervisory Control and Data Acquisition
SIMS	State Emergency Management System
SEP	State Emergency Plan
SBCFCWCD	Santa Barbara County Flood Control and Water Conservation District
SLOCFCWCD	San Luis Obispo County Flood Control and Water Conservation District
SYRWCDID#1	Santa Ynez River Water Conservation District, Improvement District No. 1
State	State of California
SWP	State Water Project
SWRCB	State Water Resources Control Board
SSLOCSD	South San Luis Obispo County Sanitation District

taf	Thousand Acre-Feet
TOC	Total Organic Carbon
T&O	Taste and Odor
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
Water Agency	Santa Barbara County Water Agency
WSRA	Water Supply Retention Agreements

1.0 PLAN PREPARATION

1.1 Introduction

This 2010 Urban Water Management Plan (UWMP) has been prepared in response to the California Urban Water Management Planning Act (UWMP Act), California Water Code, Division 6, Part 2.6, Sections 10610 through 10650[1]. The UWMP Act requires every urban water supplier to prepare and adopt an UWMP. In addition, urban water suppliers are also required to update and adopt an updated UWMP every five years on or before December 31, in years ending in zero or five. For 2010, the State has extended the submission deadline to July 1, 2011 in order to give water suppliers sufficient time to meet the new requirements under Senate Bill SBX7-7 (SBX7-7)[2]. SBX7-7 is intended to reduce per capita water consumption in California by 20 percent by the year 2020.

Section 10617 of the California Water Code defines an "urban water supplier' as a public water system that that provides water for municipal purposes either directly or indirectly to more than 3,000 customers, or supplies more than 3,000 acre-feet (AF) of water annually. The Central Coast Water Authority (CCWA) is considered an urban water supplier because it is classified as a public water system by the California Department of Public Health (DPH) and it supplies more than 3,000 AF of water per year.

Although CCWA meets the definition of an urban water supplier, it can be further classified as a wholesale urban water supplier. This classification is recognized in the California Water Code and there are several instances in the Code where the UWMP requirements for wholesaler and retail urban water suppliers are different. These differences are as follows:

- The Demand Management Measures (DMM) for wholesalers are different from those required for retailers. A description of the DMMs implemented by CCWA is presented in Section 6.0 of this UWMP.

- Wholesaler suppliers are not required to develop baseline and target values for daily per capita use, interim urban water use target, and urban water use. This data is developed by the retail urban water supplier.

- Wholesale suppliers are to provide "an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions" of their retailers.

- Only retail urban water suppliers are required to address the lower income water supply projections.

An urban water supplier that does not prepare, adopt, and submit an UWMP to the California Department of Water Resources (DWR) is ineligible to receive drought assistance from the State of California (State). Consequently, in order to preserve the ability to seek assistance from the State of California, CCWA has prepared this 2010 UWMP. To ensure all required components of the UWMP have been addressed, the DWR UWMP Checklist was completed and is presented in Appendix A[3].

1.2 The Central Coast Water Authority

The CCWA was formed in 1991 through a Joint Exercise of Powers Agreement[4] among nine public agencies in Santa Barbara County and has Water Supply Agreements[5] with five other entities. CCWA was specifically formed for the purpose of designing, building and operating the facilities needed to deliver water from the State Water Project (SWP) to the various entities entitled to receive that water in Santa Barbara County.

Currently, The CCWA Board of Directors is composed of elected Board and Council members from eight member agencies, all of which are public agencies. A founding member of CCWA, the Summerland Water District, was merged into the Montecito Water District. The CCWA member agencies are the Cities of Buellton, Guadalupe, Santa Barbara and Santa Maria, Carpinteria Valley Water District, Goleta Water District, Montecito Water District and Santa Ynez River Water Conservation District, Improvement District No. 1 (SYRWCDID#1) in which the City of Solvang is located. The other entities which do not have voting rights include Golden State Water Company, Vandenberg Air Force Base, La Cumbre Mutual Water Company, Morehart Land Company, and the Raytheon Company.

Each vote on CCWA's Board of Directors is weighted roughly in proportion to the entity's allocation of State water entitlement that was held in 1991. Table 1-1 outlines the voting percentage for each member of the CCWA Board of Directors.

Table 1-1: Board of Directors Voting Weights

Agency	Percentage
City of Guadalupe	1.15%
City of Santa Maria	43.19%
City of Buellton	2.21%
Santa Ynez RWCD, Improvement District #1	7.64%
Goleta Water District	17.20%
City of Santa Barbara	11.47%
Montecito Water District	9.50%
Carpinteria Valley Water District	7.64%
TOTAL	100.00%

The Joint Exercise of Powers Agreement also provided a means for other entities to join as associate members. A mutual water company or public utility may join CCWA as an

associate member by entering into an agreement with CCWA, which establishes the terms and conditions of being an associate member. An associate member may appoint an Associate Director and Alternative Director who may sit with the CCWA Board of Directors, but do not have voting rights or count towards establishing a quorum. The La Cumbre Mutual Water District is an Associate Member of the CCWA.

Finally, other entities may join CCWA as project participants through signing a Water Supply Agreement with CCWA. This category of participants does not have representation on the CCWA Board of Directors, but are invited to participate without a voting right in the CCWA Operations Committee. The Santa Barbara County Participants (CCWA Members, Associate Members and other Participants) are presented in the Table 1-2 below:

Table 1-2: Santa Barbara County Project Participant Table A Amount

Agency	**Table A[1]**
City of Buellton	578
Carpinteria Valley Water District	2,000
Goleta Water District	4,500
City of Guadalupe	550
La Cumbre Mutual Water Company	1,000
Montecito Water District	3,000
Morehart Land Company	200
City of Santa Barbara	3,000
Raytheon Systems Company	50
City of Santa Maria	16,200
Santa Ynez RWCD, Improvement District #1	2,000
Golden State Water Company	500
Vandenberg Air Force Base	5,500
TOTAL	39,078

- In acre-feet per year. The amounts do not include CCWA's 3,908 acre-feet per year in "drought buffer" amount. In addition, the amount listed in the table above does not include Goleta Water District's 2,500 acre-feet per year of "drought buffer".

CCWA also has certain operational relationships and agreements with the DWR and the San Luis Obispo County Flood Control and Water Conservation District (SLOCFCWCD). As specified by the original Water Supply Agreement with the State[6] (see section 2.1 for more detail), DWR was responsible for the design and construction of the Phase II Coastal Branch conveyance facilities, which extends through San Luis Obispo County to the Tank 5 site in northern Santa Barbara County. The State also retains ownership of the conveyance facilities following construction, although the costs for the design, construction and operation are 100% funded by the Santa Barbara and San Luis Obispo State Water Project Participants.

CCWA served to represent the Santa Barbara County participant interests as the DWR initiated design and construction of the Phase II Coastal Branch conveyance facilities.

CCWA also was directly responsible for the design and construction of the CCWA pipeline extension from Tank 5 to the Santa Ynez Pumping Plant in the Santa Ynez Valley. In addition, CCWA designed and constructed the Polonio Pass Water Treatment Plant (PPWTP), which is located on a DWR easement in northern San Luis Obispo County.

Due to the location of the PPWTP in northern San Luis Obispo County, all turnouts on the Phase II Coastal Branch conveyance facilities receive treated potable water. Consequently, CCWA entered into two important agreements. DWR and CCWA entered into an Operations and Maintenance Agreement[7] whereby CCWA would be responsible for the operations and maintenance of the DWR pipeline from the PPWTP outlet to Tank 5. In addition, CCWA and SLOCFCWCD entered into a Master Water Treatment Agreement[8] that detailed water treatment and conveyance operations for San Luis Obispo County water.

These two agreements define CCWA's operational relationship with SLOCFCWCD. Essentially, SLOCFCWCD is obtaining its water supply and conveyance capacity from DWR. Since CCWA operates and maintains the conveyance system for DWR from the PPWTP to the Tank 5 site, SLOCFCWCD interacts with CCWA for water delivery requests. In addition, CCWA provides water treatment services to SLOCFCWCD at the PPWTP.

Although SLOCFCWCD has 25,000 AF per year in State water Table A Amount[9], at the time of the design and construction of the Phase II Coastal Branch conveyance facilities, SLOCFCWCD elected to commit to funding for only 4,830 AF per year of treatment plant and conveyance capacity. The DWR conveyance facilities through San Luis Obispo County have two active turnouts that provide water to 11 water purveyors. These water purveyors obtained contractual rights from SLOCFCWCD to receive water from the State Water Project. The San Luis Obispo County purveyors are presented in Table 1-3 below[10].

Table 1-3: San Luis Obispo Project Participants Table A Amounts

Agency	Table A[1]
Avila Beach Community Services District	100
Avila Valley Mutual Water Company, Inc	20
California Men's Colony (State)	400
County of SLO C.S.A. No. 16, I.D. #1	100
County of SLO (Op Center & Reg. Park)	425
City of Morro Bay	1,313
Oceano Community Services District	750
City of Pismo Beach	1,240
San Luis Coastal Unified School District	7
San Miguelito Mutual Water Company	275
SLO Co. Comm. Coll. District (Cuesta College)	200
TOTAL	4,830

CCWA does not have a direct relationship with the San Luis Obispo Project Participants; only with SLOCFCWCD. Since SLOCFCWCD delivers treated drinking water to the San Luis Obispo Project Participants, it is classified as a wholesale urban water supplier.

1.3 Coordination

Due CCWA's role as a wholesale water supplier, it is important that the efforts in preparing this UWMP be coordinated with CCWA participants, other related agencies and the public. In fact, the UWMP Act requires CCWA and its participants to exchange important information concerning projections of service population, water supply demand and available water supply sources. Accordingly, CCWA implemented an organized coordination program to ensure that the pertinent data and issues are presented accurately. Table 1-4 presents the agencies and the role each played in coordinating the development of this UWMP:

Table 1-4: Coordination Matrix

Coordination and Public Involvement						
Entities	**Coordination and Public Involvement Actions**					
	Helped write the plan	**Was contacted for assistance**	**Received copy of the draft**	**Commented on the draft**	**Attended public meetings**	**Received a notice of intention to adopt**
County of San Luis Obispo – Flood Control and Water Conservation District	✔	✔	✔	✔	✔	✔
County of Santa Barbara – Water Agency	✔	✔	✔	✔	✔	✔
Retailers (Contractors in each County)			✔			✔
Other Relevant Public Agencies			✔			✔

The CCWA UWMP coordination efforts focused on three groups presented below:

1.3.1 Santa Barbara County Participants

The first step in preparing the CCWA UWMP included contacting each CCWA project participant to establish an open line of communication between the staff members that are directly responsible for preparing their respective UWMPs. Through contacting each project participant, CCWA determined that only six of the thirteen Santa Barbara County project participants are required to prepare an UWMP (Table 1-5). The remaining seven project participants are well below the 3,000 service connections and 3,000 AF of supplied water criteria that triggers the UWMP requirement. Additionally, they are exempt from the requirements of SBX7-7 since they do not meet the definition of an urban retail water supplier.

Each CCWA project participant was asked to provide projections of water supply needs for their respective service areas in five year increments through 2035. CCWA also provided each participant an estimate of the available water from the CCWA system. Estimated projections included a long term average availability, single dry year availability and multi-dry year availability for two, four and six year drought scenarios.

Table 1-5: Santa Barbara County Project Participants UWMP Requirement

Agency	UWMP Required
City of Buellton	No
Carpinteria Valley Water District	Yes
Goleta Water District	Yes
City of Guadalupe	No
La Cumbre Mutual Water Company	No
Montecito Water District	Yes
Morehart Land Company	No
City of Santa Barbara	Yes
Raytheon Company	No
City of Santa Maria	Yes
Santa Ynez RWCD, Improvement District #1	No
Golden State Water Company	Yes
Vandenberg Air Force Base	Yes

1.3.2 San Luis Obispo County Participants

In San Luis Obispo County, the SLOCFCWCD is preparing its own UWMP since it is considered a wholesale urban water supplier to the San Luis Obispo County water purveyors. CCWA does not have a direct contractual relationship with the San Luis Obispo Participants. Consequently, to ensure consistent accurate information, all data and data analysis concerning the San Luis Obispo water purveyors will be found in the UWMP prepared by SLOCFCWCD.

CCWA staff initially met with SLOCFCWCD staff on March 15, 2011 to discuss preparation work on the two agencies' respective UWMPs. Both CCWA and SLOCFCWCD staff continued on-going dialog as both agencies developed their respective UWMP, as well as exchanging copies of the UWMPs for review and comment.

1.3.3 County of Santa Barbara, Water Resource Division

The County of Santa Barbara, Water Resources Division of the Public Works Department is comprised of two separate dependent special districts: the Santa Barbara County Flood Control and Water Conservation District (SBCFCWCD) and the County Water Agency (Water Agency)[11]. These two special district programs

were consolidated into the Water Resources Division of the Public Works Department in February 1994 as part of a Department-wide reorganization. Both the SBCFCWCD and the Water Agency have boundaries that coincide with the County's boundary. The Board of Supervisors acts as the Board of Directors of each agency and the staffs of each agency are county employees.

- **SBCFCWCD**. Currently, the primary purpose of the SBCFCWCD is to provide flood protection and to conserve storm, flood and surface waters for beneficial public use. When the District was first created in 1955 by the State legislature in response to severe flooding and damage suffered from storms in the early 1950s, its primary charge was to implement a program of channel maintenance and capital improvements to mitigate the threat to life and property from flooding. SBCFCWCD also served as the original contracting entity for the State Water Project in 1963. See Section 2.1 for details on SBCFCWCD's role with the State Water Project and its relationship with CCWA.

- **Water Agency.** The Santa Barbara County Water Agency was established by the state legislature in 1945 to control and conserve storm, flood and other surface waters for beneficial use and to enter into contracts for water supply. Today, the Water Agency is primarily involved in projects for the storage, diversion, transportation, delivery and sale of water. It prepares investigations and reports on the County's water requirements, the water needs of projected development and the efficient use of water. It provides technical assistance to other County departments, water districts, and the public concerning water availability and water well locations and design. The Water Agency also administers the Cachuma Project and the Twitchell Dam Project contracts with the U.S. Bureau of Reclamation.

The County's Water Resources Division, through its Water Agency, implements a regional water conservation program, known as the Regional Water Efficiency Program (RWEP)[12]. This program was established in December 1990, just prior to the formation of CCWA. Following the formation of CCWA, the SBFCWCD and CCWA entered into an agreement entitled "Transfer of Financial Responsibility Agreement"[13] in 1991. In this contract, the SBFCWCD delegated specific responsibilities to CCWA which includes making CCWA financially responsible for designing, constructing and operating the Coastal Branch of the State Water Project.

The Transfer of Financial Responsibility Agreement did not delegate water conservation responsibilities from the SBFCWCD to CCWA. Rather, the SBFCWCD retained the responsibility to develop a regional water conservation program for the benefit of the water purveyors in Santa Barbara County. Due to this arrangement, CCWA staff worked closely with staff from the RWEP in coordinating information contained in the CCWA UWMP.

CCWA staff initially met with SBCFCWCD staff on February 25, 2011 to discuss preparation work on the CCWA UWMP. Both CCWA and SBCFCWCD staff continued on-going dialog as the CCWA UWMP was developed. Since the Water Agency is not a water supplier, it is not required to prepare an UWMP.

1.3.4 Public

CCWA recognizes the importance of obtaining public input on its programs and documents. To that end, CCWA mailed postcards to 42 agencies and individuals requesting feedback on the draft UWMP. See Appendix B for contact information, notices and other outreach materials. The postcard provided information regarding how to obtain a copy of the draft plan and the dates and locations of the public workshops.

The Draft Plan was made available for public inspection at local libraries, as well as on CCWA website (www.ccwa.com). In addition, a copy of the draft UWMP was available for public review at the CCWA Office in Buellton. Draft copies (on CD) were sent for review and comment to all CCWA retail water supply agencies, wastewater agencies, cities, and special interest groups before the public hearing. Public notices regarding the availability of the UWMP for public inspection were posted in the local newspapers and on the CCWA website.

A public workshop was held on June 20, 2011 in CCWA's Buellton office to provide an overview of the UWMP and solicit public feedback. Public Notices and sign-in sheets for these two public workshops are presented in Appendix B.

1.4 Plan Adoption, Submittal and Implementation

The 2011 UWMPs are required to be adopted by each urban water supplier and submitted to the DWR by July 1, 2011. Accordingly, the CCWA Board of Directors will consider adoption of the 2011 CCWA UWMP at its regular June meeting on June 23, 2011. A public notice was issued in advance of this Board Meeting, in accordance with applicable laws and regulations. The Board Resolution is presented in Appendix C.

Once the UWMP has been adopted by the CCWA Board of Directors, a copy of the UWMP will be mailed to DWR, the California State Library, and every city and county within which CCWA provides water supplies within 30 days of adoption. Should any changes to the UWMP be made after adoption, the CCWA Board of Directors will consider and adopt the changes during a properly notified Board of Directors meeting. Copies of amendments or changes to the UWMP will be submitted to DWR, the California State Library, and any city or county within which CCWA provides water supplies within 30 days of adoption. In addition, within 30 days of submitting the UWMP to DWR, a copy of the UWMP will be made available for public review.

2.0 SYSTEM DESCRIPTION

2.1 CCWA History

In 1963, anticipating a future need for supplemental water supplies, the SBCFCWCD and the SLOCFCWCD entered into Water Supply Contracts (State Contract) with the State. Under the State Contract, water would be delivered to Santa Barbara and San Luis Obispo Counties through the "Coastal Branch" of the SWP. Phase I of the Coastal Branch, a 15-mile aqueduct branching off the California Aqueduct in northwestern Kern County, was completed in 1968. Construction of the remainder of the Coastal Branch (designated "Phase II") was postponed from 1975 to 1991. This postponement in construction was permitted in the State Contract, which allowed Santa Barbara and San Luis Obispo Counties to delay construction until needed.

Even though construction of the Coastal Branch Phase II project was delayed, both counties were still obligated to make certain payments to the State related to facilities (such as the Oroville Dam and the California Aqueduct) which had already been built and which would be part of the delivery system that eventually would convey SWP water to the Central Coast. Beginning in about 1979, many people in Santa Barbara County questioned whether it should continue to make payments under the State Contract. A number of water purveyors concluded it would be prudent for the County to continue to retain its Table A Amount (formerly referred to as “entitlement” which is named for “Table A” in each SWP Contractor’s Water Supply Contract) and make payments to the State. The County was willing to retain the Table A Amount, but only if the associated costs were shifted from the countywide tax base to the ratepayers in those jurisdictions that wanted to keep the option to join the SWP. Beginning in 1982, SLOCFCWCD entered into a series of Water Supply Retention Agreements (WSRAs) with various water purveyors for the purpose of shifting responsibility for such State payments from the County taxpayers to individual purveyors and their ratepayers. The WSRAs included a provision stating that no revenue bond financing for project facilities could be issued unless authorized by a vote of the people within the jurisdiction of each participating purveyor.

In 1983, SBCFCWCD, SLOCFC&WCD and the State commenced joint studies that found that additional water was needed to meet projected demand for the two counties. The shortage was being met by long-term overdraft of local groundwater basins. The chronic overdraft of the local groundwater basins presented a serious environmental threat. Since many of these groundwater basins are adjacent to the ocean, the risk of saltwater intrusion and permanent damage to groundwater basins weighed on the minds of local water officials. In addition, reports from other areas in California (including some from San Luis Obispo County) indicated that groundwater over drafting was causing surface soil subsidence. Local water agencies understood the significant environmental benefits that could be derived by reducing groundwater “mining” by diversifying water supplies to include additional sources, such as imported water.

In 1985, the DWR, in conjunction with SLOCFCWCD, completed a major "Alternatives Study" regarding the feasibility and costs of various supplemental sources of water supply for Santa Barbara County. This study determined that supplemental water from an enlarged Cachuma Reservoir (constructed by the United States Bureau of Reclamation) was the preferred alternative for the Santa Ynez Valley and the South Coast, while SWP water was preferred for the cities of Lompoc, Santa Maria and other north County entities.

In 1986, the City of Santa Maria requested SLOCFCWCD to ask the State to begin the planning and environmental studies, including preparation of an environmental impact report, needed to build the Coastal Branch Phase II project. In the same year, Santa Ynez River Water Conservation District, Improvement District No. 1 and the South Coast water purveyors asked the State and the United States Bureau of Reclamation (USBR) to begin a study for enlarging Cachuma Reservoir. This alternative raised environmental concerns that led to doubts about its ultimate feasibility.

In June 1990, DWR prepared and circulated a draft environmental impact report (DEIR) on the Coastal Branch Phase II project, pursuant to the California Environmental Quality Act, Public Resources Code Section 21091 (CEQA). Under CEQA, one purpose of a DEIR is to publicly disclose the impact, both environmental and financial, of a proposed project. The Coastal Branch DEIR was the subject of numerous public meetings in Santa Barbara County.

In May 1991, DWR issued the final environmental impact report (FEIR) for the Coastal Branch Phase II project and the Mission Hills Extension. The FEIR was sent to all of the potential participating water purveyors.

On June 4, 1991, during the extended drought of 1987-1992, elections (required by the WSRAs) were held in 14 Santa Barbara County cities, communities and water districts on a State water ballot measure. The measure asked whether voters in each city or district would approve issuance of revenue bonds to finance local facilities needed to treat and distribute SWP water once the State completed construction of the Coastal Branch Phase II project (Figure 2-1). Voters in eleven cities and districts approved the bond measures. Several San Luis Obispo County cities and districts also voted to participate in the effort.

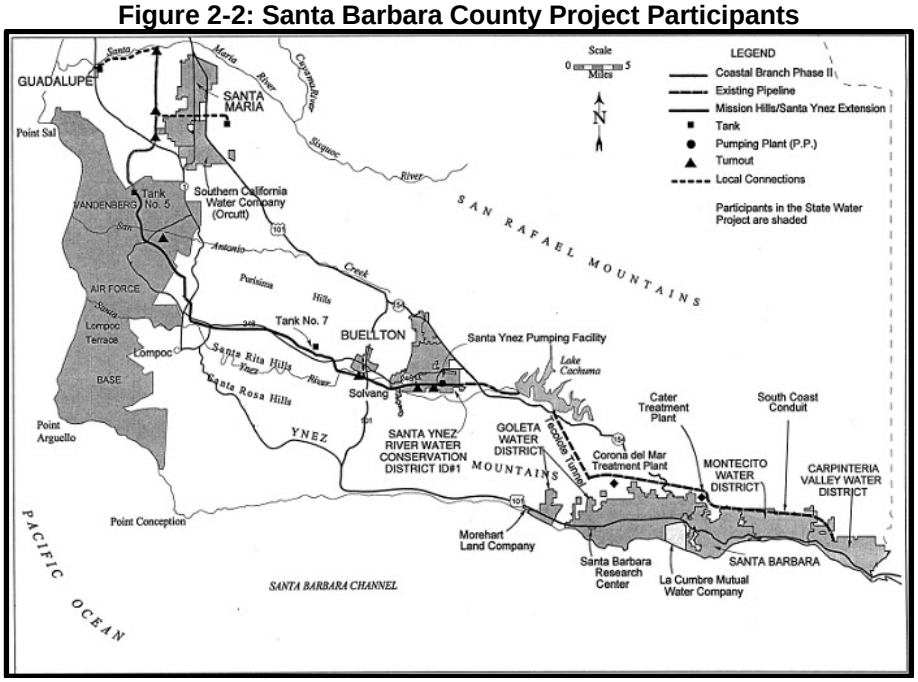
The CCWA was formed immediately after the 1991 elections. It took over the WSRAs in Santa Barbara County and transformed them into Water Supply Agreements. It also signed a Transfer of Financial Responsibility with the SLOCFCWCD so it could interact directly with the State (i.e., DWR). SLOCFCWCD maintained its contractual relationship with the State, however, because of its ability to tax in the event of a default. SLOCFCWCD also maintained its contractual relationship with the State and signed agreements with CCWA to treat its SWP water and to operate and maintain the pipeline and facilities in San Luis Obispo County.[14]

Figure 2-1: Phase II Coastal Branch

2.2 Service Area Physical Description

The CCWA operates and maintains the Coastal Branch Phase II Extension of the Coastal Branch Aqueduct Pipeline, which is part of the SWP. The CCWA supplies treated water for its member public water supply agencies and associate members. The areas served are located within Santa Barbara Counties and San Luis Obispo. The service area within Santa Barbara County is illustrated in Figure 2-2.

Figure 2-2: Santa Barbara County Project Participants



2.3 Service Area Climate

The climate in the area served by CCWA is best described as Mediterranean, characterized by hot, dry summers in inland areas, with more temperate weather along the coast, and cool, moist winters. Summers are dry with temperatures as high as 110°F in the inland areas. Winters are somewhat cool with temperatures as low as 20°F. Average annual precipitation in the region varies from 17 to 24 inches in the coastal areas to approximately 14 inches in the more arid, eastern locations. A more detailed listing of relevant weather parameters (evapotranspiration (ETo), average high temperature and average rainfall) for selected representative areas within CCWA's service area can be found in Tables 2-1 through 2-3 and Figure 2-3:

Table 2-1: Monthly Averages for ETo, Temperature, & Precipitation (Santa Maria)

Monthly Averages for ETo, Temperature, & Precipitation (Santa Maria)														
	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (inches)	232	1.94	2.39	3.77	5.08	5.81	5.95	5.95	5.62	4.35	3.50	2.48	1.96	48.8
Temp. (F)		51.1	52.6	53.4	55.2	57.6	60.4	62.9	63.4	63.3	60.7	55.9	51.5	57.3
Precipitation (inches)		2.57	2.76	2.25	1.05	0.28	0.04	0.03	0.03	0.19	0.52	1.32	1.99	13.03

Table 2-2: Monthly Averages for ETo, Temperature, & Precipitation (Santa Ynez/Cachuma Lake)

Table 2-2: Monthly Averages for ETo, Temperature, & Precipitation (Santa Ynez/Cachuma Lake)														
	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (inches)	64	1.68	2.21	3.52	5.01	5.78	6.18	6.40	6.01	4.46	3.57	2.19	1.67	48.68
Temp. (F)		66.0	67.5	69.0	74.1	78.7	85.6	91.2	92.5	89.2	83.2	74.0	67.5	78.2
Precipitation (inches)		4.34	5.47	4.76	1.26	0.39	0.04	0.01	0.03	0.30	0.76	1.58	2.92	21.86

Table 2-3: Monthly Averages for ETo, Temperature, & Precipitation (Santa Barbara)

Table 2-4 Monthly Averages for ETo, Temperature, & Precipitation (Santa Barbara)														
	Station	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
ETo (inches)	107	1.67	2.24	3.43	4.94	4.99	5.24	5.29	5.33	3.89	3.51	2.22	1.86	44.61
Temp. (F)		65.4	66.3	67.4	70.1	71.2	74.4	76.7	78.7	78.2	75.4	71.0	66.4	71.8
Precipitation (inches)		3.57	4.28	3.51	0.63	0.23	0.05	0.03	0.11	0.42	0.52	1.32	2.26	16.93

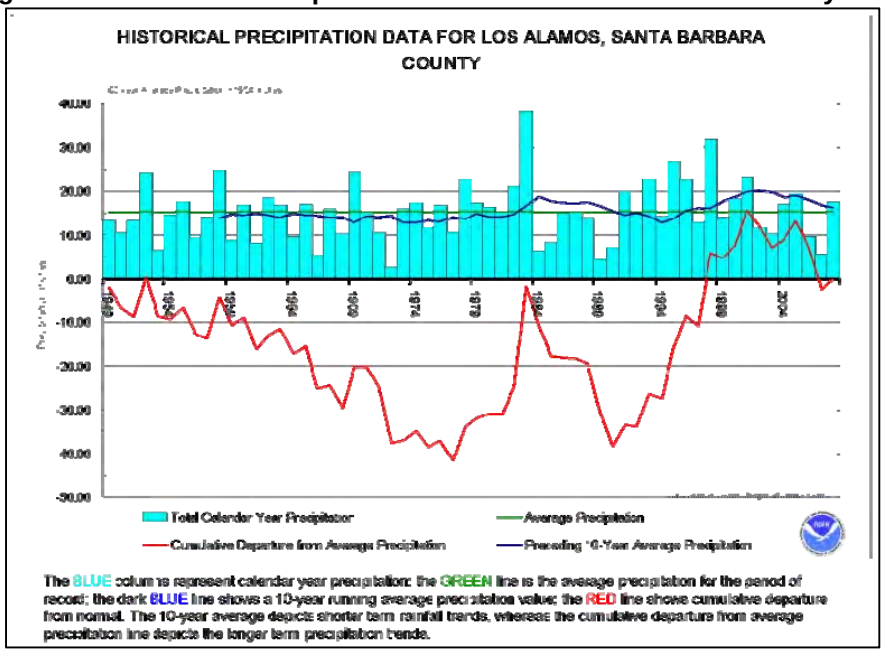
Temperature and precipitation data-National Weather Service-NWS Los Angles/Oxnard 1971-2000[15]

- http://www.wrh.noaa.gov/lox/climate/city_normtemps.php
- http://www.wrh.noaa.gov/lox/climate/citynorms.php

ETo data-The California Irrigation Management Information System (CIMIS)[16]

- *wwwcimis.water.ca.gov*

Figure 2-3: Historical Precipitation for Central Santa Barbara County Area.



2.4 Service Area Population

Population data for all of the specific CCWA project participant service areas are not available. Population data for individual retail service areas can be found in the UWMPs of the retail purveyors. In order to provide a population overview in Santa Barbara County, however, the following data is presented. The Santa Barbara County Association of Governments published a report entitled "Regional Growth Forecast 2005 to 2040" in August 2007.[17] The summary data for the population forecast, at the jurisdiction level, from this report is presented in Table 2-4

Table 2-4: Santa Barbara County Population Forecast

Jurisdiction	2005	2010	2015	2020	2025	2030	2035	2040
South Coast	204,700	205,800	208,500	211,300	213,600	215,700	216,300	216,900
City of Carpinteria	14,300	14,200	14,400	14,600	14,800	15,000	15,100	15,300
City of Santa Barbara	89,800	90,000	91,000	92,000	92,400	92,800	92,800	93,000
City of Goleta	31,000	31,700	33,100	34,500	35,900	37,300	37,300	37,300
Carp. - Uninc.	5,100	5,200	5,200	5,300	5,300	5,400	5,400	5,500
SB - Uninc.	64,400	64,600	64,800	65,000	65,200	65,400	65,500	65,800
Lompoc Valley	59,400	61,200	62,600	64,200	65,800	67,400	69,000	70,400
City of Lompoc	41,800	43,300	44,400	45,700	46,900	48,200	49,500	50,700
Lompoc - Uninc.	17,700	18,000	18,300	18,600	18,900	19,100	19,400	19,800
Santa Maria Valley	129,100	137,600	146,900	156,400	165,700	169,200	171,800	174,600
City of Santa Maria	88,500	95,000	102,300	109,500	116,700	118,300	118,900	119,400
City of Guadalupe	6,300	7,100	8,000	8,800	9,600	10,400	11,200	12,000
SM - Uninc.	33,800	35,000	36,200	37,500	38,700	39,900	41,100	42,500
Guad. - Uninc.	400	500	500	500	600	600	700	700
Santa Ynez Valley	23,000	24,000	25,100	25,900	26,400	27,000	27,600	28,200
City of Solvang	5,400	5,600	5,800	5,900	6,000	6,200	6,400	6,600
SY - Uninc.	13,100	13,500	14,000	14,300	14,300	14,300	14,300	14,300
City of Buellton	4,500	4,900	5,300	5,700	6,100	6,500	6,900	7,200
Cuyama Valley	1,300	1,500	1,700	1,800	1,900	2,100	2,300	2,700
County Total	417,500	430,200	444,900	459,600	473,400	481,400	487,000	492,800
Total Unincorporated	135,900	138,300	140,700	143,000	144,900	146,800	148,900	151,200
Total City	281,600	291,900	304,200	316,600	328,500	334,600	338,100	341,500

SBCAG, Regional Growth Forecast, 8-2007

Population over the 2005-2040 timeframe is forecast to increase by 75,300 persons or 18% countywide. The South Coast is forecast to experience an increase in population of 12,200 or 6%. The North County is forecast to experience an increase of 63,100 persons or 30%. The Unincorporated areas of Orcutt, which is primarily serviced by the Golden State Company, and the Goleta Valley, which is primarily serviced by the Goleta Water District, are forecast to increase 25% and 2% respectively.

