Urban Water Management Plan Update

2025

Central Coast Water Authority

June 2026




PROVOST & PRITCHARD

CENTRAL COAST WATER AUTHORITY

2025 Urban Water Management Plan

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Table of Contents

TABLES

FIGURES

APPENDICES

ACRONYMS

AF ..... Acre-Foot
Cal OES ..... Office of Emergency Services
CCWA ..... Central Coast Water Authority
CVP ..... Central Valley Project
D-1641 ..... SWRCB Water Rights Decision 1641
DBP ..... Disinfection Byproducts
DCR ..... Delivery Capacity Report
DDW ..... Division of Drinking Water
DMM ..... Demand Management Measures
DWR ..... Department of Water Resources
ESA ..... Endangered Species Act
FEIR ..... Final Environmental Impact Report
IRWD ..... Irvine Ranch Water District
IRWMP ..... Integrated Regional Water Management Plan
MAF ..... Million Acre-Feet
MIB 2-methylisoborneol
MOU ..... Memorandum of Understanding
MWD ..... Montecito Water District
MWQI ..... Municipal Water Quality Investigations
SBCAG ..... Santa Barbara County Association of Governments
SGMA ..... Sustainable Groundwater Management Act
SLOCFCWCD ..... San Luis Obispo County Flood Control and Water Conservation District
SWRCB ..... State Water Resources Control Board
SYRWCDID#1 ..... Santa Ynez River Water Conservation District, Improvement District No. 1
State ..... State of California
SWP ..... State Water Project
SSLOCSD ..... South San Luis Obispo County Sanitation District
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
WCD ..... Water Conservation District
WSCP ..... Water Shortage Contingency Plan

Lay Description of Urban Water Management in Central Coast Water Authority

This 2025 Urban Water Management Plan (UWMP) was prepared for the Central Coast Water Authority (CCWA), a wholesale supplier of urban water for ten water agencies in Santa Barbara County. This document describes the roles and responsibilities of CCWA, available water supplies, water demands, water reliability, and mitigation programs performed in droughts to secure additional water. This document is an update to CCWA's 2020 UWMP.

CCWA obtains its water primarily from the State Water Project (SWP), which delivers water through a series of canals and pipelines from Northern California. CCWA then treats the water to drinking water standards and delivers it to the water agencies. CCWA only provides some of the water needed by these agencies. As a result, the agencies also have other water supplies and implement water conservation programs to help meet their full water demands.

In 2025, CCWA delivered 12,514 acre-feet to all Participants. The agencies have combined water contracts to provide water supply systems with a capacity of 43,886 acre-feet of water but usually only some of the water is available due to the natural variation of rainfall from year to year as well as drought, environmental regulations, and other reasons. A report by the State estimates that water reliability is currently around 54% of contracted supplies and will go down to 48% by 2045. In dry years, the water supply can be as low as 5% of the contract amount.

CCWA has a Supplemental Water Purchase Program that allows the water agencies to ask CCWA to find and purchase extra water supplies during droughts. This program is voluntary but has successfully secured other water supplies in dry years and will be continued into the future.

1 Introduction and Overview

1.1 Introduction

This 2025 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 as well as to update and adopt the UWMP every five years. This 2025 UWMP must be completed by July 1, 2026.

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 State Water Resources Control Board (SWCRB), Division of Drinking Water (DDW) and it supplies more than 3,000 AF of water per year. In 1994, DDW issued a permit to CCWA to operate as a public water system and the associated Water System Number for CCWA is CA4210030.

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. The primary 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 8.0 of this UWMP.

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

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 certain grant, loans, and special drought assistance from the State of California (State). Consequently, to preserve the ability to seek assistance from the State of California, CCWA has prepared this 2025 UWMP. To ensure all required components of the UWMP have been addressed, the DWR UWMP Checklist and the DWR Standardized UWMP Tables were completed, and they are presented in in **Appendix A** and **Appendix B[2], respectively**.

1.2 The Central Coast Water Authority

The CCWA was formed in 1991 through a Joint Exercise of Powers Agreement[3] among eight public agencies in Santa Barbara County. CCWA is a party to a State Water Supply Contract with the California Department of Water Resources (DWR).[4] As a result, CCWA is responsible for the delivery of all SWP water to Santa Barbara County. Pursuant to 13 Water Supply Agreements,[5] CCWA delivers SWP water to its eight member agencies and five other entities (collectively, the "CCWA Participants"). 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). The other non-member CCWA Participants are the Golden State Water Company, Vandenberg Space Force Base, La Cumbre Mutual Water Company, Morehart Land Company, and the Raytheon Systems Company.

The CCWA Board of Directors is composed of representatives appointed by each of the eight member agencies. CCWA's Joint Exercise of Powers Agreement provides the voting percentage for each member of the CCWA Board of Directors.

Table 1-1: Board of Directors Voting Weights

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

All CCWA Participants are identified in **Table 1-2** below, along with their respective SWP "Table A Amounts," which is the maximum quantity of SWP annual water supply for which each CCWA Participant has contracted:

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

	Table A Amount (AF)		
CCWA Participant	**Original Table A**	**Drought Buffer**	**Total Table A**
Buellton, City of	578	58	636
Carpinteria Valley Water District	2,000	200	2,200
Golden State Water Company	500	50	550
Goleta Water District	4,500	2,950	7,450
Guadalupe, City of	550	55	605
La Cumbre Mutual Water Company	1,000	100	1,100
Montecito Water District	3,000	300	3,300
Morehart Land Company	200	20	220
Raytheon Company	50	5	55
Santa Barbara, City of	3,000	300	3,300
Santa Maria, City of	16,200	1,620	17,820
Santa Ynez River WCD ID#1[1]	2,000	200	2,200
Vandenberg Space Force Base	5,500	550	6,050
Subtotal	**39,078**	**6,408**	**45,486**

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.
[2]Only CCWA and Goleta Water District have drought buffer supplies. CCWA's drought buffer includes 3,908 AF and conveyance capacity and allocates it across CCWA Participants. Goleta Water District has a 2,500 AF drought buffer for supply only with no associated conveyance capacity.

Several of CCWA's Participants are retail urban water suppliers and responsible for preparing their own UWMPs as well. (See additional discussion below in **Section 2.1**.)

CCWA also delivers SWP water to San Luis Obispo County. Pursuant to an agreement with DWR,[6] CCWA operates and maintains the SWP conveyance facilities in San Luis Obispo and Santa Barbara Counties (Phase II Coastal Branch) that permits the delivery of SWP water to both Santa Barbara and San Luis Obispo counties. In addition, CCWA owns and operates the Polonio Pass Water Treatment Plant in northern San Luis Obispo County. CCWA also contracts with the San Luis Obispo County Flood Control and Water Conservation District (SLOCFCWCD)[7] for the treatment and conveyance of the SWP water to San Luis Obispo County. In turn, SLOCFCWCD contracts with 11 participants in San Luis Obispo ("San Luis Obispo Participants"). All CCWA Participants and San Luis Obispo Participants receive potable water treated at the Polonio Pass Water Treatment Plant.

The San Luis Obispo County Participants are presented in the Table 1-3 below, along with their respective SWP Table A Amounts.[8]

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
City of Morro Bay	1,313
City of Pismo Beach	1,240
County of SLO C.S.A. No. 16, I.D. #1	100
County of SLO (Op Center & Reg. Park)	425
Oceano Community Services District	750
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 Participants, it is classified as a wholesale urban water supplier.

2 Plan Preparation

Due to 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 Participants (see also discussion below in **Section 2.2**) 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 2-1** presents the agencies and the role each played in coordinating the development of this UWMP:

Table 2-1: Coordination Matrix

Coordination and Public Involvement						
Entities	**Helped write the plan**	**Was contacted for assistance**	**Received copy or link to 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			✔			✔
San Luis Obispo Participants			✔			✔
CCWA Participants		✔	✔			✔
Other Relevant Public Agencies*			✔			✔

*Includes Santa Barbara County

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

2.1 Santa Barbara County Participants

The first step in preparing the CCWA UWMP included contacting each CCWA Participant to establish an open line of communication between the staff members. Through contacting each project participant, CCWA determined that only six of the thirteen CCWA Participants are required to prepare an UWMP (Carpinteria Valley Water District**,** Goleta Water District**,** Montecito Water District, City of Santa Barbara, City of Santa Maria, Golden State Water Company). The remaining seven do not qualify as they are well below the 3,000 service connections and 3,000 AF of supplied water criteria that triggers the UWMP requirement.

Each CCWA Participant was asked to provide projections of water supply needs for their respective service areas in five-year increments through 2050. 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 a five-year drought scenario.

Table 2-2: Santa Barbara County Project Participants UWMP Requirement

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

2.2 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. 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 consulted with SLOCFCWCD staff during the 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.

2.3 County of Santa Barbara, Water Resource Division

The County of Santa Barbara, Water Resources Division of the Public Works Department is comprised of \the County Water Agency (Water Agency) and Project Clean Water.[9]

Since the Water Agency is a not a water supplier, it is not required to prepare a UWMP.

2.4 Public

CCWA recognizes the importance of obtaining public input on its programs and documents. To that end, CCWA mailed notices to 14 local public agencies requesting feedback on the Draft UWMP and Water Shortage Contingency Plan (WSCP). See **Appendix C** for contact information, notices, and other outreach materials. The notice provided information regarding how to obtain a copy of the draft plan and the dates and locations of the public workshops.

The Draft Plan must be provided to the public for review and comment 30 days prior to adoption. The Draft Plan was made available on the CCWA website (www.ccwa.com) beginning **May 26, 2026**. In addition, a copy of the Draft UWMP was available for public review at the CCWA Office in Buellton. Public notices regarding the availability of the Draft UWMP for public inspection were posted in the local newspapers on May 29 and June 5, 2026.

2.5 Plan Adoption, Submittal, and Implementation

The 2025 UWMP is required to be adopted by each urban water supplier and submitted to the DWR by July 1, 2026. Accordingly, the CCWA Board of Directors will consider adoption of the 2025 CCWA UWMP and WSCP at its regular meeting on **June 25, 2026**. A public notice was issued in advance of this Board Meeting, in accordance with Section 6066, California Government Code. The Board Resolution is presented in **Appendix D**. Three public comments were received on the UWMP.