2.5 Service Area Economy

The California Department of Transportation produces long term socio-economic forecasts for each County in the State of California, through its Economic Analysis Branch. These long term economic forecasts are updated annually and are produced to assist local and regional agencies in their planning efforts. The forecasts provide both historical data and a forecast from 2010 to 2035. To provide a general snapshot of the socio-economics of Santa Barbara County, copies of the 2010 updated forecasts are included in Appendix D[18]. The summary tables of the 2010 updated forecasts are presented Table 2-5:

Table 2-5: Caltrans Santa Barbara County Socio-Economic Forecast

Santa Barbara County Economic Forecast
2002-2009 History, 2010-2035 Forecast

	Population (people)	Net Migration (people)	Registered Vehicles (thousands)	Households (thousands)	New Homes Permitted (homes)	Total Taxable Sales (billions)	Personal Income (billions)	Real Per Capita Income (dollars)	Inflation Rate (% change in CPI)	Real Farm Crop Value (millions)	Real Industrial Production (billions)	Unemployment Rate (percent)
2002	409,464	1,202	355.0	138	1,732	$5.07	$13.06	$39,126	2.8	947	2.00	5.2
2003	413,800	1,470	363.1	140	1,617	$5.28	$13.68	$39,522	2.6	1,026	2.11	5.1
2004	416,619	-235	374.6	142	1,517	$5.54	$15.38	$42,722	3.3	1,048	2.19	4.7
2005	419,016	-968	369.4	143	960	$5.81	$16.31	$43,110	4.5	1,105	2.48	4.4
2006	421,041	-1,290	373.2	146	897	$6.13	$17.81	$44,936	4.3	1,080	2.77	4.1
2007	425,203	787	370.6	147	723	$6.07	$19.02	$46,012	3.3	1,135	2.73	4.4
2008	429,109	625	369.4	148	643	$6.07	$19.00	$43,991	3.5	1,130	2.71	5.4
2009	432,975	613	363.1	149	187	$5.77	$18.54	$42,828	-0.8	1,154	2.66	8.8
2010	436,912	751	366.3	149	440	$5.87	$18.78	$42,216	1.8	1,172	2.72	9.4
2011	440,601	539	369.5	150	759	$6.08	$19.78	$42,967	2.4	1,155	2.74	8.6
2012	444,868	1,188	374.4	150	995	$6.36	$21.14	$44,489	2.2	1,167	2.83	7.8
2013	449,279	1,361	379.8	151	1,138	$6.72	$22.60	$46,005	2.4	1,192	2.92	7.0
2014	454,009	1,685	385.3	152	1,240	$7.13	$23.70	$46,687	2.3	1,200	2.99	6.2
2015	458,337	1,285	390.7	153	1,266	$7.58	$24.97	$47,601	2.4	1,219	3.09	5.7
2016	462,508	1,109	395.4	155	1,259	$8.06	$26.25	$48,481	2.3	1,239	3.17	5.4
2017	466,101	515	398.9	156	1,218	$8.54	$27.76	$49,727	2.3	1,220	3.27	5.3
2018	469,656	488	402.5	157	1,204	$9.00	$29.07	$50,496	2.3	1,243	3.36	5.2
2019	472,727	59	405.4	158	1,182	$9.47	$30.40	$51,297	2.3	1,262	3.46	5.0
2020	475,848	179	408.1	159	1,185	$9.97	$31.62	$51,859	2.2	1,274	3.59	5.0
2021	478,922	201	410.5	160	1,158	$10.50	$33.11	$52,541	2.7	1,255	3.70	4.9
2022	481,323	-440	413.5	161	1,135	$11.02	$34.59	$53,146	2.8	1,287	3.81	4.8
2023	483,875	-224	415.6	162	1,127	$11.55	$36.26	$53,963	2.7	1,268	3.92	4.8
2024	486,075	-502	419.2	163	1,086	$12.09	$37.81	$54,636	2.5	1,312	4.01	4.7
2025	488,234	-482	422.8	164	1,068	$12.69	$39.38	$55,220	2.6	1,325	4.17	4.6
2026	490,149	-677	425.3	165	1,048	$13.30	$41.11	$55,932	2.7	1,339	4.31	4.6
2027	491,896	-719	427.9	166	1,025	$13.95	$42.75	$56,431	2.7	1,353	4.45	4.5
2028	493,506	-763	429.8	166	1,030	$14.63	$44.56	$56,971	2.9	1,342	4.60	4.5
2029	494,910	-870	432.0	167	1,025	$15.34	$46.42	$57,517	2.9	1,360	4.76	4.4
2030	496,392	-716	434.0	168	1,020	$16.06	$48.31	$58,040	2.8	1,395	4.92	4.4
2031	497,710	-829	435.9	169	999	$16.81	$50.28	$58,593	2.8	1,398	5.10	4.3
2032	498,878	-970	437.8	170	967	$17.59	$52.32	$59,158	2.8	1,401	5.28	4.3
2033	499,900	-1,078	439.6	171	935	$18.42	$54.44	$59,742	2.8	1,403	5.46	4.4
2034	500,814	-1,179	441.1	172	902	$19.28	$56.64	$60,336	2.8	1,405	5.64	4.4
2035	501,748	-1,162	442.4	172	878	$20.18	$58.93	$60,933	2.8	1,406	5.83	4.5

Employment and population growth is forecast to remain modest in Santa Barbara County over the next five years. The northern end of the county will continue to dominate population and job growth due largely to the greater production of planned housing in the Santa Maria Valley. Housing is also more affordable in the northern communities of Santa Maria, Orcutt, and Lompoc. This suggests that the demand for water supply in the northern portion of the County may increase due to growth. The local retail purveyors are in the best position to assess and respond to this potential.

3.0 SYSTEM DEMANDS

This section characterizes the water demand by CCWA participants and also presents projections of future demand for water supply. As a wholesaler, CCWA does not have direct access to retailer records. However, CCWA does have information on deliveries of SWP water to each participant. Since each CCWA participant has additional sources of water supply, the water deliveries made by CCWA do not translate to system demand. Other sources of information are needed to supplement CCWA delivery records to properly characterize CCWA participant's system demand.

The DWR requires all public water systems to complete a form entitled "Public Water System Statistics,"[19] also known as DWR Form 38, on an annual basis. This form requires each water purveyor to provide basic water system information, water production data, number and type of service connections and the total volume of delivered water to each type of service connection. In addition, the DPH requires all public water systems to prepare and submit an annual report[20]. The content of the DPH report varies from year to year, but generally includes an inventory of water supply sources, number of service connections and total volume of water produced.

Information obtained from DWR Form 38 and the DPH annual report for each CCWA Santa Barbara County participant was reviewed and tabulated as a way to characterize the demand for water supply within each participant's water system. In addition, the volumes of SWP water delivered to each CCWA Santa Barbara County participant is presented.

As indicated in Section 1.2, CCWA delivers SWP water to the SLOFCWCD through the Chorro Valley and Lopez Turnouts. Since SLOFCWCD is classified as a wholesale water supplier, it is preparing an UWMP for its water purveyors. Consequently, to avoid duplication of efforts, all data analysis related to the San Luis Obispo County water purveyors can be found in the UWMP prepared by SLOFCWCD.

3.1 Total CCWA Santa Barbara County Participant Water Demands

For each of the CCWA Santa Barbara County project participants, the water supply data presented in the DWR Form 38 and DPH Annual Reports were reviewed and summarized. The data for 2005 and 2010 was selected, in accordance with DWR guidelines, for evaluation. The results are presented in Table 3-1 for 2005 and Table 3-2 for 2010

Table 3-1: 2005 Customer Class and Delivery Volumes

2005 Customer Class and Delivery Volume Data												
Participant	Number of Service Connections						Delivery Volumes, Acre-Feet					
	Single Family	Multi-residential	Commercial Institutional	Industrial	Landscape	Agricultural	Single Family	Multi-residential	Commercial Institutional	Industrial	Landscape	Agricultural
Buellton	498	75	145	19	12	0	512.5	70.8	512.5	21.7	56.5	0
Carpinteria	2995	308	272	64	0	424	758.5	758.5	488.8	116.2	0	1840.3
Golden State Water Co (1)	10865	130	40	2	106	0	6880.8	265.5	318.2	1.7	426.1	0.6
Goleta	13065	1509	954	0	145	160	4543	1954	2587	0	1110	2320
Guadalupe	2878	21	178	10	20	0	547.55	6.02	174.02	8.64	18.49	0
La Cumbre	1427	0	0	0	3	31	1382.0	0	0	0	0	81.3
Montecito	4064	57	124	0	21	40	3977.1	205.7	356.8	0	329.7	381.4
Morehart (2)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Raytheon (3)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Santa Barbara	17258	5861	2363	52	686	0	5723	3060	2218	364	645	0
Santa Maria (4)	18121	817	1873	96	48	0	6994	2105	2813	383	47	0
Santa Ynez ID1	2295	0	0	0	0	76	2336.85	0	0	0	0	2403.62
Solvang	1566	87	214	17	23	0	798.6	120.8	231.4	44.9	155.3	12.6
Vandenberg (5)	1814	0	0	2736	0	0	No data	No data	No data	No data	No data	No data

Note: 1. Golden State Water Company data is comprised of the Orcutt and Tanglewood Public Water Systems
2. The Morehart Land Company is a land developer for the planned community of Naples. No service category or total delivery volume available
3. Raytheon is a industrial/commercial participant. No service category or total delivery volume available
4. Total delivery volume for Santa Maria does not include 10 AF of water supplied to "Other" category.
5. Department of Public Health Annual Report provided total production of 3892 AF and service connection data. No volume data per service category available

Table 3-2: 2010 Customer Class and Delivery Data

2010 Customer Class and Delivery Volume Data												
Participant	Number of Service Connections						Delivery Volumes					
	Single Family	Multi-Residential	Commercial Institutional	Industrial	Landscape	Agricultural	Single Family	Multi-Residential	Commercial Institutional	Industrial	Landscape	Agricultural
Buellton	1235	108	155	21	10	0	972	69	102	24	16	0
Carpinteria	3078	314	246	57	68	398	944.2	409.8	435.4	73.0	90.0	1580.8
Golden State Water Co (1)	11042	0	446	5	44	74	5567.6	209.0	508.8	1.8	477.1	8.3
Goleta	13342	1578	1017	0	207	164	4331	1794	2339	0	1173	2395
Guadalupe	1771	12	102	0	26	0	578.22	5.41	301.63	0	44.91	0
La Cumbre	1435	0	0	0	4	30	1.3	0	0	0	153.6	76.8
Montecito	4204	74	242	0	0	45	3679	115	540	0	0	319
Morehart (2)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Raytheon (3)	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data	No data
Santa Barbara	16919	6132	2526	56	736	59	5487.0	2842.5	1974.1	249.2	599.0	0
Santa Maria (4)	18436	787	1894	89	355	0	6605	2231	2505	337	1054	0
Santa Ynez ID1	2373	0	0	0	0	65	2299.49	0	0	0	0	2335.05
Solvang	1591	84	230	20	26	0	762.3	131.9	212.7	39.6	159.4	0.0
Vandenberg (5)	999	0	22	123	0	0	855.4	0	906.0	0	0	0

Note: 1. Golden State Water Company data is comprised of the Orcutt and Tanglewood Public Water Systems
2. The Morehart Land Company is a land developer for the planned community of Naples
3. Raytheon is a industrial/commercial participant
4. Total delivery volume presented in Table for Santa Maria does not include 340 AF of water supplied to "Other" category and 92 AF as wholesaler.
5. Service connection data obtained from Department of Public Health Annual Report

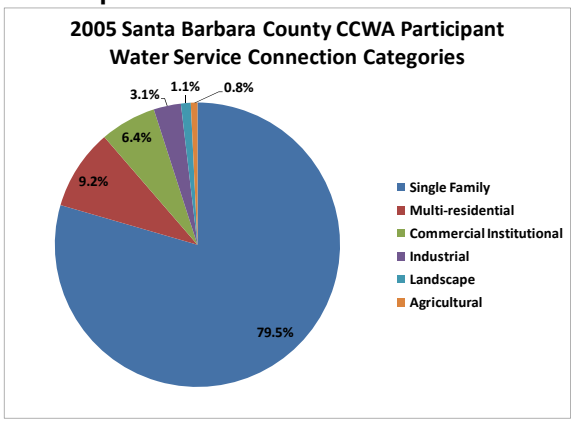
To characterize the CCWA Santa Barbara County project participants' demand for water supply, three aspects were evaluated: distribution of customer class, water deliveries to each customer class and portion of water supply provided by CCWA. The CCWA Santa Barbara County participants were evaluated as a group, as opposed to individual systems. The results of the review are as follows:

3.1.1 Customer Class

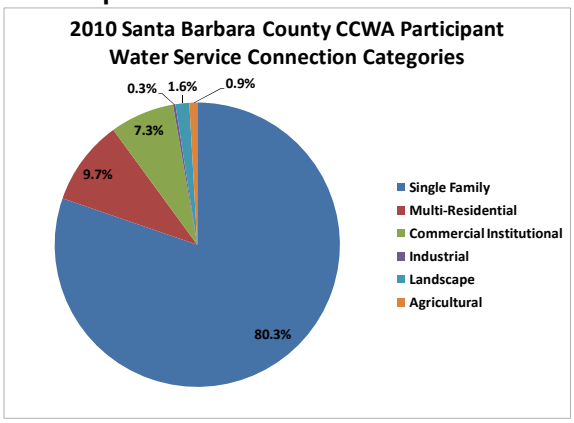
The DWR Form 38 provides six defined customer classes and a seventh category called "other". Form 38 requires each Public Water System to provide the number of service connection per customer class and the monthly volume delivered to each customer class. Form 38 also requires information on both potable and recycled water supply.

The data compiled from DWR Form 38 indicates that the primary customer classes that are serviced by the CCWA Santa Barbara County participants include single-family residential, followed by multi-residential and commercial/institutional customer classes. These three categories represent well over 95% of the total number of service connections. No significant changes in the distribution of customer classes can be observed when comparing 2005 data to 2010. The aggregate customer class distribution for CCWA Santa Barbara County participants is graphically presented in Graph 3-1 for 2005 and Graph 3-2 for 2010

Graph 3-1: 2005 Service Connections



Graph 3-2: 2010 Service Connections



Although the above graphs suggest that agricultural customer service connections are few, there are project participants that supply up to 50% of their total water supply to agricultural customers. This illustrates the higher demand for water typically required by agricultural service connections as compared to other customer classes. The four CCWA Santa Barbara County participants that deliver significant volumes of water to agricultural customers are as follows:

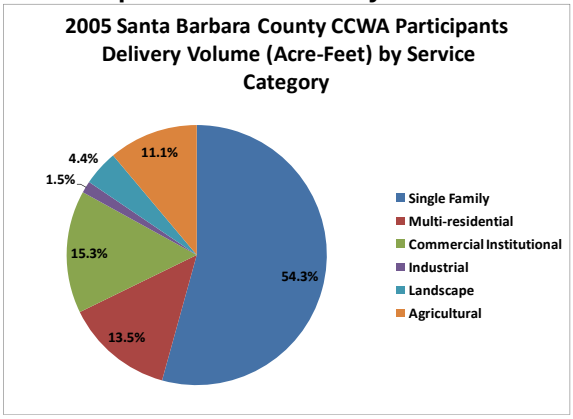
- Santa Ynez River Conservation District Improvement District #1, with approximately 2.7% of its total service connections assigned to the agricultural customer class.
- Goleta Water District, with approximately 1% of its total service connections assigned to the agricultural customer class.
- Carpinteria Water District, with approximately 9.6% of its total service connections assigned to the agricultural customer class.
- La Cumbre Mutual Water Company, with approximately 2% of its total service connections assigned to the agricultural customer class.

3.1.2 Total Volume Delivered by Service Connection Category

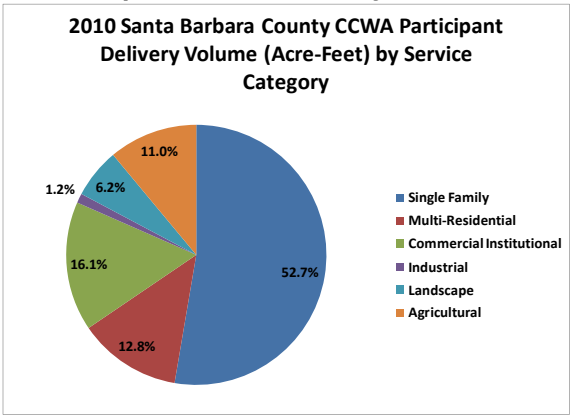
As reported in DWR Form 38, the CCWA Santa Barbara County project participants delivered over 63,000 AF in 2005 and over 60,000 AF in 2010 as a group to their respective customers. The aggregate delivery volume for each customer class

distribution for CCWA Santa Barbara County project participants is graphically presented in Graph 3-3 for 2005 and Graph 3-4 for 2010

Graph 3-3: 2005 Delivery Volumes



Graph 3-4: 2010 Delivery Volumes



Although the customer classes of single-family residential, multi-family residential and commercial/institutional represented over 95% of the number of service connections, these three classes account for roughly 81% of the water delivered by Santa Barbara County project participants to their respective systems. As evidenced in the graphs above, agricultural service connections represent a significant portion of the total water demand for CCWA Santa Barbara County participants. These agricultural service connections required approximately 11% of water delivered, even though the number of agricultural service connections is less than 1% of the total number of connections. The participants with the highest percentage of water delivered to the agricultural customer class are as follows:

- Santa Ynez River Conservation District Improvement District #1 delivering approximately 50% of its total water supply to agricultural customer class service connections.
- Goleta Water District delivering approximately 20% of its total water supply to agricultural customer class service connections.
- Carpinteria Water District delivering approximately 44% of its total water supply to agricultural customer class service connections.
- La Cumbre Mutual Water Company delivering approximately 33% of its total water supply to agricultural customer class service connections.

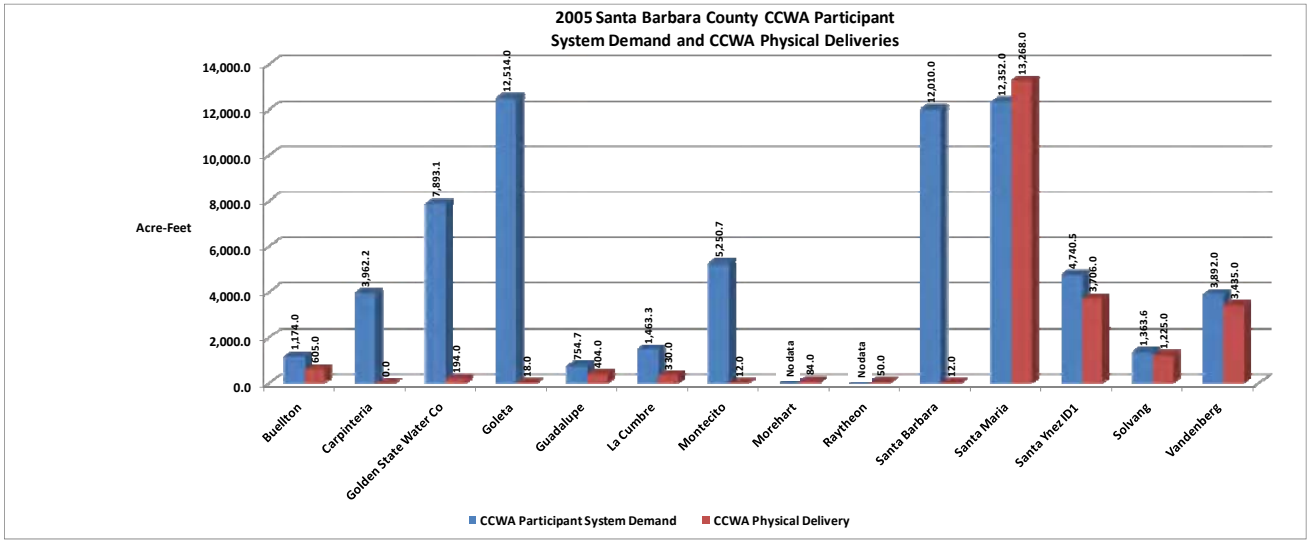
3.1.3 Comparing CCWA Deliveries to Total Reported Supply

The mission of CCWA is to provide high quality, reliable, supplemental water to Santa Barbara and San Luis Obispo Counties. The key word in CCWA's mission statement is "supplemental." All of CCWA's project participants maintain and utilize additional sources of water supply. Each CCWA participant manages its own portfolio of water supplies that best meets its long-term and short-term needs. The water provided by CCWA is only one source of water supply for CCWA project

participants and this source is also interrupted on an annual basis for scheduled maintenance work. Each year, DWR ceases water delivery operations in the Coastal Branch of the SWP for the purposes of conducting maintenance work. These annual outages typically last from two to four weeks per year. CCWA project participants are required to rely upon other sources of water supply during these annual maintenance events.

As indicated earlier, the CCWA Santa Barbara County project participants delivered over 63,000 AF of water to their respective customers in 2005. Of this amount, CCWA delivered 23,343 AF of water. To illustrate the portion of water delivered to each participant, the total system demand and CCWA physical delivery was plotted and presented in Graph 3-5. The term "physical delivery" indicates the water that passed through each project participant's turnout. As will be discussed in Section 3.1.4, there is an exchange agreement between SYRWCDID#1 and four South County CCWA project participants. In this agreement, an agreed amount of SWP water is delivered to SYRWCDID#1 rather than the South County project participants and a like amount of Lake Cachuma water is transferred into the South County accounts.

Graph 3-5: 2005 Project Participant System Demand and CCWA Deliveries

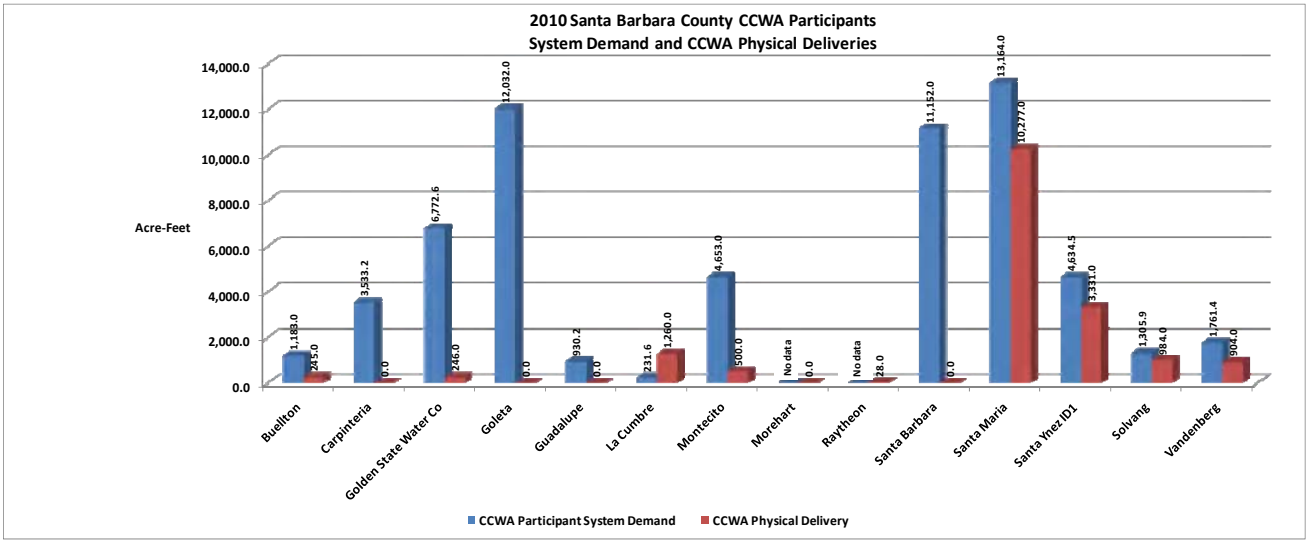


As shown in Graph 3-5, there are five CCWA Santa Barbara County participants that receive a significant portion of their total supply directly from the CCWA system. These participants include Buellton, Santa Maria, SYRWCDID#1, Solvang and Vandenberg. In the case of the City of Santa Maria, the total for CCWA physical deliveries is higher than the reported total volume of water delivered to its customers. However, it is important to note that this data reflects only metered deliveries to customers and does not reflect the total system demand for the City of Santa Maria's system. The difference between total system demand and metered deliveries to customers is the volume of unaccounted for water. The City of Santa Maria has made significant improvements in reducing the volume of unaccounted for

water. In 2005, unaccounted for water was in the 10 – 12% range. Currently, the City's unaccounted for water is in the 2.2% range.

In 2010, the CCWA Santa Barbara County project participants delivered over 60,000 AF of water to their respective customers. CCWA delivered 17,775 AF of this total amount. To illustrate the portion of water delivered to each participant, the total system demand and CCWA physical delivery was plotted and presented in Graph 3-6.

Graph 3-6: 2010 Project Participant System Demand and CCWA Deliveries



The same supply pattern as in 2005 can be observed in the 2010 graph, with the exception of La Cumbre Mutual Water Company. This agency had a demand of 231.6 AF in 2010, but requested delivery of 1,260 AF of SWP water. This anomaly is explained by how SWP water is actually delivered to this agency. For all South Santa Barbara County CCWA project participants, CCWA delivers water to Lake Cachuma. Water is then subsequently drawn from Lake Cachuma and treated to produce potable water. Since La Cumbre Mutual Water Company receives its treated water supply from the City of Santa Barbara, there is a balancing arrangement between these two agencies where La Cumbre can receive treated water that has not yet been delivered by CCWA to Lake Cachuma. La Cumbre Mutual Water Company will deliver SWP water to Lake Cachuma to re-pay the City of Santa Barbara account.

3.1.4 Santa Ynez Exchange Agreement

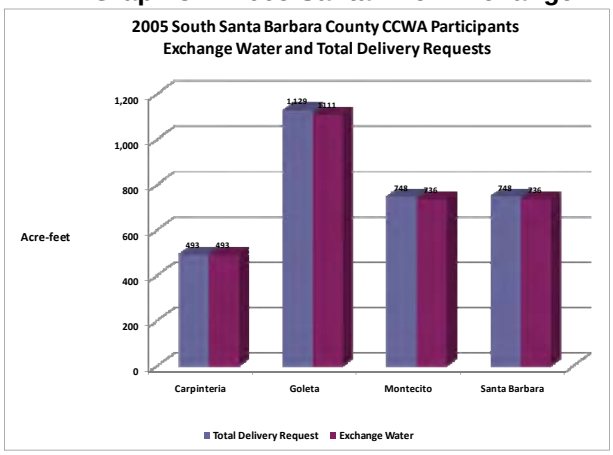
To properly interpret the SWP delivery records, it is important to understand the Santa Ynez Water Exchange Agreement.[21] This agreement provided the CCWA participants located in South Santa Barbara County an opportunity to receive "SWP water" through existing infrastructure, as opposed to building a new pipeline around Lake Cachuma.

Lake Cachuma is utilized directly for water supply by five water purveyors. These water purveyors have water supply agreements with the Santa Barbara County Water Agency, which in turn has a Master Water Supply Agreement with the USB R.[22] The five purveyors known as the Cachuma Member Units and their project allocations are as follows:

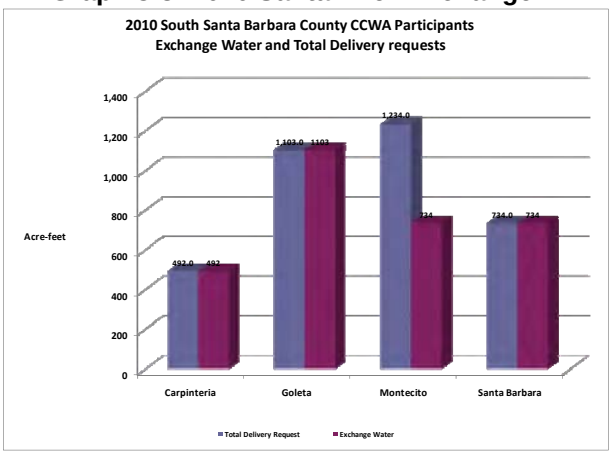
- Carpinteria Valley Water District - 10.94%
- City of Santa Barbara - 32.19%
- Goleta Water District - 36.25%
- Montecito Water District - 10.31%
- SYRWCDID#1 - 10.31%

SYRWCDID#1 is located north of Lake Cachuma while all of the other Cachuma Member Units are located south of Lake Cachuma. The exchange agreement takes advantage of this fact and the related infrastructure. The agreement included SYRWCDID#1 selling its 5-mile pipeline from the Santa Ynez Valley to Lake Cachuma to CCWA for use in conveying SWP water to Lake Cachuma. Subsequently, SYRWCDID#1 exchanges its Lake Cachuma water that would have normally been delivered to SYRWCDID#1 to be delivered to the other Cachuma Member Units. In exchange, the South County Cachuma Member Units cause the delivery of a like amount of SWP water to SYRWCDID#1 on a gallon-for-gallon exchange basis.

Graph 3-7: 2005 Santa Ynez Exchange



Graph 3-8: 2010 Santa Ynez Exchange



Graphs 3-7 and 3-8 present the SWP request and the portion of which was exchange water for 2005 and 2010 respectively.

3.2 CCWA Water Demand

3.2.1 CCWA Historical Demand

The CCWA project participants have multiple sources of water supply to respond to their own customer's water supply needs. There are a number of factors that determine the demand for water supply from the CCWA system by the CCWA project participants. These factors may include water quality issues, water production rates and availability from other sources, water transfer arrangements and many others. The demand for water from the CCWA system is ultimately a management decision by the CCWA Project Participants.

It is CCWA's responsibility to take measures to maximize the amount of water available to it project participants, up to the Table A amount (See Section 4.2 for explanation of Table A). Although the annual DWR allocation may vary from year to year, higher water deliveries volumes are possible through the use of carry-over water, surplus water, water transfers, exchanges and groundwater banking opportunities. CCWA has always been successful in its ability to deliver larger volumes of water than the DWR allocation alone would provide and continues to meet the annual SWP demand for each of its project participants.

The Table 3-3 presents the water delivery volume requested by Project Participants and the actual volume of delivered water between 2005 and 2010. It is important to understand that the water delivery requests are made to DWR by October 1 of each year for the following Calendar Year deliveries. This is in advance of the annual DWR allocation announcement, which DWR announces prior to December 1 of each year. In addition, the DWR annual allocation is routinely changed through the year as more becomes known about the hydrologic conditions of the Delta.

The delivery request made well in advance of the actual need is in contrast to requests for water arising from the day-to-day operations of a potable water system. These day-to-day delivery decisions are often made within 24 hours of the actual delivery. This is the primary reason why requested deliveries do not exactly match the actual deliveries made to CCWA project participants.

When considering the final DWR annual allocation announcement and comparing the actual deliveries, expressed as a percent of Table A, it is clear that CCWA has the ability to deliver greater volumes of water that than that DWR allocation would provide.

Table 3-3: 2005 through 2010 Delivery Requests and Actual Deliveries

CCWA Project Participant Initial Delivery Request and Actual Deliveries, 2005 through 2010, in Acre-feet																
PROJECT PARTICIPANT	Table A Amount			2005 Requests		2006 Requests		2007 Requets		2008 Requests		2009 Requests		2010 Requests	
	Table A Amount	CCWA + GWD Drought Buffer	Total Table A Amount	Delivery Request	*Deliveries as of 12/31/05*	Delivery Request	*Deliveries*	Delivery Request	*Deliveries as of 12/31/07*	Delivery Request	*Deliveries as of 12/31/08*	Delivery Request	*Deliveries as of 12/31/09*	Delivery Request	*Deliveries as of 12/31/10*
City of Guadalupe	550	55	605	605	404	455	476	455	437	455	348	455	39	455	0
City of Santa Maria	16,200	1,620	17,820	15,511	13,268	14,020	13,128	14,020	11,711	14,020	7,792	14,020	7,779	14,020	10,277
SCWC	500	50	550	550	194	430	586	430	189	430	233	430	249	430	246
Vandenberg AFB	5,500	550	6,050	5,650	3,436	4,600	3,369	4,600	3,443	4,600	1,899	4,600	1,427	4,600	904
City of Buellton	578	58	636	636	605	486	650	486	602	486	464	486	251	486	245
Santa Ynez ID#1 (Solvang)	1,500	0	1,500	1,500	1,225	1,170	1,226	1,170	1,215	1,170	1,167	1,170	1,104	1,170	984
Santa Ynez ID#1	500	200	700	700	630	700	750	700	432	700	203	700	182	700	268
Goleta WD	4,500	2,950	7,450	940	1,129	3,450	983	3,450	2,992	3,450	1,656	3,450	1,384	3,450	1,103
Morehart Land Company	200	20	220	220	84	160	0	160	60	160	0	160	0	160	0
La Cumbre Mutual WC	1,000	100	1,100	920	330	830	704	800	625	800	776	830	1,047	830	1,260
Raytheon Systems Co.	50	5	55	55	50	55	55	55	33	55	19	55	22	55	28
City of Santa Barbara	3,000	300	3,300	615	748	588	656	616	540	616	621	616	451	616	734
Montecito WD	3,000	300	3,300	1,980	748	2,400	656	2,400	3,272	2,400	2,680	2,400	1,214	2,400	1,234
Carpinteria Valley WD	2,000	200	2,200	1,890	493	1,300	439	410	561	410	533	410	303	410	492
Santa Barbara SUBTOTAL	39,078	6,408	42,986	31,772	23,344	30,644	23,678	29,752	26,112	29,752	18,391	29,782	15,452	29,782	17,775

3.2.2 CCWA Water Demand Projections

An initial objective of importing water from the SWP into Santa Barbara and San Luis Obispo Counties is to reduce the over-draft of local groundwater basins. The Environmental Impact Report prepared for the Phase II Coastal Branch of the SWP and for the Mission Hills Extension Project[23] indicated that both Santa Barbara and San Luis Obispo Counties had water demands well above the average safe sustainable yield for the area, with deficits of between 60,000 and 61,000 AF per year in 1985. The EIR further stated that importation of State Water was not designed to eliminate the water supply deficit, but to help reduce it.

All CCWA participants have continued to maintain a variety of water supply sources to draw upon. The available sources include groundwater sources, developed local surface water supplies, desalination and recycled water. Therefore, the water imported by CCWA represents only one source of supply to its project participants. Due to the year to year variability of supply in the SWP, CCWA's charge is to make a reliable and consistent water supply available for the benefit of its project participants.

Most State water that is not utilized for local water demand in any given year is banked, transferred or exchanged. The State Water Supply Contract includes provisions that allow these water management practices. Additionally, surplus water (also known as Article 21 water – see Section 4.2.1 for further explanation) can be requested by any SWP Contractors for delivery. This management practice provides a level of protection against drought since it allows SWP contractors to store water for use in current or subsequent years to augment supply.

To estimate water delivery projections into the future, CCWA relies upon the guidance provided by DWR. DWR conducts a reliability study[24] for the SWP operation every two years to provide contractors with information about the SWP's ability to deliver water under current conditions as well as conditions 20 years into the future. The studies utilize an 82 year historical record of flows in the Delta and

the use of a sophisticated flow model known as CALSIMS II. The results of this study were utilized by CCWA to prepare estimated projections of water availability for each CCWA participant, following DWR estimation protocol.

According to the 2009 DWR reliability study, the long term reliability of SWP water to Santa Barbara County project participants is 63% of the Table A amount in 2009 and reduces to 61% of the Table A amount in 2029. Following the DWR estimation protocol, the long term average of available water was calculated every five years starting in 2010 and ending in 2035. The results of this calculation are presented in Table 3-4. Since CCWA's system demand is defined as the water available in any given year, the results presented in Table 3-4 is the projection for future CCWA system demand.

Table 3-4 Long Term Average Delivery Projections

Long Term Average Projections, Acre-Feet per Year						
Participant	2010	2015	2020	2025	2030	2035
Buellton	402	398	394	390	386	382
Carpinteria	1,389	1,376	1,362	1,348	1,335	1,321
Golden State Water Co	347	344	341	337	334	330
Goleta	4,705	4,659	4,612	4,566	4,520	4,473
Guadalupe	382	378	375	371	367	363
La Cumbre	695	688	681	674	667	661
Montecito	2,084	2,064	2,043	2,023	2,002	1,982
Morehart	139	138	136	135	133	132
Raytheon	35	34	34	34	33	33
Santa Barbara	2,084	2,064	2,043	2,023	2,002	1,982
Santa Maria	11,254	11,143	11,032	10,922	10,811	10,700
Santa Ynez ID1	1,389	1,376	1,362	1,348	1,335	1,321
Vandenberg	3,821	3,783	3,746	3,708	3,670	3,633
SLOFCWCD	3,074	3,037	3,000	2,963	2,926	2,889

Although the CCWA Santa Barbara County participants may not need all of the water available, by virtue of being connected to a state-wide system, the water can be banked, exchanged or transferred in a variety of ways to further offset the risk of drought exposure in future years. Both short and long term measures are available to obtain additional water supplies beyond the annual allocation. These measures are discussed further in Chapter 4 and 5.

3.3 Water Use Reduction Plan

Water use reduction is not a goal of CCWA. That is a task left to the retail agencies that CCWA supports. Instead, prudent management efforts to make supply alternatives available, protect water supplies that exceed immediate demand, prevent leakage and service interruptions are the main focuses of the CCWA operation. CCWA also participates in Demand Management Measures that are applicable to the CCWA operation. These are discussed in detail in Section 6.0 of this UWMP.

4.0 CCWA SYSTEM SUPPLIES

CCWA's source of water supply is imported water from the SWP. CCWA's Water Supply Agreements with each of its project participants stipulate that imported SWP water will be an interruptible source of supply. In addition, the Environmental Impact Report for the Phase II Coastal Branch indicated that imported SWP water is a supplemental source of water and is intended to reduce ground water overdraft.

4.1 State Water Project (SWP) Description

The SWP is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants that extends for more than 600 miles (Figure 4-1). Its main purpose is to divert and store surplus water during wet periods and distribute it to areas in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California. It is also used for recreation and to control floods, generate power, protect fish and wildlife, and manage water quality in the Delta.

The keystone of the SWP is Lake Oroville, which conserves water from the Feather River watershed. It is the SWP's largest storage facility with a capacity of about 3.5 million acre feet (maf). Releases from Lake Oroville flow down the Feather River into the Sacramento River, which drains the northern portion of California's Central Valley. The Sacramento River flows into the Delta, comprised of 738,000 acres of land interlaced with channels that receive runoff from about 40% of the state's land area. The SWP and the Central Valley Project (CVP) rely on Delta channels as a conduit to move water from the Sacramento River inflow to the points of diversion in the south Delta. Thus, the Delta is actually part of the SWP conveyance system, making the Delta a key component in SWP deliveries. The significance of the Delta to SWP deliveries is described in more detail below.

From the northern Delta, Barker Slough Pumping Plant diverts water for delivery to Napa and Solano counties through the North Bay Aqueduct. Near Byron in the southern Delta, the SWP diverts water into Clifton Court Forebay for delivery south of the Delta. Banks pumping plant lifts water from Clifton Court Forebay into the California Aqueduct, which channels the water to Bethany Reservoir. The water delivered to Bethany Reservoir from Banks Pumping Plant is either delivered into the South Bay Aqueduct for use in the San Francisco Bay Area or continues down the California Aqueduct to O'Neil Forebay, Gianelli Pumping-Generating Plant, and San Luis Reservoir.

Figure 4-1: State Water Project System

San Luis Reservoir is jointly operated by DWR and USBR and has a storage capacity of more than 2 maf. DWR's share of gross storage in the reservoir is about 1.062 maf. Generally, water is pumped into San Luis Reservoir during late fall through early spring, and is temporarily stored for release back to the California Aqueduct to meet summertime peaking demands for SWP and CVP contractors.

SWP water not stored in San Luis Reservoir and water eventually released from San Luis reservoir continues to flow south through the San Luis Canal, a portion of the California Aqueduct jointly owned by DWR and USBR. As water flows through the San Joaquin Valley, deliveries of CVP water are made through numerous turnouts to farmlands in the service areas of the CVP. Near Kettleman City, the Coastal Branch Aqueduct splits from the California Aqueduct for water delivery to agricultural areas to the west and municipal and industrial water users in San Luis Obispo and Santa Barbara counties.

The remaining water conveyed by the California Aqueduct travels farther in the San Joaquin Valley to agriculture users such as Kern County Water Agency before reaching Edmonston Pumping Plant, which raises the water high enough to travel across the Tehachapi Mountains into Antelope Valley. In Antelope Valley, the Aqueduct divides into the East and West Branches. The East Branch carries water into Silverwood Lake

and Lake Perris. Water in the West Branch flows to Quail Lake, Pyramid Lake, and Castaic Lake.

Twenty-nine state water contractors have signed long-term water supply contracts with DWR for 4,173 maf per year. Signed in the 1960s, all contracts are in effect to at least 2035 and are essentially uniform. Each contract contains a schedule of the maximum amount of water the contractor can receive annually. This schedule is contained in SWP Table A. The annual amount was designed to increase each year, with most contractors reaching their maximum amount in 1990. In most cases, SWP water is an important component of local water supplies. Five contractors use SWP water primarily for agricultural purposes and the remaining 24 contractors use SWP water primarily for municipal purposes. All available water is allocated annually in proportion to each contractor's annual SWP Table A amount.

4.2 SWP Water Supply Agreement

The SWP Water Supply Contract[6] between the DWR and 29 SWP Water Contractors (Contractors) specifies the terms and conditions governing the water delivery and cost repayment for the SWP.

Table A is a table attached to the SWP Water Supply Contract. Comprehension of the purpose of Table A is important in understanding how the SWP Water Supply Contract is administered. All water-supply related costs of the SWP are paid 100% by the Contractors, and the SWP Table A serves as a basis for allocating many of those costs. In addition, SWP Table A plays a key role in the annual allocation of available supply among Contractors. When the SWP was being planned, the amount of water projected to be available for delivery to the Contractors was 4.173 maf per year. This was referred to as the maximum project yield, and it was recognized that in some years the project would be unable to deliver that amount and in other years project supply could exceed that amount. The SWP Table A amount was used as the basis for apportioning available supply to each Contractor and as a factor in calculating each Contractor's share of the project's costs. Other contract provisions permit changes to an individual Contractor's SWP Table A under special circumstances.

Every year, DWR conducts modeling studies of the SWP system to determine the allocation, or percentage of the amount of Table A that can be delivered by the SWP system. This allocation is revised throughout the year as hydrologic conditions and other factors change.

4.2.1 SWP Water Supply Classifications

The SWP Water Supply Contract defines several classifications of water available for delivery to Contractors under specific circumstances. All classifications are considered "project" water. Many Contractors make frequent use of these additional

water types to increase or decrease the amount available to them under SWP Table A.

- **SWP Table A Water** Each contract's SWP Table A is the amount in AF that is used to determine the portion of available supply to be delivered to that Contractor. SWP Table A water is given first priority for delivery.

- **Carryover Water** Pursuant to the SWP Water Supply Contract, Contractors have the opportunity to carry over a portion of their allocated water approved for delivery in the current year for delivery during the next year. The carryover program was designed to encourage the most effective and beneficial use of water and to avoid obligating the Contractors to use or lose the water by December 31 of each year. The water supply contracts states the criteria for carrying over SWP Table A water from one year to the next. Normally, carryover water is water that has been exported during the year from the delta, has not been delivered to the Contractor during that year, and has remained stored in the SWP share of San Luis Reservoir. Storage for carryover water no longer becomes available to the Contractors if it interferes with storage of SWP water for project needs. Once this occurs, the carryover water is converted to Article 21 water at a defined rate, linked to the production rate of the Banks Pumping Plant.

- **SWP Article 21 Water.** Article 21 of the SWP Water Supply Contract permits delivery of water in excess of the delivery of SWP Table A and some other water types to those Contractors requesting it. It is available under specific conditions.

- **Turnback Pool Water** Contractors may choose to offer their allocated SWP Table A water excess to their needs to other Contractors through two pools in February and March. Contributing Contractors receive a reduction in charges, and taking Contractors pay extra.

4.2.2 SWP Conveyance Capacity

The original 1963 SWP Water Supply Contractors for SBCFCWCD, now represented by CCWA, had a Table A amount of 60,000 AF per year. This was reduced to 57,700 AF per year in January 1964 (Amendment #2). In 1981, the Table A amount was reduced again to 45,486 AF per year (Amendment #9). In 1994, the SWP contract was amended (Amendment 16) to specify the pipeline flow capacity of the Phase II Coastal Branch as being 42,986 AF per year. This conveyance capacity is defined in Tables B1 and B2 of the amended SWP Water Supply Agreement, which stipulated the proportionate share of the capital costs and variable costs for the Phase II Coastal Branch pipeline. The Table A amount was not changed due to the Goleta Valley Water District retaining 2,500 AF in Table A with no associated pipeline capacity for use as drought buffer (42,986 + 2,500 = 45,486). The 42,986 AF per year also includes the 10% drought buffer acquired by CCWA for its project participants during the design phase of the Phase II Coastal Branch.

In the case of SLOCFCWCD, the SWP Water Supply Agreement has a Table A amount of 25,000 AF per year. However, there were no amendments to the agreement that documented flow capacity modification for Phase II Coastal Branch. CCWA and SLOCFCWCD have entered into a Water Treatment Master Agreement and this contract outlines the available capacity for treatment as well as flow capacity, which is 4,830 AF per year.

4.2.3 Drought Buffer

Drought buffer is a term used to identify a source of supply within the SWP system that will provide a higher level of reliability during times of drought and low DWR Table A allocations. There are two forms of drought buffer that are utilized in the Coastal Branch and they are as follows:

- Acquire or maintain a higher Table A amount than pipeline flow capacity. By having a higher Table A amount than the pipeline capacity, the DWR allocation process will not impact pipeline delivery operations until the DWR allocation is reduced to a level where available Table A is equal to pipeline capacity. This is the technique currently in use by the San Luis Obispo Flood Control and Water Conservation District, as they have 25,000 AF per year in Table A amount and a pipeline conveyance capacity of only 4,830 AF per year. The Goleta Valley Water District, one of CCWA's member agencies, has 2,500 AF per year of this category of drought buffer.

- Acquire or maintain higher Table A amount and pipeline capacity. This essentially is increasing both supply and conveyance as a method of providing reliable annual water deliveries. This is the technique primarily utilized by CCWA, as they have 42,986 AF per year in Table A amount and 42,986 in pipeline conveyance capacity, which includes the 10% drought buffer acquired by CCWA for its project participants during the design phase of the Phase II Coastal Branch.

4.2.4 Dry Year Programs

Dry Year Programs are methods of obtaining water from other sources, such as from other SWP contractors, during times of drought. The main advantage of the SWP system is that it provides the means for water transfers from throughout the State of California. Water from other SWP contractors and other non-project water can be wheeled through the existing infrastructure, subject to a variety of conditions and approvals. Each Water Supply Agreement between CCWA and its project participants specifically includes the provision that allows the pipeline to be utilized for conveyance for other water sources, if SWP water is unavailable or less than the full Table A amount.

4.3 CCWA Deliveries

To illustrate how SWP deliveries may vary with time, a review of the monthly 2005 and 2010 delivery records was conducted and the results are presented below:

4.3.1 CCWA 2005 and 2010 Deliveries

In 2005, CCWA delivered a total of 27,594 AF of water to Santa Barbara and San Luis Obispo Counties. This translates to approximately 54.8% of the Table A amount for CCWA. The Table A percentages for individual CCWA project participants will vary. To put this level of utilization into perspective, DWR's initial Table A Allocation for 2005 was 40% and was increased four times to ultimately reach 90% in late May 2005 (Table 4-1). As is most often the case, CCWA makes more water available to its project participants than they may require.

Table 4-1: 2005 DWR Annual Allocation Adjustments

Date	Notice Number[25]	Allocation
11/30/04	04-08	40%
1/14/05	05-02	60%
4/1/05	06-05	70%
4/21/05	05-06	80%
5/27/05	05-07	90%

The increases in allocation were, in part, due to the amount of precipitation in the Feather River watershed, which provides the source of supply for the Oroville Reservoir. The releases from this reservoir are an important factor in DWR's ability to export water from the Sacramento-San Joaquin Delta. A measure of the amount of precipitation for the Feather River watershed is the Northern Sierra 8-Station Rain Index[26]. This index indicated that precipitation in rain year 2004/2005 (October 1, 2004 to September 30, 2005) was approximately 160% of average.

Water exported from the Delta is either conveyed to meet the demand for water supply south of the Delta or conveyed to the San Luis Reservoir as well as other SWP and local reservoirs for storage. Water is released from the San Luis Reservoir when the demand for water supply exceeds the rate at which water can be pumped from the Delta by the Henry Banks Pumping Plant.

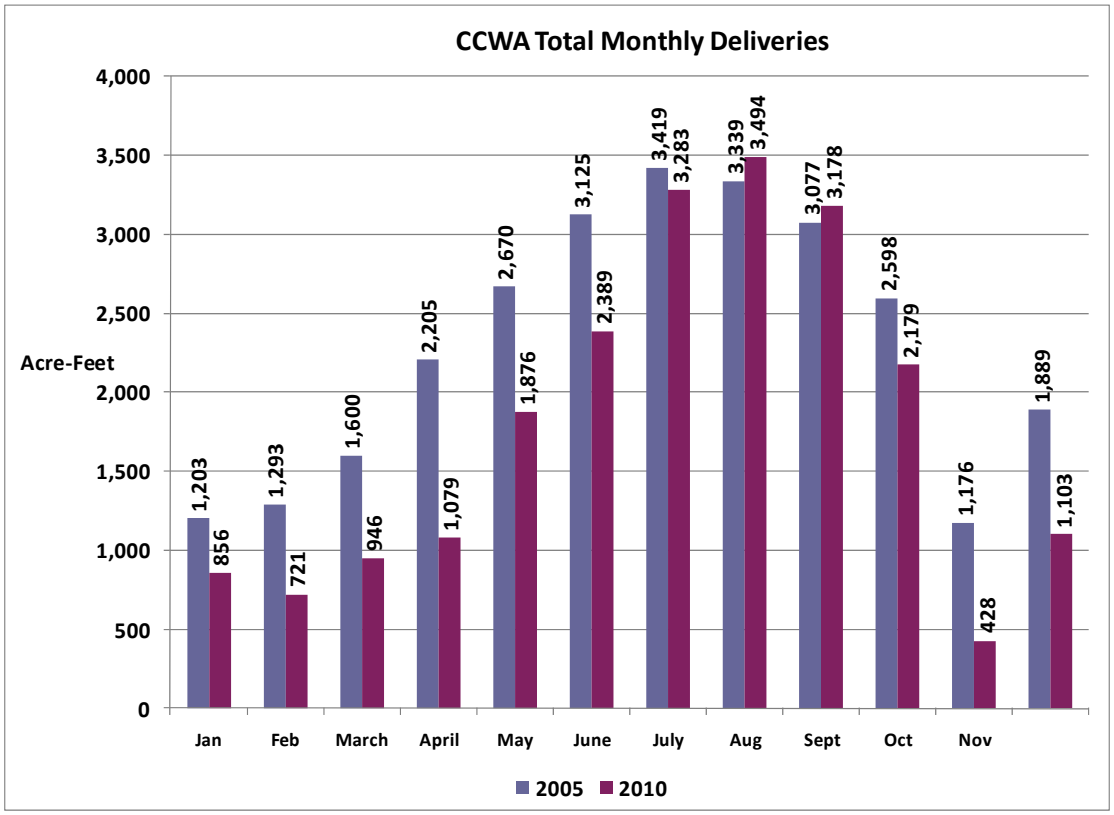
In contrast to 2005, CCWA participants received 21,532 AF of water in 2010, which translates to 42.8% of Table A. DWR's initial Table A Allocation for 2010 was 5% and was raised six times to reach 50% (Table 4-2). The Northern Sierra 8-Station Rain Index indicated that precipitation in rain year 2009/2010 (October 1 2009 to September 30 2010) was approximately 107% of average.

Table 4-2: 2010 DWR Annual Allocation Adjustments

Date	Notice Number	Allocation
11/30/09	09-09	5%
2/23/10	10-03	15%
3/30/10	10-06	20%
4/22/10	10-07	30%
5/3/10	10-08	40%
5/20/10	10-10	45%
6/22/10	10-11	50%

The monthly delivery volumes for each CCWA participant are presented in the Graph 4-1 below. The monthly patterns of delivery for 2005 and 2010 are similar to peak deliveries occurring in the summer months. The lowest monthly deliveries occur in the month of November. This is primarily due to the annual DWR winter maintenance shutdown, which lasted for 2 weeks in 2005 and 3 weeks in 2010.

Graph 4-1: 2005 and 2010 CCWA Monthly Delivery



4.3.2 CCWA Projected Deliveries

DWR conducts a reliability study[24] for the SWP operation every two years to provide contractors with information about the SWP's ability to deliver water under current conditions as well as conditions 20 years into the future. The studies utilize an 82 year historical record of flows in the Delta and the use of a sophisticated flow model known as CALSIMS II. In the 2009 study, three areas of significant uncertainty for SWP water deliveries were identified. These areas of uncertainties are as follows:

- Climate Change. In 2009, DWR conducted a study on the potential impacts of climate change on water resource decisions in California. Twelve separate future climate projections were used to assess the impacts at mid-century and end of century. The DWR reliability study selected one of the climate projections that would represent the median effects on the SWP operation. Although there is a wide range of uncertainty for sea level rise, DWR assumed that sea level would rise by 1 foot mid-century and 2 feet at end of century for simplicity sake.

- Delta Levee Failure. The Delta is over 738,000 acres in size and interlaced with hundreds of miles of waterways. Much of the land within the Delta is below sea level and relies upon over 1,100 miles of fragile levees for flood protection. Failure of the levee system could result in large tracts of land being flooded causing the flow dynamics within the delta to be temporarily changed, which could create the potential for seawater intrusion into the delta, as well as other water quality issues.

- Operational restrictions arising from the United States Fish and Wildlife Service (FWS) and National Marine Fishery Service (NMFS) Biological Opinions (BOs). These BOs can potentially reduce the timing and over all water exports from the Delta. In DWR reliability study, they assumed that the same restriction for fish protection would remain constant for the 20 year period.

Other important assumptions made in the DWR reliability report include (1) no infrastructure changes would occur and (2) drought and weather patterns would continue to be the same. CCWA staff utilized the reliability data developed by DWR for Santa Barbara and San Luis Obispo Counties. Following DWR's estimation protocol, the long term average reliability of the SWP operation was estimated. As indicated in Chapter 3, CCWA's mission is to serve as a source of water supply to its project participants and plans to deliver the amount of water available from the SWP. The project participants will manage this volume of water as their individual systems needs dictate. The long term water deliveries from 2010 to 2035 are presented in 5 year intervals in Table 4-3.

Table 4-3: Long Term Average Water Delivery Estimate

Long Term Average, Acre-Feet per Year									
Participant	Table A	Buffer	Total Table A	2010	2015	2020	2025	2030	2035
Buellton	578	58	636	402	398	394	390	386	382
Carpinteria	2,000	200	2,200	1,389	1,376	1,362	1,348	1,335	1,321
Golden State Water Co	500	50	550	347	344	341	337	334	330
Goleta	4,500	2,950	7,450	4,705	4,659	4,612	4,566	4,520	4,473
Guadalupe	550	55	605	382	378	375	371	367	363
La Cumbre	1,000	100	1,100	695	688	681	674	667	661
Montecito	3,000	300	3,300	2,084	2,064	2,043	2,023	2,002	1,982
Morehart	200	20	220	139	138	136	135	133	132
Raytheon	50	5	55	35	34	34	34	33	33
Santa Barbara	3,000	300	3,300	2,084	2,064	2,043	2,023	2,002	1,982
Santa Maria	16,200	1,620	17,820	11,254	11,143	11,032	10,922	10,811	10,700
Santa Ynez ID1	500	200	700	1,389	1,376	1,362	1,348	1,335	1,321
Vandenberg	5,500	550	6,050	3,821	3,783	3,746	3,708	3,670	3,633

4.4 CCWA Participant Water Sources

CCWA was formed for the sole purpose of designing, constructing and operating the facilities needed to bring SWP water to the agencies that contracted to receive that water. Since the SWP is considered an interruptible supply, CCWA participants have other sources of water supply.[19, 20, 27] The following is a brief summary of the portfolio of water supplies maintained by the CCWA project participants in Santa Barbara County:

4.4.1 City of Buellton

The City of Buellton's service area is approximately 1,025 acres and potable water is provided to residential, commercial and industrial customers. There are no agricultural irrigated lands within city limits. Currently, the City of Buellton relies upon two sources of water for domestic supply and they are as follows:

- **State Water Project:** The City of Buellton has a SWP allotment of 578 AF per year with an additional 57.8 AF per year drought buffer.

- **Groundwater**. The City of Buellton has four active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Buellton Uplands Groundwater Basin and the Santa Ynez River Riparian Basin.

4.4.2 Carpinteria Valley Water District

The Carpinteria Valley Water District's service area is approximately 11,300 acres. Domestic water service is provided to a population of about 18,500 and

approximately 3,883 acres of irrigated crops, ranging from lemons and avocados to various nursery products. Currently, Carpinteria Valley Water District relies on three sources of supply to meet water demand in its service area and they are as follows:

- **Cachuma Project:** Carpinteria Valley Water District is one of five water purveyors that have a Water Supply Agreement with the Santa Barbara County Water Agency for use of the Lake Cachuma as a source of water supply. The Water Agency, in turn, has the Master Water Supply Contract with the USBR. Carpinteria Valley Water District's Project Water Allocation for the Cachuma Project is 10.94%. The annual yield of the Cachuma Project has been determined to be 25,714 AF, which translates to roughly 2,813 AF per year for the Carpinteria Valley Water District. However, Carpinteria Valley Water District also receives as much as 400 AF per year from exchanges with other member units.

- **State Water Project:** Carpinteria Valley Water District has an SWP allotment of 2,000 AF per year with an additional 200 AF per year drought buffer.

- **Groundwater**. Carpinteria Valley Water District has three active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Carpinteria Groundwater Basin. This basin has not been adjudicated, but is managed pursuant to an AB 3030 Groundwater Basin Management Plan.

4.4.3 Goleta Water District

The Goleta Water District provides water to approximately 85,000 customers in Goleta and parts of Santa Barbara. The Goleta Water District spans 29,000 acres and extends from the Santa Barbara County South Coast area west to Santa Barbara's city limits at El Capitan. It is bound on the south by the ocean and on the north by the foothills of the Santa Ynez Mountains.

Currently, the Goleta Water District relies on four sources of supply to meet water demand in its service area and they are as follows:

- **Cachuma Project:** Goleta Water District is one of five water purveyors that have a Water Supply Agreement with the Santa Barbara County Water Agency for use of Lake Cachuma as a source of water supply. The Water Agency, in turn, has the Master Water Supply Contract with the USBR. Goleta's Project Water Allocation for the Cachuma Project is 36.25%. The annual yield of the Cachuma Project has been determined to be 25,714 AF, which translates to roughly 9,321 AF per year for the Goleta Water District.

- **State Water Project:** Goleta Water District has a SWP allotment of 4,500 AF per year with an additional 450 AF per year drought buffer. In addition, Goleta Water District has contract for 2,500 AF of special drought buffer.

- **Groundwater.** Goleta Water District has six active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Goleta Valley Groundwater Basin. The North-Central portion of this Basin was adjudicated via the "Wright Judgment" (Martha H. Wright et al. v. Goleta Water District et al., 1989, Amended Judgment, Superior Court of Santa Barbara County Case No. SM57969). To proactively manage the Goleta Groundwater Basin, Goleta Water District customers enacted the voter-approved SAFE Water Supplies Ordinance in 1991 (amended 1994) to ensure the Basin is effectively managed. An additional measure implemented by Goleta Water District, in coordination with the La Cumbre Mutual Water Company, includes the preparation of the Goleta Groundwater Basin Groundwater Management Plan. This plan addresses groundwater issues, adopts Basin Management Objectives, and outlines management strategies for the basin.

- **Recycled Water**. Goleta Water District receives tertiary disinfected recycled water from the Goleta Sanitation District for distribution within its service area. Goleta Sanitation District has a permitted capacity to produce tertiary disinfected recycled water at a rate of 3.0 MGD.

4.4.4 La Cumbre Mutual Water Company

The La Cumbre Mutual Water Company was formed in 1925 to serve water to land owners in Hope Ranch and the area between Hollister Avenue and Hope Ranch, totaling approximately 2,000 acres. The La Cumbre Mutual Water Company provides water to its shareholders on a non-profit mutual-benefit basis. Every landowner within the service area is an owner of this company. The ownership is attached to the land and the amount of ownership is proportional to acreage.

Currently, the La Cumbre Mutual Water Company relies on two sources of supply to meet water demand in its service area and they are as follows:

- **State Water Project:** The La Cumbre Mutual Water Company has a SWP allotment of 1,000 AF per year with an additional 10 AF per year drought buffer. SWP water is treated at the PPWTP in northern San Luis Obispo County and is conveyed to the Santa Ynez Valley Pumping Plant where the water is de-chlorinated before it is pump to Lake Cachuma. The water is then subsequently delivered from Lake Cachuma to the Cater Surface Water Treatment Plant, operated by the City of Santa Barbara, for treatment. La Cumbre Mutual Water Company then receives water from the City of Santa Barbara.

- **Groundwater**. The La Cumbre Mutual Water Company has four active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Goleta Valley Groundwater Basin. This basin has not been adjudicated, but is managed pursuant to an AB 3030 Groundwater Basin Management Plan.

4.4.5 Montecito Water District

The Montecito Water District encompasses an area of 9,888 acres, of which approximately 6,883 acres are developed (about 98% as residential and 2% as commercial) and approximately 849 acres are currently used for agriculture. Currently, the Montecito Water District relies on three sources of supply to meet water demand in its service area and they are as follows:

- **Cachuma Project:** Montecito Water District is one of five water purveyors that have a Water Supply Agreement with the Santa Barbara County Water Agency for use of Lake Cachuma as a source of water supply. The Water Agency, in turn, has the Master Water Supply Contract with the USBR. Montecito's Project Water Allocation for the Cachuma Project is 10.31%. The annual yield of the Cachuma Project has been determined to be 25,714 AF, which translates to roughly 2,651 AF per year for the Montecito Water District.

- **Jameson Lake, Fox and Alder Creeks**: The Montecito Water District receives approximately 20% to 45% of its supply from these sources.

- **State Water Project:** The Montecito Water District has a SWP allotment of 3,000 AF per year with an additional 300 AF per year drought buffer.

- **Groundwater**. The Montecito Water District has four active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Montecito Basin. This basin has not been adjudicated, but efforts are underway to manage it through an AB 3030 Groundwater Basin Management Plan.

4.4.6 Morehart Land Company

Morehart Land Company is a privately held California corporation owned by the Morehart family. Its primary business is real estate investment and ranching. In 1977, the Morehart Land Company acquired the majority of lots within the Townsite of Naples, which is located along the ocean, 12 miles north of Santa Barbara, California. The Townsite of Naples consists of 415 largely undeveloped lots which have a combined area of approximately 605 acres. Lot sizes range from 5,036 square feet to 3.7 acres. Six blocks have been developed and contain 23 homes, the last two of which were built in the mid-1980s.

The Morehart Land Company has developed water rights, groundwater wells and a water treatment plant and storage facility to serve the townsite and possibly nearby properties. Negotiations are underway with Goleta Water District to obtain a water transfer agreement by which Goleta Water District will transfer the Morehart Land Company's State water allotment through its existing facilities to the Company's distribution connection. Currently, the Morehart Land Company has 200 AF in SWP water, with an additional 20 AF of drought buffer

4.4.7 City of Santa Barbara

The City of Santa Barbara encompasses 21 square miles and currently provides water to approximately 82,000 municipal and industrial customers. The City of Santa Barbara relies on seven sources of supply to meet water demand in its service area and they are as follows:

- **Gibraltar Reservoir:** This reservoir is owned by the City of Santa Barbara and is located on the Santa Ynez River. The current reservoir capacity is 7,264 AF, with an annual yield of approximately 4,600 AF per year. Water from this reservoir is delivered through the Santa Ynez Mountains to Santa Barbara via Mission Tunnel.

- **Devil's Canyon Creek:** The City of Santa Barbara maintains a small diversion works on Devil's Canyon Creek below Gibraltar Dam which diverts water from Devil's Canyon Creek into Mission Tunnel. The range of annual yield is 24 to 557 AF per year, with an average of 115 AF per year.

- **Cachuma Project:** The City of Santa Barbara is one of five water purveyors that have a Water Supply Agreement with the Santa Barbara County Water Agency for use of Lake Cachuma as a source of water supply. The Water Agency, in turn, has the Master Water Supply Contract with the USBR. Montecito's Project Water Allocation for the Cachuma Project is 32.19%. The annual yield of the Cachuma Project has been determined to be 25,714 AF, which translates to roughly 8,277 AF per year for the City of Santa Barbara.

- **Mission Tunnel**: This structure is a 3.7 mile tunnel through the Santa Ynez Mountains running from the North Portal, located approximately 1,700 feet downstream of Gibraltar Dam to the South Portal, located on Mission Creek approximately 3 miles north of downtown Santa Barbara. Annual Infiltration for the period 1976 through 2000 ranged from 520 AFY to 2,172 AFY, with an average of 1,348 AFY.

- **Groundwater:** The City of Santa Barbara has five active groundwater production wells that are permitted by the California DPH. Groundwater is produced from three groundwater basins: Storage Unit 1 (located in the vicinity of downtown), the Foothill Basin (located in the upper State Street area), and Storage Unit 3 (located generally in the Westside area).

- **State Water Project:** The City of Santa Barbara has a SWP allotment of 3,000 AF per year with an additional 300 AF per year drought buffer.

- **Desalination:** The City of Santa Barbara constructed a reverse osmosis seawater desalination facility as an emergency water supply during the drought of 1990. The facility has since been incorporated into the City of Santa Barbara's long-term supply plan as a way of reducing shortages due to depleted surface supplies during drought. Two neighboring water purveyors participated in the temporary project, but have since dropped out of the project. A portion of the reverse osmosis filtration capacity was subsequently sold, leaving a current capacity of 3,125 AF.

4.4.8 Raytheon

The Raytheon Company employs approximately 1,450 people at its primary facility, which is located in Goleta, and approximately 150 people at its branch facility, which is located in Santa Maria. It owns approximately 9.4 acres of land in Goleta and owns or rents 14 buildings with a total of approximately 640,000 square feet of space in Goleta and owns approximately 75 acres of land and one building of approximately 121,000 square feet of space in Santa Maria.

Raytheon has contracted for 50 AF of water from the State Water Project. This water will be used primarily as a supplemental supply for system reliability.

4.4.9 City of Santa Maria

The City of Santa Maria encompasses an area of approximately 14,361 acres (22.44 square miles). The City of Santa Maria lies along the Santa Maria River and within the Santa Maria Valley. The City expects that the undeveloped land within its boundaries will continue to be developed and that the City's estimated population at build out, in the year 2030, will be approximately 115,000 persons. Currently, the City of Santa Maria relies upon two sources of water for domestic supply and they are as follows:

- **State Water Project:** The City of Santa Maria has a SWP allotment of 16,200 AF per year with an additional 1,620 AF per year of drought buffer.

- **Groundwater**. The City of Santa Maria has eight active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Santa Maria Groundwater Basin. This Basin is adjudicated and part of the settlement, the City participates in the management and operation of the Twitchell reservoir, which is operated for the purposes of groundwater recharge within the Santa Maria Basin.

4.4.10 Santa Ynez River Water Conservation District, Improvement District #1.

Located in the central portion of Santa Barbara County, SYRWCDID#1 serves the communities of Santa Ynez, Los Olivos, Ballard and the City of Solvang. It covers about 10,850 acres. Currently, SYRWCDID#1 relies on four sources of supply to meet water demand in its service area and they are as follows:

- **Cachuma Project:** SYRWCDID#1 is one of five water purveyors that have a Water Supply Agreement with the Santa Barbara County Water Agency for use of the Lake Cachuma as a source of water supply. The Water Agency, in turn, has the Master Water Supply Contract with the USBR. SYRWCDID#1's Project Water Allocation for the Cachuma Project is 10.31%. The annual yield of the Cachuma Project has been determined to be 25,714 AF, which translates to roughly 2,651 AF per year for the SYRWCDID#1. However SYRWCDID#1 has entered into an Exchange Agreement with the other four Cachuma Project Participants where SYRWCDID#1 receives SWP water rather than Cachuma water on a one-for-one basis. For additional details on the Exchange Agreement, see Section 3.1.4.

- **State Water Project:** SYRWCDID#1 has a SWP allotment of 2,000 AF per year with an additional 200 AF per year drought buffer.

- **Groundwater**. SYRWCDID#1 has fifteen active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Santa Ynez Uplands Groundwater Basin and the Santa Ynez River Alluvium.

4.4.11 Golden State Water Company

The Golden State Water Company is regulated by the California Public Utility Commission and is a private investor owned utility company. The Golden State Water Company has grouped five individual water systems within the Santa Maria Valley into one Customer Service Area. The five systems are known as (1) Orcutt, (2) Tanglewood, (3) Lake Marie, (4) Sisquoc and (5) Nipomo. All five systems share common management and the same operations crew. All water rates are based on the Golden State Water Company's investments and pass-through costs for these five water systems as a group.

In terms of supplying SWP water to the Golden State Water Company, there is one turnout on the CCWA system that provides water to the Tanglewood System. Golden State Water Company also obtains access to SWP deliveries for its Orcutt System through wheeling SWP through the City of Santa Maria turnout and

accepting water from the City of Santa Maria through one of three system interconnections. The sources of water supply for the Tanglewood and Orcutt System are as follows:

- **State Water Project:** The Golden State Water Company has a SWP allotment of 500 AF per year with an additional 50 AF per year of drought buffer.

- **Groundwater**. The Golden State Water Company has two active groundwater production wells in its Tanglewood System and fifteen active production wells in its Orcutt System that are permitted by the California DPH. These groundwater wells draw water from the Santa Maria Groundwater Basin. This Basin is adjudicated and part of the settlement, the Company participates in the management and operation of the Twitchell reservoir, which is operated for the purposes of groundwater recharge within the Santa Maria Basin.

4.4.12 Vandenberg Air Force Base.

Vandenberg Air Force Base consists of 86,000 acres of open lands in the Lompoc-Guadalupe-Santa Maria triangle. Today, the base is operated by Air Force Space Command's 30th Space Wing. Population is approximately 12,500 and 15,000 people. Currently, Vandenberg Air Force Base relies on two sources of supply to meet water demand in its service area and they are as follows:

- **State Water Project:** Vandenberg Air Force Base has a SWP allotment of 5,500 AF per year with an additional 550 AF per year of drought buffer.

- **Groundwater**. Vandenberg Air Force Base has four active groundwater production wells that are permitted by the California DPH. These groundwater wells draw water from the Lompoc Groundwater Basin.

4.5 Transfer Opportunities

CCWA can increase water supply reliability by participating in voluntary water transfer programs. Since the California drought of 1987-1992, the concept of water transfers has evolved into a viable supplemental source to improve supply reliability. The initial concept for water transfers was codified into law in 1986 when the California Legislature adopted the “Katz” Law (California Water Code, Sections 1810-1814)[28] and the Costa-Isenberg Water Transfer Law of 1986 (California Water Code, Sections 470, 475, 480-483)[29]. These laws help define parameters for water transfers and set up a variety of approaches through which water or water rights can be transferred among individuals or agencies.