Once the UWMP has been adopted by the CCWA Board of Directors, copies will be submitted electronically 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 or WSCP 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 or WSCP 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.

3 System Description

3.1 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 (see **Figure 3-1**). The CCWA supplies treated water for its Participants and for San Luis Obispo Participants. In addition, the service areas for each CCWA Participant are presented in **Appendix E**.

Figure 3-1:Phase II Coastal Branch and CCWA Extension

3.2 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 monthly precipitation in the region varies from 1.6 to 1.8 inches in the coastal areas to approximately 1.4 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 **Table 3-1** through **Table 3-3.**

Table 3-1: Monthly Averages for Eto, Temperature & Precipitation (CIMIS Station #107, Santa Barbara)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr Ave
ETo (inches)	1.97	2.66	3.68	4.57	4.76	5.00	5.92	5.63	3.97	3.45	2.15	1.58	3.78
Ave Max Temp. (F)	68.6	69.2	67.8	71.5	72.1	73.4	75.9	80.9	79.1	77.8	71.2	71.2	72.9
Ave Min Temp. (F)	46.4	46.7	47.6	50.7	54.0	57.1	58.5	60.0	60.0	55.4	48.6	47.0	52.7
Precipitation (inches)	2.8	3.3	3.9	0.8	0.4	0.4	0.2	0.3	0.3	0.6	1.9	4.9	19.8

Table 3-2: Monthly Average for Temperature & Precipitation (CIMIS Station #52, San Luis Obispo)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr Ave
ETo (inches)	2.46	2.98	3.54	4.71	5.63	5.97	6.24	5.86	4.47	4.01	2.91	2.17	4.25
Ave Max Temp. (F)	65.6	66.8	64.3	67.7	70.4	74.8	76.8	80.0	79.3	77.8	71.4	65.9	71.7
Ave Min Temp (F)	44.2	44.3	44.0	46.8	48.9	52.8	54.2	55.2	55.2	51.9	47.3	45.8	49.2
Precipitation (inches)	3.8	3.1	4.4	1.1	0.1	0.1	0.0	0.0	0.3	0.6	1.9	5.5	20.9

Table 3-3: Monthly Averages for ETo, Temperature, & Precipitation (CIMIS Station# 64, Santa Ynez/ Cachuma)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Yr Ave
ETo (inches)	2.13	2.67	3.77	5.08	6.34	6.80	7.24	6.73	4.84	3.95	2.42	1.67	4.47
Ave Max Temp. (F)	67.4	68.8	67.6	72.8	77.3	82.8	89.0	90.1	87.1	83.5	74.7	68.5	77.5
Ave Min Temp (F)	35.9	37.4	40.9	44.3	48.0	51.1	54.1	54.2	52.8	44.9	36.7	36.8	44.7
Precipitation (inches)	2.9	3.1	3.4	1.1	0.1	0.0	0.0	0.0	0.1	0.6	1.2	3.8	17.7

Data Source: The California Irrigation Management Information System (CIMIS),[10] www.cimis.water.ca.gov: *Santa Maria Period of Record January 2020 to February 2026, Santa Ynez Period of Record January 2020 to February 2026, Santa Barbara. Period of Record January 2020 to February 2026.*

3.3 Service Area Population

The Santa Barbara County Association of Governments (SBCAG) published a report entitled "Regional Growth Forecast 2050" in January 2019. The summary data for the population forecast, at the jurisdiction level, from this report is presented in **Table 3-4.** The report includes data for years 2025, 2030, 2035, 2040, and 2050.

Table 3-4: Santa Barbara County Population Forecast

Jurisdiction	2025	2030	2035	2040	2045	2050
Buellton	5,700	5,900	6,200	6,400	6,500	6,600
Carpinteria	14,200	14,300	14,500	14,600	14,700	14,700
Goleta	32,500	33,100	33,700	34,300	34,500	34,700
Guadalupe	8,100	8,400	8,600	8,900	9,000	9,100
Lompoc	47,800	49,000	50,000	51,300	51,800	52,200
Lompoc Unincorporated	16,700	16,900	17,100	17,400	17,450*	17,500
Santa Barbara	97,300	98,600	99,900	101,100	101,600	102,000
Santa Maria	121,900	127,600	133,300	139,000	141,000	143,100
Santa Maria/ Guadalupe/ Cuyama	38,400	39,000	39,500	40,100	40,250*	40,500
Santa Ynez Unincorporated	13,700	13,900	14,100	14,300	14,350*	14,400
Solvang	6,000	6,000	6,200	6,300	6,300	6,300
South Coast/ Other Unincorporated	76,600	77,200	78,300	79,500	79,900*	80,300
County Total	478,900	489,900	501,400	513,200	517,350*	521,400

* Numbers were not reported and are estimates

Another source of population data are Annual Water System Reports. DDW requires all public water systems to prepare and submit an Annual Water System Report, and these reports contain population information as well as a variety of other operational data.

Considering that the SBCAG report does not include population data for all CCWA Participants, both the Annual Water System Report and the SBCAG Report were utilized to prepare the population projections for all CCWA Participants, presented in **Table 3-5**. The 2019 population for each CCWA Participant service area, as reported in the Annual Water System Report, was used as the basis of the population projections from 2020 to 2050. The growth rates shown in the SBCAG report for the closest community match for each CCWA Participant were used to project future population.

Table 3-5: Central Coast Water Authority Participant Population Projections

CCWA Participant	2020	2025	2030	2035	2040	2045	2050
Buellton, City of	5,517	5,726	5,967	6,205	6,447	6,531	6,616
Carpinteria Valley WD	15,433	15,711	15,868	16,027	16,187	16,252	16,317
Golden State Water Co	4,462	4,859	5,088	5,317	5,545	5,628	5,707
Goleta WD	86,952	87,822	89,315	90,922	92,468	93,023	93,581
Guadalupe, City of	7,605	7,787	8,068	8,350	8,634	8,737	8,834
La Cumbre Mutual	4,874	4,923	5,006	5,097	5,183	5,214	5,246
Montecito WD	11,439	11,611	11,762	11,915	12,070	12,130	12,130
Morehart Land Co[1]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Raytheon System[2]	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Santa Barbara, City of	95,024	97,209	98,473	99,753	101,050	101,454	101,860
Santa Maria, City of	108,501	118,158	123,711	129,278	134,837	136,860	138,776
Santa Ynez ID #1	12,533	12,796	12,956	13,174	13,391	13,463	13,464
Vandenberg SFB	15,001	15,226	15,409	15,640	15,874	15,954	16,034
CCWA Participant Population	367,341	381,828	391,622	401,677	411,686	415,247	418,624
County Total Population	460,900	478,600	489,900	501,500	513,300	517,500	517,500
Percent of Santa Barbara County Population	79.7%	79.8%	79.9%	80.1%	80.2%	80.2%	80.9%

[1]Morehart Land Company is a land developer and has no population
[2]Raytheon Company has no population data
Notes:
2019 Population as reported by CCWA Participant in the 2019 Annual Water System Report (EAR) submitted to State Water Resources Control Board (SWRCB) DDW.
2020, 2025, 2030, 2040, 2045, and 2050 CCWA Participant Projection calculated using population forecasts percent change (Tables 10 and 13), SBCAG, Regional Growth Forecast 2050, Jan 2019.
La Cumbre Mutual Water Company projections calculated using Goleta forecast percentage change.
Montecito Water District projections calculated using South Coast Unincorporated forecast percent change.
Population projection for Santa Ynez ID#1 includes the population projection for Santa Ynez (based on the Santa Ynez Unincorporated forecast percent change) and the population projection for the City of Solvang because Solvang resides within the Santa Ynez ID#1 service area.
Vandenberg Space Force Base projection calculated using nearby Lompoc Unincorporated forecast percentage change.
County Total Population from Table 8, SBCAG, Regional Growth Forecast 2050, Jan 2019.
Percent of Santa Barbara County Population is calculated

3.4 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 2023 to 2050. To provide a general snapshot of the socioeconomics of Santa Barbara County, copies of the 2019 updated forecasts are included in **Appendix F**[11]. The summary tables of the updated Caltrans forecast for Santa Barbara County are presented below in **Table 3-6**.