Up to 27 million AF of water are delivered for agricultural use every year. Over half of this water is used in the Central Valley, and much of it is delivered by, or adjacent to,

SWP and CVP conveyance facilities. This proximity to existing water conveyance facilities provides a mechanism for the voluntary transfer of water to many urban areas, including CCWA, via the SWP. Such water transfers can involve water sales, conjunctive use and groundwater substitution, and water sharing, and usually occur as a form of spot, option, or core transfers agreements (see descriptions below). The cost of a water transfer varies depending on the type, term, timing and location of the transfer.

One of the most important aspects of any resource planning process is flexibility. A flexible strategy minimizes unnecessary or redundant investments (or stranded costs). The voluntary purchase or exchange of water between willing participants can be an effective means of achieving flexibility. However, not all water transfers or exchanges have the same effectiveness in meeting resource needs.

4.5.1 Categories of Water Transfers

Through the resource planning process and ultimate implementation, several different types of water transfers and exchanges could be undertaken:

- **Permanent Transfers** - Agreements to purchase a defined quantity or Table A amount of water every year. These transfers have the benefit of more certainty in costs and supply, but in some years can be surplus to imported water (available in most years) that is already paid for.

- **Spot Market Transfers -** Water that is purchased only during the time of need (such as during a drought). Payments for these transfers occur only when water is actually requested and delivered, but there is usually greater uncertainty in terms of costs and availability of supply. An additional risk of spot market transfers is that the purchases may be subject to institutional limits or restricted access (e.g., requiring the purchasing agency to institute rationing before it is eligible to participate in the program). A recent example of this kind of transfer is DWR implementing the Drought Water Bank (DWB) in response to a third year of drought. The DWB provided 74,100 AF of water for through Delta transfers for use in the San Joaquin Valley and Southern California. In addition to the water provided by the DWB, another 200,185 AF of water was transferred through the Delta through separate transfer agreements.

- **Option Contracts -** Agreements that specify the amount of water needed and the frequency or probability that the supply will be called upon (an option). Typically, a relatively low up-front option payment is required and, if the option is actually called upon, a subsequent payment would be made for the amount called. These transfers have the best characteristics of both core and spot transfers. With option contracts, the potential for redundant supply is minimized, as are the risks associated with cost and supply availability.

- **Exchanges** – Exchanges occur when participants have different delivery requirements during certain portions of the year or during various year types (wet, normal, dry, etc.). Exchangers offer water to other participants in exchange for water at a later time. Exchanges can take place over single or several years and can be even (one af for one af) or un even (one af during a dry year for two af during a wet year).

4.5.2 Examples of Recent CCWA Water Transfers

CCWA has participated in a number of water transfers and exchanges since the 2005 UWMP. The programs are identified and presented to the CCWA Project Participants as conditions merit. Examples of the programs implemented since 2005 are as follows:

- **San Luis Obispo County Dry Year Program**.[30] The SLOFCWCD has a SWP Water Supply Agreement with a Table A amount of 25,000 AF. However, the conveyance capacity available to SLOFCWCD in the Phase II Coastal Branch is limited to 4,830 AFY. Consequently, SLOFCWCD will have water available for transfer in years with DWR annual allocation above 19.3%. CCWA entered into a two year dry year program with SLOFCWCD for 2008 and 2009.

- **DWR 2009 Dry Year Purchase Program.**[31] In 2009, DWR established a Dry Year Purchase Program whereby they coordinated water transfers from primarily agricultural users within the Sacramento Valley to urban water users in the Bay Area and central and southern California. Categories of water types made available from agriculture were (1) Reservoir releases above normal operations, (2) Groundwater substitution, where groundwater was utilized instead of surface water, (3) Cropland idling specifically for water transfer purposes and (4) Crop substitution where less water intensive crops are grown specifically for the water transfer. CCWA participated in this program.

4.6 Groundwater Banking Opportunities

Conjunctive use is a well established water management method of using multiple water supply sources to achieve improved supply reliability. Most conjunctive use concepts are based on storing water within groundwater basins during times of water surplus. During dry periods and drought the water could be recovered from the groundwater basins for use as supply at a time when surface water supplies would likely be limited. With recent developments in conjunctive use and groundwater banking, significant opportunities exist to improve water supply reliability for CCWA.

Groundwater banking programs involve storing available surface water supplies during wet years in groundwater basins in either locally or in locations convenient to water transportation facilities. Water is typically stored either directly by surface spreading or

injection, or indirectly by supplying surface water to farmers for their use in lieu of their intended groundwater pumping. During water shortages, the stored water could be pumped out and conveyed through the California Aqueduct. There are several conjunctive use and groundwater banking opportunities throughout the State that are available to CCWA.

4.7 Desalinated Water Opportunities

Desalination represents a significant potential opportunity to increase the available water supplies in California. One publication by the Pacific Institute,[32] a private independent non-profit organization focused on sustainable development, environmental protection and international security, suggests if all currently proposed desalination projects are built, these facilities could provide up to 6% of the urban demand for water supplies, as reported in 2000.

There has been several guidance documents prepared for the development of desalination facilities. In March 2004, the California Coastal Commission released the "Seawater Desalination and the California Coastal Act."[33] This paper identified the issues of concern to the California Coastal Commission. The Coastal Commission published the document since all seawater desalination projects will require approval from this agency. The main permitting issues that were identified in the report included population growth inducement and impact to marine organisms.

In other guidance documents for desalination projects, DWR published a report entitled "California Desalination Planning Handbook"[34] in February 2008. This book addressed a wide variety of planning issues, from likely permitting requirements to guiding principles for developing environmentally and economically acceptable projects. In addition, in 2009, DWR also published logistical guidance[35] for deploying mobile desalination units in the event of severe drought or water supply emergencies. Although this report provides good information on the types of mobile desalination units that are available and vender information, the permitting of mobile desalination units was not addressed in a comprehensive manner.

Although desalination may represent a potential source of additional water supply, at this time, the CCWA Board of Directors does not consider desalination to be a cost effective method of increasing the reliability of imported water. This conclusion is supported by two recent studies on the central coast addressing desalination as a potential source of water supply. However, although desalination is considered cost prohibitive, there are desalination operations on the central coast. The referenced desalination studies and desalination operations are presented below:

4.7.1 City of Santa Barbara Desalination

The City constructed a reverse osmosis seawater desalination facility as an emergency water supply during the drought of 1990. The facility has since been incorporated into the City's long-term supply plan as a way of reducing shortages due to depleted surface supplies during drought. Two neighboring water purveyors participated in the temporary project, but have since dropped out of the project. A portion of the reverse osmosis filtration capacity was subsequently sold, leaving a current capacity of 3,125 AF. In 1995, the plant was dedicated as the Charles Meyer Desalination Facility in honor of Commissioner Meyer's long and dedicated service on the City Water Commission.[36]

4.7.2 City of Morro Bay Desalination

The City of Morro Bay's desalination plant is only operating desalination facility in San Luis Obispo County. In the past, the City of Morro Bay has used the salt water reverse osmosis (SWRO) treatment plant to treat water from saltwater wells and to remove nitrates from fresh water wells. However, recently the City of Morro Bay completed the installation of two 450 gallons per minute (gpm) brackish water reverse osmosis (BWRO) treatment trains. The addition of these treatment processes will enable the Morro Bay to treat both fresh water and salt water wells simultaneously, and will also reduce the energy usage of the facility as well. The SWRO trains are designed to produce approximately 645 AFY of potable water from sea water. The BWRO system is capable of treating the entire 581 AF of the City is permitted to extract from the Morro Groundwater Basin.[10]

4.7.3 Northern Cities Desalination Evaluation

The City of Arroyo Grande, the City of Grover Beach, and the Oceano Community Services District, known as the Northern Cities, participated in the evaluation of a desalination project[37] to supplement their existing potable water sources. Currently, all three agencies receive water from various sources, including the California SWP, Lopez Lake Reservoir, and groundwater from the Arroyo Grande Plain Hydrologic Subarea that is part of the Santa Maria Valley Groundwater Basin.

Recent projections of water supply shortfalls in the region motivated the agencies to conduct a more detailed study of desalination as a supplemental water supply. The study focused on utilizing the existing South San Luis Obispo County Sanitation District's (SSLOCSD) wastewater treatment plant to take advantage of utilizing the existing ocean outfall, while having the plant located near seawater. The feasibility study, completed in 2008, was based on a 2,300 AFY seawater desalination facility. Some of the major points of interest and concern of this study include:

- Twenty or more beach wells may be needed to provide enough seawater to produce the required 2,300 AFY potable water.

- Permitting and environmental issues could be complex, and implementation could take eight years or longer.

Initial capital cost was estimated to be in the range of $35 million, and customer rates could be increased by 18 percent to over 100 percent to fund the project, and would cost in the neighborhood of $2,300 per AF or more, on a 20-year life cycle basis.

4.7.4 Nipomo Community Service District Desalination Evaluation

The Nipomo Community Service District (NCSD) conducted a series of studies to identify alternative sources of water supply in 2007.[38] This agency sole source of water supply is from groundwater wells. Due to groundwater levels falling to levels below sea-level, the NCSD moved forward with the evaluation for a 6,300 AFY desalination facility. The conclusion of the study indicated:

- On a net worth basis, a desalination project would cost approximately $79,000,000, not including contingencies or cost escalation. If cost escalation is considered, then the project will cost approximately $98,210,000.

- Additional costs will be required for modification of the distribution system to accommodate the new source of supply.

- The consultant noted the fact that two large desalination projects (Monterey Bay and Dana Point Facilitates) have required significant time, effort and expense, but have not received all of the required permits to operate the full scale systems.

- The consultant noted the proximity of the Northern Cities Desalination Project and indicated that its close proximity could potential hamper permitting efforts for the Nipomo System.

4.7.5 Laguna County Sanitation District Desalination

Although this desalination facility is for wastewater, it is noteworthy project due to the innovative approach taken by the Laguna County Sanitation District (LCSD) in managing the waste brine disposal issue within the Santa Maria Valley.[39] The LCSD disposes of the concentrated brine waste stream from a reverse osmosis treatment process at the wastewater treatment plant via a Class I non hazardous injection well operating in close proximity to the plant. The well is permitted by EPA

under a Underground Injection Control (UIC) permit. The injection well was converted from a former oil well in 2002.

The LCSD injection well facility is located approximately four miles northwest of the LCSD wastewater treatment plant. The injection fluid is piped via a four inch pipeline from the treatment plant to the injection well. The injection fluid is generated by reverse osmosis units at the treatment plant that treat treated wastewater effluent that is high in salt content. The brine concentrate generated by the reverse osmosis units is conveyed to the injection well for disposal. In addition to the brine from the reverse osmosis units, LCSD has a brine unloading station to accept concentrated brine from local water softening companies. The local water softening companies are specifically listed in the draft permit.

The daily flow to the injection well has averaged 110,000 gallons per day between 2002 and 2009. The well is permitted to inject at 1,000 psi, however the surface injection pressure is 0 psi (due to gravity flow). The brine is injected into the Monterey Formation at a depth of approximately 4,800 feet to 5,336 feet below ground surface.

4.8 Recycled Water Opportunities

The advantage of encouraging the use of recycled water is that it decreases the demand for potable water supply. Every gallon of recycled water used instead of potable water decreases the demand for potable water by the same amount. Although this is an important tool in managing and optimizing water supplies, CCWA does not provide water directly to the end user. The infrastructure operated and maintained by CCWA is solely designed for delivery of potable water to its participants. Consequently, direct participation in recycled water opportunities is not possible for CCWA.

To evaluate the potential of recycled water opportunities within Santa Barbara County, as a whole, the California Integrated Water Quality Database System[40] was accessed. This database is a web-based relational database for regulatory data and is maintained by the State Water Resources Control Board (SWRCB). A query was made utilizing the "Regulated Facilities" report form. The query requested a report for all facilities that are (1) in Santa Barbara County, (2) in the Water Reclamation Program, and (3) active wastewater treatment plants. The database produced a report listing 14 facilities meeting these criteria.

The permits for each of the listed facilities were reviewed to determine the level of treatment provided, permitted capacity and if the facility provide recycled water for use. The results of the review are presented in Table 4-4

Table 4-4: Summary of Santa Barbara County Wastewater Treatment Plants[41]

Facility Name	Agency / Discharger	City	Permitted Capacity, MGD	Permitted Secondary, MGD	Permitted Tertiary, MGD	Current Disposal Method
BUELLTON WWTP	Buellton City	Buellton	1.3	1.3	0	Percolation Ponds
CARPINTERIA SD WWTP	CARPINTERIA SD	Carpinteria	2.5	2.5	0	Ocean Outfall
CATE SCHOOL WWTP	CATE SCHOOL CORP	Carpinteria	0.025	-	0.025	Onsite Irrigation Use
EL ESTERO WWTP NPDES	SANTA BARBARA CITY PWD	Santa Barbara	11.0 for WWTP 12.5 for Desal Brine	11	4.3 for Recycle Water System	Ocean Outfall and Provide Recycle Water
GOLETA SD WWTP	GOLETA SD	Goleta	9.7	4.38	3.0 for Recycle Water System	Ocean Outfall and Provide Recyle Water
GUADALUPE WWTP	GUADALUPE, CITY OF	Guadalupe	0.96	0.96	0	Spray Field Irrigation
LAGUNA COUNTY SD	LAGUNA SANITATION	Santa Maria	3.7	-	3.7	Spray Field Irrigation/Approved Users/Brine Injection Well
LOMPOC REGIONAL WWTP	Lompoc City	Lompoc	5	5	0	Discharge to Miguelito Creek
LOS ALAMOS WWTP	LOS ALAMOS CSD	Los Alamos	0.4	0.4	0	Percolation Pond/Spray Field Irrigation
MISSION HILLS LA PURISIMA WWTP	MISSION HILLS CSD	Lompoc	0.57	0.57	0	Percolation Ponds
MONTECITO WWTP	MONTECITO SD	Santa Barbara	1.5	1.5	0	Ocean Outfall
SANTA MARIA WWTP	Santa Maria City	Santa Maria	13.5	13.5	0	Percolation Ponds
Solvang WWTP	Solvang City	Solvang	1.5	1.5	0	Percolation Ponds
SUMMERLAND WWTP	SUMMERLAND SD	Summerland	0.3	-	0.3	Ocean Outfall

The total permitted capacity of the wastewater plants listed above is approximately 52 million gallons per day (MGD). The permitted capacity of tertiary treatment is 11.3 MGD. The most active programs for providing recycled water with tertiary treatment are as follows:

- City of Santa Barbara. The City of Santa Barbara initiated planning for a water reclamation project in the early 1980's. Phase I of the recycled water system was completed in 1989. It included addition of tertiary treatment with carbon filtration and disinfection at the El Estero Wastewater Treatment Plant (4.3 MGD permitted capacity), a 600,000 gallon distribution reservoir and pumping station, and 5.1 miles of distribution main. Phase II of the recycled water system was completed in 1992, adding an additional pumping station, a 1.5 million gallon reservoir and 8.3 miles of distribution main. The system now provides recycled water to 432 acres of landscaped area at 40 sites, such as parks, schools, golf courses, and other large landscaped areas.[35]

- Goleta Water District. In 1995, the Goleta Water District began making deliveries of recycled water that was produced by the Goleta Sanitary District, a separate public agency. The Goleta Sanitary District has a permitted capacity of 3.0 MGD for tertiary treated wastewater. The Goleta Water District currently delivers recycled water to UCSB, several golf courses, and other irrigation users, most of whom were previously using District potable water for irrigation.[42]

4.9 Future Water Projects

CCWA project participants as a whole are forward thinking and sophisticated water mangers. A wide variety of potential projects are under evaluation, as follows:

4.9.1 SWP Additional Supply Project

An ongoing planning effort to increase long-term supply reliability for both the SWP and CVP is taking place through the Bay Delta Conservation Plan (BDCP). The co-equal goals of the BDCP are to improve water supply and restore habitat in the Delta. The BDCP is being prepared through a collaboration of state, federal, and local water agencies, state and federal fish agencies, environmental organizations, and other interested parties. Several "isolated conveyance system" alternatives are being considered in the plan which would divert water from the North Delta to the South Delta where water is pumped into the south-of-Delta stretches of the SWP and CVP. The new conveyance facilities would allow for greater flexibility in balancing the needs of the estuary with reliable water supplies. In December 2010, DWR released a "Highlights of the BDCP" document which summarizes the activities and expected outcomes of the BDCP. The results of preliminary analysis included in the document indicate the proposed conveyance facilities may increase the combined average long-term water supply to the SWP and CVP from 4.7 million acre-feet (MAF) per year to 5.9 MAF/year. This would represent an increase in reliability for SWP contractors from 60% to 75%. Planned completion of the BDCP and corresponding environmental analysis is early-2013.

4.9.2 Suspended Table A Reacquisition

SBCFCWCD executed a Water Supply Contract with the DWR to fund the construction of water conservation and conveyance facilities for the SWP in 1963. The State subsequently moved forward with the construction of these facilities, which included Phase I of the Coastal Branch conveyance facilities. The Coastal Branch facilities were designed to handle the 57,700 AF requested by SBFCWCD. Construction of Phase II of the Coastal Branch was not immediately constructed and was delayed indefinitely by SBFCWCD, as allowed by the State Contract.

In 1979 a bond measure was placed before Santa Barbara County voters to secure funds to construct Phase II of the Coastal Branch. However, the bond measure was soundly defeated. Consequently, SBFCWCD considered ceasing payments to DWR for the SWP facilities. In response, several water purveyors urged SBFCWCD to retain the SWP entitlements. By the mid-1980's, the water purveyors and SBFCWCD entered into WSRA where the water purveyors agreed to pay for their share of the SWP. Through the WSRAs, 45,486 AF of SWP water were preserved. As a result, the remaining 12,214 AF was suspended by DWR and no additional payments have been made by SBFCWCD since 1982. The 12,214 AF of SWP water supply entitlement is known as "Suspended Table A Water" and the SBFCWCD has the option of reacquiring this entitlement through payment of past costs plus interest. The possible future project is to reacquire the Suspended Table A Water.

Since Phase II of the Coastal Branch was designed to convey 42,985 AF, the reacquisition of the Suspended Table A Water will be a measure to increase the reliability of SWP deliveries to Santa Barbara County. The original contract with DWR states that it will use its best efforts to deliver all or a portion of the contracted amount to each of the twenty-nine State Water Contractors. Each year DWR determines the percent allocation of the Table A amount that will be delivered based upon a number of variables. The allocation is determined through consideration of both hydrologic and regulatory constraints, as well as reservoir storage, accretions, transportation losses, etc. In the twelve years that CCWA has been in operation, we have received a 100% allocation in four years and a 90% allocation in three others. However, we have also received allocations as low as 35%. Through reacquiring the suspended water, CCWA Participant's allocation will be based on a larger contract amount. By having a larger amount, CCWA participants will enhance the reliability of their SWP water supply in two important ways:

- During high allocation years, participants will be able to utilize a number of available water banking opportunities which increases the reliability of supply during low allocation years.

- During low allocation years, participants will be able to receive volumes of water more consistent with their contract amounts. The volume of delivered water will be larger because (1) the allocation percentage will be applied to a larger contract amount and (2) water stored in water banks as a result of higher contract allocation amount during wetter years can also be used to augment imported supplies.

4.9.3 SLOFCWCD and CCWA Conveyance for Supply Exchange

SLOFCWCD executed a Water Supply Agreement with the DWR in 1963 for a Table A amount of 25,000 AF. This Agreement was to fund the construction of water conservation and conveyance facilities for the SWP. DWR moved forward with the construction of these facilities, which included Phase I of the Coastal Branch conveyance facilities. The Coastal Branch facilities were designed to handle the 25,000 acre-feet requested by SLOFCWCD. Construction of Phase II of the Coastal Branch was not immediately constructed and was delayed indefinitely by SLOFCWCD, as allowed by the SWP Water Supply Agreement.

When the design for the Phase II Coastal Branch was initiated, SLOFCWCD ultimately decided not to fund construction of conveyance facilities for the full 25,000 AF Table A amount. Rather, SLOFCWCD entered into the Master Water Treatment Agreement with CCWA. This agreement specified that the treatment plant and the pipeline would provide SLOFCWCD with 4,830 AFY of treatment and conveyance capacity. This measure provided a very high level of reliability for the SLOFCWCD subcontractors, as the annual DWR allocation would need to fall to

less than 19.3% to impact delivery requests to the San Luis Obispo water purveyors.

Currently, there is interest by the San Luis Obispo County water purveyors to secure additional treatment plant and pipeline flow capacity. CCWA project participants are also interested in potentially exchanging conveyance capacity for Table A source water. To evaluate this potential both SLOFCWCD and CCWA jointly funded a pipeline flow capacity study[43] to determine if additional flow capacity is available in the pipeline above the original design capacity. This study was completed in first quarter 2011 and indicates that additional flow capacity exists, the magnitude of which depends on the delivery points along the pipeline. This potential project will continue to be evaluated.

4.9.4 Local Groundwater Banking

San Luis Obispo County The SLOFCWCD has initiated feasibility studies[44] of potentially operating a groundwater bank in the Paso Robles Groundwater Basin. The study cited the large Table A amount in the SLOFCWCD SWP Water Supply Agreement and suggested that this water could be a key part of the groundwater bank operation. Three main recharge areas that were evaluated are:

- Shell Creek/Camatta Creek and Lower San Juan Recharge Area (Alternative #1). This area is beneath the community of Shandon.

- Creston Recharge Area (Alternative #2). This area is beneath the community of Creston.

- Salinas River/Highway 46 Area (Alternative #3). This area is beneath the City of Paso Robles.

The evaluation considered both direct recharge and agricultural in-lieu recharge operations. The two primary concepts are as follows:

- Treated Water Banking Concept: This concept included creating a new turnout from the Coastal Branch Aqueduct to deliver treated water to a banking location for recharge (through injection, spreading, or in-lieu recharge). When SWP supplies exist in excess of current demand, water would be banked. When SWP water is not available, the previously banked water would be recovered and conveyed to the Coastal Branch for delivery water users.

- Raw Water Banking Concept: This concept would require constructing a new pipeline to convey raw water from PPWTP (prior to treatment) to a banking location in the Paso Robles Groundwater Basin for recharge (through stream recharge, spreading, or in-lieu recharge). When SWP supplies exist in excess of current demand (4,830 AF per year), water would be banked. When SWP

water is not available, the previously banked water would be recovered and conveyed to the Coastal Branch for delivery water users, or, if necessary, pumped back to PPWTP for treatment using the same pipeline.

Santa Barbara County: There has been no formal feasibility study of groundwater banking for Santa Barbara County. However, the Santa Maria Valley has many characteristics that suggest a groundwater banking operation may be feasible. These characteristics include:

- The Santa Maria Valley has an active and sophisticated agricultural industry.
- The SWP pipeline passes through the center of the Santa Maria Valley.
- The Santa Maria Valley Groundwater Basin is very large.
- There are potential desalination brine disposal opportunities within the Santa Maria Valley, as evidenced by the Laguna County Sanitation District operations (See Section 4.7.5 for additional details)

5.0 WATER SUPPLY RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING

CCWA is a supplemental source of water supply to its Project Participants. It is also an interruptible supply, as specified in each of the Project Participant's Water Supply Agreements. In fact, DWR ceases water delivery operations on the SWP Coastal Branch on an annual basis for maintenance work. This maintenance shutdown is typically scheduled during the winter months and lasts from two to four weeks. During this time, all CCWA Project Participants are required to utilize their other sources of water supply to meet the water supply demand of their individual systems. It is CCWA's mission to deliver of the SWP water that is available to each project participant and to manage undelivered SWP as each project participant dictates.

The UWMP Act requires urban water suppliers to compare the total projected demand for water supply with the amount of water supply that is available over the next twenty years, in five year increments. As described in Section 3.2, the demand for water from the CCWA system is highly influenced by the management decisions of the retail water purveyors. To respond to end user demands for water supply, the retail purveyor will first select the source of supply to be utilized, and then convey it to where the water is needed. The selection of which source of supply to be used in responding to the end user demand for water involves both short term and long term considerations. Since the CCWA system is only one of the sources that are available to the CCWA Project Participants, it is difficult to predict the proportion of retail system demand that will be met by water supplied by the CCWA system in any given year.

In terms of the amount of water supply that is available over the next twenty years, DWR has provided data and estimation protocols to assist with the assessment. The estimation of available supply in future years is termed "water supply reliability". The reliability estimations that are presented in this chapter are strictly focused on the routine delivery of Table A water. Water Transfers, Surplus Water (Article 21) and Groundwater Banking are not considered. This chapter presents the reliability assessment for CCWA's source of water supply, based on individual Project Participant Table A Amount and Drought Buffer. It also presents a reliability assessment of a single dry year and multiple year droughts.

5.1 Water Supply Reliability Estimations

Each water supply source has its own reliability characteristics. In any given year, the variability in weather patterns around the state may affect the availability of water supplies. The various engineered water supply systems throughout the state can only capture what nature provides, in terms of rainfall and run-off patterns. However, there are numerous other factors that influence the availability of water that include regulatory restrictions, operational status of key pumping and storage facilities and many other factors.

As discussed in Section 4.2, each SWP contractor's Water Supply Contract contains a Table A amount that identifies the maximum amount of Table A water that contractor may request each year. However, the amount of SWP water actually allocated to contractors each year is dependent on a number of factors than can vary significantly from year to year. The primary factors affecting SWP supply availability include the availability of water at the source of supply in northern California, the ability to transport that water from the source to the primary SWP diversion point in the southern Delta and the magnitude of total contractor demand for that water. In many years, the availability of SWP supplies to CCWA and the other SWP contractors is less than their maximum Table A Amounts, and can be significantly less in very dry years.

DWR's SWP Delivery Reliability Report,[23] prepared biennially, assists SWP contractors and local planners in assessing the reliability of the SWP component of their overall supplies. In its Reliability Report, DWR presents the results of its analysis of the reliability of SWP supplies, based on model studies of SWP operations. In general, DWR model studies show the anticipated amount of SWP supply that would be available for a given SWP water demand, given an assumed set of physical facilities and operating constraints, based on 82 years of historic hydrology. The results are interpreted as the capability of the SWP to meet the assumed SWP demand, over a range of hydrologic conditions, for that assumed set of physical facilities and operating constraints.

DWR's 2009 update of the Reliability Report presents the results of model studies for years 2009 and 2029. In these model studies, DWR assumed existing SWP facilities and operating constraints for both the 2009 and 2029 studies. The primary differences between the two studies are an increase in projected SWP contractor demands, an increase in projected upstream demands (which affects SWP supplies by reducing the amount of inflows available for the SWP), and the inclusion in the 2029 study of potential impacts on historic hydrology of the effects of climate change and accompanying sea level rise. In the report, DWR presents the SWP delivery capability resulting from these studies as a percent of maximum contractor Table A amounts, which is called the reliability factor. A reliability factor is estimated for each year between 1922 and 2003, given the modeled conditions (i.e. 2009 or 2029 conditions). To estimate the supply capability in intermediate years between 2009 and 2029, DWR instructs contractors to interpolate the data between the results of those two studies.

The following sections provide an estimate of the availability of SWP supply during various hydrologic conditions.

5.1.1 Reliability Factor Estimates

DWR provided contractor specific estimates for the reliability factors for the years between 1922 and 2003, as modeled under 2009 conditions and again as modeled under 2029 conditions.[45] This data was utilized, following DWR guidance, to estimate the long term average, the single driest year, two-year drought, four-year drought and six-year drought reliability factors.

The multi-year drought reliability factors were estimated by analyzing the DWR data through determining the two-year running average, four-year running average and six-year running average for the DWR data set. The lowest running average represented the drought periods of interest (i.e. two, four and six year droughts). For the situation where the lowest running averages were different for 2009 versus 2029 modeled conditions, two separate drought year time frames were analyzed. The reliability factors for the years other than 2009 and 2029 were linearly interpolated. Tables 5-1 represent the results of these calculations:

Table 5-1: CCWA Reliability Factor Estimate – Santa Barbara County

Year	Long Term Average	Single Dry Year 1977	2-year drought 1991-1992	2-year drought 1990-1991	4-year drought 1929-1932	4-year drought 1989-1992	6-year drought 1929-1934	6-year drought 1987-1992
2010	63%	6%	26%	35%	34%	36%	34%	38%
2015	63%	7%	26%	32%	34%	35%	34%	36%
2020	62%	8%	26%	30%	35%	34%	35%	34%
2025	61%	9%	26%	27%	35%	34%	35%	33%
2030	61%	10%	26%	24%	36%	33%	36%	31%
2035	60%	11%	26%	21%	36%	32%	36%	29%

5.1.2 Long Term Average Condition

As required by DWR guidelines, the long term annual average delivery has been calculated for each CCWA Project Participant in five year increments from 2010 to 2035. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Table 5-2 present the results of these calculations:

Table 5-2: Long Term Average Delivery Estimate

Long Term Average, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	402	398	394	390	386	382
Carpinteria	2,000	200	2,200	1,389	1,376	1,362	1,348	1,335	1,321
Golden State Water Co	500	50	550	347	344	341	337	334	330
Goleta	4,500	2,950	7,450	4,705	4,659	4,612	4,566	4,520	4,473
Guadalupe	550	55	605	382	378	375	371	367	363
La Cumbre	1,000	100	1,100	695	688	681	674	667	661
Montecito	3,000	300	3,300	2,084	2,064	2,043	2,023	2,002	1,982
Morehart	200	20	220	139	138	136	135	133	132
Raytheon	50	5	55	35	34	34	34	33	33
Santa Barbara	3,000	300	3,300	2,084	2,064	2,043	2,023	2,002	1,982
Santa Maria	16,200	1,620	17,820	11,254	11,143	11,032	10,922	10,811	10,700
Santa Ynez ID1	500	200	700	1,389	1,376	1,362	1,348	1,335	1,321
Vandenberg	5,500	550	6,050	3,821	3,783	3,746	3,708	3,670	3,633

5.1.3 Single Year Drought

As required by DWR guidelines, the available delivery for the single driest year was calculated for each CCWA Project Participant in five year increments from 2010 to 2035. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Table 5-3 presents the results of these calculations:

Table 5-3: Single Dry Year Delivery Estimate

Single Dry Year 1977, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	35	42	48	54	61	67
Carpinteria	2,000	200	2,200	123	145	166	188	210	232
Golden State Water Co	500	50	550	31	36	42	47	52	58
Goleta	4,500	2,950	7,450	416	490	563	637	711	785
Guadalupe	550	55	605	34	40	46	52	58	64
La Cumbre	1,000	100	1,100	61	72	83	94	105	116
Montecito	3,000	300	3,300	184	217	250	282	315	348
Morehart	200	20	220	12	14	17	19	21	23
Raytheon	50	5	55	3	4	4	5	5	6
Santa Barbara	3,000	300	3,300	184	217	250	282	315	348
Santa Maria	16,200	1,620	17,820	995	1,171	1,348	1,524	1,701	1,877
Santa Ynez ID1	500	200	700	123	145	166	188	210	232
Vandenberg	5,500	550	6,050	338	398	458	517	577	637

5.1.4 Two-Year Drought

As required by DWR guidelines, the average delivery for a two-year drought period was calculated for each CCWA Project Participant in five year increments from 2010 to 2035. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Two separate two-year drought periods were evaluated, as outlined in Section 5.1.1. Tables 5-4 and 5-5 present the results of these calculations:

Table 5-4: Two Year Drought Delivery Estimate – 1990 to 1991

2-year drought 1990-1991, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	224	206	188	170	151	133
Carpinteria	2,000	200	2,200	774	712	649	586	524	461
Golden State Water Co	500	50	550	194	178	162	147	131	115
Goleta	4,500	2,950	7,450	2,622	2,410	2,198	1,986	1,774	1,562
Guadalupe	550	55	605	213	196	178	161	144	127
La Cumbre	1,000	100	1,100	387	356	325	293	262	231
Montecito	3,000	300	3,300	1,161	1,067	974	880	786	692
Morehart	200	20	220	77	71	65	59	52	46
Raytheon	50	5	55	19	18	16	15	13	12
Santa Barbara	3,000	300	3,300	1,161	1,067	974	880	786	692
Santa Maria	16,200	1,620	17,820	6,272	5,764	5,257	4,750	4,243	3,736
Santa Ynez ID1	500	200	700	774	712	649	586	524	461
Vandenberg	5,500	550	6,050	2,129	1,957	1,785	1,613	1,441	1,269

Table 5-5: Two Year Drought Delivery Estimate – 1991 to 1992

2-year drought 1991-1992, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	168	168	167	167	166	166
Carpinteria	2,000	200	2,200	581	580	578	577	575	574
Golden State Water Co	500	50	550	145	145	145	144	144	143
Goleta	4,500	2,950	7,450	1,968	1,963	1,958	1,953	1,948	1,943
Guadalupe	550	55	605	160	159	159	159	158	158
La Cumbre	1,000	100	1,100	291	290	289	288	288	287
Montecito	3,000	300	3,300	872	870	867	865	863	861
Morehart	200	20	220	58	58	58	58	58	57
Raytheon	50	5	55	15	14	14	14	14	14
Santa Barbara	3,000	300	3,300	872	870	867	865	863	861
Santa Maria	16,200	1,620	17,820	4,708	4,696	4,684	4,672	4,660	4,648
Santa Ynez ID1	500	200	700	581	580	578	577	575	574
Vandenberg	5,500	550	6,050	1,598	1,594	1,590	1,586	1,582	1,578

5.1.5 Four-Year Drought

As required by DWR guidelines, the average delivery for a four-year drought period was calculated for each CCWA Project Participant in five year increments from 2010 to 2035. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Two separate four-year drought periods were evaluated, as outlined in Section 5.1.1. Tables 5-6 and 5-7 present the results of these calculations:

Table 5-6: Four Year Drought Delivery Estimate – 1929 to 1932

4-year drought 1929-1932, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	214	217	221	224	227	230
Carpinteria	2,000	200	2,200	741	752	763	774	784	795
Golden State Water Co	500	50	550	185	188	191	193	196	199
Goleta	4,500	2,950	7,450	2,510	2,547	2,583	2,620	2,656	2,693
Guadalupe	550	55	605	204	207	210	213	216	219
La Cumbre	1,000	100	1,100	371	376	381	387	392	398
Montecito	3,000	300	3,300	1,112	1,128	1,144	1,160	1,177	1,193
Morehart	200	20	220	74	75	76	77	78	80
Raytheon	50	5	55	19	19	19	19	20	20
Santa Barbara	3,000	300	3,300	1,112	1,128	1,144	1,160	1,177	1,193
Santa Maria	16,200	1,620	17,820	6,004	6,092	6,179	6,267	6,354	6,442
Santa Ynez ID1	500	200	700	741	752	763	774	784	795
Vandenberg	5,500	550	6,050	2,038	2,068	2,098	2,128	2,157	2,187

Table 5-7: Four Year Drought Delivery Estimate – 1989 to 1992

4-year drought 1989-1992, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	228	223	218	213	208	204
Carpinteria	2,000	200	2,200	787	770	754	737	721	704
Golden State Water Co	500	50	550	197	193	188	184	180	176
Goleta	4,500	2,950	7,450	2,665	2,609	2,553	2,497	2,441	2,384
Guadalupe	550	55	605	216	212	207	203	198	194
La Cumbre	1,000	100	1,100	394	385	377	369	360	352
Montecito	3,000	300	3,300	1,181	1,156	1,131	1,106	1,081	1,056
Morehart	200	20	220	79	77	75	74	72	70
Raytheon	50	5	55	20	19	19	18	18	18
Santa Barbara	3,000	300	3,300	1,181	1,156	1,131	1,106	1,081	1,056
Santa Maria	16,200	1,620	17,820	6,375	6,241	6,107	5,972	5,838	5,703
Santa Ynez ID1	500	200	700	787	770	754	737	721	704
Vandenberg	5,500	550	6,050	2,164	2,119	2,073	2,028	1,982	1,936

5.1.6 Six-Year Drought

As required by DWR guidelines, the average delivery for a six-year drought period was calculated for each CCWA Project Participant in five year increments from 2010 to 2035. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Two separate six-year drought periods were evaluated, as outlined in Section 5.1.1. Tables 5-8 and 5-9 present the results of these calculations:

Table 5-8: Six Year Drought Delivery Estimate – 1929 to 1934

6-year drought 1929-1934, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	215	218	221	223	226	229
Carpinteria	2,000	200	2,200	745	754	764	773	782	791
Golden State Water Co	500	50	550	186	189	191	193	195	198
Goleta	4,500	2,950	7,450	2,524	2,555	2,586	2,616	2,647	2,678
Guadalupe	550	55	605	205	207	210	212	215	217
La Cumbre	1,000	100	1,100	373	377	382	386	391	395
Montecito	3,000	300	3,300	1,118	1,132	1,145	1,159	1,173	1,186
Morehart	200	20	220	75	75	76	77	78	79
Raytheon	50	5	55	19	19	19	19	20	20
Santa Barbara	3,000	300	3,300	1,118	1,132	1,145	1,159	1,173	1,186
Santa Maria	16,200	1,620	17,820	6,036	6,110	6,184	6,258	6,332	6,406
Santa Ynez ID1	500	200	700	745	754	764	773	782	791
Vandenberg	5,500	550	6,050	2,049	2,075	2,100	2,125	2,150	2,175

Table 5-9: Six Year Drought Delivery Estimate – 1987 to 1992

6-year drought 1987-1992, Acre-Feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**
Buellton	578	58	636	240	230	219	209	198	187
Carpinteria	2,000	200	2,200	831	795	758	722	685	649
Golden State Water Co	500	50	550	208	199	190	180	171	162
Goleta	4,500	2,950	7,450	2,815	2,691	2,567	2,444	2,320	2,196
Guadalupe	550	55	605	229	219	208	198	188	178
La Cumbre	1,000	100	1,100	416	397	379	361	343	324
Montecito	3,000	300	3,300	1,247	1,192	1,137	1,082	1,028	973
Morehart	200	20	220	83	79	76	72	69	65
Raytheon	50	5	55	21	20	19	18	17	16
Santa Barbara	3,000	300	3,300	1,247	1,192	1,137	1,082	1,028	973
Santa Maria	16,200	1,620	17,820	6,733	6,437	6,141	5,845	5,549	5,253
Santa Ynez ID1	500	200	700	831	795	758	722	685	649
Vandenberg	5,500	550	6,050	2,286	2,185	2,085	1,984	1,884	1,783

5.2 Comparison of Demand and Supply

As discussed previously, the CCWA Project Participants have multiple sources of water supply. The CCWA system is only one of those sources. In responding to the long term and short term needs for water supply, the retail water supplier will determine the best use of each available source of supply. The water demand upon the CCWA system is highly dependent on the management decision by the individual Project Participants, as opposed to arising directly from an end user demand for water supply. Consequently, it is difficult to predict the level of water demand for the CCWA system.