Table 3-6: Caltrans Santa Barbara County Socio-Economic Forecast

Santa Barbara County Economic Forecast

Economic Indicators — 2015-2022 History, 2023-2050 Forecast

	Population (people)	House-holds (thousands)	Net Migration (people)	New Homes Permitted (homes)	Registered Vehicles (thousands)	Personal Income (billions)	Taxable Retail Sales (billions)	Total Taxable Sales (billions)	Real Industrial Production (billions)	Real per Capita Income (dollars)	Unemployment Rate (percent)	Real Farm Production (billions)	Inflation Rate (percent)
2015	442,188	144.8	971	1,071	394	$24.6	$4.8	$6.8	$3.9	$70,958	5.3	1.9	0.9
2016	444,277	146.2	-365	884	404	$25.0	$4.8	$6.9	$3.8	$70,378	5.1	1.8	1.9
2017	445,801	147.2	-737	1,263	403	$25.9	$4.9	$7.1	$4.0	$70,681	4.6	1.9	2.8
2018	447,666	148.2	-174	846	406	$27.1	$5.2	$7.3	$4.0	$70,950	4.0	1.8	3.8
2019	448,815	149.8	-1,172	1,069	414	$28.5	$5.3	$7.6	$3.9	$72,324	3.6	1.8	3.1
2020	448,484	148.4	-2,473	380	411	$31.1	$5.2	$7.4	$3.8	$77,747	8.2	2.0	1.6
2021	439,322	149.1	-10,803	521	416	$33.0	$6.2	$9.0	$4.1	$81,141	5.8	2.1	3.8
2022	443,210	150.1	1,734	1,058	418	$33.3	$6.8	$9.8	$3.7	$75,075	3.5	2.0	7.9
2023	443,186	151.3	-1,912	928	420	$35.8	$7.0	$9.9	$3.8	$77,331	3.8	2.1	3.7
2024	443,936	152.1	-1,088	777	422	$37.7	$7.3	$10.3	$3.9	$78,870	3.8	2.1	3.0
2025	444,417	152.8	-1,287	717	423	$39.1	$7.7	$11.0	$3.9	$79,882	3.6	2.1	2.7
2026	445,190	153.4	-911	713	424	$40.5	$8.2	$11.6	$3.9	$80,862	3.5	2.2	2.1
2027	445,984	154.0	-759	707	425	$42.0	$8.6	$12.3	$3.9	$81,882	3.7	2.2	2.1
2028	447,203	154.6	-274	717	425	$43.5	$9.1	$13.0	$4.0	$82,732	3.8	2.1	2.1
2029	448,889	155.2	285	745	426	$44.9	$9.5	$13.6	$4.0	$83,449	3.9	2.2	2.0
2030	450,230	155.9	76	752	427	$46.3	$10.0	$14.2	$4.0	$83,890	3.9	2.2	2.1
2031	451,268	156.5	-89	748	428	$47.7	$10.4	$14.8	$4.0	$84,383	3.9	2.2	2.0
2032	452,139	157.2	-131	756	429	$48.8	$10.8	$15.3	$4.0	$84,350	3.8	2.2	2.2
2033	452,773	157.8	-204	763	430	$50.1	$11.1	$15.9	$4.0	$84,852	3.8	2.2	1.8
2034	453,234	158.5	-219	755	431	$51.6	$11.5	$16.4	$4.0	$85,478	3.9	2.2	2.0
2035	453,633	159.1	-152	750	431	$53.1	$11.9	$16.9	$4.0	$85,982	4.0	2.2	2.1
2036	454,018	159.7	-37	745	432	$54.6	$12.2	$17.3	$4.0	$86,121	4.0	2.2	2.5
2037	454,411	160.4	89	749	433	$56.2	$12.5	$17.8	$4.0	$86,272	4.1	2.2	2.6
2038	454,796	161.0	214	754	434	$58.0	$12.8	$18.2	$4.0	$86,661	4.2	2.2	2.4
2039	455,183	161.7	310	759	434	$59.6	$13.1	$18.7	$4.0	$86,687	4.2	2.2	2.6
2040	455,118	162.3	-24	756	435	$61.4	$13.5	$19.2	$4.0	$87,076	4.3	2.2	2.5
2041	454,866	162.9	-77	757	435	$63.2	$13.8	$19.6	$4.0	$87,746	4.3	2.2	2.1
2042	454,732	163.6	152	760	436	$65.0	$14.2	$20.1	$4.0	$88,437	4.2	2.2	2.0
2043	454,688	164.3	334	760	437	$66.9	$14.6	$20.7	$4.0	$89,139	4.3	2.2	1.9
2044	454,644	164.9	432	758	437	$68.7	$15.1	$21.4	$4.0	$89,949	4.3	2.2	1.7
2045	454,269	165.6	208	740	438	$70.5	$15.5	$22.1	$4.0	$90,689	4.3	2.2	1.8
2046	453,837	166.2	229	734	438	$72.3	$16.0	$22.7	$4.0	$91,314	4.4	2.2	1.9
2047	453,408	166.8	304	729	438	$74.2	$16.5	$23.4	$4.0	$91,732	4.4	2.2	2.1
2048	453,100	167.4	499	729	439	$76.1	$17.0	$24.1	$4.0	$92,059	4.4	2.2	2.2
2049	452,594	168.1	396	726	439	$78.0	$17.5	$24.9	$4.0	$92,666	4.4	2.2	1.9
2050	452,238	168.7	646	730	440	$80.1	$18.1	$25.7	$4.0	$93,176	4.4	2.2	2.0

Overall population and economic trends are described in the Santa Barbara County Association of Governments (SBCAG) report entitled "Regional Growth Forecast 2050," published in January 2019, and referenced above in **Section 3.3**. According to this report, which covers the years 2017 through 2060, annual population growth is expected to decrease in Santa Barbara County from 3,500 in 2017 to 800 by 2060. This is due to a combination of factors including a relatively constant number of births, rising mortality as baby-boomers age, and forecasted slow decline in net in-migration.

Between 2017 and 2050, countywide population in Santa Barbara County is expected to increase by 68,000 or 15%, while both jobs and households are expected to increase by 25%. In the 2017-2050 forecast horizon, the City of Santa Maria is expected to experience the greatest population growth (32%), followed by Buellton (24%) and Guadalupe (20%), while the South Coast Cities of Carpinteria, Santa Barbara and Goleta are forecasted to grow by less than 9%.

According to the Caltrans 2020-2050 forecast, referenced above and in **Table 3-6**, housing production in the next five years is expected to be similar to the previous five years. The southern and middle parts of Santa Barbara County, including both the tourist destination of the City of Santa Barbara and the wine industry in the Santa Ynez Valley, are among the most expensive housing markets in the United States. Houses in the northern part of the county are less than half as expensive as in the southern part of the county.

4 System Demands

This section characterizes the water demand by CCWA Participants and presents projections of future demand for water supply. CCWA maintains 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 individual retailer system demand.

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.

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 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 purpose of conducting maintenance work. These annual outages typically last from two to four weeks per year. CCWA Participants are required to rely upon other sources of water supply during these annual maintenance events.

4.1.1 Santa Ynez Exchange Agreement

The Santa Ynez Water Exchange Agreement[12] is an innovative water management strategy that was put into effect during the original construction of the CCWA system. This agreement provided the CCWA Participants located in southern portion of Santa Barbara County an opportunity to receive SWP water through existing infrastructure, as opposed to building a new pipeline around Lake Cachuma.

Five water purveyors have Cachuma Project water supply agreements with the Santa Barbara County Water Agency, which in turn has a Master Water Supply Agreement with the United States Bureau of Reclamation (USBR).[13] The five purveyors known as the Cachuma Member Units and their Cachuma 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. SYRWCDID#1 sold its 5-mile pipeline from the Santa Ynez Valley to Lake Cachuma to CCWA for use in conveying SWP water to Lake Cachuma. Pursuant to the Exchange Agreement, SYRWCDID#1 exchanges the Lake Cachuma water that otherwise would be delivered to SYRWCDID#1 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.

This exchange has advantages to both SYRWCDID#1 and the South Coast Cachuma Member Units. SYRWCDID#1 receives SWP instead of Lake Cachuma water that would need to be treated, and the South Coast Cachuma Member Units avoid the cost of having to construct separate facilities to deliver SWP supplies to the South Coast. In addition, for amounts of water exchanged, the South Coast Member Units avoid the cost of pumping water into Lake Cachuma.

From 2021-2025 a total of 6,497 AF was exchanged through the Santa Ynez Agreement.

4.2 CCWA Water Demand

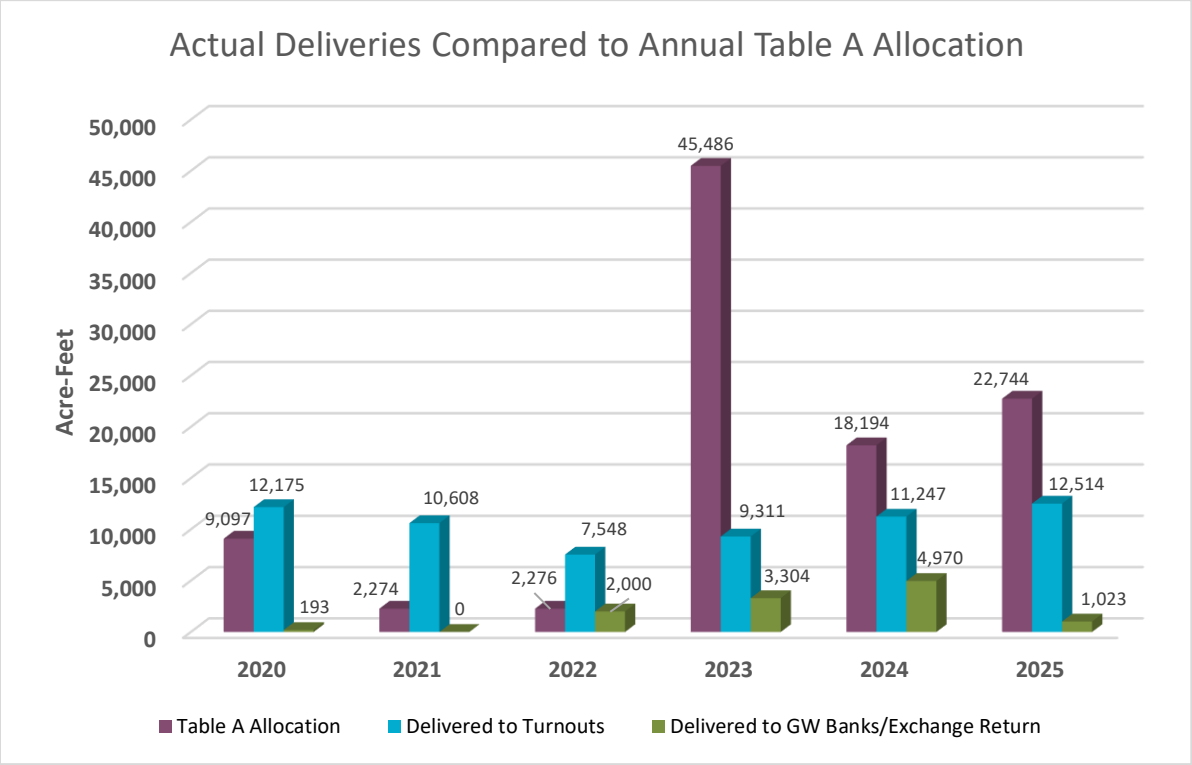
4.2.1 CCWA Historical Demand

The CCWA 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 their demand for water supply from CCWA. 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 each of the CCWA Participants.

It is CCWA's responsibility to take measures to maximize the amount of water available to CCWA Participants, up to the Table A amount (See **Section 5.2** for explanation of Table A). Although the annual DWR SWP allocation may vary from year to year, higher water delivery 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 total Table A allocation would provide and continues to meet the annual SWP demand for CCWA Participants.

Figure 4-1 presents the annual SWP Table A allocation, water deliveries to CCWA Participants, and water transferred to another SWP contractor or groundwater bank from 2020 to 2025. Based on this data, it is clear that CCWA has the ability to deliver greater volumes of water than the total Table A allocation would provide in low allocation years, as observed in 2020 through 2022. Also, as can be observed each year, water can be transferred to/from another SWP contractor or groundwater bank for the purpose of securing and increasing the reliability of water supplies for use in times of drought. The SWP allocation was a rare 100% in 2023, resulting in a very large allocation.

Figure 4-1: 2020 through 2025, Delivered Water and Table A Allocation



One of the key advantages of the CCWA system is its connection to statewide infrastructure, which provides the ability to move water from almost anywhere in the state. This ability allows for the optimum management of a given year's SWP Table A allocation. It can be utilized for supply or delivered to another SWP contractor or groundwater bank with the commitment to return the water in the future. In addition, the connection to statewide infrastructure allows CCWA to identify, secure and convey supplemental water from almost anywhere in the state to Santa Barbara County.

4.2.2 CCWA Water Demand Projections

An initial objective of importing water from the SWP into Santa Barbara and San Luis Obispo Counties was to reduce the overdraft of local groundwater basins. The Environmental Impact Report (EIR) prepared for the Phase II Coastal Branch of the SWP and for the Mission Hills Extension Project[14] 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 SWP 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, 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 CCWA Participants.

Most SWP water that is not utilized for local water demand in any given year is stored within the SWP system, 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 5.2.1** for further explanation) can be requested by any SWP contractor for delivery, when it is available. 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. As discussed more fully in **Section 5.3.1** of this UWMP, DWR conducts a delivery capability study[15] for the SWP operation every two years to provide SWP contractors with information about the SWP's ability to deliver water under current conditions as well as selected future conditions. The studies utilize a long-term historical record of flows in the Delta and the use of a sophisticated flow model known as CALSIM 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.

DWR issued its most recent update, the Draft 2025 DWR State Water Project Delivery Capability Report (DCR) in December 2025. According to the 2025 DCR, the long-term reliability of SWP is 54% in 2025 and reduces down to 48% in 2043. The 2025 DCR did not provide specific reliabilities by County or region because the report is still in the draft stage, and the Technical Addendum normally containing regional reliabilities has not been released

A long-term SWP allocation of 48% was reported for the 50% 'level of concern' future condition in the 2025 DCR. For the long-term planning purposes of this UWMP, the long-term average allocations reported for the 50% level of concern is the most appropriate estimate of average future SWP water supply availability The DCR include three future conditions: 50%, 75% and 95% level of concern. The 50% presents the central tendency of project outcomes, while the other represent more severe scenarios.

Following the DWR estimation protocol, the long-term average available water was calculated every five years from 2025 through 2050. The results of this calculation are presented in **Table 4.1**

Table 4-1: Long Term Average Delivery Projections

Participant	Table A	Buffer	Total Table A	2025	2030	2035	2040	2045	2050
Predicted SWP Allocation				**54%**	**53%**	**51%**	**50%**	**48%**	**48%**
Buellton, City of	578	58	636	343	337	324	318	305	305
Carpinteria Valley WD	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1056
Golden State Water Co	500	50	550	297	292	281	275	264	264
Goleta WD	4,500	2,950	7,450	4,023	3,949	3,800	3,725	3,576	3576
Guadalupe, City of	550	55	605	327	321	309	303	290	290
La Cumbre Mutual	1,000	100	1,100	594	583	561	550	528	528
Montecito WD	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Morehart Land Co	200	20	220	119	117	112	110	106	106
Raytheon Systems	50	5	55	30	29	28	28	26	26
Santa Barbara, City of	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Santa Maria, City of	16,200	1,620	17,820	9,623	9,445	9,088	8,910	8,554	8554
Santa Ynez ID#1[1]	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1,056
Vandenberg SFB	5,500	550	6,050	3,267	3,207	3,086	3,025	2,904	2904
SUBTOTAL	**39,078**	**6,408**	**45,486**	**24,562**	**24,108**	**23,198**	**22,743**	**21,833**	**21,833**

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

Although the CCWA Participants may not need all of the water available in a given year, by virtue of being connected to a state-wide system, available 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 1** and **6**.

4.3 Reduced Delta Reliance Analysis

DWR has recommended that SWP contractors prepare documentation on reduced reliance on Delta water supplies that is consistent with the Delta Stewardship Council's Reduced Reliance Policy. While not a strict requirement of UWMPs, reduced reliance documentation would facilitate implementation of possible actions that involve the Sacramento-San Joaquin Delta (such as Delta Conveyance and multi-year water transfers from North of the Delta) and require a consistency determination with the Delta Plan.

As a wholesale agency, a reduced Delta reliance analysis is not applicable since CCWA itself has no water demands and has no control over water demands. Rather it is relevant to the CCWA Participants. As a result, CCWA provided guidance to the CCWA Participants for documenting compliance with this policy. A guidance letter was sent to each CCWA Participants and can be found in **Appendix I**. Each agency can evaluate Delta reliance as they see fit, but they are encouraged to consider CCWA's guidance document, which focus on the baseline SWP reliability to use in any analysis.

4.4 Distribution System Water Losses

The American Water Works Association (AWWA) developed software designed to guide a water distribution system operator through a water audit. DWR prepared the DWR Water Loss Audit, which was based on the AWWA method. California Water Code Section 10631 (J) requires water supplier to quantify distribution water losses using the DWR Water Loss Audit Method.

CCWA maintains a water delivery database, which serves as the basis of the water audit. This database is populated with monthly delivery data that is processed from flow measurements made at the individual Turnout meters and the DWR "sales" meter located at the inlet of the Polonio Pass Water Treatment Plant. The DWR "sales" meter essentially measures water entering the CCWA system and the turnout meters are measuring the water leaving the CCWA system.

The flow data is processed as follows. At the end of the month, DWR will provide CCWA with the monthly total of water delivered to the Polonio Pass Water Treatment Plant. Since the DWR meter is the official "sale" meter to CCWA, the total deliveries to the turnouts must be corrected to match the DWR monthly total. This ensures that each CCWA Participant is paying their share of the DWR variable costs.

First, the DWR monthly total is compared to the sum of all turnout monthly totals. If the DWR total and the Turnout totals are within 3%, the individual Participant totals will be reconciled to match the DWR monthly total. This entails an allocation that is based on the amount of water delivered in the month to each participant. This results in either adding or subtracting to the turnout meter total so that the sum of all Turnout meters will equal the DWR monthly total. If the DWR total and the turnout totals are greater than 3%, the difference is investigated further.

From 2021 to 2025, 66,006 AF was billed to CCWA Participants. This value matched the DWR total but is 649 AF higher than the turnout meter raw values for this period. This difference is reported as distribution systems losses. This number includes all meter errors and water losses through the Polonio Pass Water Treatment Plant. While not required for wholesale agencies, CCWA completed annual water audits from 2021 through 2025, including tracking of water supplied and water loss. The completed AWWA-Water Audit Software printouts are presented in **Appendix G**.

CCWA implements a number of other leak detection methods to ensure that leaks are identified in a prompt manner and repaired. The Infrastructure Leakage Index (ILI) is a performance indicator of real water loss from the supply network of a water distribution system. Quick repairs allow for CCWA to retain an average Infrastructure Leakage Index (ILI) of 0.5 from 2021 to 2025, which represents relatively low system losses. The Water Audit Data Validity Score measures the overall quality of the data in the analysis. Overall, The Authority has maintained a data validity score of 73 since 2016.
Table 4-2 below is a summary of results from the AWWA Water Loss Audits from 2021 to 2025.

Table 4-2: Water Audit Results (2021-2025)

Description	2021	2022	2023	2024	2025
Water Supplied (AF/Yr)	14,160	11,336	12,124	13,814	14,572
Water Losses (AF/Yr)	112	185	85	140	127
Percent Water Loss	0.78%	1.61%	0.70%	1.00%	0.86%
Data Validity Score	73	73	73	73	73
Infrastructure Leakage Index	0.3	1	0.2	0.6	0.4

5 CCWA System Supplies

CCWA's source of water supply is imported water from the SWP. CCWA's Water Supply Agreements with each of CCWA Participants stipulate that imported SWP water will be an interruptible source of supply. In addition, the EIR for the Phase II Coastal Branch indicated that imported SWP water is a supplemental source of water.

5.1 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 5-1**: State Water Project System
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 5-1: 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 SWP 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 2085 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 SWP contractors reaching their maximum amount in 1990. In most cases, SWP water is an important component of local water supplies. Five SWP contractors use SWP water primarily for agricultural purposes and the remaining 24 SWP 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.

5.2 SWP Water Supply Contract

The SWP Water Supply Contract[6] between the DWR and 29 SWP Water 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 SWP 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 SWP 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 SWP contractor and as a factor in calculating each SWP contractor's share of the project's costs. Other contract provisions permit changes to an individual SWP 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. SWP reliability has been steadily decreasing each year and is substantially lower than what was originally anticipated. This is discussed more in later sections.

5.2.1 SWP Water Supply Classifications

The SWP Water Supply Contract defines several classifications of water available for delivery to SWP contractors under specific circumstances. All classifications are considered "project" water. Many SWP 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 SWP contractor. SWP Table A water is given first priority for delivery.

- **Carryover Water.** Pursuant to the SWP Water Supply Contract, SWP 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 SWP contractors to use or lose the water by December 31 of each year. The water supply contracts state 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 SWP 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 SWP 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 SWP contractors requesting it. It is available under specific conditions.

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

5.2.2 SWP Contract Term

DWR and each of the SWP contractors entered into substantially uniform long-term SWP Water Supply Contracts in the 1960s with initial 75-year terms, which thus would begin to expire in 2035, but have been extended up to 2085.

5.2.3 SWP Conveyance Capacity

The original 1963 SWP Water Supply contractors for Santa Barbara County 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 Contract, 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 CCWA Participants during the design phase of the Phase II Coastal Branch.

In the case of SLOCFCWCD, the SWP Water Supply Contract has a Table A amount of 25,000 AF per year. However, CCWA and SLOCFCWCD have entered into a Water Treatment Master Agreement that outlines the available capacity for treatment as well as flow capacity for SLOCFCWCD, which is 4,830 AF per year.

5.2.4 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 by CCWA, CCWA Participants and SLOCFCWCD on 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 SLOCFCWCD, as they have 25,000 AF per year in Table A amount and a pipeline conveyance capacity of only 4,830 AF per year.