However, the essential question that the comparison of available supply to demand is whether each Project Participant has enough water to meet the demand for water supply for their respective systems. To address this question, a review of the historical water delivery records will provide insight. The reliability estimated presented in Section 5.1 represents the best data available to estimate water deliveries through the SWP

system during a variety of drought conditions. However, these estimates are conservative and, more importantly, they do not considered a number reliability measures that can be implemented, if needed, by the CCWA Project Participants. These measures include the availability of surplus water (Article 21), water transfers, exchanges, non-project purchases, turnback pools and groundwater banking.

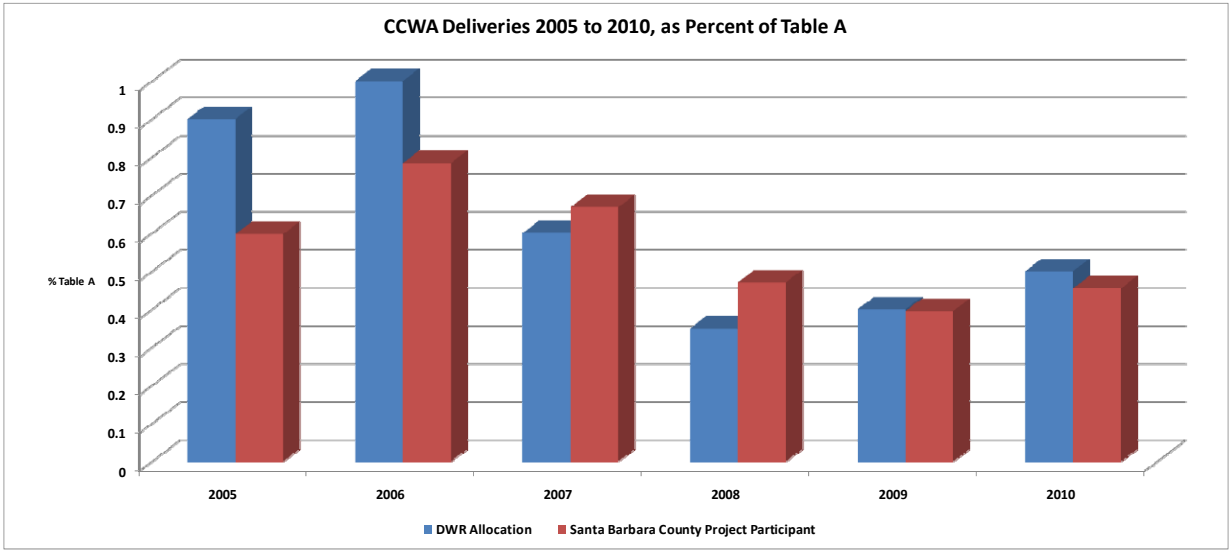
One example of CCWA's use of reliability enhancements can be observed in 2001. The DWR annual allocation was 39% in 2001, which was the lowest allocation experienced by CCWA at the time. During that year, CCWA took advantage of DWR turnback pools and dry year water purchase programs for the benefit of its project participants. Coupled with individual project participant drought buffers, the result was that Santa Barbara County project participants received nearly 80% of the water they requested.

Table 5-10 and Graph 5-1 presents the actual deliveries, expressed as a percent of the Table A amount, from 2005 through 2010. The associated DWR annual allocations are also presented.

Table 5-10: CCWA Deliveries, as Percent of Table A, Compared to DWR Annual Allocation

CCWA Project Participant Actual Deliveries, 2005 through 2010, in Percent of Table A										
PROJECT PARTICIPANT	Table A Amount			Percent of Table A Delivered, %						
	Table A Amount	CCWA + GWD Drought Buffer	Total Table A Amount	2005	2006	2007	2008	2009	2010
DWR Allocation				90.0%	100.0%	60.0%	35.0%	40.0%	50.0%
City of Guadalupe	550	55	605	73.5%	82.7%	79.5%	63.3%	7.1%	0.0%
City of Santa Maria	16,200	1,620	17,820	81.9%	86.5%	72.3%	48.1%	48.0%	63.4%
SCWC	500	50	550	38.8%	86.0%	37.8%	46.6%	49.8%	49.2%
Vandenberg AFB	5,500	550	6,050	62.5%	83.6%	62.6%	34.5%	25.9%	16.4%
City of Buellton	578	58	636	104.7%	84.1%	104.2%	80.3%	43.4%	42.4%
Santa Ynez ID#1 (Solvang)	1,500	0	1,500	81.7%	78.0%	81.0%	77.8%	73.6%	65.6%
Santa Ynez ID#1	500	200	700	126.0%	140.0%	86.4%	40.6%	36.4%	53.6%
Goleta WD	4,500	2,950	7,450	25.1%	76.7%	66.5%	36.8%	30.8%	24.5%
Morehart Land Company	200	20	220	42.0%	80.0%	30.0%	0.0%	0.0%	0.0%
La Cumbre Mutual WC	1,000	100	1,100	33.0%	83.0%	62.5%	77.6%	104.7%	126.0%
Raytheon Systems Co.	50	5	55	100.0%	110.0%	66.0%	38.0%	44.0%	56.0%
City of Santa Barbara	3,000	300	3,300	24.9%	19.6%	18.0%	20.7%	15.0%	24.5%
Montecito WD	3,000	300	3,300	24.9%	80.0%	109.1%	89.3%	40.5%	41.1%
Carpinteria Valley WD	2,000	200	2,200	24.7%	65.0%	28.1%	26.7%	15.2%	24.6%
Santa Barbara TOTAL	39,078	6,408	42,986	59.7%	78.4%	66.8%	47.1%	39.5%	45.5%

Graph 5-1: Historical Deliveries Compared to DWR Allocation



As can be observed in the historical delivery record, Project Participants may or may not receive their full DWR allocation. Some Project Participants elect to take measures to receive more than the DWR allocation amount, while others elect to receive less than the full DWR allocation amount. This highlights the difficulty in estimating the demand for water supply from the CCWA System.

To meet demand for water during drought years, the CCWA system will be able to facilitate the delivery of additional supplies above the DWR annual allocation amount. This is accomplished through the use of many reliability measures that are available. These measures include drought buffer, carryover water, water transfers among CCWA Project Participants, water transfers with other SWP contractors, water transfers from "non-project" sources, DWR dry year purchase programs, exchanges and potential groundwater banking programs. All of these programs are possible because of the physical connection to a state-wide distribution system.

5.3 Operational Factors Effecting SWP Deliveries

While Table A identifies the maximum annual amount of Table A water a SWP contractor may request, the amount of SWP water actually available and allocated to SWP contractors each year is dependent on a number of factors and can vary significantly from year to year. The primary factors affecting SWP supply availability include: the availability of water at the source of supply in northern California, the ability to transport that water from the source to the primary SWP diversion point in the southern Delta and the magnitude of total contractor demand for that water.

5.3.1 Availability of SWP Source Water

SWP supplies originate in northern California, primarily from the Feather River watershed. The availability of these supplies is dependent on the amount of precipitation in the watershed, the amount of that precipitation that runs off into the Feather River, water use by others in the watershed and the amount of water in storage in the SWP's Lake Oroville at the beginning of the year. Variability in the location, timing, amount and form (rain or snow) of precipitation, as well as how wet or dry the previous year was, produces variability from year to year in the amount of water that flows into Lake Oroville. However, Lake Oroville acts to regulate some of that variability, storing high inflows in wetter years that can be used to supplement supplies in dry years with lower inflows.

As discussed in DWR's 2009 Reliability Report, climate change adds another layer of uncertainty in estimating the future availability of SWP source water. Current literature suggests that climate change may change precipitation patterns in California from the patterns that occurred historically. While different climate change models show differing effects, potential changes could include more precipitation falling in the form of rain rather than snow and earlier snowmelt, which would result in more runoff occurring in the winter rather than spread out over the winter and spring.

5.3.2 Ability to Convey SWP Source Water

Water released from Lake Oroville flows down natural river channels into the Delta. The Delta is a network of channels and reclaimed islands at the confluence of the Sacramento and San Joaquin rivers. The SWP and the CVP use Delta channels to convey water to the southern Delta for diversion, making the Delta a focal point for water distribution throughout the state.

A number of issues affecting the Delta can impact the ability to divert water supplies from the Delta, including water quality, fishery protection and levee system integrity. Water quality in the Delta can be adversely affected by both SWP and CVP diversions, which primarily affect salinity, as well as by urban discharge and agricultural runoff that flows into the Delta, which can increase concentrations of constituents such as mercury, organic carbon, selenium, pesticides, toxic pollutants and reduce dissolved oxygen. The Delta also provides a unique estuarine habitat for many resident and migratory fish species, some of which are listed as threatened or endangered. The decline in some fish populations is likely the result of a number of factors, including water diversions, habitat destruction, degraded water quality through urban runoff and waste water discharge, and the introduction of non-native species. Delta islands are protected from flooding by an extensive levee system. Levee failure and subsequent island flooding can lead to increased salinity requiring the temporary shut down of SWP pumps.

In order to address some of these issues, SWP and CVP operations in the Delta are limited by a number of regulatory and operational constraints. These constraints are primarily incorporated into the SWRCB's Water Rights Decision [46]1641 (D-1641), which establishes Delta water quality standards and outflow requirements that the SWP and CVP must comply with. In addition, SWP and CVP operations are further constrained by requirements included in BOs for the protection of threatened and endangered fish species in the Delta, issued by the FWS in December 2008 and the NMFS in June 2009. The requirements in the BOs are based on real-time physical and biological phenomena (such as turbidity, water temperature and location of fish), which results in uncertainty in estimating potential impacts on supply of the additional constraints imposed by the BOs.

5.3.3 Demand for SWP Water

The reliability of SWP supplies is affected by the total amount of water requested and used by SWP contractors, since an increase in total requests increases the competition for limited SWP supplies. As previously mentioned, contractor Table A Amounts in the SWP Water Supply Contracts have ramped up over time, based on projected increases in population and water demand at the time the contracts were signed. Urban SWP contractors' requests for SWP water were low in the early years of the SWP, but have increased steadily over time, although more slowly than the ramp-up in their Table A Amounts, which reached a maximum for most contractors in the early to mid 1990s. Since that time, urban contractors' requests for SWP have continued to increase until recent years when nearly all SWP contractors are requesting their maximum Table A Amounts.

5.4 Regulatory Factors Effecting SWP Deliveries

Since the last round of UWMPs was prepared in 2005, the DWR has twice updated its SWP Delivery Reliability Report. In each of its updates, DWR has projected further reductions in average SWP water deliveries than were projected in 2005. The 2009 Report is the most recent update, and identifies several emerging factors that have the potential to affect the availability and reliability of SWP supplies. Although the 2009 Report presents an extremely conservative projection of SWP delivery reliability, particularly in light of events occurring since its release, it remains the best available information concerning the SWP. Following is information and a brief summary of several factors identified in the 2009 Reliability Report having the potential to affect the availability and reliability of SWP supplies. A more detailed analysis of the factors discussed below is attached as Appendix E.

5.4.1 FWS and NMFS Biological Opinions

In December 2008 and June 2009, respectively, the FWS and the NMFS issued BOs setting forth each agency's conclusions regarding the effects that the proposed long-term coordinated operations of the SWP and CVP would have on threatened and endangered fish species in the Delta.[47] Both BOs concluded that the operation of the Projects as proposed by DWR and the USBR would jeopardize the continued existence of the protected species. Because FWS and NMFS reached "jeopardy" conclusions, each was required by the ESA to develop a Reasonable and Prudent Alternative (RPA) to the proposed Project, and to include that RPA in its respective BO. According to their terms, the RPAs developed and adopted by FWS and NMFS impose many new restrictions and requirements on Project operations. If the RPA terms are fully implemented, however, the resulting Project operations are deemed to be in compliance with the ESA.

Of particular importance to the operation of the SWP and to the SWP Contractors, the RPAs included in the new BOs are expected to result in substantially reduced water exports from the Delta. Preliminary estimates prepared by DWR indicate that in comparison to the level of SWP exports from the Delta previously authorized under State Board Decision 1641 (D-1641),[48] the FWS BO could reduce those deliveries by 18 to 29 percent during average and dry conditions, respectively, and the NMFS BO could reduce SWP deliveries by an additional 10 percent (for an aggregate reduction of 28 to 39 percent). These estimates remain preliminary, as the operating restrictions imposed under the FWS and NMFS RPAs are dependent upon highly variable factors such as hydrologic conditions affecting Delta water supplies, flow conditions in the Delta, migratory and reproductive patterns of the protected species, and numerous other non-Project factors that impact the health and abundance of the species and their habitats. Moreover, legal challenges have been filed against the FWS and NMFS BOs, and should the courts conclude the BOs are invalid and the RPA restrictions are inappropriate, SWP exports could return to higher levels.

FWS BO Litigation

In early 2009, the State Water Contractors, the San Luis Delta-Mendota Water Authority, and several individual State and Federal contractor water agencies filed legal challenges against the FWS delta smelt BO. (*The Consolidated Delta Smelt Cases*, E.D. Cal. 1:09-CV-00407-OWW-GSA.) In November 2009, the court granted summary judgment on the claim made by several plaintiffs that the federal defendants violated the National Environmental Policy Act (NEPA) by failing to perform NEPA analysis prior to provisionally adopting and implementing the FWS BO and RPA. Further, in May 2010, the court issued Findings of Fact and Conclusions of Law on a motion for preliminary injunction, which not only confirmed the court's prior NEPA ruling, but also determined that plaintiffs are likely to prevail on their claims that FWS violated the ESA and the Administrative Procedure Act (APA) in adopting the BO's RPA. Thereafter, the parties filed motions for summary judgment to obtain a final ruling in the cases, and those motions were argued in

early July 2010. In December 2010, the court issued a memorandum decision that invalidated the BO and RPA in several respects and remanded the matter to FWS. Further proceedings are expected to address interim operations of the SWP and CVP. Until the court makes its final ruling and directs the next course of action, it has relaxed the RPA restriction.

NMFS BO Litigation

After issuance of the NMFS BO in June 2009, the State Water Contractors and other water agencies filed legal challenges against the NMFS salmonid BO. (*The Consolidated Salmon Cases*, E.D. Cal. 1:09-CV-1053-OWW-DLB.) In May 2010, the court ruled that the federal defendants violated NEPA by failing to analyze the impact of the BO and RPA on humans and the human environment. The court also ruled that plaintiffs are likely to prevail on their claims that NMFS violated the ESA and the APA in adopting the RPA, and authorized the Projects to operate in accordance with D-1641 during a short period (until the end of June 2010) unless there was a showing of jeopardy to the species or adverse modification of its critical habitat. As with the delta smelt litigation, the parties also filed motions for summary judgment to obtain a final ruling in the cases. Those motions were heard in mid-December 2010 and a decision is expected in 2011.

5.4.2 Consistency Determination Litigation

Because the delta smelt and salmon species are also protected under California's ESA, the SWP and CVP are required to obtain take authorization for Project operations from the California Department of Fish and Game (DFG). In July 2009 and September 2009, respectively, DFG issued "consistency determinations" pursuant to California's ESA and determined that Project operations do not violate that statute to the extent the operations are in compliance with the RPAs set forth in the FWS and NMFS BOs Because the consistency determinations pose a risk that the SWP could remain bound to the terms of the RPAs even if the BOs are overturned by a federal court, DFG's decisions were challenged in state court by the State Water Contractors and the Kern County Water Agency. The cases are currently stayed pending the outcome of *The Consolidated Delta Smelt Cases* and *The Consolidated Salmon Cases* (above).[49]

5.4.3 Longfin Smelt Protections

Regulatory actions related to longfin smelt also have the potential to affect the availability and reliability of SWP supplies. In February 2008, longfin smelt were listed as a "candidate" species under California ESA, and DFG imposed certain interim restrictions on the SWP for protection of the longfin smelt and its critical habitat. In February 2009, shortly before longfin smelt were officially listed as a "threatened" species under California ESA, DFG issued Incidental Take Permit No. 2081-2009-001-03 (the Permit) to DWR, which imposes terms and conditions on the

ongoing and long-term operations of SWP facilities in the Delta. The operating restrictions under the Permit are based in large part on the restrictions imposed on the SWP by the new FWS BO for delta smelt (see above). The resulting water supply reductions under the Permit depend on several variable factors, such as Delta hydrology, migratory and reproductive patters of longfin smelt, and other factors affecting species abundance in the Delta. Notably, DWR has not indicated whether any particular reductions in SWP exports are likely to result from the Permit. In March 2009, the State Water Contractor's filed a legal challenge against the Permit.[50] Although that litigation is currently stayed pursuant to a stipulation of the parties, the challenge puts DFG's ability to enforce the Permit into question.

5.4.4 Development of Delta Plan and Delta Flow Criteria Pursuant to New State Laws

In November 2009, the California Legislature enacted SBX7-1 as part of a multi-pronged water package related to water supply reliability, ecosystem health, and the Delta.[51] Among other things, SBX7-1 creates the Delta Stewardship Council (Council) and directs the Council to develop a comprehensive management plan for the Delta by January 1, 2012 (the Delta Plan). In addition, the SWRCB was directed to develop flow criteria for the Delta to protect public trust resources, including fish, wildlife, recreation and scenic enjoyment, and DFG was required to identify quantifiable biological objectives and flow criteria for species of concern in the Delta.

In August 2010, the SWRCB adopted Resolution No. 2010-0039 approving its report entitled "Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem" (Flow Criteria). The SWRCB report concluded that substantially higher flows are needed through the Delta than in have occurred in previous decades in order to benefit zooplankton and various fish species.[52] Separately, in September 2010, DFG issued a draft report entitled "Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta" (DFG Report). The DFG Report is based on similar biological objectives and recommends Delta flows similar to those set forth in the SWRCB's Flow Criteria.[53] Notably, both the SWRCB and DFG recognized that their recommended flow criteria for the Delta do *not* balance the public interest or the need to provide an adequate and reliable water supply.[54] Also of importance, both the SWRCB and DFG acknowledged that their recommended flow criteria do not have any regulatory or adjudicatory effect; however, they may be used to inform the Council as it prepares the Delta Plan, and may be considered as the Bay Delta Conservation Plan (BDCP) process moves forward.[55]

5.4.5 DWR Final 2009 SWP Delivery Reliability Report

DWR continues to evaluate the issues affecting SWP exports from the Delta and how those issues may affect the long-term availability and reliability of SWP deliveries to the SWP Contractors. In September 2010, DWR released its Final

2009 SWP Delivery Reliability Report (DWR Report), which forecasts additional reductions in annual SWP deliveries on average in comparison to the 2007 Report. According to DWR, the long-term average delivery of contractual SWP Table A supply is projected to be 60 percent under current and future conditions over the 20-year projection.[56] Within that long-term average, SWP Table A deliveries can range from 7 percent (single dry year) to 68 percent (single wet year) of contractual amounts under current conditions, and from 11 percent (single dry year) to 97 percent (single wet year) under future conditions.[57] Contractual amounts are projected to range from 32 to 38 percent during multiple-dry year periods, and from 79 to 93 percent during multiple wet periods.[58]

To ensure a conservative analysis, the DWR Report expressly assumes and accounts for the institutional, environmental, regulatory, and legal factors affecting SWP supplies, including but not limited to: water quality constraints, fishery protections, other D-1641 requirements, and the operational limitations imposed by the FWS and NMFS BOs that are discussed above. The DWR Report also considers the potential effects of Delta levee failures and other seismic or flood events.[59] Notably, the DWR Report assumes that all of these restrictions and limitations will remain in place over the next 20-year period and that no actions to improve the Delta will occur, even though numerous legal challenges, various Delta restoration processes, and new legal requirements for Delta improvements are currently underway (i.e., BDCP, Delta Vision, Delta Plan, etc.). Finally, DWR's long-term SWP delivery reliability analyses incorporate assumptions intended to account for potential supply shortfalls related to global climate change.[60] These and other factors result in DWR presenting an extremely conservative projection of SWP delivery reliability in its 2009 Report.

5.4.6 Conclusion

DWR's most recently published Reliability Report demonstrates that the projected long-term average delivery amounts of contractual SWP Table A supplies have decreased in comparison to previous estimates. However, as noted, the projections developed by DWR are predicated on conservative assumptions, which make the projections useful from a long-range urban water supply planning perspective.[61] Indeed, recent rulings in various legal actions and other factors described above and in Appendix E, among others, support higher estimates of average annual SWP deliveries than projected in DWR's 2009 Report. While this may lead DWR to increase its projections in its next scheduled Report, the 2009 Report remains the best available information concerning the long-term delivery reliability of SWP supplies.

5.5 Water Shortage Contingency Planning

Both CCWA and DWR are committed to delivering all of the water that is available in a given year. There are many design features in the DWR and CCWA systems that are intended to facilitate continuous supply and delivery operations, with a minimum of interruptions. Some of the features are as follows:

- To prevent service interruption due to power failures, all key facilities have emergency electrical generators to, at least, maintain communication and control of these facilities.

- To prevent malicious acts of vandalism or terrorism, a wide variety of security measures are in place.

- To minimize the impact of earthquakes, there are a range of design features on the pipeline to minimize damage. These features include specialized pipe connections such as the Coastal Branch pipeline crosses the San Andreas Fault and isolation valves at other fault crossing locations/

- To provide early detection of contamination, the pipeline and treatment plant are equipped with a wide variety of water quality instrumentation. All of these water quality instruments can be monitored through CCWA's Supervisory Control and Data Acquisition (SCADA) System.

The water shortage contingencies that are within the scope of CCWA and DWR are described below:

5.5.1 Water Supply Agreement on Shortage in Water Supply

Water supplies may be interrupted or reduced significantly in a number of ways, such as a drought which limits supplies, an earthquake which damages water delivery or storage facilities, or a toxic spill that affects water quality. As a wholesaler of a supplemental water supply, CCWA's obligation during water supply interruptions or reductions is limited. The Water Supply Agreements signed by each project participant includes the following language to address shortage of water supply: [5]

"*Shortage in Water Supply*

a) Temporary Shortages; Delivery Priorities. In any Year in which there may occur a shortage or interruption due to drought or other temporary cause in the supply of water available for delivery to the Contractor, with the result that such supply is less than the total of the annual Project Allotments of all Project Participants for that Year, the Authority Shall reduce the delivery of water to the Contractor based upon water use in accordance with the State Water Supply Contract.

b) Permanent Shortage Entitlements. In the event that the State is unable to construct sufficient additional conservation facilities to prevent a reduction in the minimum State Water Project yield, or if for any other reason there is a reduction in the minimum State Water Project yield, which, notwithstanding preventive or remedial measures taken or to be taken by the State, threatens a permanent shortage in the supply of State Water Project water to be made available to the Authority under the State Water Supply Contract the Project Allotment of the Contractor shall be reduced in accordance with the State Water Supply Contract.

c) No Liability for Shortages. Neither the Authority nor any of its officers, agents, or employees shall be liable for any damage, direct or indirect, arising from the shortages in the amount of water to be made available for delivery to the Contractor under this Agreement caused by non-availability of water to the Authority under the State Water Supply Contract or caused by drought, operation of area of origin statutes, or any other cause beyond its control.

d) Wheeling During Shortages. In the event that the Contractor's Project Allotment has been temporarily or permanently reduced, the Contractor may direct the Authority to deliver water acquired by the Contractor outside of Santa Barbara County and delivered through the Coastal Aqueduct, up to an amount equal to such reduction, subject to the Authority's overall delivery ability considering the then current delivery schedule of all Project Participants and subject to water quality requirements reasonably approved by the Authority. For purpose of Section 13 hereof, such water shall be treated as Project Allotment and the Authority shall not charge any fee in connection with the delivery of such water except Fixed O&M Costs and Variable O&M Costs which would be allocable to such Contractor's Project Allotment."

CCWA informs its project participants whenever there is a change in the DWR delivery allotment. Additionally, it makes every attempt to increase reliability in both the short and long term and to locate additional supplies to firm up deliveries.

5.5.2 CCWA Emergency Response Plan

CCWA has prepared an Emergency Response Plan (ERP)[62] which provides detailed instructions for catastrophic interruption of its water supply including chemical spill, SCADA or other communications failure, accidental contamination of water supply, contamination of water supply threat, earthquake, fire, intrusion alarm at CCWA facilities, power failure, vandalism or other damage to CCWA facilities, water supply failure and water treatment failure.

The ERP includes job classification-specific instructions for all the above situations, notification lists, facility specific information, chain of command/emergency operations center information, emergency contractor and supplier information and a

complete set of forms to assist in emergency tracking. CCWA also maintains an inventory of essential equipment such as emergency generators, portable chlorination and de-chlorination equipment, lighting, etc. as well as long lead time supplies such as pipe sections in various diameters, valves and other critical items.

The ERP is updated annually. Additionally, staff receives training and performs emergency response exercises on a frequent basis.

5.5.3 DWR Emergency Response Plan/Business Resumption Plan

DWR performs numerous water resources planning and management activities throughout California and is responsible for protecting life and property from emergencies caused by catastrophic events such as flood, drought, and dam or levee failure. An extensive and complex emergency planning and management system has been developed by DWR. The system starts at the statewide level and includes individual State agencies and departments in response actions to ensure that appropriate actions are taken in a timely manner.

DWR documents its general procedures in its ERP[63]. The ERP is the DWR master plan that incorporates the emergency plans of department units and describes the emergency management organization and responsibilities for protecting lives and property. The ERP is mandated by government code and is also required by the State Emergency Plan (SEP). The SEP requires each agency to submit an ERP to Office of Emergency Services (OES) and explain what it will do to provide resources and how critical business will be resumed. The ERP also describes critical functions of DWR, including the management of essential resources, coordination of emergency response and preparedness, and communication within DWR and with OES. Along with the Business Resumption Plan (BRP), which is discussed below, the ERP is the main document forming the overarching structure for the Emergency Action Plans of the local DWR Field Divisions. Specifically, the ERP:

- Establishes and maintains guidelines for division and district/field offices for responding to emergencies (that is, preparation and execution of the Field Division's Emergency Action Plans);

- Outlines how DWR will respond to and manage flood and dam emergencies, incidents on the SWP, acts of terrorism and war, and provide the necessary support to other State agencies during catastrophic events, especially OES;

- Identifies the organization and functions that DWR staff may be assigned to during an emergency using the State Emergency Management System (SEMS) concept;

- Outlines the responsibilities of key DWR staff;

- Integrates essential emergency organizations;

- Incorporates the coordination with other federal, State, and local authorities and, at a minimum, is revised annually.

The BRP contains the overall structure and process for addressing business recovery and resumption, including specific plans for critical functions, remote facilities, and major departmental organizations. Considering that the State would be greatly affected if the DWR were unable to recover and resume business functions following a disaster or during an emergency, the BRP establishes a process that DWR will follow to recover after a catastrophic event.

5.5.4 Theoretical Three Year Minimum Supply for 2011 to 2013

As required by DWR guidelines, the minimum delivery for a three year period was calculated for each CCWA project participant and applied to the years 2011 to 2013. All calculations follow the estimation protocol outlined in the DWR Reliability Report. The conditions of the single driest year (1977) were utilized to estimate the minimum three year supply. The Table A amount and drought buffer amount for each CCWA Project Participant was utilized in the delivery estimate, provided that the conveyance capacity allocation for each participant was not exceeded. Table 5-11 presents the reliability factors and Table 5-12 presents the results of the delivery calculations:

Table 5-11: Three Year Minimum Reliability Factors, Assumes 1977 Conditions for 3 Years

3-Year Minimum Supply Estimation, Reliability Factors - Assumes 1977 Conditions			
Agency	**2011**	**2012**	**2013**
Santa Barbara County Project Participants	5.8%	6.0%	6.2%

Table 5-12: Three Year Minimum Delivery Estimate

Minimum 3 Year Supply, Acre-Feet per Year, Assumes 1977 Conditions						
Participant	**Table A**	**Buffer**	**Total Table A**	**2011**	**2012**	**2013**
Buellton	578	58	636	37	38	39
Carpinteria	2,000	200	2,200	127	132	136
Golden State Water Co	500	50	550	32	33	34
Goleta	4,500	2,950	7,450	431	445	460
Guadalupe	550	55	605	35	36	37
La Cumbre	1,000	100	1,100	64	66	68
Montecito	3,000	300	3,300	191	197	204
Morehart	200	20	220	13	13	14
Raytheon	50	5	55	3	3	3
Santa Barbara	3,000	300	3,300	191	197	204
Santa Maria	16,200	1,620	17,820	1,030	1,065	1,101
Santa Ynez ID1	500	200	700	40	42	43
Vandenberg	5,500	550	6,050	350	362	374

5.6 Actions to Prepare for Catastrophic Interruption

The Phase II Coastal Branch pipeline traverses the San Andreas Fault, in addition, the California Aqueduct passes within 20 miles of the San Andreas Fault as well. The California Division of Mines and Geology has stated that two of the aqueduct systems that import water to southern California (including the California Aqueduct) could be ruptured by displacement on the San Andreas Fault. The situation would be further complicated by physical damage to pumping equipment and local loss of electrical power.

DWR has an Aqueduct Outage Plan for restoring the California Aqueduct to service should a major break occur, which it estimates would take approximately four months to repair. This would interrupt the SWP source of supply to the CCWA project participants for the four month repair period. Since the CCWA system is a supplemental and interruptible supply, the CCWA project participants maintain other sources of water supply that could be utilized during this potential extended outage. However, CCWA staff would work and cooperate with DWR in facilitating a speedy resumption of service.

5.6.1 SWP Emergency Outage Scenarios

In addition to earthquakes, the SWP could experience other emergency outage scenarios. Past examples include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995 (which also destroyed part of Interstate 5 near Los Banos) and various subsidence repairs needed along the East Branch of the Aqueduct since the 1980s. All these outages were short-term in nature (on the order of weeks), and DWR's Operations and Maintenance Division worked diligently to devise methods to keep the Aqueduct in operation while repairs were made. Thus, the SWP contractors experienced no interruption in deliveries.

One of the SWP's important design engineering features is the ability to isolate parts of the system. The Aqueduct is divided into "pools." Thus, if one pool or portion of the California Aqueduct is damaged in some way, other portions of the system can still remain in operation. The principal SWP facilities are shown on Figure 4-1.

There are other events that could result in significant outages and potential interruptions of service. Examples of possible nature-caused events include a levee breach in the Delta near the Harvey O. Banks Pumping Plant or a flood or earthquake event that severely damages the Aqueduct along its San Joaquin Valley traverse. Such events could impact some or all SWP contractors south of the Delta.

The response of DWR, CCWA and other SWP contractors to such events would be highly dependent on the type and location of any such events. In typical SWP operations, water flowing through the Delta is diverted at the SWP's main pumping

facility, located in the southern Delta, and is pumped into the California Aqueduct. During the relatively heavier runoff period in the winter and early spring, Delta diversions generally exceed SWP contractor demands and the excess is stored in San Luis Reservoir. During the summer and fall, when diversions from the Delta are generally more limited and less than contractor demands, releases from San Luis Reservoir are used to make up the difference in deliveries to contractors. The SWP share of maximum storage capacity at San Luis Reservoir is 1,062,000 AF.