- 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. The Goleta Valley Water District, a CCWA Participant, has 2,500 AF per year of this category of drought buffer. CCWA also has a drought buffer of 3,908 AF per year, which CCWA allocates, pro rata, to all CCWA Participants, thereby increasing the reliability of all CCWA Participants' deliveries each year.

5.2.5 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. 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 CCWA 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.

5.3 CCWA Deliveries

5.3.1 SWP Allocations

When allocating Table A amounts, DWR evaluates how much water is actually available in the state. The key indicators include snowpack in Sierra Nevada, reservoir storage, forecasted runoff, precipitation trends, and storage carryover. Limitations also evaluated include other environmental and regulatory factors like biological opinions and water quality standards.

DWR announces percent Table A allocations in steps each year, with the allocation generally increasing as the water year progresses. Allocation does not guarantee actual delivery. DWR's Table A Allocation from 2020 to 2025 fluctuated as shown in **Table 5-1.** This period included some extremely dry years and a rare 100% allocation in 2023.

Table 5-1: DWR Annual Total Allocation

Year	Allocation
2020	20%
2021	5%
2022	5%
2023	100%
2024	40%
2025	50%

5.3.2 CCWA Projected Deliveries

DWR prepares a biennial report to assist SWP contractors and local planners in assessing the near and long-term availability of supplies from the SWP. DWR issued the Draft 2025 DCR in December 2025. In the 2025 update, DWR provides SWP supply estimates for SWP contractors to use in their planning efforts, including for use in their 2025 UWMPs. The 2025 DCR includes DWR's estimates of SWP water supply availability under both current and future conditions.

DWR's estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and Central Valley Project systems. Key assumptions and inputs to the model comprise of the facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and projected contractor demands for SWP water.

In the 2025 DCR model study under existing conditions, DWR assumed: existing facilities, hydrologic inflows to the model based on long-term historical inflows, current regulatory and operational constraints, biological opinions and contractor demands at maximum Table A Amounts. The long-term average allocation reported in the 2025 DCR for the existing conditions was 54%.

To evaluate SWP supply availability under future conditions, the 2025 DCR included a model study representing hydrologic and sea level rise conditions up to 2043. A long-term SWP allocation of 48% was reported for the 50% 'level of concern' future condition in the DCR. For the long-term planning purposes of this UWMP, the long-term average allocations reported for the 50% level of concern is the most appropriate estimate of average future SWP water supply availability The DCR include three future conditions: 50%, 75% and 95% level of concern. The 50% presents the central tendency of project outcomes, while the other represent more severe scenarios.

The anticipated long-term water deliveries from 2025 to 2050 are presented in 5-year intervals in **Table 5-2**.

Table 5-2: Long-term Average Water Delivery Estimate (2025-2050)

Long Term Average, Acre-feet per Year									
Participant	Table A	Buffer	Total Table A	2025	2030	2035	2040	2045	2050
Predicted SWP Allocation				54%	53%	51%	50%	48%	48%
Buellton, City of	578	58	636	343	337	324	318	305	305
Carpinteria Valley WD	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1056
Golden State Water Co	500	50	550	297	292	281	275	264	264
Goleta WD	4,500	2,950	7,450	4,023	3,949	3,800	3,725	3,576	3576
Guadalupe, City of	550	55	605	327	321	309	303	290	290
La Cumbre Mutual	1,000	100	1,100	594	583	561	550	528	528
Montecito WD	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Morehart Land Co	200	20	220	119	117	112	110	106	106
Raytheon Systems	50	5	55	30	29	28	28	26	26
Santa Barbara, City of	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Santa Maria, City of	16,200	1,620	17,820	9,623	9,445	9,088	8,910	8,554	8554
Santa Ynez ID#1[1]	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1,056
Vandenberg SFB	5,500	550	6,050	3,267	3,207	3,086	3,025	2,904	2904
SUBTOTAL	39,078	6,408	45,486	24,562	24,108	23,198	22,743	21,833	21,833

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

5.4 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, xvi] The following is a brief summary of the portfolio of water supplies maintained by the CCWA Participants in Santa Barbara County:

5.4.1 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. Currently, the City of Buellton relies upon two sources of water for domestic supply including the SWP and groundwater from the Buellton Uplands Groundwater Basin and the Santa Ynez River Riparian Basin. The City of Buellton has a SWP allotment of 578 AF per year with an additional 58 AF per year drought buffer. 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.

5.4.2 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 3,900 acres of irrigated crops. Currently, Carpinteria Valley Water District relies on three sources of supply which include SWP with an allotment of 2,000 AFY, groundwater from the Carpinteria Groundwater Basin, and the Cachuma Project which provides roughly 2,813 AF.

5.4.3 Golden State Water Company

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. Currently, the Golden State Water Company receives as much as 500 AF per year plus 50 AF per year during a drought year from the SWP and the Santa Maria Groundwater Basin.

5.4.4 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. Currently, the Goleta Water District relies on four sources of supply to meet water demand. The SWP allotment includes 4,500 AF per year with an additional 450 AF per year drought buffer. In addition, Goleta Water District has contracted for 2,500 AF of special drought buffer, Cachuma Project provides roughly 9,300 AF per year for the Goleta Water District, the Goleta Sanitary District provides tertiary disinfected recycled water, and the district utilizes wells that draw from the Goleta Groundwater Basin

5.4.5 City of Guadalupe

The City of Guadalupe encompasses an area of approximately 832 acres and relies upon two water sources. The water sources include a SWP allotment of 550 AF per year with an additional 55 AF per year of drought buffer, and groundwater wells that draw water from the Santa Maria Groundwater Basin.

5.4.6 La Cumbre Mutual Water Company

The La Cumbre Mutual Water Company was formed in 1925 to serve water to landowners totaling approximately 2,000 acres. Currently, the La Cumbre Mutual Water Company relies on two sources of supply to meet water demand with a SWP allotment of 1,000 AF per year with an additional 100 AF per year drought buffer. Additionally, the La Cumbre Mutual Water Company has six active groundwater wells that draw water from the Goleta Central Basin and the Foothill Basin.

5.4.7 Montecito Water District

The Montecito Water District encompasses an area of 9,888 acres. Currently, the Montecito Water District relies on five sources of supply including: 1) the Cachuma Project provides up to 2,651 AFY; 2) surface water from the Santa Ynez River up to 2,000 AFY, 3) SWP allotments of 3,000 AFY with an additional 300 AFY drought buffer; 4) the Charles E. Meyer Desalination Facilities provides up to of 1,430 AFY; and 5) groundwater wells draw water from the Montecito Groundwater Basin, with annual deliveries ranging from 0 to 700 AFY

5.4.8 Morehart Land Company

Morehart Land Company is a privately held California corporation which consists of approximately 605 acres. Currently, the Morehart Land Company has 200 AF in SWP water, with an additional 20 AF of drought buffer.

5.4.9 Raytheon

The Raytheon Company owns approximately 9.4 acres of land in Goleta and 75 acres of land in Santa Maria. Raytheon has contracted for 50 AF of water from the SWP with an additional drought buffer of 5 AF per year.

5.4.10 City of Santa Barbara

The City of Santa Barbara encompasses 21 square miles and currently provides water to a population of approximately 95,650 people, or 27,405 municipal and industrial service connections. The City of Santa Barbara relies on seven water sources, including: roughly 8,277 AFY allocated from the Cachuma Project, SWP allotment of 3,000 AFY with an additional 300 AFY per year drought buffer, six groundwater wells are active and also utilized for a water source, and some local surface water sources that vary and can come from the Gibraltar Reservoir, Devils Canyon Creek, and/ or Mission Tunnel. Lastly, the City of Santa Barbara maintains a reverse osmosis seawater desalination facility which can provide 3,125 AFY.

5.4.11 City of Santa Maria

The City of Santa Maria encompasses an area of approximately 14,400 acres. The 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 including an SWP allotment of 16,200 AF per year with an additional 1,620 AF per year of drought buffer, and groundwater wells that draw water from the Santa Maria Groundwater Basin.

5.4.12 Santa Ynez River Water Conservation District, Improvement District #1

Located in the central portion of Santa Barbara County, SYRWCDID#1serves the communities of Santa Ynez, Los Olivos, Ballard, the Santa Ynez Band of Chumash Indians, and the City of Solvang on a limited basis. It covers about 10,850 acres. Currently, SYRWCDID#1relies on four sources of supply to meet water demand in its service area and includes an SWP Table A allotment of 2,000 AFY with an additional 200 AF per year drought buffer for the area, groundwater wells that draw water from the Santa Ynez Uplands Groundwater Basin, roughly 2,651 AFY for ID No.1 from the Cachuma Project, and ten active river production wells along Santa Ynez River.

5.4.13 Vandenberg Space Force Base

Vandenberg Space 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 14,971 permanent or long-term residents. Currently, Vandenberg Space Force Base relies on two sources of supply to meet water demands, including: an SWP allotment of 5,500 AF per year with an additional 550 AF per year of drought buffer, and groundwater wells tapping the Lompoc Groundwater Basin.

5.5 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)[xvii] and the Costa-Isenberg Water Transfer Law of 1986 (California Water Code, Sections 470, 475, 480-483)[xviii]. 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. One of the more recent developments is the Water Management Amendment (Amendment 21 to CCWA's SWP Water Supply Contract). Amendment 21 expanded flexibility for SWP contractors to transfer, exchange, store, and carry over water supplies between SWP contractors. The amendment established consistent rules and administrative procedures for water transfers and exchanges while maintaining existing SWP operational criteria and delivery limits. Its purpose was to improve water management flexibility during droughts, changing hydrology, and other water supply challenges.

Up to 27 MAF 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 CCWA Participants can be an effective means of achieving flexibility. However, not all water transfers or exchanges have the same effectiveness in meeting resource needs.

In 2021, CCWA adopted a policy for water transfers out of the county, requiring that water proposed to be transferred out of the county first be offered to other CCWA Participants before it is offered on the wider water market. In 2024, CCWA adopted a comprehensive set of rules and procedures governing transfers and exchanges[25].

5.5.1 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 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.

CCWA is currently involved in two Groundwater Banking Projects: 1) Strand Ranch Groundwater Bank through Irvine Ranch Water District and 2) Semitropic Water Banking and Exchange Program. The agreement with Strand Ranch is between CCWA and Irvine Ranch Water District (IRWD). CCWA entered into the agreement on behalf of La Cumbre Mutual Water Company. CCWA's agreement with IRWD allows for a total yield of up to 416 AFY. Any annual yield above that amount would be determined by IRWD. The Semitropic Water Banking Agreement is between Montecito Water District (MWD) and Semitropic. CCWA facilitates the deliveries and transfers on behalf of MWD.

5.6 Desalinated Water Opportunities

CCWA is not currently pursuing any desalination projects or opportunities.

5.7 Recycled Water and Local Groundwater

CCWA was formed to operate and maintain the Coastal Branch of the SWP and the local facilities required to deliver SWP to Santa Barbara and San Luis Obispo Counties, and to manage the delivery of SWP water in both counties. There are no plans to expand the charter of CCWA to include the management and/or distribution of recycled water or local groundwater.

5.8 Future Water Projects

CCWA Participants are forward thinking and sophisticated water managers. A wide variety of potential projects are under evaluation, as follows:

5.8.1 Delta Conveyance Project

An ongoing planning effort to increase long-term supply reliability for both the SWP and CVP is taking place through the Delta Conveyance Project. The Delta Conveyance Project facilities would allow for greater flexibility in balancing the needs of the estuary with the reliability of water supplies. The plan would also provide other benefits, such as reducing the risk of long outages from Delta levee failures. CCWA has opted-out of the Delta Conveyance Project and has communicated that to DWR and other public water agency participants.

5.8.2 Suspended Table A Reacquisition

The original 1963 State Water Contract for Santa Barbara County provided for the delivery of up to 57,700 AFY of Table A Amount from SWP to Santa Barbara County. In 1981, DWR agreed to reduce the Table A amount from 57,700 to 45,486 AFY (see Amendment No. 9). As a result, the remaining 12,214 AF was "suspended" by DWR. The 12,214 AF of SWP water supply entitlement is known as "Suspended Table A Water" and CCWA has the option of reacquiring this Suspended Table A Water 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 and the local facilities were designed to convey only 42,985 AF, the reacquisition of the Suspended Table A Water would have the potential to increase the reliability of SWP deliveries to Santa Barbara County, but the capacity of the existing facilities would not change. Reacquiring the Suspended Table A Water, some or all CCWA Participants' allocations would 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, CCWA 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, CCWA 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.

Suspended Table A provides 12,214 AF of additional Table A contract amount. For a long-term average reliability of 48% at future conditions, per the 2025 DCR, this translates to an average of 5,863 AF of potential additional supply. On February 14, 2020, CCWA published a Notice of Preparation for the project, and began preparation of a draft EIR, but work on the report is currently on-hold.

5.8.3 SLOFCWCD and CCWA Long-term 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 AF 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 CCWA 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 20% 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. Since, SLOFCWCD has 25,000 AF of Table A contract amount, it typically have more than 4,830 AF available to it in any given year. Accordingly, CCWA and SLOFCWCD are exploring potential exchange concepts that may be mutually beneficial. Additionally, in some years short-term annual transfers between CCWA and SLOFCWCD are made.

5.8.4 CCWA Water Management Strategies Study

CCWA and SLOFCWCD developed the Coastal Branch Water Management Strategies study in January of 2019, which evaluates opportunities to improve water supply reliability for agencies served by the Coastal Branch of the California Aqueduct. The primary challenge of SWP supply variability show where annual allocation significantly fluctuate due to hydrologic conditions and regulatory constraints. In addition, they system faces conveyance limitations, particularly during peak summer demand, and limited storage capacity to capture excess water during wet periods. Regulatory requirements and environmental protections further constrain operations. The report evaluates several management strategies to address these challenges. These include increasing water transfers and exchanges between agencies, expanding storage opportunities such as groundwater banking, optimization conveyance by utilizing unused capacity during off peak periods, and facilitating water purchases and sales to balance supply and demand. Evaluation of the success of the strategies include more reliable water supplies, cost effectiveness, fair distribution, feasibility of regulatory aspects, proximity logistics, and improved water quality. The report emphasizes a portfolio-based approach, combining multiple strategies to improve the system performance. The portfolios are evaluated based on criteria such as supply reliability, cost, environmental feasibility, equity, and water quality. Findings indicate that significant benefits can be achieved through improved coordination and more efficient use of existing infrastructure, particularly by leveraging unused conveyance capacity and facilitating interagency transfers.

Overall, the report concludes that enhancing regional cooperation and operational flexibility is critical to improving water supply reliability along the Coastal Branch. Rather than relying on new infrastructure, the recommended approach focuses on better management of existing resources to adapt to increasing variability in water availability.

5.9 Energy Usage

Energy intensity is defined as the amount of energy used to collectively divert, store, convey, treat, and distribute each unit volume of water and herein is reported as kilowatt hours per acre-foot (kW-hr/AF). An analysis was performed for the reporting period of December 29, 2021, through December 28, 2022. The analysis covers energy usage within CCWA including water treatment and pumping for storage in Lake Cachuma.

The energy intensity analysis is shown below in **Table 5-3**. The final calculated energy intensity is 431 kWh/AF. CCWA does not generate any electricity to offset its electricity use. Also, this analysis excludes energy used by the CCWA Participants

Table 5-3: Energy Intensity

Energy Intensity (Year 2022)			
Description	**Water Management Process**		
	Place into Storage	**Treatment**	**Total Utility**
Volume of Water Entering Process (AF)	5,301	11,518	11,518
Energy Consumed (kWh)	2,286,866	894,712	3,181,578
Energy Intensity (kWh/AF)	431	78	276

6 Water Supply Reliability

CCWA provides a supplemental source of water supply to CCWA Participants. It is also an interruptible supply, as specified in each of CCWA 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 in the fall of each calendar year and lasts from two to four weeks. During this time, all CCWA Participants are required to utilize their other sources of water supply to meet their individual system demands. It is CCWA's mission to deliver the SWP water that is available to each CCWA Participant and to manage undelivered SWP as each CCWA 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-five years, in five-year increments. As described in Section 4.2, the demand for water from the CCWA system is highly influenced by the management decisions of CCWA Participants. To respond to end user demands for water supply, the CCWA Participant 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 Participants, it is difficult to predict the proportion of their 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, Article 21 Water and Groundwater Banking are not considered. This chapter presents the reliability assessment for CCWA's source of water supply, based on individual CCWA Participant Table A and drought buffer amounts. It also presents a reliability assessment of a single-dry year and multiple-year (5-year) drought.

6.1 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, including regulatory restrictions, operational status of key pumping and storage facilities and many other factors.

As discussed in Section 5.2, 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 SWP 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 SWP 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 2025 DCR,[20] prepared biennially, assists SWP contractors and local planners in assessing the reliability of the SWP component of their overall supplies. In the report DWR presents the results of an SWP reliability analysis based on model studies of SWP operations. 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 estimates of SWP deliveries are based on a computer model that simulates monthly operations of the SWP and CVP systems. Key assumptions and inputs to the model comprise of the facilities included in the system, hydrologic inflows to the system, regulatory and operational constraints on system operations, and projected contractor demands for SWP water.

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. The following sections provide an estimate of the availability of SWP supply during various hydrologic conditions based on these reliability factors.

6.1.1 Reliability Factor Estimates

In the 2025 DCR, DWR provided reliability estimates for current and future conditions up to the year 2043.[19] This data was utilized, following DWR guidance, to estimate the long-term average, the single driest year, and five-year drought reliability factors. **Table 6-1** represent the results of these calculations:

Table 6-1: CCWA Table A Reliability Estimate

				5-Year Drought - Option 1: 1929-1934				
Year	**Long Term Average**	**Single Dry Year 1977**	**Lowest Allocation on Record (2014)**	**5-Year Drought Year 1: 1929**	**5-Year Drought Year 2: 1930**	**5-Year Drought Year 3: 1931**	**5-Year Drought Year 4: 1932**	**5-Year Drought Year 5: 1933**
2025	54.0%	6.0%	5.0%	15.0%	15.0%	15.0%	15.0%	15.0%
2030	53.0%	5.0%	5.0%	15.0%	15.0%	15.0%	15.0%	15.0%
2035	51.0%	4.0%	5.0%	15.0%	15.0%	15.0%	15.0%	15.0%
2040	50.0%	3.0%	5.0%	15.0%	15.0%	15.0%	15.0%	15.0%
2045	48.0%	2.0%	5.0%	14.0%	14.0%	14.0%	14.0%	14.0%
2050	48.0%	2.0%	5.0%	14.0%	14.0%	14.0%	14.0%	14.0%

1. Highlighted rows are linked to tab "SWP Delivery Capability Report"
2. Other cells are interpolated by formula
3. 5% in 2014 is based on actual allocation that year

The table above was sent to all of CCWA Participants so they could plan consistently with CCWA. An example of one of the memos including the table is included in **Appendix C**.

6.1.2 Long-term Average Condition

As required by DWR guidelines, the long-term annual average delivery has been calculated for each CCWA Participant in five-year increments from 2025 to 2050. All calculations follow the estimation protocol outlined in the DCR. 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 6-2** presents the results of these calculations:

Table 6-2: Long-term Average Delivery Estimate (2025 to 2050)

Long Term Average, Acre-feet per Year									
Participant	**Table A**	**Buffer**	**Total Table A**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**
Predicted SWP Allocation				**54%**	**53%**	**51%**	**50%**	**48%**	**48%**
Buellton, City of	578	58	636	343	337	324	318	305	305
Carpinteria Valley WD	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1056
Golden State Water Co	500	50	550	297	292	281	275	264	264
Goleta WD	4,500	2,950	7,450	4,023	3,949	3,800	3,725	3,576	3576
Guadalupe, City of	550	55	605	327	321	309	303	290	290
La Cumbre Mutual	1,000	100	1,100	594	583	561	550	528	528
Montecito WD	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Morehart Land Co	200	20	220	119	117	112	110	106	106
Raytheon Systems	50	5	55	30	29	28	28	26	26
Santa Barbara, City of	3,000	300	3,300	1,782	1,749	1,683	1,650	1,584	1584
Santa Maria, City of	16,200	1,620	17,820	9,623	9,445	9,088	8,910	8,554	8554
Santa Ynez ID#1[1]	2,000	200	2,200	1,188	1,166	1,122	1,100	1,056	1,056
Vandenberg SFB	5,500	550	6,050	3,267	3,207	3,086	3,025	2,904	2904
SUBTOTAL	**39,078**	**6,408**	**45,486**	**24,562**	**24,108**	**23,198**	**22,743**	**21,833**	**21,833**

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

6.1.3 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 2025 to 2050. All calculations follow the estimation protocol outlined in the DCR. 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 6-3** presents the results of these calculations for 1977, which has a reliability of 6% in current conditions and down to 2% in 2043.