CCWA receives its SWP deliveries through the Coastal Branch Phase II of the SWP. The only other contractors receiving deliveries from the Coastal Branch Phase II is SLOCFCWCD. The Coastal Branch Phase I and II have a total of five pumping stations to deliver water to the PPWTP. The available raw water storage at PPWTP is 24.1 million gallons.

Three scenarios that could impact the delivery to CCWA of its SWP supply are described below:

Scenario 1: Levee Breach Near Banks Pumping Plant

As demonstrated by the June 2004 Jones Tract levee breach and previous levee breaks, the Delta's levee system is fragile. The SWP's main pumping facility, Banks Pumping Plant, is located in the southern Delta. Should a major levee in the Delta near these facilities fail catastrophically, salt water from the eastern portions of San Francisco Bay would flow into the Delta, displacing the fresh water runoff that supplies the SWP. All pumping from the Delta would be disrupted until water quality conditions stabilized and returned to pre-breach conditions. The re-freshening of Delta water quality would require large amounts of additional Delta inflows, which might not be immediately available, depending on the time of year of the levee breach. The Jones Tract repairs took several weeks to accomplish and months to complete; a more severe breach could take much longer, during which time pumping from the Delta might not be available on a regular basis.

Assuming that the Banks Pumping Plant would be out of service for six months, DWR could continue making at least some SWP deliveries to all southern California contractors from water stored in San Luis Reservoir. The water available for such deliveries would be dependent on the storage in San Luis Reservoir at the time the outage occurred and could be minimal if it occurred in the late summer or early fall when San Luis Reservoir storage is typically low.

Scenario 2: Complete Disruption of the California Aqueduct in the San Joaquin Valley

The 1995 flood event at Arroyo Pasajero demonstrated vulnerabilities of the California Aqueduct (the portion that traverses the San Joaquin Valley from San Luis Reservoir to Edmonston Pumping Plant). Should a similar flood event or an earthquake damage this portion of the aqueduct, deliveries from San Luis Reservoir could be interrupted for a period of time. DWR has informed the SWP contractors that a four-month outage could be expected in such an event.

Arroyo Pasajero is located downstream of San Luis Reservoir and upstream of the Coastal Branch aqueduct. Assuming an outage at a location near Arroyo Pasajero that takes the California Aqueduct out of service for four months, supplies from San Luis Reservoir would not be available to those SWP contractors located downstream of that point.

Scenario 3: Complete Loss of Electrical Power on the Coastal Branch

The Phase I and II Coastal Branch have a total of five pumping station to lift water from the San Joaquin Valley to the Polonio Pass of the Diablo/Coastal Mountain Range. These five pumping plants lift the water over 1,700 feet. Due to the size of the pumps in use at each pumping plant, operation by a standby emergency generator is not practical. Since these pumping Plants are part of critical infrastructure, the restoration of power is expected to be within a 24 to 48 hour period.

Once water has been delivered to the PPWTP, it can be treated and conveyed to the CCWA project participants, even during a regional power outage. The Treatment Plant is equipped with an emergency electrical generator sized for all plant processes. All water passing through the treatment train of the plant flows by gravity flow, with no need for pumping. Standby emergency generators are also available at all key conveyance facilities to provide continuous monitoring and control functions.

5.6.2 Assessment of Worst Case Scenario

Since the CCWA system receives all of its water supply through the SWP system, any interruption between the San Luis Reservoirs and the Coastal Branch will represent significant potential for interrupting water supply delivery operations. Scenario #2, the complete disruption of the California Aqueduct between San Luis Reservoir and the Coastal Branch, would represent the worst case scenario. As discussed above, DWR has estimated that the time to repair a complete disruption of the aqueduct would be four months.

During an outage arising from scenario #2, CCWA project participants would be required to utilize their other sources of water supply. CCWA staff would work and cooperate with DWR to facilitate restoration of service as expediently as possible.

5.7 Water Quality

CCWA provides water from the State Water Project (SWP) to participants in Santa Barbara and San Luis Obispo Counties. SWP water comes from the Sacramento-San Joaquin Delta (Delta) which is fed by rain and snow from the Sierra Nevada, Cascade, and Coastal mountain ranges. Water from the Delta is pumped into a series of canals

and reservoirs and provides water to urban and agricultural consumers throughout the Bay Area and central and southern California. Water flowing through the Delta is of generally high quality; however certain water quality aspects may vary considerably due to conditions in the Delta. Seawater intrusion from the San Francisco Bay creates higher concentrations of chloride and bromide salts. Total organic carbon (TOC) concentrations also increase as the water flows through the Delta due to agricultural drainage from peat soil islands in the Delta. Treated wastewater discharged into the Delta also increases salt concentrations and adds pathogens to the water.

In order to improve the usability of the Delta as a municipal water source, the Municipal Water Quality Investigations (MWQI) Program was created. The MWQI Program accomplishes this, in part, by providing monitoring, forecasting, and reporting of SWP water quality at sites in the Delta. By using data provided by the MWQI Program and its own water monitoring programs, CCWA is able to make adjustments at the treatment plant to produce water to the highest standards attainable. The treatment plant, at Polonio Pass, utilizes conventional treatment to provide a multi-barrier strategy.

The first barrier is advanced coagulation which removes organic and sediment particulates as well as dissolved organic matter. Removing particles improves the anti-microbial action of the disinfectants and the removal of dissolved organic matter removes a microbial food source as well as precursors for disinfection byproducts. The water is then passed through a second barrier of activated carbon filters to remove remaining particulate matter down to micron size. The filters also adsorb additional organic matter. Finally, the water enters the third barrier, a dedicated chlorine contactor. Chlorine kills any remaining microbes that have made it through the treatment process. After a sufficient chlorination contact time, ammonia is added to the water to form chloramines. Chloramines are similar to chlorine and prevent the growth of bacteria in the distribution system, which delivers water from the treatment plant to CCWA's project participants.

The TOC and bromide in Delta water has the potential to form harmful disinfection byproducts (DBP) by reacting with chlorine or chloramines in the treatment process. In order to reduce the potential for the formation of DBPs, TOC levels are reduced prior to the disinfection. The concentration of TOC varies from below 2 mg/L to more than 10 mg/L in water from the Delta. The cost of treatment fluctuates with the amount of chemicals necessary to remove the organic carbon.

Another important property of SWP water is the mineral content. SWP water is generally low in alkalinity and dissolved minerals, such as calcium, magnesium, sodium, potassium, iron, manganese, nitrate, and sulfate. Most of these do not have health based concerns, but "hard" water (water high in calcium, magnesium, and iron) can cause a number of problems for consumers, such as the formation of white crusts in plumbing fixtures, water spots, damage to water heaters, and excess use of soaps. Nitrate is the main exception, as it has significant health effects for infants; however, the nitrate content of SWP water is very low. A low alkalinity levels affects the coagulation treatment process. Alkalinity is necessary to react with aluminum sulfate (alum) used in

the treatment process, in order to cause coagulation and flocculation of suspended solids and colloidal particles. The reaction of alum with alkalinity also removes excess alum from the processed water. Without this reaction, some alum may stay dissolved in the water and be released in the processed water. Aluminum has been linked to health related problems. The use of additional chemicals may be used to compensate for low alkalinity leading to higher treatment costs. Also of significance is the chloride content. Although not a human health risk, chloride can have a negative impact on agricultural activities and regulatory compliance for local sanitation agencies.

Water from the Delta is also susceptible to taste and odor (T&O) problems associated with algal growth in the Delta. This is typically a seasonal problem only occurring in the warmer months which when accompanied by other factors, can lead to algal blooms. Some algae, especially blue-green algae, release 2-methylisoborneol (MIB) and geosmin which are T&O chemicals associated with musty and earthy taste and smells. Both of these compounds have very low odor thresholds and can be sensed by some people at concentrations around 10 to 30 parts per trillion. The source of these compounds is not fully understood so CCWA uses a combination of monitoring by the DWR in the Delta and at San Luis Reservoir and monitoring of the water entering the treatment plant to forecast a possible spike in the levels of these two T&O compounds. In the case of an actual T&O event, CCWA is prepared to remove these contaminants using powdered activated carbon in the treatment process.

Each winter the DWR performs maintenance and inspections on the Coastal Branch of the SWP. In order for DWR to obtain access to the canal and pipelines, the Coastal Branch is slowly dewatered. During this time the PPWTP must shut down. As the water flow decreases, concentrations of ammonia in the canal can rise significantly. During the shutdown, ammonia levels may continue to rise in the raw water tanks at the treatment plant. The management of the excess ammonia prior to and following the plant shutdown creates a challenge in the treatment of the water along with extra expenses associated with the use of additional chemicals. This has been remedied to some extent by the removal of sediment buildup in the canal and pumping plant forebays of the Coastal Branch as part of the routine maintenance performed during the winter shutdowns.

CCWA does not believe that water quality will negatively impact its ability to provide a reliable supply of water over the next twenty years, although water quality is certainly a consideration in water supply planning. CCWA's approach has been to monitor water quality both upstream and downstream of the treatment plant and to use that information to treat the water to the highest standards attainable.

5.8 Drought Planning

As a wholesaler of supplemental imported water, CCWA defers the creation of water shortage action plans to the retail agencies who have the ability to rely on other sources, participate in demand management measures and institute voluntary and

mandatory conservation. These shortage contingency plans are contained in their individual UWMPs and Master Water Plans. CCWA's charge is to assure that the delivery of the SWP to retail agencies is as reliable as possible each and every year.

6.0 DEMAND MANAGEMENT MEASURES

The UWMP Act defines a set of Demand Management Measures (DMM), which are a set of specific methods employed by a water supplier to encourage and facilitate water conservation. The UWMP Act requires that any water management grant or loan that is administered by DWR, State Water Resource Control Board or California Bay-Delta Authority (Funding Agencies) and issued to an urban water supplier must be conditioned to require implementation of applicable DMMs.

In addition to DMMs, the water industry has developed its own water conservation practices. In 1991, the California Urban Water Conservation Council (CUWCC) was formed via the Memorandum of Understanding Regarding Water Conservation in California (MOU) and this organization developed a set of water conservation practices known as Best Management Practices (BMP). The CUWCC was created to increase efficient water use statewide through partnerships among urban water agencies, public interest organizations, and private entities. The CUWCC's goal is to integrate urban water conservation BMPs into the planning and management of California's water resources. Water suppliers that sign the MOU pledge to implement the applicable BMPs and to submit an annual report that documents the progress of BMP implementation.

DWR consulted with the CUWCC and appropriate funding agencies and determined that DMMs are equivalent to the BMPs that are described in the CUWCC MOU for loan and grant funding eligibility purposes. Therefore, for the UWMP process, DMMs, and BMPs are referred to interchangeably. However, in 2008, the CUWCC made some changes to their BMP descriptions. Based on the new BMP descriptions for wholesaler urban water suppliers and the UWMP Guidance manual, the specific BMP/DMMs generally applicable to whole sale urban water suppliers are as follows:

Table 6-1: Best Management Practices/Demand Management Measures

CCUWCC BMP Organization and Names (2009 MOU)				UWMP DMMs	
Type	**Category**	**BMP#**	**BMP Name**	**DMM#**	**DMM Name**
Foundational	Operations Practices	1.1.1	Conservation coordinator	L	Water conservation coordinator
		1.1.3	Wholesale agency assistance programs	J	Wholesale agency programs
		1.2	Water loss control	C	System water audits, leak detection, and repair
		1.3	Metering with commodity rates for all new connections and retrofit of existing connections	D	Metering with commodity rates for all new connections and retrofit of existing connections
		1.4	Retail conservation pricing	K	Conservation pricing
	Education Programs	2.1	Public information programs	G	Public information programs
		2.2	School education programs	H	School education programs

CCWA is a joint powers agency that was formed for the specific purpose of designing, constructing, operating and maintaining the facilities needed to import State Water into the central coast. Due to the agency's charter, CCWA does not have the legal authority to implement some of the wholesaler DMM/BMPs.

6.1 Santa Barbara County and CCWA Contractual Relationship

The SBFCWCD entered into an agreement with DWR in February 1963 entitled "Water Supply Contract".[6] This contract secured the SBFCWCD's participation in the SWP. In 1981, the SBFCWCD assigned certain rights and responsibilities of the SWP Water Supply Contract to local water purveyors in a series of agreements entitled "Water Supply Retention Agreements".[64] However, even though the SBFCWCD assigned certain rights of the SWP Water Supply Contract, the SBFCWCD has remained the responsible contracting entity recognized by DWR.

The local water purveyors that entered into the WSRA ultimately formed the CCWA through a Joint Exercise of Powers Agreement in 1991.[4] CCWA was specifically formed for the purpose of designing, building and operating the facilities needed to deliver water from the SWP to the various entities entitled to receive that water in Santa Barbara County. Each CCWA participant entered into a Water Supply Agreement with CCWA which assigned the rights they derived from their WSRA to CCWA.

Since the SBFCWCD is the recognized contracting entity in the original SWP Water Supply Contract, CCWA and the SBFCWCD entered into an agreement entitled "Transfer of Financial Responsibility Agreement" in 1991.[13] In this agreement, the SBFCWCD delegated specific responsibilities to CCWA which includes making CCWA financially responsible for designing, constructing and operating the Coastal Branch of the SWP.

The Transfer of Financial Responsibility Agreement did not delegate water conservation responsibilities from the SBFCWCD to CCWA. Rather, the SBFCWCD retained the responsibility to develop a regional water conservation program for the benefit of the water purveyors in Santa Barbara County. The SBFCWCD's regional water conservation program, known as the RWEP, was established in December 1990.[12] The individual CCWA Santa Barbara County Project Participants directly participate in the RWEP. Organizationally, both the RWEP and the SBFCWCD are part of the County of Santa Barbara Water Resource Division.

It is noteworthy that the USBR recognizes the RWEP as a regional water conservation program. This program satisfies the USBR's requirement for the County Water Agency, as a USBR master contractor for the Cachuma Project, to have a regional water conservation program.

6.2 Santa Barbara County Regional Water Efficiency Program

The CCWA Santa Barbara County Project Participants work within the framework of the County of Santa Barbara's robust water conservation program to supplement their own programs. The RWEP provides information and assistance to 18 local water purveyors within the County.[12]

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

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

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

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

6.2.1 School Education

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

6.2.2 Public Information

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

6.2.3 Commercial, Industrial, and Institutional

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

6.2.4 Landscape/Outdoor Water Use

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

6.2.5 Residential/Indoor Water Use

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

6.2.6 Agricultural

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

6.2.7 Coordination/Administration

The RWEP acts as a clearinghouse for water conservation information and programs. Tasks include surveying water providers and collecting data on water production and rates, water planning coordination including integrated regional water management planning and drought planning activities, and information sharing. Information sharing includes attending state and national meetings on topics related to water conservation, working closely with the CUWCC on implementing programs and reporting on conservation activities, as well as coordinating among all the water purveyors within Santa Barbara County on cooperative programs within the RWEP. The RWEP also provides information and training to local water conservation staff. This includes legislative updates, information on new water conserving technologies, reporting to local agencies on regional programs, and workshops on various water efficiency topics.

Additionally, the RWEP serves an oversight role for shared conservation projects including financial management of shared grants and project management activities such as budgeting, scheduling, and logistics. Multiple benefits result from using water efficiently, including saving energy, reducing flow into wastewater treatment facilities, and minimizing the need to develop new supplies, which comes with associated costs. Individual water consumers can also benefit by saving money on their water and energy bills when using water efficiently. The Integrated Regional Water Management Plan (IRWMP) includes projects that enhance existing conservation programs and will help increase water supply reliability, which is essential to effective regional water management for years in which water is in short supply.

6.3 Assessment of CCWA Current BMP/DMM Practices

As part of the preparation of the CCWA 2010 UWMP, a review of CCWA's BMP/DMM practices was conducted. The findings of the review indicate that, although the legal authority to implement many of the required Wholesaler BMP/DMMs rests with the Santa Barbara County Water Agency and not CCWA, much has been accomplished by CCWA towards full implementation. A description of the CCWA's accomplishments for meeting the Wholesaler BMP/DMMs and proposed additional efforts are presented below:

6.3.1 Conservation Coordinator (BMP 1.1.1 and DMM L)

CCWA does not currently have a dedicated water conservation coordinator. However, CCWA does have staff assigned to conduct certain tasks dealing with water loss issues, which is a Demand Management Measure. See Section 6.3.3 for more detail. In addition, CCWA does encourage staff to develop professionally through earning various certification and licenses. Recently, the CCWA Water

Treatment Plant Supervisor earned a certification as a Water Conservation Practitioner from the American Water Works Association.

To ensure and fortify compliance with this BMP, CCWA will assign water conservation coordinator duties to existing staff members in fiscal year 2011/2012. CCWA has also agreed to join the CUWCC and will formalize a program through becoming a signatory to the CUWCC Memorandum of Understanding. The duties arising from this program will be assigned to existing staff as required.

6.3.2 Wholesaler Assistance (BMP 1.1.3 and DMM J)

Wholesaler assistance is not within the specific charter of CCWA, which is to build, operate and maintain the SWP coastal branch. A wholesaler assistance program is defined by the CUWCC as having six elements. These elements are as follows:

1. Financial investments and building partnerships
2. Technical support
3. Program management
4. Water shortage allocations
5. Non-signatory reporting
6. Encourage CUWCC membership

All of the elements listed above are not within the scope of CCWA's charter. Consequently, CCWA does not have the authority to directly implement these measures. Santa Barbara County's RWEP serves this role for the Santa Barbara County water purveyors.

6.3.3 Water Loss Control (BMP 1.2 and DMM C)

The CCWA Board of Directors approves annual goals for staff to complete in each calendar year. In 2008, the Board established a goal to research the available leak detection methods for large diameter pipelines. Staff completed the goal and concluded that the most cost effective leak detection method was a program that combined hydrostatic pipeline testing during the annual winter maintenance shutdown, periodic internal pipeline inspection at selected locations and right-of-way inspection for signs of pipeline leakage. This leak detection program has been in place since 2008 and is an ongoing effort. Any leaks that are identified are rapidly repaired.

CCWA complies with the intent of this BMP/DMM. Later in 2011, CCWA will conduct an annual water audit, following the procedures outlined in the American Water Works Association Manual M-36, starting in Fiscal Year 2011/2012.

6.3.4 Metering with Commodity Rates (BMP 1.3 and DMM D)

The CCWA pipeline has ten turnouts where water is delivered. Each turnout is equipped with a meter that provides continuous measurement of flow rate and also provides totalized delivery volumes. The meters are monitored continuously through the CCWA SCADA. On a monthly basis, the total recorded delivery volume for each turnout is reviewed and reconciled with Master Meters, as required by contract. All variable costs associated with the CCWA operation is based on the monthly totals of each participant turnout.

The CCWA Instrumentation, Calibration and Repair Department is charged with the responsibility of servicing the turnout meters to ensure they perform to industry standards. The service includes routine calibration and replacement of faulty parts or complete meters, as appropriate.

6.3.5 Retail Conservation Pricing (BMP 1.4 and DMM K)

As a wholesaler, CCWA does not have the ability to set rates for retail water customers. CCWA passes all of its costs on to each water retailer. The individual CCWA participants set the water rates for their individual systems. This BMP/DMM is not applicable to CCWA.

6.3.6 Public Information (BMP 2.1 and DMM G)

As described in Section 6.2, the SBFCWCD did not delegate the responsibility of implementing a water conservation program to CCWA. Rather, the SBFCWCD developed the Santa Barbara County RWEP to serve the Santa Barbara County water purveyors. Consequently, CCWA relies upon the Santa Barbara County RWEP for dissemination of water conservation information to the public and school system. CCWA does cooperate with the RWEP through providing a link to its website.

6.3.7 School Education Programs (BMP 2.2 and DMM H)

As discussed in Section 6.3.6, CCWA relies upon the Santa Barbara County RWEP for dissemination of water conservation information to the public and school system. CCWA does cooperate with the RWEP through providing a link to its website.

6.4 CCWA Plan for Compliance with Applicable DMM/BMP

CCWA has budgeted for the expense of joining the CUWCC in fiscal year 2011/2012 and intends to become a signatory to the MOU. Within the framework of the MOU, CCWA plans to implement the following:

- Continue to work and cooperate with the Santa Barbara County RWEP as a means to ensure CCWA project participants benefit for BMP 1.1.3 (Wholesale Assistance), 1.4 (Retail Pricing), 2.1 (Public Information) and 2.2 (School Education).

- Implement leak detection methods consistent with the requirements of BMP 1.2 (Water Loss) to ensure full compliance. Although CCWA will implement BMP 1.2 as specified in the MOU, CCWA does have an existing leak detection program that has a greater ability to detect pipeline leakage than the methods outlines in BMP 1.2. The methods in use by CCWA are as follows:

    - Visual ground surface inspection of the entire length of the 143 mile pipeline on an annual basis,
    - Hydrostatic testing of section of the pipeline during the annual shutdown, and
    - Periodic internal inspections of the pipeline. Selected sections of the pipeline are inspected on an annual basis.

- Utilize existing staff to implement specific tasks related to BMP 1.1.1 (Water Conservation Coordinator) and BMP 1.2 (Water Loss).

7.0 REFERENCES

[1] California Water Code, Division 6, Section 10610 to 10650
[2] Senate Bill SBX7-7, Water Conservation Act of 2009
[3] California Department of Water Resources, Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan, Dated March 2011.
[4] Joint Exercise of Powers Agreement, between cities of Buellton, Guadalupe Santa Barbara and Santa Maria, Carpentaria Valley Water District, Goleta Water District, Montecito Water District and the Santa Ynez River Water Conservation District Improvement District #1, dated August 1, 1991.
[5] Water Supply Agreement, Between the Central Coast Water Authority and Individual Project Participants, various dates in 1991.
[6] Water Supply Contract Between State of California, Department of Water Resources and Santa Barbara County Flood Control and Water Conservation District, dated February 26, 1963.
[7] Joint Exercise of Powers Agreement Between State of California and the Central Coast Water Authority, relating to the Operations and Maintenance of the Coastal Branch, Phase II, dated October 1, 1996.
[8] Master Water Treatment Agreement Between the Central Coast Water Authority and the San Luis Obispo County Flood Control and Water Conservation District, Dated March 1, 1992.
[9] Water Supply Contract Between State of California, Department of Water Resources and San Luis Obispo County Flood Control and Water Conservation District, dated February 26, 1963.
[10] County of San Luis Obispo, Water Resources Division of Public Works, Website providing data on the State Water Project in San Luis Obispo County, http://www.slocountywater.org/site/Major%20Projects/State%20Water%20Project/index.htm
[11] County of Santa Barbara, Public Works Department, Website providing data on the Water Agency and Flood Control and Water Conservation District, http://www.countyofsb.org/pwd/pwwater.aspx?id=2956
[12] County of Santa Barbara, Regional Water Efficiency Program, Regional Water Efficiency Program Description, revised October 27, 2010.
[13] Transfer of Financial Responsibility Agreement, Between Santa Barbara County Flood Control and Water Conservation District and the Central Coast Water Authority, Dated November 12, 1991.
[14] Central Coast Water Authority, website providing history of agency, http://www.ccwa.com/history/index.html
[15] National Oceanic Atmospheric Administration, Website providing weather data, http://www.wrh.noaa.gov/lox/climate/city_normtemps.php ,
[16] California Irrigation Management Information System (CIMIS), Website providing evapo-transpiration data, www.cimis.water.ca.gov
[17] Santa Barbara County Association of Governments, Regional Growth Forecast 2005 – 2040, dated August 2007.
[18] Santa Barbara County Association of Governments, Regional Growth Forecast 2005 – 2040, dated August 2007.
[19] California Department of Water Resources, Public Water System Statistics Form (Form 38), Form 38 for year 2005 and 2010 for all Santa Barbara County Project Participants.
[20] California Department of Public Health, Annual Report to the Drinking Water Program, Annual Report for years 2005 to 2009 for all Santa Barbara County Project Participants.
[21] 21. Santa Ynez River State Water Project Exchange Agreement Between the Carpinteria County Water District, Central Coast Water Authority, Goleta Water District, La Cumbre Mutual Water Company, Montecito Water District, Santa Ynez River Water Conservation District, Improvement District No. 1,
[22] Water Service Contract, Between the United States and Santa Barbara County Water Agency (Agency) Providing for Water Service from the Project, Contract No. I75r-1802R, dated April 14, 1996.
[23] California Department of Water Resources, Final Environmental Impact Report, State Water Project Coastal Branch, Phase II and Mission Hills Extension, dated May 1991.
[24] California Department of Water Resources, The State Water Project Delivery Reliability Report 2009, dated August 2009.

[25] California Department of Water Resources, State Water Project Analysis Office, website providing Contractor Notices, http://www.water.ca.gov/swpao/notices.cfm
[26] California Department of Water Resources, website providing weather data including 8 station rain index, http://cdec.water.ca.gov/weather.html
[27] Central Coast Water Authority, Website providing website links to each Project Participant, www.ccwa.com
[28] California Water Code, Section 1810 – 1814
[29] California Water Code, Section 470, 475, 480 – 483
[30] California Department of Water Resources, website providing information on 2009 Dry Year Purchasing Program, http://www.water.ca.gov/drought/docs/2009water_bank.pdf
[31] 2008 and 2009 Central Coast Water Authority Reliability Agreement, Between San Luis Obispo County Flood Control and Water Conservation District and the Central Coast Water Authority
[32] Pacific Institute, H. Cooley, P Gleick, G Wolf, Desalination, with a Grain of Salt, A California Perspective, June 2006
[33] California Coastal Commission, Seawater Desalination and the California Coastal Act, March 2004
[34] California State University, Sacramento, Center for Collaborative Policy, California Desalination Planning Handbook, Prepared for Department of Water Resources, dated February 2008.
[35] F. BenJemaa of California Department of Water Resources, Water Use and Efficiency Branch, Logistics for Deploying Mobile Water Desalination Units, Dated April 30, 2009.
[36]City of Santa Barbara, Water resources Department, website providing information on recycled water use, http://www.santabarbaraca.gov/Resident/Water/Wastewater/WWRecycledWater.htm.
[37]San Luis Obispo County Flood Control and Water Conservation District, Draft Water Master Plan, March 2011
[38] Nipomo Community Service District, Evaluation of Desalination as a Source of Supplemental Water, Dated September 28, 2007
[39] US Environmental Protection Agency, Region 9, Fact Sheet for Draft Class I Nonhazardous Underground Injection Control Permit # CA10910004, County of Santa Barbara, Laguna Sanitation District, dated January 2011
[40] California State Water Resources Control Board, California Integrated Water Quality Database System, website providing access to permitted facilities information, http://ciwqs.waterboards.ca.gov/ciwqs/readOnly/ciwqsReportRegulatedFacilitiesCriteria.jsp?command=resetCriteria
[41] California Regional Water Quality Control Board, Waste Discharge Permits for facilities listed in Table 4-4
[42] Bachman, Steven, Goleta Water District Water Supply Management Plan, April 2011
[43] San Luis Obispo County Flood Control and Water Conservation District, Capacity Assessment of the Coastal Branch, Chorro Valley and Lopez Pipeline – Draft, April 15, 2011
[44] San Luis Obispo County Flood Control and Water Conservation District, Paso Robles Groundwater Sub-basin Water Banking Feasibility Study, Dated April 2008
[45] California Department of Water Resources, website providing SWP Contractor Specific Reliability Data, http://baydeltaoffice.water.ca.gov/swpreliability/index.cfm
[46] California State Water Resources Control Board, Water Rights Decision D-1641.
[47] The December 15, 2008 FWS BO evaluated impacts to the delta smelt. The June 4, 2009 NMFS BO evaluated impacts to winter-run and spring-run Chinook salmon, steelhead, green sturgeon, and resident killer whales.
[48] See Appendix E for a description of SWP exports as authorized under D-1641, and reductions in D-1641 exports as ordered by the "Interim Remedies" decision in *NRDC v. Kempthorne* (E.D. Cal. 05-CV-1207-OWW).
[49] *See*, *e.g.*, *State Water Contractors v. Cal. Dept. of Fish and Game*, Sac. Sup. Ct. Case No. 34-2010-80000552; *State Water Contractors v. Cal. Dept. of Fish and Game*, Sac. Sup. Ct. Case No. 34-2010-80000560.
[50] *See State Water Contractors v. California Dept. of Fish and Game, et al.*, Sac. Sup. Ct. Case No. 34-2009-80000203.

[51] SBX7-1 became effective February 3, 2010 and adds Division 35 to the California Water Code (commencing with Section 85300). Division 35 is referred to as the Sacramento-San Joaquin Delta Reform Act of 2009.
[52] (Flow Criteria at 5-8.)
[53] (DFG Report at 13.)
[54] (Flow Criteria at 4; DFG Report at 16.)
[55] (Flow Criteria at 3, 10; DFG Report at ES-4.)
[56] (DWR Report at 43, 48, Tables 6.3 and 6.12.)
[57] (DWR Report at 43-44, 49, Tables 6.4, 6.5, 6.13 and 6.14.)
[58] (DWR Report at 49, Tables 6.13 and 6.14.)
[59] (*See*, *e.g.*, DWR Report at 19-24, 25-28, 29-35, Appendices A, A-1, A-2, B.)
[60] (*See*, *e.g.*, DWR Report at 19, 29-30, Appendices A-B.)
[61] *See*, *e.g.*, *Sonoma County Water Coalition v. Sonoma County Water Agency* (2010) 189 Cal.App.4th 33; *Watsonville Pilots Association v. City of Watsonville* (2010) 183 Cal.App.4th 1059; *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412.
[62] Central Coast Water Authority, Emergency Response Plan, 2010
[63] California Department of Water Resources, Delta Sanitary Survey 2001 Update.
[64] Water Supply Retention Agreement, Between Santa Barbara County Flood Control and Water Conservation District and the CCWA Project Participants.