Table 6-4 presents a single dry year reliability of 5% based on actual allocations in 2014. Further discussions on the 2014 water year and why it is considered the "worst-case" scenario are provided after **Tables 6-3 and 6-4.**

Table 6-3: Single Dry Year Delivery Estimate, Based on 1977

Single Driest Year, 1977, Acre-Feet per Year									
Participant	Table A	Buffer	Total Table A	2025	2030	2035	2040	2045	2050
Predicted SWP Allocation				6%	5%	4%	3%	2%	2%
Buellton, City of	578	58	636	38	32	25	19	13	13
Carpinteria Valley WD	2,000	200	2,200	132	110	88	66	44	44
Golden State Water Co	500	50	550	33	28	22	17	11	11
Goleta WD	4,500	2,950	7,450	447	373	298	224	149	149
Guadalupe, City of	550	55	605	36	30	24	18	12	12
La Cumbre Mutual	1,000	100	1,100	66	55	44	33	22	22
Montecito WD	3,000	300	3,300	198	165	132	99	66	66
Morehart Land Co	200	20	220	13	11	9	7	4	4
Raytheon Systems	50	5	55	3	3	2	2	1	1
Santa Barbara, City of	3,000	300	3,300	198	165	132	99	66	66
Santa Maria, City of	16,200	1,620	17,820	1,069	891	713	535	356	356
Santa Ynez ID#1[1]	2,000	200	2,200	132	110	88	66	44	44
Vandenberg SFB	5,500	550	6,050	363	303	242	182	121	121
			Total	**2,729**	**2,274**	**1,819**	**1,365**	**910**	**910**

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

Table 6-4: Single Dry Year Delivery Estimate, Based on 2014

Lowest Allocation on Record, 2014, Acre-Feet per Year										
Participant	Table A	Buffer	Total Table A	2020	2025	2030	2035	2040	2045	2050
Predicted SWP Allocation				5%	5%	5%	5%	5%	5%	5%
Buellton, City of	578	58	636	32	32	32	32	32	32	32
Carpinteria Valley WD	2,000	200	2,200	110	110	110	110	110	110	110
Golden State Water Co	500	50	550	28	28	28	28	28	28	28
Goleta WD	4,500	2,950	7,450	373	373	373	373	373	373	373
Guadalupe, City of	550	55	605	30	30	30	30	30	30	30
La Cumbre Mutual	1,000	100	1,100	55	55	55	55	55	55	55
Montecito WD	3,000	300	3,300	165	165	165	165	165	165	165
Morehart Land Co	200	20	220	11	11	11	11	11	11	11
Raytheon Systems	50	5	55	3	3	3	3	3	3	3
Santa Barbara, City of	3,000	300	3,300	165	165	165	165	165	165	165
Santa Maria, City of	16,200	1,620	17,820	891	891	891	891	891	891	891
Santa Ynez ID#1[1]	2,000	200	2,200	110	110	110	110	110	110	110
Vandenberg SFB	5,500	550	6,050	303	303	303	303	303	303	303
Total	39,078	6,408	45,486	2,274	2,274	2,274	2,274	2,274	2,274	2,274

[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

The extremely dry sequence from the beginning of January 2013 through the end of 2014 was one of the driest two-year periods in the historical record. Water year 2013 was a year with two hydrologic extremes. October through December 2012 was one of the wettest fall periods on record but was followed by the driest consecutive 12 months on record. Accordingly, the 2013 SWP allocation was 35% of SWP Table A amounts. The 2013 hydrology ended up being even drier than DWR's conservative hydrologic forecast, so the SWP began 2014 with reservoir storage lower than targeted levels and less stored water available for 2014 supplies. Compounding this low storage situation, 2014 also was an extremely dry year, with runoff for water year 2014 the fourth driest on record. Due to extraordinarily dry conditions in 2013 and 2014, the 2014 SWP water supply allocation was a historically low 5% of Table A amounts.

The exceedingly dry sequence from the beginning of January 2013 through the end of 2014 was one of the driest two-year periods in the historical record. As noted above, the circumstances that led to the low 2014 SWP water supply allocation were unusual and have a low probability of occurrence in the future. Thus, the assumption for CCWA is that a 5% allocation represents the "worst-case" scenario.

6.1.4 Five-Year Drought

The average delivery for a five-year drought period was calculated for each CCWA Participant in five-year increments from 2025 to 2050. All calculations follow the estimation protocol outlined in the DCR. **Table 6-5** presents the results of these calculations:

Table 6-5: Five-Year Drought Delivery Estimate – Based on 1988 to 1992

Five-Year Drought, 1929-1933, Acre-Feet per Year										
Participant	Table A	Buffer	Total Table A	2020	2025	2030	2035	2040	2045	2050
Predicted SWP Allocation				15%	15%	15%	15%	15%	14%	14%
Buellton, City of	578	58	636	95	95	95	95	95	89	89
Carpinteria Valley WD	2,000	200	2,200	330	330	330	330	330	308	308
Golden State Water Co	500	50	550	83	83	83	83	83	77	77
Goleta WD	4,500	2,950	7,450	1,118	1,118	1,118	1,118	1,118	1,043	1,043
Guadalupe, City of	550	55	605	91	91	91	91	91	85	85
La Cumbre Mutual	1,000	100	1,100	165	165	165	165	165	154	154
Montecito WD	3,000	300	3,300	495	495	495	495	495	462	462
Morehart Land Co	200	20	220	33	33	33	33	33	31	31
Raytheon System	50	5	55	8	8	8	8	8	8	8
Santa Barbara, City of	3,000	300	3,300	495	495	495	495	495	462	462
Santa Maria, City of	16,200	1,620	17,820	2,673	2,673	2,673	2,673	2,673	2,495	2,495
Santa Ynez ID#1[1]	2,000	200	2,200	330	330	330	330	330	308	308
Vandenberg SFB	5,500	550	6,050	908	908	908	908	908	847	847
Total	39,078	6,408	45,486	6,823	6,823	6,823	6,823	6,823	6,368	6,368

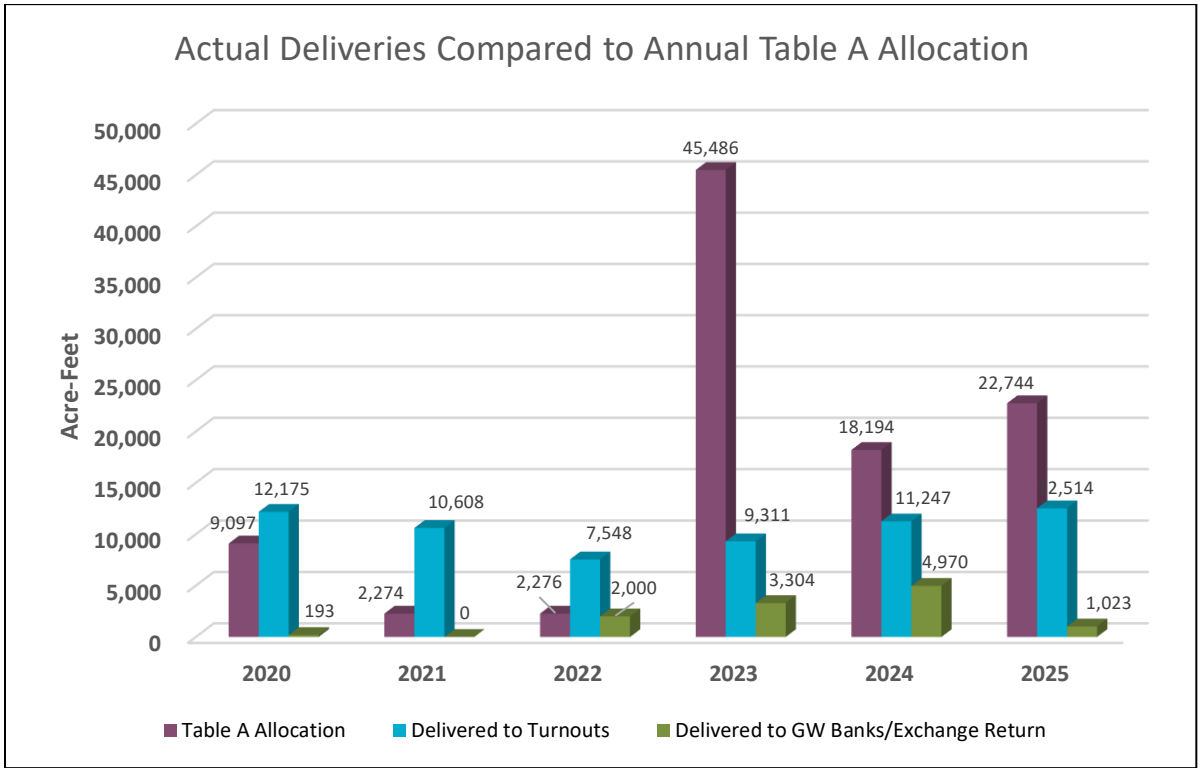
[1]Santa Ynez River WCD #1 has contracted a portion of its Table A allocation to the City of Solvang.

6.2 Comparison of Demand and Supply

As discussed previously, the CCWA 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, each CCWA Participant 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 CCWA 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.

SWP supplies also vary each year. **Figure 6-1** shows actual deliveries versus the SWP allocation from 2020 to 2025. In several years deliveries exceeded the allocation due to supplemental sources of SWP and other water obtained by CCWA Participants.