APPENDIX A
DWR Checklist

Table I-2 Urban Water Management Plan checklist, organized by subject

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
PLAN PREPARATION				
4	Coordinate the preparation of its plan with other appropriate agencies in the area, including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	10620(d)(2)		Page 5 Section 1.3
6	Notify, at least 60 days prior to the public hearing on the plan required by Section 10642, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Any city or county receiving the notice may be consulted and provide comments.	10621(b)		Appendix B
7	Provide supporting documentation that the UWMP or any amendments to, or changes in, have been adopted as described in Section 10640 et seq.	10621(c)		Appendix C
54	Provide supporting documentation that the urban water management plan has been or will be provided to any city or county within which it provides water, no later than 60 days after the submission of this urban water management plan.	10635(b)		Page 8 Section1.4
55	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan.	10642		N/A
56	Provide supporting documentation that the urban water supplier made the plan available for public inspection and held a public hearing about the plan. For public agencies, the hearing notice is to be provided pursuant to Section 6066 of the Government Code. The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water. Privately-owned water suppliers shall provide an equivalent notice within its service area.	10642		Appendix B
57	Provide supporting documentation that the plan has been adopted as prepared or modified.	10642		Page 8 Section 1.4
58	Provide supporting documentation as to how the water supplier plans to implement its plan.	10643		Page 8 Section 1.4

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
59	Provide supporting documentation that, in addition to submittal to DWR, the urban water supplier has submitted this UWMP to the California State Library and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption. This also includes amendments or changes.	10644(a)		Page 8 Section 1.4
60	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the urban water supplier has or will make the plan available for public review during normal business hours	10645		Page 8 Section 1.4
SYSTEM DESCRIPTION				
8	Describe the water supplier service area.	10631(a)		Pages 9-12 Section 2
9	Describe the climate and other demographic factors of the service area of the supplier	10631(a)		Pages 12-13 Section 2.4
10	Indicate the current population of the service area	10631(a)	Provide the most recent population data possible. Use the method described in "Baseline Daily Per Capita Water Use." See Section M.	Page 14 Section 2.4
11	Provide population projections for 2015, 2020, 2025, and 2030, based on data from State, regional, or local service area population projections.	10631(a)	2035 and 2040 can also be provided to support consistency with Water Supply Assessments and Written Verification of Water Supply documents.	Page 14 Section 2.4
12	Describe other demographic factors affecting the supplier's water management planning.	10631(a)		Page 15 Section 2.5
SYSTEM DEMANDS				
1	Provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.	10608.20(e)		N/A
2	*Wholesalers:* Include an assessment of present and proposed future measures, programs, and policies to help achieve the water use reductions. *Retailers:* Conduct at least one public hearing that includes general discussion of the urban retail water supplier's implementation plan for complying with the Water Conservation Bill of 2009.	10608.36 10608.26(a)	Retailers and wholesalers have slightly different requirements	Page 26 Section 3.3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
3	Report progress in meeting urban water use targets using the standardized form.	10608.40		N/A
25	Quantify past, current, and projected water use, identifying the uses among water use sectors, for the following: (A) single-family residential, (B) multifamily, (C) commercial, (D) industrial, (E) institutional and governmental, (F) landscape, (G) sales to other agencies, (H) saline water intrusion barriers, groundwater recharge, conjunctive use, and (I) agriculture.	10631(e)(1)	Consider 'past' to be 2005, present to be 2010, and projected to be 2015, 2020, 2025, and 2030. Provide numbers for each category for each of these years.	Pages 17-20 Section 3.1
33	Provide documentation that either the retail agency provided the wholesale agency with water use projections for at least 20 years, if the UWMP agency is a retail agency, OR, if a wholesale agency, it provided its urban retail customers with future planned and existing water source available to it from the wholesale agency during the required water-year types	10631(k)	Average year, single dry year, multiple dry years for 2015, 2020, 2025, and 2030.	Page 25 Section 3.2.2
34	Include projected water use for single-family and multifamily residential housing needed for lower income households, as identified in the housing element of any city, county, or city and county in the service area of the supplier.	10631.1(a)		N/A
SYSTEM SUPPLIES				
13	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, and 2030.	10631(b)	The 'existing' water sources should be for the same year as the "current population" in line 10. 2035 and 2040 can also be provided.	Pages 34-35 Section 4.3.2
14	Indicate whether groundwater is an existing or planned source of water available to the supplier. If yes, then complete 15 through 21 of the UWMP Checklist. If no, then indicate "not applicable" in lines 15 through 21 under the UWMP location column.	10631(b)	Source classifications are: surface water, groundwater, recycled water, storm water, desalinated sea water, desalinated brackish groundwater, and other.	Pages 27-29 Section 4.1
15	Indicate whether a groundwater management plan been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	10631(b)(1)		N/A
16	Describe the groundwater basin.	10631(b)(2)		N/A
17	Indicate whether the groundwater basin is adjudicated? Include a copy of the court order or decree.	10631(b)(2)		N/A

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
18	Describe the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. If the basin is not adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		N/A
19	For groundwater basins that are not adjudicated, provide information as to whether DWR has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition. If the basin is adjudicated, indicate “not applicable” in the UWMP location column.	10631(b)(2)		N/A
20	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	10631(b)(3)		N/A
21	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	10631(b)(4)	Provide projections for 2015, 2020, 2025, and 2030.	N/A
24	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	10631(d)		Page 43 Section 4.5
30	Include a detailed description of all water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years, excluding demand management programs addressed in (f)(1). Include specific projects, describe water supply impacts, and provide a timeline for each project.	10631(h)		Pages 43-45 Section 4.5.1
31	Describe desalinated water project opportunities for long-term supply, including, but not limited to, ocean water, brackish water, and groundwater.	10631(i)		Pages 44-49 Section 4.6 Section 4.7
44	Provide information on recycled water and its potential for use as a water source in the service area of the urban water supplier. Coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	10633		Page 48 Section 4.8
45	Describe the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	10633(a)		Page 49 Section 4.8

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
46	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	10633(b)		Page 49 Section 4.8
47	Describe the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.	10633(c)		Page 49 Section 4.8
48	Describe and quantify the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.	10633(d)		Page 49 Section 4.8
49	The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected.	10633(e)		Page 49-53 Section 4.9
50	Describe the actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.	10633(f)		N/A
51	Provide a plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.	10633(g)		N/A
WATER SHORTAGE RELIABILITY AND WATER SHORTAGE CONTINGENCY PLANNING [b]				
5	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	10620(f)		N/A
22	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage and provide data for (A) an average water year, (B) a single dry water year, and (C) multiple dry water years.	10631(c)(1)		Page 54-60 Section 5.1
23	For any water source that may not be available at a consistent level of use - given specific legal, environmental, water quality, or climatic factors - describe plans to supplement or replace that source with alternative sources or water demand management measures, to the extent practicable.	10631(c)(2)		Pages 60-62 Section 5.2
35	Provide an urban water shortage contingency analysis that specifies stages of action, including up to a 50-percent water supply reduction, and an outline of specific water supply conditions at each stage	10632(a)		Pages 62-64 Section 5.3

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
36	Provide an estimate of the minimum water supply available during each of the next three water years based on the driest three-year historic sequence for the agency's water supply.	10632(b)		Page 72 Section 5.5.4
37	Identify actions to be undertaken by the urban water supplier to prepare for, and implement during, a catastrophic interruption of water supplies including, but not limited to, a regional power outage, an earthquake, or other disaster.	10632(c)		Pages 73 Section 5.6
38	Identify additional, mandatory prohibitions against specific water use practices during water shortages, including, but not limited to, prohibiting the use of potable water for street cleaning.	10632(d)		N/A
39	Specify consumption reduction methods in the most restrictive stages. Each urban water supplier may use any type of consumption reduction methods in its water shortage contingency analysis that would reduce water use, are appropriate for its area, and have the ability to achieve a water use reduction consistent with up to a 50 percent reduction in water supply.	10632(e)		N/A
40	Indicated penalties or charges for excessive use, where applicable.	10632(f)		N/A
41	Provide an analysis of the impacts of each of the actions and conditions described in subdivisions (a) to (f), inclusive, on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts, such as the development of reserves and rate adjustments.	10632(g)		N/A
42	Provide a draft water shortage contingency resolution or ordinance.	10632(h)		N/A
43	Indicate a mechanism for determining actual reductions in water use pursuant to the urban water shortage contingency analysis.	10632(i)		N/A
52	Provide information, to the extent practicable, relating to the quality of existing sources of water available to the supplier over the same five-year increments, and the manner in which water quality affects water management strategies and supply reliability	10634	For years 2010, 2015, 2020, 2025, and 2030	Pages 76-78 Section 5.7

No.	UWMP requirement [a]	Calif. Water Code reference	Additional clarification	UWMP location
53	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry water years. Base the assessment on the information compiled under Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.	10635(a)		Page 78 Section 5.8
DEMAND MANAGEMENT MEASURES				
26	Describe how each water demand management measures is being implemented or scheduled for implementation. Use the list provided.	10631(f)(1)	Discuss each DMM, even if it is not currently or planned for implementation. Provide any appropriate schedules.	Page 75 Section 6
27	Describe the methods the supplier uses to evaluate the effectiveness of DMMs implemented or described in the UWMP.	10631(f)(3)		Page 83 Section 6.4
28	Provide an estimate, if available, of existing conservation savings on water use within the supplier's service area, and the effect of the savings on the ability to further reduce demand.	10631(f)(4)		N/A
29	Evaluate each water demand management measure that is not currently being implemented or scheduled for implementation. The evaluation should include economic and non-economic factors, cost-benefit analysis, available funding, and the water suppliers' legal authority to implement the work.	10631(g)	See 10631(g) for additional wording.	N/A
32	Include the annual reports submitted to meet the Section 6.2 requirements, if a member of the CUWCC and signer of the December 10, 2008 MOU.	10631(j)	Signers of the MOU that submit the annual reports are deemed compliant with Items 28 and 29.	N/A

a The UWMP Requirement descriptions are general summaries of what is provided in the legislation. Urban water suppliers should review the exact legislative wording prior to submitting its UWMP.

b The Subject classification is provided for clarification only. It is aligned with the organization presented in Part I of this guidebook. A water supplier is free to address the UWMP Requirement anywhere with its UWMP, but is urged to provide clarification to DWR to facilitate review.

APPENDIX B
Notices and Outreach Materials

SANTA BARBARA NEWS PRESS
Proof of Publication
(2015.5C.C.P)

Superior Court of
the State of California
In and for The County of Santa Barbara

Envelope No. 42399

In the Matter of: NOTICE OF PUBLIC WORKSHOP AND PUBLIC HEARINGS

The undersigned, being the principal clerk of the printer of the Santa Barbara News Press, a newspaper of general circulation, printed and published daily in the City of Santa Barbara, County of Santa Barbara, California and which newspaper has been adjudged a newspaper of general circulation by the Superior Court in the County of Santa Barbara, State of California, Adjudication Number 47171; and that affiant is the principal clerk of said Santa Barbara News Press. That the printed notice hereto annexed was published in the SANTA BARBARA NEWS-PRESS, in the issues of the following named dates

JUNE 4, 8, 15, 18 / 2011

all in the year 2011 I hereby certify (or declare) under penalty of perjury that that foregoing is true and correct.

Executed on this 29th of JUNE 2011 at Santa Barbara, CA.

Signature

NOTICE OF PUBLIC WORKSHOP AND PUBLIC HEARINGS
2010 URBAN WATER MANAGEMENT PLAN

The Central Coast Water Authority ("CCWA") has prepared its 2010 Urban Water Management Plan ("UWMP"), as encouraged by the Urban Water Management Planning Act ("Act"). Adoption of the 2010 UWMP by the CCWA Board of Directors is required under the Act by July 1, 2011.

While the Act only requires that an urban water supplier hold one public hearing before adopting a plan, in order to ensure sufficient opportunity for public feedback, input and suggestions concerning the 2010 UWMP, a public workshop has also been scheduled in advance of the Public Hearing to adopt the 2010 UWMP.

The public workshop will be held at 7:00 p.m. on Monday, June 20, 2011. The public hearing will held at 9:00 a.m., on Thursday, June 23, 2011. Both the public workshop and hearing will take place at the CCWA Board Room, located on the 255 Industrial Way, Buellton California 93427.

For additional information regarding the public hearing or the public workshop, please contact John Brady or Drew Dudley, at (805) 688-2292.

JUNE 4, 8, 15, 18 / 2011 -- 42399

2010 UWMP LETTER RECIPIENTS

P:\ACCESS FILES\Database new CCWA Main\Query:"Project Participant UWMP Ltr"

Last Name		
Albrecht	Bill	City of Buellton
Alvarado	Mike	La Cumbre Mutual Water Company
Amerikaner	Steve	Brownstein Hyatt Farber Schreck
Barget	Joe	Vandenberg Village CSD
Bjork	Rebecca	City of Santa Barbara
Chase	Steve	City of Goleta
Community Development Dept		City of Grover Beach
Community Development Director		City of Carpinteria
Dahlstrom	Chris	Santa Ynez River WCD, ID #1
Hamilton	Charles	Carpinteria Valley Water District
McInnes	John	Goleta Water District
Mosby	Tom	Montecito Water District
Naftaly	Matt	S.B. County Water Agency
Pena	Michael	City of Guadalupe
Petersen	Ken	Golden State Water Company
Planning Manager		City of Goleta
Rees	Kate	Cachuma Operation & Maint. Bd.
Rush	Pernell	1028 Iceland Ave., Bldg 11432
Segovia	Susan	City of Lompoc
Sweet	Richard	City of Santa Maria
van der Linden, P.E.	Matt	City of Solvang
Wales	Bruce	Santa Ynez River WCD
Wilson	U.S.	Cuyama CSD
Woodard	William "Woody"	Golden State Water Company

Also include:
CCWA
Bill Brennan
John Brady
Drew Dudley
San Luis Obispo County
Sylas Cranor

April 25, 2011

XXXXX
XXXXX
XXXXX

Subject: 60-Day Notification for Preparation of the 2011 Urban Water Management Plan for the Central Coast Water Authority.

Dear XXXXX:

The Central Coast Water Authority (CCWA) is in the process of preparing an updated Urban Water Management Plan, as required under the Urban Water Management Plan Act (Act). The deadline for completing and adopting the final Urban Water Management Plan is July 1, 2011.

Water Code, Section 10621(b) of the Act requires CCWA to provide a 60 day advance notice regarding the preparation of its 2011 Urban Water Management Plan (Plan). This notice must be provided to any city or county that receives water from the Central Coast Water Authority. This letter constitutes CCWA's 60 day notice.

When a draft Plan is available for public review, a copy will be posted on our website (www.ccwa.com). A copy of the draft Plan will also be available for review at our office in Buellton, California, once available to the public. In addition, CCWA will hold two public workshops in late May or early June of this year and will make its draft Plan available to the public at least two weeks prior to the public workshops. A notice of these public workshops will be issued in advance, as required.

The public hearing to consider adoption of the final Plan will be held in late June, 2011. The hearing will take place at the CCWA Board room, located at 255 Industrial Way, Buellton, CA 93427-9565. A notice will be issued specifying the date and time in advanced of the hearing, as required.

If you have any questions, please call our office at (805) 688-2292.

Sincerely,

John Brady
Operation Manager/Engineer
Central Coast Water Authority

June 3, 2011

XXXX
XXXX
XXXX

Subject: Notice of Public Hearings
2010 Urban Water Management Plan

Dear XXXX:

The Central Coast Water Authority (CCWA) has prepared a regional 2010 Urban Water Management Plan (UWMP) for the Santa Barbara County area, as encouraged by the Urban Water Management Planning Act (Act). Adoption of the 2010 UWMP is required under the Act by July 1, 2011.

The California Legislature, in 1983, enacted the Urban Water Management Planning Act (Division 6 Part 2.6 of the Water Code §§10610-10656). The Act states that every urban water supplier which provides water to 3,000 or more customers, or provides more than 3,000 acre-feet of water annually, is required to assess the reliability of its water sources over a 20-year planning horizon considering normal, dry, and multiple dry years. The UWMP examines historic and current water use projections and compares projected water supplies with demands over the next 20 years. The plan is meant to help ensure that CCWA provides a reliable supply of high-quality water to our participants and assists in planning to help meet current and future water demands in our area.

While the Act only requires that an urban water supplier hold one public hearing before adopting a plan, in order to ensure sufficient opportunity for public feedback, input and suggestions concerning the 2010 UWMP, CCWA will make a Draft UWMP available for public review via our website www.ccwa.com or by requesting a copy by contacting our office at 805-688-2292.

The CCWA will hold a public hearing on June 20th 2011 at 7:00pm. The public hearing will take place at the CCWA Board Room, located at 255 Industrial Way Buellton, CA 93427.

For additional information regarding the public hearings, please contact John Brady or Drew Dudley at (805) 688-2292.

Sincerely,

Andrew Dudley
Engineering Technician

ASD/jb

NOTICE OF PUBLIC WORKSHOP AND PUBLIC HEARINGS

2010 URBAN WATER MANAGEMENT PLAN

The Central Coast Water Authority ("CCWA") has prepared its 2010 Urban Water Management Plan ("UWMP"), as encouraged by the Urban Water Management Planning Act ("Act"). Adoption of the 2010 UWMP by the CCWA Board of Directors is required under the Act by July 1, 2011.

While the Act only requires that an urban water supplier hold one public hearing before adopting a plan, in order to ensure sufficient opportunity for public feedback, input and suggestions concerning the 2010 UWMP, a public workshop has also been scheduled in advance of the Public Hearing to adopt the 2010 UWMP.

The public workshop will be held at 7:00 p.m. on Monday, June 20, 2011. The public hearing will held at 9:00 a.m., on Thursday, June 23, 2011. Both the public workshop and hearing will take place at the CCWA Board Room, located on the 255 Industrial Way, Buellton California 93427.

For additional information regarding the public hearings, please contact John Brady or Drew Dudley, at (805) 688-2292.

APPENDIX C
CCWA Board Resolution to Adopt UWMP

RESOLUTION NO. 11-03

**RESOLUTION ADOPTING
THE 2010 URBAN WATER MANAGEMENT PLAN
FOR THE CENTRAL COAST WATER AUTHORITY
AS REQUIRED BY THE
CALIFORNIA URBAN WATER MANAGEMENT PLANNING ACT,
CALIFORNIA WATER CODE DIVISION 6, PART 2.6**

WHEREAS, pursuant to California Water Code section 10652, the preparation and adoption of an Urban Water Management Plan is exempt from the requirements of the California Environmental Quality Act (California Public Resources Code section 21000, et seq.); and

WHEREAS, the California Legislature enacted Assembly Bill 797 (Water Code Section 10610 et seq., known as the Urban Water Management Planning Act) during the 1983-84 Regular Session, and as amended subsequently, which mandates that every retail and wholesale water supplier providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre feet of water annually, prepare an Urban Water Management Plan, the primary objective of which is to plan for the conservation and efficient use of water; and

WHEREAS, the Central Coast Water Authority (CCWA) is a water wholesaler providing water to retail water purveyors that serve a population of over 350,000 people; and supply over 30,000 acre-feet per year of State Water Project Water; and

WHEREAS, the Plan must be adopted by July 1, 2011, after public review and hearing, and filed with the California Department of Water Resources within thirty days of adoption; and

WHEREAS, the CCWA circulated said Plan among local retail water suppliers contracted to receive water from CCWA; and

WHEREAS, the CCWA conducted one properly noticed public workshop regarding said Plan on June 20, 2011; and

WHEREAS, the CCWA conducted one properly noticed public hearing regarding said Plan on June 23, 2011; and

WHEREAS, CCWA shall file said Plan with the California Department of Water Resources by July 1, 2011;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Central Coast Water Authority:

1. That the 2010 Urban Water Management Plan is hereby approved and adopted.
2. That the Executive Director of CCWA is hereby authorized and directed to submit the 2010 Urban Water Management Plan to the Department of Water Resources within 30 days of execution of this Resolution

I attest that the foregoing resolution No. 11-03 was adopted by the Board of Directors of the Central Coast Water Authority at a meeting held June 23, 2011

Larry Lavagnino, Chairman

[Seal]

Attest:

William J Brennan
Secretary to the Board of Directors

	VOTING PERCENTAGE	AYE	NAY	ABSTAIN	ABSENT
City of Buellton	2.21%	X			
Carpinteria Valley Water District	7.64%	X			
Goleta Water District	17.20%	X			
City of Guadalupe	1.15%	X			
Montecito Water District	9.50%	X			
City of Santa Barbara	11.47%				X
City of Santa Maria	43.19%	X			
Santa Ynez River Water Conservation District, Improvement District No. 1	7.64%	X			

APPENDIX D
Santa Barbara County Economic Forecast

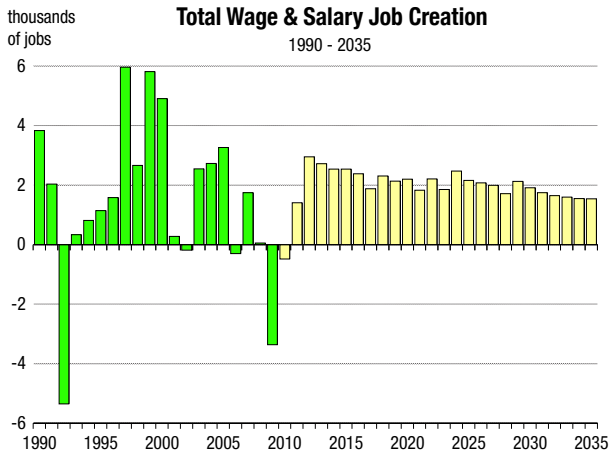
Santa Barbara County Economic Forecast

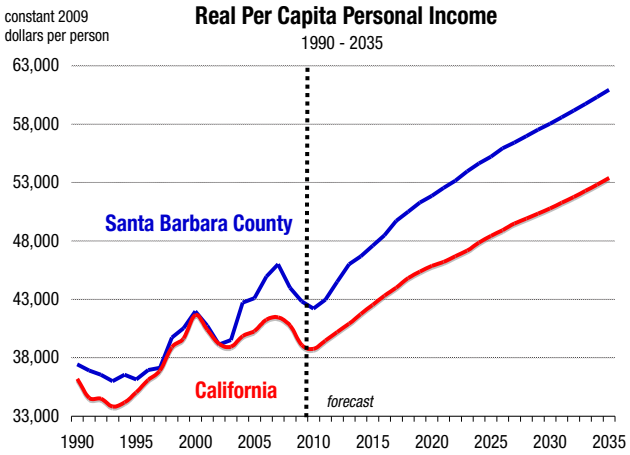
Santa Barbara County, located immediately west of Ventura County, is dominated by three principal economic activities: tourism, Vandenberg Air Force Base, and education. The population is nearly 433,000 people, and there are 186,400 wage and salary jobs. The per capita income in Santa Barbara County is $42,828, and the average salary per worker is $50,029.

Economic growth in Southern California declined sharply in 2009 and job creation was the lowest on record. In Santa Barbara County, nearly 3,400 wage and salary jobs were lost last year, a decline of -1.8 percent. Non-farm employment declined at a slightly higher rate of -1.9 percent. Though the unemployment rate increased to 8.8 percent, Santa Barbara has the second lowest rate of unemployment of all California Counties.

The principal employment clusters in Santa Barbara County are the public sector, retail trade, and services. Last year the only sectors that showed growth in the county were government and education and health services. The farm sector, which accounts for 9 percent of total employment, lost 160 jobs in 2009, declining 1 percent. The total value of crop production exceeded $1.1 billion in 2008, on the strength of strawberries, broccoli, and wine grapes.

Employment and population growth will remain modest in Santa Barbara County over the next five years. The northern end of the county will continue to dominate population and job growth due largely to the greater production of planned housing in the Santa Maria Valley. Housing is also more affordable in the northern communities of Santa Maria, Orcutt, and Lompoc. New job creation in the southern end of the county will remain scarce because new housing is both limited and expensive.





Forecast Highlights

- 2010 will be a year of stagnant job growth. For the year a decline of 480 jobs or 0.3 percent is forecast. By 2011 recovery is underway, with employment increasing by 0.8 percent.

- Average salaries adjusted for inflation are currently below the California state average, and will remain so over the forecast horizon. Real average salaries are forecast to rise an average of 1.1 percent per year from 2010 to 2015.

- The professional services, government, leisure services, retail trade, construction, education and health services, and farm sectors each add at least 1,200 jobs between 2010 and 2015. Together they account for 98 percent of net job creation. No other sector is expected to add more than 350 jobs from 2010 to 2015.

- Population growth will remain modest in the county. Annual growth in the 2010 to 2015 period averages 1.0 percent per year. The population will increase at faster rates in the Santa Maria Valley than in the Santa Barbara-Goleta area.

- Net migration for the entire county is expected to remain positive over the medium term forecast horizon. The south county will likely have negative net migration, but that will be offset by gains in the north county. From 2010 to 2015, there is an average of 1,100 net migrants entering the county per year.

- Real per capita incomes are expected to rise at an annual compound growth rate of 2.4 percent from 2010 to 2015.

- Total taxable sales are expected to increase by an average of 2.8 percent during the 2010 to 2015 period.

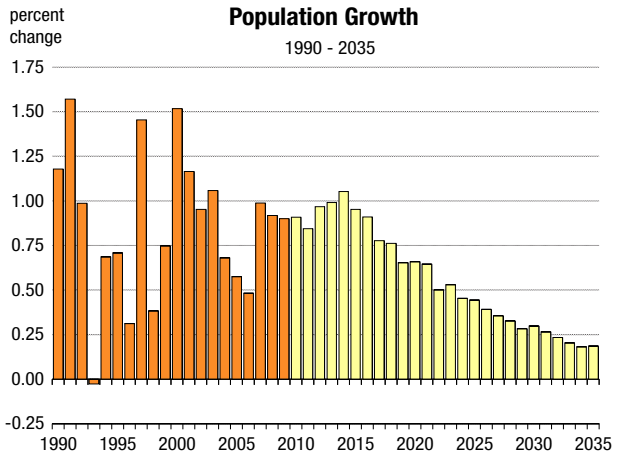
- Industrial production will increase by 2.1 percent in 2010, with gains coming from all component sectors. From 2010 to 2015 the growth rate of industrial production will average 2.6 percent per year.

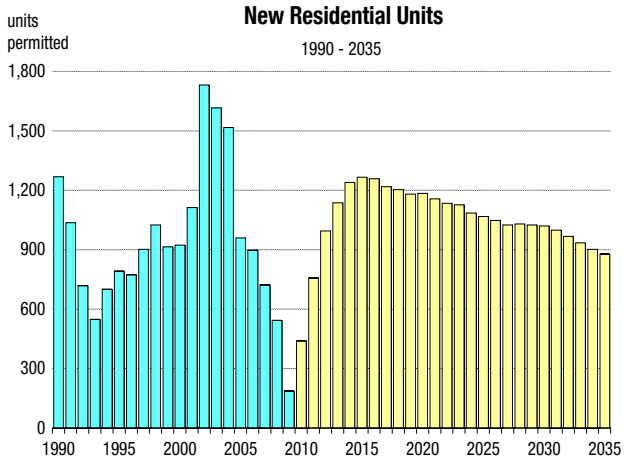
- Farm production is forecast to increase by 0.8 percent per year between 2010 and 2015. The principal crop in the county is currently strawberries but wine grape production continues to increase in value.

Santa Barbara County Economic Forecast

2002-2009 History, 2010-2035 Forecast

	Population (people)	Net Migration (people)	Registered Vehicles (thousands)	Households (thousands)	New Homes Permitted (homes)	Total Taxable Sales (billions)	Personal Income (billions)	Real Per Capita Income (dollars)	Inflation Rate (% change in CPI)	Real Farm Crop Value (millions)	Real Industrial Production (billions)	Unemploy-ment Rate (percent)
2002	409,464	1,202	355.0	138	1,732	$5.07	$13.06	$39,126	2.8	947	2.00	5.2
2003	413,800	1,470	353.1	140	1,617	$5.28	$13.68	$39,522	2.6	1,026	2.11	5.1
2004	416,619	-235	374.6	142	1,517	$5.54	$15.38	$42,722	3.3	1,048	2.19	4.7
2005	419,016	-968	369.4	143	960	$5.81	$16.31	$43,110	4.5	1,105	2.48	4.4
2006	421,041	-1,290	373.2	146	897	$6.13	$17.81	$44,936	4.3	1,080	2.77	4.1
2007	425,203	787	370.6	147	723	$6.07	$19.02	$46,012	3.3	1,135	2.73	4.4
2008	429,109	625	369.4	148	543	$6.07	$19.00	$43,991	3.5	1,130	2.71	5.4
2009	432,975	613	363.1	149	187	$5.77	$18.54	$42,828	-0.8	1,154	2.66	8.8
2010	436,912	751	366.3	149	440	$5.87	$18.78	$42,216	1.8	1,172	2.72	9.4
2011	440,601	539	369.5	150	759	$6.08	$19.78	$42,967	2.4	1,155	2.74	8.6
2012	444,868	1,188	374.4	150	995	$6.36	$21.14	$44,489	2.2	1,167	2.83	7.8
2013	449,279	1,361	379.8	151	1,138	$6.72	$22.60	$46,005	2.4	1,192	2.92	7.0
2014	454,009	1,685	385.3	152	1,240	$7.13	$23.70	$46,687	2.3	1,200	2.99	6.2
2015	458,337	1,285	390.7	153	1,266	$7.58	$24.97	$47,601	2.4	1,219	3.09	5.7
2016	462,508	1,109	395.4	155	1,259	$8.06	$26.25	$48,481	2.3	1,239	3.17	5.4
2017	466,101	515	398.9	156	1,218	$8.54	$27.76	$49,727	2.3	1,220	3.27	5.3
2018	469,656	488	402.5	157	1,204	$9.00	$29.07	$50,496	2.3	1,243	3.36	5.2
2019	472,727	59	405.4	158	1,182	$9.47	$30.40	$51,297	2.3	1,262	3.46	5.0
2020	475,848	179	408.1	159	1,185	$9.97	$31.62	$51,859	2.2	1,274	3.59	5.0
2021	478,922	201	410.5	160	1,158	$10.50	$33.11	$52,541	2.7	1,255	3.70	4.9
2022	481,323	-440	413.5	161	1,135	$11.02	$34.59	$53,146	2.8	1,287	3.81	4.8
2023	483,875	-224	415.6	162	1,127	$11.55	$36.26	$53,963	2.7	1,268	3.92	4.8
2024	486,075	-502	419.2	163	1,086	$12.09	$37.81	$54,636	2.5	1,312	4.04	4.7
2025	488,234	-482	422.8	164	1,068	$12.69	$39.38	$55,220	2.6	1,325	4.17	4.6
2026	490,149	-677	425.3	165	1,048	$13.30	$41.11	$55,932	2.7	1,339	4.31	4.6
2027	491,896	-719	427.9	166	1,025	$13.95	$42.75	$56,431	2.7	1,353	4.45	4.5
2028	493,506	-763	429.8	166	1,030	$14.63	$44.56	$56,971	2.9	1,342	4.60	4.5
2029	494,910	-870	432.0	167	1,025	$15.34	$46.42	$57,517	2.9	1,380	4.76	4.4
2030	496,392	-716	434.0	168	1,020	$16.06	$48.31	$58,040	2.8	1,395	4.92	4.4
2031	497,710	-829	435.9	169	999	$16.81	$50.28	$58,593	2.8	1,398	5.10	4.3
2032	498,878	-970	437.8	170	967	$17.59	$52.32	$59,158	2.8	1,401	5.28	4.3
2033	499,900	-1,078	439.6	171	935	$18.42	$54.44	$59,742	2.8	1,403	5.46	4.4
2034	500,814	-1,179	441.1	172	902	$19.28	$56.64	$60,336	2.8	1,405	5.64	4.4
2035	501,748	-1,162	442.4	172	878	$20.18	$58.93	$60,933	2.8	1,406	5.83	4.5

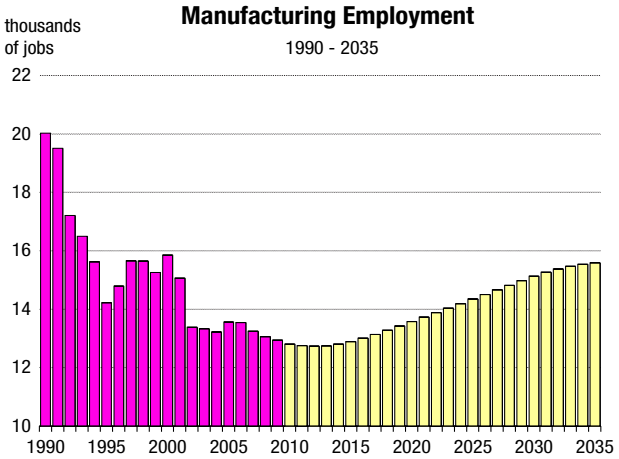


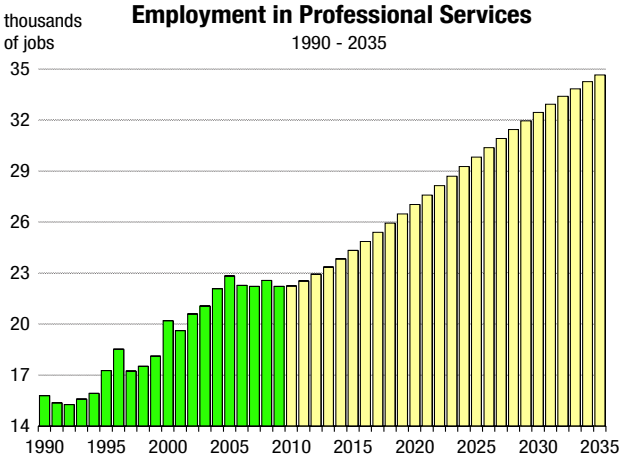


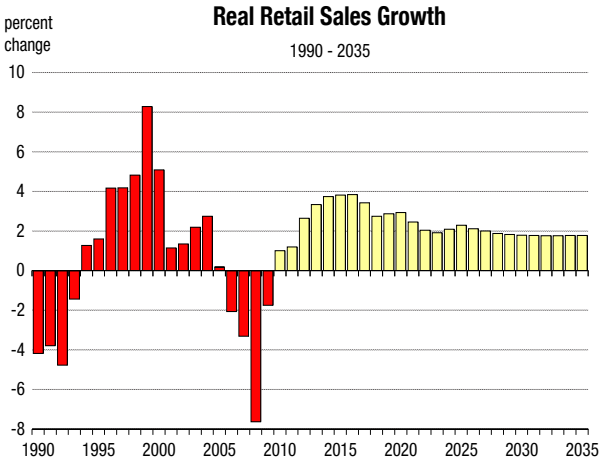
Santa Barbara County Employment Forecast

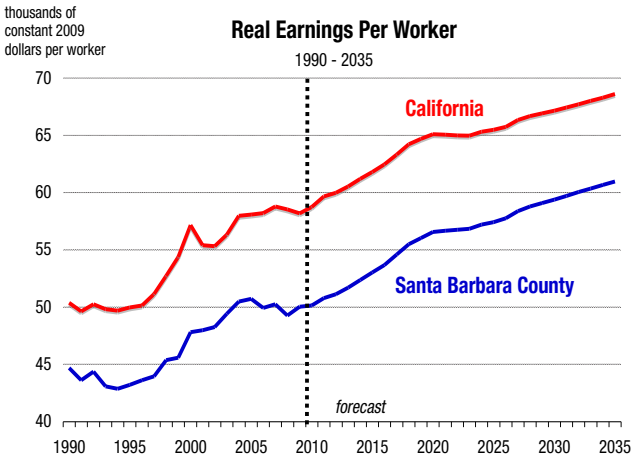
2002-2009 History, 2010-2035 Forecast

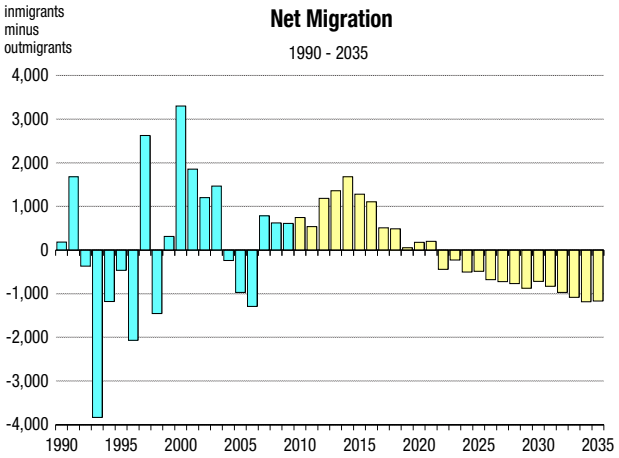
	Total Wage & Salary	Farm	Construction	Manufac-turing	Transportation & Utilities	Wholesale & Retail Trade	Financial Activities	Professional Services	Information	Health & Education	Leisure	Government
	employment (thousands of jobs)											
2002	179.6	14.23	8.0	13.4	2.8	25.1	8.6	20.6	4.1	19.3	21.0	35.8
2003	182.2	16.18	8.6	13.3	2.9	24.4	8.4	21.1	4.1	19.3	21.7	35.6
2004	184.9	16.01	9.7	13.2	2.9	24.7	8.5	22.1	4.0	19.6	21.9	35.9
2005	188.2	16.25	10.1	13.6	3.0	24.9	8.6	22.8	4.1	19.4	22.4	36.4
2006	187.9	15.44	10.5	13.6	3.1	25.2	8.7	22.3	4.0	19.5	22.7	36.1
2007	189.6	16.05	10.5	13.3	3.0	25.1	8.2	22.2	3.9	20.3	22.9	37.0
2008	189.7	16.90	9.7	13.1	3.1	24.6	7.9	22.6	3.8	20.7	23.0	37.4
2009	186.3	16.74	8.4	12.9	3.0	23.6	7.5	22.2	3.6	20.8	22.7	37.8
2010	185.9	17.13	8.1	12.8	3.0	23.6	7.6	22.3	3.4	21.1	22.8	37.2
2011	187.3	17.15	8.2	12.8	3.0	23.8	7.7	22.5	3.2	21.3	23.3	37.4
2012	190.2	17.46	8.6	12.7	3.0	24.3	7.7	22.9	3.1	21.6	23.7	38.1
2013	192.9	17.88	9.0	12.8	3.0	24.8	7.7	23.4	3.0	22.0	24.1	38.3
2014	195.5	18.12	9.4	12.8	3.1	25.3	7.8	23.8	2.9	22.4	24.5	38.4
2015	198.0	18.45	9.6	12.9	3.1	25.8	7.8	24.3	2.8	22.9	24.9	38.5
2016	200.4	18.80	9.7	13.0	3.1	26.2	7.9	24.9	2.7	23.3	25.3	38.5
2017	202.3	18.76	9.7	13.1	3.1	26.5	8.0	25.4	2.6	23.7	25.6	38.7
2018	204.6	19.14	9.7	13.3	3.1	26.8	8.0	25.9	2.5	24.2	26.0	39.0
2019	206.7	19.46	9.7	13.4	3.1	27.1	8.0	26.5	2.4	24.6	26.2	39.3
2020	208.9	19.72	9.7	13.6	3.1	27.4	8.1	27.0	2.3	25.0	26.5	39.6
2021	210.8	19.68	9.7	13.7	3.1	27.7	8.1	27.6	2.2	25.5	26.7	39.9
2022	213.0	20.13	9.6	13.9	3.0	27.9	8.1	28.2	2.1	26.0	27.0	40.2
2023	214.8	20.09	9.6	14.0	3.0	28.2	8.2	28.7	2.0	26.5	27.2	40.4
2024	217.3	20.64	9.5	14.2	3.0	28.4	8.3	29.3	1.9	27.0	27.4	40.6
2025	219.5	20.91	9.5	14.4	3.0	28.7	8.4	29.8	1.8	27.5	27.6	40.9
2026	221.6	21.17	9.4	14.5	3.0	28.9	8.5	30.4	1.8	27.9	27.8	41.1
2027	223.6	21.43	9.4	14.7	3.0	29.2	8.6	30.9	1.7	28.3	28.0	41.3
2028	225.3	21.47	9.3	14.8	3.0	29.4	8.7	31.5	1.6	28.7	28.2	41.5
2029	227.4	21.96	9.3	15.0	3.0	29.6	8.8	32.0	1.6	29.0	28.4	41.7
2030	229.3	22.23	9.3	15.1	3.0	29.8	8.9	32.5	1.5	29.3	28.7	41.9
2031	231.1	22.40	9.3	15.3	3.0	30.0	9.0	32.9	1.5	29.5	28.9	42.1
2032	232.7	22.56	9.2	15.4	3.0	30.2	9.1	33.4	1.4	29.8	29.1	42.3
2033	234.3	22.72	9.2	15.5	3.0	30.4	9.2	33.8	1.3	30.0	29.3	42.5
2034	235.9	22.88	9.2	15.5	3.0	30.6	9.3	34.3	1.3	30.2	29.6	42.7
2035	237.4	23.03	9.2	15.6	3.0	30.8	9.4	34.7	1.3	30.4	29.8	42.9

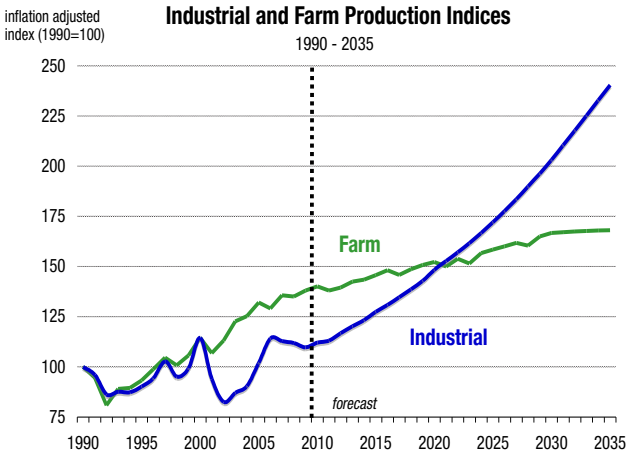












County Economic and Demographic Indicators

Projected Economic Growth (2010-2015)

Expected retail sales growth:	15.6 %
Expected job growth:	6.5 %
Fastest growing jobs sector:	Construction
Expected personal income growth:	18.3 %

Expected population growth:	4.9 %
Net migration to account for:	28.3 %
Expected growth in number of vehicles:	6.7 %

Demographics (2009)

Unemployment rate (December)	9.3 %
County Rank* in California (58 counties):	4th
Working age (16-64) population:	65.8 %

Population with B.A. Degree or higher:	28.7 %
Median Home Selling Price:	$374,996
Median Household Income:	$60,619

Quality of Life

Violent Crime rate (2008):	387 per 100,000 persons
County Rank* in California (58 counties):	25th
Average Commute Time to work (2009):	21.3 minutes

High School drop out rate (2008):	14.5 %
Households at/below poverty line:	9.1 %

* The county ranked 1st corresponds to the lowest rate in California

APPENDIX E
Delta Regulatory Issues Paper

APPENDIX E
RECENT FACTORS AFFECTING SWP SUPPLIES

Since the last round of Urban Water Management Plans (UWMPs) were prepared in 2005, the California Department of Water Resources (DWR) has twice updated its State Water Project (SWP) Delivery Reliability Report. In each of its updates, DWR has projected further reductions in average SWP water deliveries than were projected in 2005. The 2009 Report is the most recent update, and identifies several emerging factors that have the potential to affect the availability and reliability of SWP supplies. Although the 2009 Report presents an extremely conservative projection of SWP delivery reliability, particularly in light of events occurring since its release, it remains the best available information concerning the SWP. Following is information and a brief summary of several factors identified in the 2009 Report having the potential to affect the availability and reliability of SWP supplies.

New U.S. Fish and Wildlife Service Biological Opinion for Delta Smelt and Related Litigation Matters

SWP operations have been challenged in connection with potential impacts to the delta smelt, a small fish that resides only in the Delta and is protected under CESA and the ESA. In February 2005, the United States Fish and Wildlife Service (FWS) issued a "no jeopardy" determination and biological opinion (B.O.) analyzing potential impacts to the delta smelt in connection with the long-term coordinated operations of the California State Water Project (SWP) and the federal Central Valley Project (CVP) through the year 2030. The project/action evaluated in the B.O., formally known as the "Operations Criteria and Plan" (or OCAP), includes existing pumping operations, proposals to increase SWP pumping over the next 30-year period, and other proposed long-term operational changes. In February 2005, several environmental groups filed suit in federal court against FWS and the Secretary of the Interior challenging the validity of the B.O. (*Natural Resources Defense Council v. Kempthorne*, USDC Case No. 05-CV-1207-OWW.)

In May 2007, the Federal District Court for the Eastern District of California determined that the B.O. violated the requirements of the ESA. In order that the SWP and CVP could continue to operate, the court established interim operating requirements for the Projects that would remain in place until a new B.O. was completed (the Interim Remedies)(December 14, 2007). The Interim Remedies were based on various factors occurring in the Delta, such as prevailing hydrologic and flow conditions, and the distribution and spawning status of delta smelt. For the 2007-2008 water year, the Interim Remedies were reported to have reduced SWP supplies by approximately 500,000 acre-feet.

On December 15, 2008, FWS issued its new B.O. The B.O. concludes that the proposed long-term coordinated CVP and SWP operations will "jeopardize" the delta smelt and "adversely modify" its critical habitat according to ESA standards. Pursuant to the ESA, because the B.O. is a "jeopardy" opinion, FWS was required to formulate and adopt as part of the B.O. a "Reasonable and Prudent Alternative" (RPA) to the proposed action that FWS believes will not cause jeopardy to the delta smelt or adversely modify or destroy its critical habitat, and which can be implemented by Reclamation and DWR. (16 U.S.C. § 1536(b)(3)(A).) The RPA adopted as part of the B.O. imposed various new operating restrictions upon the CVP and SWP and has the potential to result in substantial water supply reductions from the Projects.

APPENDIX E
RECENT FACTORS AFFECTING SWP SUPPLIES

Soon after the B.O. was issued, DWR published information estimating that in comparison to the level of SWP exports from the Delta previously authorized under State Water Resources Control Board (State Board) Decision 1641 (D-1641),[1] the FWS B.O. could reduce those deliveries by 18 to 29 percent during average and dry conditions, respectively. As with the Interim Remedies, potential water supply restrictions under the new B.O. are dependent on highly variable factors such as hydrologic conditions affecting Delta water supplies, flow conditions in the Delta, migratory and reproductive patterns of delta smelt, and numerous other non-Project factors that impact the health and abundance of delta smelt and its critical habitat.

Due to a number of alleged scientific and other deficiencies in the new FWS B.O., in early 2009 the State Water Contractors, the San Luis and Delta-Mendota Water Authority and several individual State and Federal contractor water agencies filed legal challenges against the B.O., which were consolidated in the Federal District Court for the Eastern District of California. (*The Consolidated Delta Smelt Cases*, Lead Case No. 1:09-CV-00407-OWW-GSA.) Early on in the proceedings, several of the plaintiff water agencies and the federal defendants filed cross-motions for summary judgment to determine whether a violation of the National Environmental Policy Act (NEPA) occurred in connection with federal defendants' adoption and implementation of the NMFS B.O. and its RPA. In a Memorandum Decision issued in November 2009, the court ruled that the moving plaintiffs were entitled to summary judgment on their claim that the federal defendants violated NEPA by failing to perform any NEPA analysis prior to adopting and implementing the new FWS B.O. and its RPA. (*The Consolidated Delta Smelt Cases*, Doc. No. 399 at 46-47.)

Separately, several of the plaintiffs filed a motion for preliminary injunction against the implementation of Component 2 (Action 3) of the RPA that proposed to restrict Delta exports during a particular timeframe in spring and summer months, depending on certain biological and environmental parameters. In May 2010, the court issued its Findings of Fact and Conclusions of Law Regarding Plaintiffs' Request for Preliminary Injunction Against Implementation of RPA Component 2 (a/k/a Action 3). In that decision, the court reconfirmed its earlier ruling that the federal defendants failed to examine the potential environmental and human consequences of the RPA actions adopted under the B.O. in violation of NEPA. (*Consolidated Delta Smelt Cases*, Doc. No. 704 at 120-122.) The court also ruled that the plaintiffs were likely to prevail on their claims that FWS violated the ESA and the federal Administrative Procedure Act (APA) in formulating and adopting RPA Component 2 without support of the best available science and without adequate explanation regarding its biological benefit to delta smelt. (*Id.* at 123-125.)

In the meantime, the parties also filed cross motions for summary judgment to obtain a final ruling in the cases. Those motions were argued in early July 2010. In December 2010, the court issued a memorandum decision that invalidated the B.O. and RPA in several respects and remanded the matter to FWS. Further proceedings are expected to address interim operations of the SWP and CVP.

Because delta smelt are also protected under the California ESA, the SWP and CVP are required to obtain take authorization from the California Department of Fish and Game (DFG).

[1] See additional discussion below regarding SWP exports as authorized under D-1641.

In July 2009, DFG issued a "consistency determination" pursuant to Fish and Game Code section 2080.1. That determination provides that operations of the SWP and CVP are in compliance with CESA so long as those operations occur in accordance with the FWS delta smelt B.O. and RPA. Because the consistency determination posed a risk that the SWP could remain bound to the terms of the RPA even if the FWS B.O. was eventually overturned by a federal court, DFG's decision was challenged in state court by the State Water Contractors and the Kern County Water Agency. (*State Water Contractors v. California Department of Fish and Game, et al.*, Kern County Superior Court Case No. S-1500-CV-268074[2]; *Kern County Water Agency v. Department of Fish and Game, et al.*, Sacramento County Superior Court Case No. 34-2010-80000450.) The challenges assert, among other things, that DFG's consistency determination is invalid because it relies upon and seeks to enforce restrictions established under the new FWS B.O. that are alleged under *The Consolidated Delta Smelt Cases* to be invalid and unenforceable. The case is currently stayed by stipulation of the parties, pending the outcome of *The Consolidated Delta Smelt Cases*.

These litigation matters challenging the validity of the FWS B.O. and the DFG consistency determination give rise to the possibility that the restrictions on SWP exports could be relaxed and that SWP exports may return to the levels allowed by the Interim Remedies (above) or State Board Decision D-1641[3] pending issuance of a new B.O. and/or the implementation of the Bay-Delta Conservation Plan (BDCP). As an additional factor, by letter dated May 3, 2010, the federal Secretaries of the Department of Interior and the Department of Commerce have announced a joint initiative to develop a single integrated B.O. for the Delta and related water operations of the CVP and SWP.[4] The timing, nature and extent of the regulatory measures to be contained in any such B.O., and whether those measures would be legally challenged or upheld, cannot be predicted with any degree of certainty at this time.

New National Marine Fisheries Service Biological Opinion Salmon/Anadromous Species and Related Litigation Matters

SWP operations have also been challenged in connection with potential impacts to anadromous species in the San Francisco Bay-Delta estuary. In October 2004, the National Marine Fisheries Service (NMFS) issued a "no jeopardy" determination and B.O. analyzing potential impacts to federally listed winter-run and spring-run salmon and steelhead trout related to the long-term coordinated operations of the CVP and SWP through the year 2030. As with the 2005 FWS B.O. and *Kempthorne* case discussed above, OCAP was the project/action evaluated

[2] In June 2010, the case was transferred to Sacramento, California, where it is now referenced as *State Water Contractors v. California Department of Fish and Game, et al.*, Sacramento County Superior Court Case No. 34-2010-80000552.

[3] D-1641 implements the objectives of the 1995 Bay-Delta Plan and imposes flow and water quality objectives to assure protection of beneficial uses in the Delta. The requirements of D-1641 address, among other things, standards for fish and wildlife protection, municipal and industrial water quality, agricultural water quality, and salinity. D-1641 imposed a new operating regime for the Delta, including measures such as X2, an export/inflow ratio, and the Vernalis Adaptive Management Program (VAMP). The standards under D-1641 are accomplished through requirements and conditions imposed on the water right permits for the SWP, the CVP and others. (*See*, California Water Plan Update 2009, Regional Reports Volume 3, Sacramento-San Joaquin River Delta at DB-6.)

[4] http://www.doi.gov/news/pressreleases/upload/Roy.pdf

in the 2004 NMFS B.O., which included the Projects' existing Delta pumping operations, proposals to increase SWP pumping by 20 percent over the long term, and other operational changes. In August 2005, several environmental groups filed suit in federal court against NMFS and the Secretary of Commerce challenging the validity of the B.O. (*Pacific Coast Federation of Fishermen's Associations, et al. v. Gutierrez, et al.*, Case No. 1:06-CV-00245-OWW-GSA.)

In April 2008, the United States District Court for the Eastern District of California issued its decision invalidating the NMFS B.O. for failing to comply with the requirements of the federal ESA. As with the *Kempthorne* case (above), the court did not vacate the B.O., meaning that SWP and CVP operations were authorized to continue pending the preparation of a new B.O. and any interim remedies imposed by the court. Remedy proceedings were held similar to those conduced in the *Kempthorne* case discussed above and, in separate Findings of Fact and Conclusions of Law issued in July and October 2008, Judge Wanger determined that additional water supply restrictions beyond those required in *Kempthorne* (i.e., the Interim Remedies for delta smelt) were not required at that time for the anadromous species.

On June 4, 2009, NMFS issued a new B.O. regarding the effects of SWP and CVP operations on listed winter and spring-run salmon, steelhead trout, green sturgeon, and southern resident killer whales. Like the new FWS B.O. discussed above, the NMFS B.O. concludes that the proposed long-term coordinated operations of the CVP and SWP will jeopardize the species and adversely modify the critical habitats of most of those species. Pursuant to the ESA, because the B.O. is a "jeopardy" opinion, NMFS was required to formulate and adopt a Reasonable and Prudent Alternative (RPA) to the proposed action that NMFS believed would not cause jeopardy to the species or adversely modify or destroy their critical habitats, and which can be implemented by Reclamation and DWR. (16 U.S.C. § 1536(b)(3)(A).) The RPA adopted by NMFS imposed various new operating restrictions upon the CVP and SWP which have the potential to result in substantial reductions in water supply from the Projects.

NMFS calculated that its new B.O. has the potential to reduce SWP deliveries from the Delta by 7 percent in addition to the potential reductions under the new FWS B.O. for delta smelt (above). DWR has estimated that average annual reductions to SWP deliveries could be closer to 10 percent beyond the restrictions imposed under the FWS B.O. (thus, a total of 28 to 39 percent during average and dry conditions, respectively, in comparison to SWP exports authorized under D-1641). As with the FWS B.O., potential water supply restrictions under the NMFS B.O. are dependent on several variable factors, such as hydrologic conditions in the Delta region, migratory and reproductive patterns of protected salmonid species, and other non-Project factors that impact the health and abundance of the species and their habitats.

In June 2009, numerous legal challenges were filed against the new NMFS B.O. and consolidated in the United States District Court for the Eastern District of California alleging, among other things, that the operating restrictions set forth in the B.O. are in violation of the federal ESA, the federal APA, and other laws. (*The Consolidated Salmonid Cases*, Lead Case No. 1:09-CV-1053-OWW-DLB.) Early in the proceedings, several of the plaintiff water agencies and the federal defendants filed cross-motions for summary judgment to determine whether a NEPA violation occurred in connection with federal defendants' adoption and implementation of the NMFS B.O. and its RPA. The court heard oral argument on the motions

in February 2010, and took the matter under submission.

Separately, in January 2010, several of the plaintiff water agencies filed applications for a temporary restraining order and motions for preliminary injunction regarding the implementation of RPA Actions IV.2.1 and IV.2.3, which are designed to restrict Delta exports during a particular timeframe in spring and summer months, depending on certain biological and environmental parameters. In February 2010, the court issued its Memorandum Decision and Order Re Plaintiffs' Motion for Temporary Restraining Order. The decision found that federal defendants violated NEPA by failing to consider the potential human and environmental impacts caused by implementation of the RPA Actions, and that a temporary injunction against RPA Action IV.2.3 would not cause jeopardy to the species, whereas a failure to enjoin the Action would cause irreparable water supply impacts to the plaintiffs. (*The Consolidated Salmonid Cases*, Doc. No. 202 at 20-22.) In subsequent rulings issued in March 2010, the court ordered that plaintiffs were entitled to summary judgment on their claims that federal defendants violated NEPA by failing to prepare any NEPA documentation in the adoption and implementation of the NMFS B.O. and its RPA. (*The Consolidated Salmonid Cases*, Doc. Nos. 266 and 288 at 3.)

Plaintiffs' motions for a preliminary injunction were heard in April and May 2010, and in May 2010 the court issued Findings of Fact and Conclusions of Law Re Plaintiffs' Request for Preliminary Injunction. In that decision, the court reconfirmed its previous ruling that federal defendants violated NEPA by failing to undertake an analysis of whether the RPA Actions adopted by NMFS under its new B.O. would adversely impact humans and the human environment. (*The Consolidated Salmonid Cases*, Doc. No. 347 at 129-130, 138.) Further, the court ruled that the plaintiff water agencies had a substantial likelihood of being able to show that the federal defendants violated the ESA and the APA by failing to adequately justify, through generally recognized scientific principles, the precise flow prescriptions imposed by RPA Actions IV.2.1 and IV.2.3. (*Id.* at 130, 133-134.)[5]

Following its May 18th ruling, the court conducted further proceedings and accepted additional evidence to address the proposed injunction and whether the relief requested by the plaintiffs would adversely affect the species (namely, Central Valley spring-run Chinook salmon and Central Valley steelhead). Based on those proceedings, in June 2010, the court issued Supplemental Findings of Fact and Conclusions of Law Re Plaintiffs' Request for Preliminary Injunction. (*The Consolidated Salmonid Cases*, Doc. No. 380.) The Supplemental Findings noted that if RPA Actions IV.2.1 and IV.2.3 were enjoined through June 15, 2010, the FWS B.O. for delta smelt (above) would control Project operations between May 26th and June 15th, unless those restrictions were also enjoined, in which case Project operations would be controlled by D-

[5] RPA Action IV.2.1 limits combined water exports by the CVP and SWP based on San Joaquin River flows as measured at Vernalis. (NMFS B.O. at 642.) When flows at Vernalis range from 0 to 6,000 cfs, Action IV.2.1 limits combined CVP and SWP exports to 1,500 cfs. (NMFS B.O. at 642.) When flows at Vernalis range from 6,000 to 21,750 cfs, Action IV.2.1 imposes an inflow to combined CVP and SWP exports ratio of 4:1. (NMFS B.O. at 642.) The pumping restrictions associated with Action IV.2.1 terminate May 31st. (NMFS B.O. at 641-642.) RPA Action IV.2.3 limits Old and Middle River (OMR) flows to no more negative than -2,500 cfs between January 1 and June 15, or until the average daily water temperature at Mossdale is greater than 72 degrees Fahrenheit for seven consecutive days, whichever occurs first. (NMFS B.O. at 648-650.)

1641.[6] (Doc. No. 380 at 12.) Accordingly, the court granted an injunction against RPA Actions IV.2.1 and IV.2.3 and authorized Project operations in accordance with D-1641, provided that export pumping could be reduced on shortened notice upon a showing of jeopardy to the species or adverse modification of its critical habitat. (*Id.* at 17-18.)

In August and November 2010, the parties also filed motions for summary judgment to obtain a final ruling in the cases. Those motions were argued on December 16 and 17, 2010, and the court is expected to issue a memorandum decision on the motions.

Because the salmon species covered by the new NMFS B.O. are also protected under CESA, the SWP and CVP are required to obtain take authorization from DFG. In September 2009, DFG issued a "consistency determination" pursuant to Fish and Game Code section 2080.1. That determination provides that operations of the SWP and CVP are in compliance with CESA so long as those operations occur in accordance with the RPA set forth in the NMFS B.O. Because the consistency determination posed a risk that the SWP could remain bound to the terms of the RPA even if the NMFS B.O. was eventually overturned by a federal court, DFG's decision was challenged in state court by the State Water Contractors and the Kern County Water Agency. (*State Water Contractors v. California Department of Fish and Game, et al.*, Kern County Superior Court Case No. S-1500-CV-268497.)[7] The challenge asserts, among other things, that DFG's consistency determination is invalid because it relies upon and seeks to enforce restrictions established under the NMFS B.O. that are alleged under *The Consolidated Salmon Cases* to be invalid and unenforceable. As described above, the Federal District Court for the Eastern District of California has ruled that plaintiffs have a strong likelihood of being able to show that portions of the NMFS B.O. fail to comply with the ESA and the APA, and has enjoined implementation of several RPA Actions. Because the court's ruling effectively modified aspects of the NMFS B.O. for 2010, DWR requested that DFG make a determination that the NMFS B.O., as modified by the court, remained consistent with the provisions of CESA. In May 2010, DFG issued a new consistency determination, finding the court-modified NMFS B.O. consistent with CESA. In June 2010, an amended complaint was filed against the May 24th consistency determination. By stipulation of the parties, the case is currently stayed pending the outcome of *The Consolidated Salmonid Cases*.

The current legal challenges regarding the validity of the new NMFS B.O. and the DFG consistency determination give rise to the possibility that the restrictions on SWP exports could be relaxed and that SWP exports may return to the higher levels allowed by the Interim Remedies decision in *Kempthorne* (above) or D-1641 pending the issuance of a new B.O. and/or implementation of the BDCP. Furthermore, as noted above, in May 2010 the Department of Interior and the Department of Commerce announced a joint initiative to develop a single,

[6] Among other things, D-1641 limits Project exports to a combined total of not more than 35 percent of total Delta inflow and further limits Project operations to ensure that certain water quality standards are met as measured by the location of the isohaline condition referred to as spring X2. (See *The Consolidated Salmonid Cases*, Doc. No. 380 at 12-14.)

[7] In June 2010, the case was transferred to Sacramento, California, where it is now referenced as *State Water Contractors v. California Department of Fish and Game, et al.*, Sacramento County Superior Court Case No. 34-2010-80000560.

integrated B.O. for the coordinated operations of the CVP and SWP in the Delta.[8] The timing, nature, and extent of the regulatory measures to be contained that B.O., and whether those measures would be legally challenged or upheld, cannot be predicted with any degree of certainty at this time.

Watershed Enforcers v. California Department of Water Resources

Another litigation matter concerning SWP operations is *Watershed Enforcers v. Cal. Dept. of Water Resources* (2010) 185 Cal. App. 4th 969 (Alameda County Superior Court Case No. RG06292124). In that case, a plaintiffs group filed suit against DWR alleging the SWP was being operated without "take authorization" under CESA. The case was heard by the Alameda County Superior Court in November 2006 and, in April 2007, the court ordered DWR to cease and desist further operations of the Harvey O. Banks pumping plant facilities of the SWP unless DWR obtained proper authorization from DFG for the take of delta smelt and salmon species listed under CESA. The trial court decision was appealed by DWR and several water agency parties and the court's order was stayed pending the appeal, meaning that DWR was not required to cease its operations of the Banks facilities.

As discussed above, the new FWS and NMFS B.O.s were issued while the *Watershed Enforcers* case was pending on appeal. Based on those new B.O.s, DFG issued consistency determinations and take authorization for the SWP under CESA with respect to delta smelt and the listed anadromous species. (Also discussed above, those consistency determinations have been challenged in state court.) Thereafter, in September 2009, DWR and one of the water agency parties dismissed their appeals in the *Watershed Enforcers* case. The case remained active in 2009-2010, however, for purposes of resolving the discrete legal issue raised by the remaining water agency parties as to whether DWR is the type of entity that is subject to the take prohibitions under CESA. In a June 2010 decision, the First District Court of Appeal affirmed the trial court decision in all respects, including the determination that DWR qualifies as a "person" within the meaning of CESA, which means that DWR is subject to CESA's permitting requirements. (*Watershed Enforcers v. Department of Water Resources* (2010) 185 Cal. App. 4th 969, 973.)

California Department of Fish and Game Incidental Take Permit for Longfin Smelt and Related Litigation Matters

Regulatory actions related to longfin smelt also have the potential to affect the availability and reliability of SWP supplies. In February 2008, the California Fish and Game Commission (Commission) approved a petition to list the longfin smelt as a "candidate" species under CESA. Under CESA, once a species is granted candidate status, it is entitled to protections until the Commission determines whether to list the species as threatened or endangered. To afford such interim protection, in February 2008, the Commission adopted the first in a series of emergency take regulations that authorized the CVP and SWP to take longfin smelt, yet established certain operating restrictions on Project exports from the Delta in an effort

[8] http://www.doi.gov/news/pressreleases/upload/Roy.pdf

to protect the species. The emergency regulations were proposed to remain in effect until February 2009, at which time the Commission was required to decide whether to list the longfin as a threatened or endangered species. Initially, the Commission's take regulation imposed the same Delta export restrictions that were established in the *Kempthorne* case (i.e., the Interim Remedies discussed above). In November 2008, however, the Commission revised its emergency regulations in a manner that threatened to impose export restrictions beyond those established for delta smelt. According to information published by DWR, the Commission's 2008-2009 revised emergency take regulations had the potential to reduce SWP supplies in the January to February 2009 period by up to approximately 300,000 acre-feet under a worst-case scenario. Under other scenarios, however, the SWP delivery reductions were expected to be no greater than those imposed under the new FWS B.O. for delta smelt. In December 2008, several water agency interests filed suit against the Commission's revised take regulation, alleging it violated CESA.

In March 2009, the Commission determined that the listing of longfin smelt as a "threatened" species was warranted under CESA. CESA sets forth a general prohibition against the take of a threatened species except as otherwise authorized by statute. One such authorization is provided by California Fish and Game Code section 2081, wherein DFG may authorize the incidental taking of a threatened species in connection with an otherwise lawful activity through the issuance of a permit. In February 2009, in advance of an official listing of the species as threatened, DFG issued Incidental Take Permit No. 2081-2009-001-03 (Permit) to DWR which imposes terms and conditions on the ongoing and long-term operation of SWP facilities in the Delta for the protection of longfin smelt. The operating restrictions under the Permit are based in large part on the restrictions imposed on the SWP by the new FWS B.O. for delta smelt (see above).

In June 2009, the Commission officially listed longfin smelt as a threatened species under CESA. As with the FWS B.O., potential water supply restrictions under the Permit are dependent on several variable factors, such as hydrologic conditions in the Delta region, migratory and reproductive patterns of longfin smelt, and other non-Project factors affecting longfin smelt abundance in the Delta. DWR has not indicated whether any particular reductions in SWP exports are likely to result from the Permit. As noted above, however, DWR has estimated that the restrictions imposed by the FWS B.O. and RPA for delta smelt could reduce SWP deliveries between 18 and 29 percent in comparison to Project deliveries authorized under D-1641. In March 2009, due to a number of alleged scientific and other deficiencies in the Permit, the State Water Contractors challenged the Permit in Sacramento County Superior Court. (*State Water Contractors v. California Dept. of Fish and Game, et al.*, Sac. Sup. Ct. Case No. 34-2009-80000203.) That case puts DFG's ability to enforce the Permit into question.

California Drought Conditions

On June 4, 2008, the Governor of California proclaimed a statewide drought due to record-low rainfall in Spring 2008 and court-ordered restrictions on Delta exports as discussed above. (Executive Order S-06-08.) Soon thereafter, the Governor proclaimed a state of drought emergency to exist within the Counties of Sacramento, San Joaquin, Stanislaus, Merced, Madera,

Fresno, Kings, Tulare and Kern. (Proclamation dated June 12, 2008.) On February 27, 2009, the Governor declared a statewide water supply emergency to combat California's third consecutive year of drought conditions, evidenced by low reservoir storage and estimated snowpack water content at that time. (Proclamation dated February 27, 2009.)

Since then, statewide hydrologic conditions have improved, although the State's water supply emergency declaration has not been lifted. In March 2010, DWR announced that both manual and electronic readings indicate that the water content in California's mountain snowpack was 107 percent of normal and stated that the "readings boost our hope that we will be able to increase the State Water Project allocation by this spring to deliver more water to our cities and farms." Among these readings, DWR reported that electronic sensor readings showed northern Sierra snow water equivalents at 126 percent of normal for that date, central Sierra at 93 percent, and southern Sierra at 109 percent.[9] As of January 2011, DWR reported snow water equivalents for the northern Sierra at 164 percent of normal, 186 percent of normal for the central Sierra, and 260 percent for the southern Sierra.[10] According to DWR's California Data Exchange Center, hydrologic conditions in California as of December 1, 2010 were as follows: statewide precipitation was 155 percent of average; statewide runoff was 115 percent of average; and key historical average statewide reservoir storage was at 105 percent, with two of the state's largest reservoirs, Lake Shasta (CVP) and Lake Oroville (SWP), respectively storing 116 percent and 75 percent of their historical averages.[11]

Development of Delta Plan and Delta Flow Criteria Pursuant to New State Laws

In November 2009, the California Legislature enacted SBX7-1 as one of several bills passed as part of a comprehensive water package related to water supply reliability, ecosystem health, and the Delta. SBX7-1 became effective on February 3, 2010 and adds Division 35 to the California Water Code (commencing with Section 85300), referred to as the Sacramento-San Joaquin Delta Reform Act of 2009 (Act). Among other things, the Act creates the Delta Stewardship Council (Council) as an independent agency of the state. (Wat. Code § 85200.) SBX7-1 also amends the California Public Resources Code to specify changes to the Delta Protection Commission and to create the Delta Conservancy. (Pub. Res. Code §§ 29702-29780.) The Act directs the Council to develop a comprehensive management plan for the Delta by January 1, 2012 (Delta Plan) and to first develop an Interim Plan that includes recommendations for early actions, projects, and programs for the Delta. (*See generally*, Second Draft Interim Plan, Prepared for Consideration by the Delta Stewardship Council at 1.)

In addition to these and other requirements, SBX7-1 requires the State Board to use the best available scientific information to develop flow criteria for the Delta ecosystem necessary to protect public trust resources, including fish, wildlife, recreation and scenic enjoyment. Similarly, DFG is required to identify quantifiable biological objectives and flow criteria for species of concern in the Delta. In August 2010, the State Board adopted Resolution No. 2010-0039 approving its report entitled "Development of Flow Criteria for the Sacramento-San

[9] http://www.water.ca.gov/news/newsreleases/2010/030310snow.pdf
[10] http://cdec.water.ca.gov/cgi-progs/snow/DLYSWEQ
[11] http://cdec.water.ca.gov/cgi-progs/reports/EXECSUM

Joaquin Delta Ecosystem" (Flow Criteria). The State Board report concludes that substantially higher flows are needed through the Delta than in have occurred in previous decades in order to benefit zooplankton and various fish species. (Flow Criteria at 5-8.) Separately, in September 2010, DFG issued a draft report entitled "Quantifiable Biological Objectives and Flow Criteria for Aquatic and Terrestrial Species of Concern Dependent on the Delta" (DFG Report). The DFG Report is based on similar biological objectives and recommends Delta flows similar to those set forth in the State Board's Flow Criteria. (DFG Report at 13.) Notably, both the State Board and DFG recognize that their recommended flow criteria for the Delta do *not* balance the public interest or the need to provide an adequate and reliable water supply. (Flow Criteria at 4; DFG Report at 16.) Also of importance, both the State Board and DFG acknowledge that their recommended flow criteria do not have any regulatory or adjudicatory effect; however, they may be used to inform the Council as it prepares the Delta Plan, and may be considered as the Bay Delta Conservation Plan (BDCP) process moves forward. (Flow Criteria at 3, 10; DFG Report at ES-4.)

DWR's Final 2009 SWP Delivery Reliability Report

DWR continues to evaluate the issues affecting SWP exports from the Delta and how those issues may affect the long-term availability and reliability of SWP deliveries to the SWP Contractors. In September 2010, DWR released its Final 2009 SWP Delivery Reliability Report (DWR Report), which forecasts additional reductions to SWP supplies in comparison to the 2007 Report. According to DWR, the long-term average delivery of contractual SWP Table A supply is projected to be 60 percent under current and future conditions over the 20-year projection. (DWR Report at 43, 48, Tables 6.3 and 6.12.) Within that long-term average, SWP Table A deliveries can range from 7 percent (single dry year) to 68 percent (single wet year) of contractual amounts under current conditions, and from 11 percent (single dry year) to 97 percent (single wet year) under future conditions. (Id. at 43-44, 49, Tables 6.4, 6.5, 6.13 and 6.14.) Contractual amounts are projected to range from 32 to 38 percent during multiple-dry year periods, and from 79 to 93 percent during multiple wet periods. (Id. at 49, Tables 6.13 and 6.14.)

To ensure a conservative analysis, the DWR Report expressly assumes and accounts for the institutional, environmental, regulatory, and legal factors affecting SWP supplies, including but not limited to: water quality constraints, fishery protections, other D-1641 requirements, and the operational limitations imposed by the FWS and NMFS B.O.s that are discussed above. The DWR Report also considers the potential effects of Delta levee failures and other seismic or flood events. (*See, e.g.*, DWR Report at 19-24, 25-28, 29-35, Appendices A, A-1, A-2, B.) Notably, the DWR Report assumes that all of these restrictions and limitations will remain in place over the next 20-year period and that no actions to improve the Delta will occur, even though numerous legal challenges, various Delta restoration processes, and new legal requirements for Delta improvements are currently underway (i.e., BDCP, Delta Vision, Delta Plan, etc.). Finally, DWR's long-term SWP delivery reliability analyses incorporate assumptions that are intended to account for potential supply shortfalls related to global climate change. (*See, e.g.*, DWR Report at 19, 29-30, Appendices A-B.) Based on these and other factors, the DWR Report presents an extremely conservative projection of SWP delivery reliability.

Conclusion

DWR's most recently published SWP Delivery Reliability Report (September 2010) demonstrates that the projected long-term average delivery amounts of contractual SWP Table A supplies have decreased in comparison to previous estimates. However, as noted, the projections developed by DWR are predicated on extremely conservative assumptions, which make the projections useful from a long-range urban water supply planning perspective.[12] Indeed, recent rulings in various legal actions and other factors described above, among others, support higher estimates of average annual SWP deliveries than projected in DWR's 2009 Report. While this may lead DWR to increase its projections in its next scheduled Report, the 2009 Report remains the best available information concerning the long-term delivery reliability of SWP supplies.

[12] *See, e.g., Sonoma County Water Coalition v. Sonoma County Water Agency* (2010) 189 Cal.App.4th 33; *Watsonville Pilots Association v. City of Watsonville* (2010) 183 Cal.App.4th 1059; *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal.4th 412.