Figure 6-1: Historical Deliveries Compared to DWR Allocation



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

Table 6-6 presents the actual deliveries to each CCWA Participant, expressed as a percent of the Table A amount, from 2020 through 2025. The associated DWR annual allocations are also presented. Cells highlighted in green represent years when the SWP deliveries exceeded the allocated volume.

Table 6-6: CCWA Deliveries, as Percent of Table A, Compared to DWR Annual Allocation[1]

CCWA Participants Actual Deliveries[2], 2020 through 2025 in Percent Table A									
Participant	**Table A**	**Buffer**	**Total Table A**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
SWP Allocation				**20%**	**5%**	**5%**	**100%**	**40%**	**50%**
Buellton, City of	578	58	636	54.6%	28.5%	13.4%	38.5%	39.8%	30.0%
Carpinteria Valley WD	2,000	200	2,200	12.3%	83.5%	20.0%	3.6%	12.7%	16.2%
Golden State Water Co	500	50	550	16.7%	10.2%	10.4%	46.2%	44.7%	57.3%
Goleta WD	4,500	2,950	7,450	8.1%	25.3%	47.8%	2.4%	8.5%	11.0%
Guadalupe, City of	550	55	605	36.7%	2.0%	1.7%	94.9%	72.7%	50.6%
La Cumbre Mutual WC	1,000	100	1,100	84.4%	12.8%	49.0%	33.6%	30.4%	33.2%
Montecito WD	3,000	300	3,300	12.3%	8.8%	3.9%	3.5%	12.8%	16.5%
Morehart Land Co	200	20	220	22.3%	18.6%	46.8%	21.4%	6.8%	12.3%
Raytheon System	50	5	55	45.5%	36.4%	0.0%	0.0%	0.0%	0.0%
Santa Barbara, City of	3,000	300	3,300	12.2%	11.5%	15.8%	3.5%	12.8%	16.5%
Santa Maria, City of	16,200	1,620	17,820	32.0%	15.9%	8.9%	26.6%	26.1%	31.0%
Santa Ynez ID#1	2,000	200	2,200	62.9%	26.9%	23.1%	61.3%	41.7%	24.0%
Vandenberg AFB	5,500	550	6,050	40.3%	38.8%	0.0%	20.5%	43.6%	49.2%

Notes:
[1]Green cells represent years when deliveries exceeded the DWR allocation
[2]Actual deliveries include Table A water, drought buffer, carryover water, water transfers among CCWA Participants, water transfers and/or exchanges with other SWP contractors, water transfers from "non-project" sources, DWR dry year purchase programs, Santa Ynez Agreement exchanges and groundwater banking programs.

Figure 6-1 and **Table 6-6** both show the ability of the SWP system to deliver water above the final SWP allocation due to numerous supplementary sources. This provides the ability to augment water supplies in dry years.

6.3 Water Quality

6.3.1 CCWA Treatment of SWP Deliveries

CCWA provides water from the SWP to participants in Santa Barbara and San Luis Obispo Counties. This water is treated at Polonio Pass Water Treatment Plant which is operated by CCWA. SWP water comes from the 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 across the Delta. Variability in water quality along the Delta is generally a function of flow conditions, tidal mixing, water export operations, within the Delta. 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 contributes towards increased minerals and TOC.

Treatment Process

This SWP source water is treated at Polonio Pass Water Treatment Plant, by conventional surface water treatment, with enhanced coagulation, flocculation, sedimentation, filtration, and disinfection with free chlorine. CCWA uses data provided by the Municipal Water Quality Investigations (MWQI) Program[1] and its own water monitoring programs to optimize the treatment approach at the Polonio Pass Water Treatment Plant to produce water to the highest standards attainable. The Polonio Pass Water Treatment Plant provides a multi-barrier treatment 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 (DBP). The water is then passed through a second barrier of activated carbon filters where filters remove particulate matter, while activated carbon absorbs dissolved organic compounds. 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 used to prevent the growth of bacteria in the distribution system and help to prevent microbial regrowth, which delivers water from the Polonio Pass Water Treatment Plant to CCWA Participants. Monitoring data reported in the SWP Watershed Sanitary Survey 2022 Update indicate that current treatment for *Cryptosporidium*, *Giardia* and viruses continue to be appropriate for the Polonio Pass Water Treatment Plant.

Disinfection Byproducts

The TOC and bromide in Delta source water have the potential to form harmful DBPs by reacting with chlorine or chloramines in the treatment process. Water in the San Luis Reservoir has a greater likelihood of forming DBPs during the spring and summer when the most water is released from the reservoir to flow south in the Aqueduct due to release volume fluctuations (Watershed Sanitary Survey 2016 Update)[20]. In addition to factors related to temperature, organic matter reactivity, and residence time. To reduce the potential for the formation of DBPs, TOC levels are reduced prior to the disinfection through enhanced coagulation and filtration processes. The concentration of TOC in water from the Delta varies from below 2 parts per million (ppm) to more than 10 ppm in water from the Delta. The cost of treatment fluctuates with the amount of chemicals necessary to remove the organic carbon.

[1] The MWQC Program improves the usability of Delta water as a municipal source by providing monitoring, forecasting and reporting of SWP water quality at sites in the Delta.

Mineral Content

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 pose health concerns, but "hard" water (water high mostly in calcium and magnesium) can cause the formation of white crusts in plumbing fixtures, water spots, 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. Low alkalinity levels affect the coagulation treatment process. Alkalinity is necessary to react with aluminum sulfate (alum) used in the treatment process to cause coagulation and flocculation of suspended solids and colloidal particles. The reaction of alum (aluminum sulfate) 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. Alum 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.

Taste and Odor Issues

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 high nutrient concentrations, can lead to algal blooms. Some algae, especially blue green algae (cyanobacteria), release 2-methylisoborneol (MIB) and geosmin which are T&O chemicals associated with musty and earthy taste and smells. Both 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 which is effective at absorbing MIB and geosmin and reducing associate T&O impacts in finished water.

System Shut-Down

Each calendar year DWR performs maintenance and inspections on the Coastal Branch of the SWP, which requires the Polonio Pass Water Treatment Plant to shut down and the Coastal Branch to be slowly dewatered to provide access to the canal and pipelines. 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 Polonio Pass Water 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.

Treated Water Quality Impacts on Reliability

The ability to control nitrification is critical to reliability during drought conditions. To reduce DBP formation, the Polonio Pass Water Treatment Plant adjusts the pH of water leaving the Chlorine Contact Basin and subsequently doses ammonia to form a chloramine secondary disinfectant. While chloramines are very effective in controlling DBPs. However, this treatment step presents the potential of nitrification, a biological process in which ammonia oxidizing bacteria convert ammonia to nitrite and nitrate, leading to the depletion of chloramine residual. This process can ultimately reduce the chloramine secondary disinfectant to non-detectable concentrations. This is a condition that needs to be avoided since drinking water standards require that all treated surface water to continuously have a detectable secondary disinfectant. One parameter that influences when nitrification occurs is water age following treatment. The potential for nitrification increases as water age increases, which becomes as important consideration during drought conditions when water deliveries may be reduced due to lack of supply. As water deliveries are reduced, water age begins to increase. The point at which

a drinking water aqueduct using chloramine secondary disinfectant will need to shut down is when the nitrification process cannot be adequately controlled.

CCWA has implemented a comprehensive nitrification monitoring and control strategy which has allowed CCWA to operate the Polonio Pass Water Treatment Plant and pipeline to less than 50% of the minimum design flow rate of the system. This greatly improves reliability of the CCWA system. 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 Polonio Pass Water Treatment Plant and to use that information to treat the water to the highest standards attainable.

6.4 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 available and allocated to SWP contractors each year is dependent on several 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 SWP contractor demand for that water.

6.4.1 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.

6.4.2 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.

Several 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 several factors, including water diversions, habitat destruction, degraded water quality through urban runoff and wastewater 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.

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 [21]1641 (D-1641), which establishes Delta water quality standards and outflow requirements that the SWP and CVP must comply with.

The requirements in the biological opinions 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 biological opinions.

6.4.3 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 SWP 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.

6.5 Drought Risk Assessment

A new requirement for UWMPs is to prepare a 5-year drought risk assessment for the years 2021 to 2025 and identify response actions and mitigation measures to address the water shortages. This analysis is not applicable to CCWA since they provide a wholesale water supply and are not responsible for response actions. CCWA does offer mitigation measures by securing supplemental water for the CCWA Participants, but this is only done at their specific request. In addition, the supplies vary by circumstances, availability, and CCWA Participant demand, and it is not feasible to predict or assign what would be available during a specific dry year. CCWA can only provide what water is available. When requested to find supplies CCWA makes an effort to secure supplemental water but is not responsible for resolving other agencies' water shortages. More details on CCWA's roles and the Supplemental Water Program are provided below.

CCWA is a Joint Powers Authority that was formed by its member agencies to design, construct, operate and maintain the Coastal Branch of the SWP and the associated CCWA aqueduct extension and to convey, treat, and deliver SWP to CCWA Participants. CCWA is a wholesale provider of imported SWP water to CCWA Participants. Conservation measures and water management planning are the responsibility of each CCWA Participant, not CCWA.

CCWA's main function is to respond to the supplemental water supply needs of CCWA Participants. In times of abundant supply, CCWA will facilitate a range of actions to manage excess SWP supplies to effectively store the excess supplies for later use. Likewise, in times of drought, CCWA will facilitate securing supplemental supplies of water that can be delivered through the SWP system to CCWA Participants. However, each CCWA Participant has its own unique portfolio of water supplies and, as a result, each has a unique way of responding to their individual customers' demand for water supply.

As described in the Water Contingency Shortage Plan (**Appendix H**), CCWA has developed program that will allow individual CCWA Participants to pursue supplemental sources of water supply, transfers of surplus water, or participation in a groundwater bank. This program is essential due to the wide range of possible responses to changing conditions.

An important function of the CCWA operation is to fully characterize the source of supply for CCWA Participants so that they can incorporate this information into their individual water management strategies. CCWA will provide frequent updates on the current year available supply at each Board of Directors meeting and at each Operating Committee meeting. This update includes the status of precipitation and snow levels of the SWP's watershed, current reservoir levels, and the results of DWR periodic special studies regarding potential changes to the amount of available supply as well as DWR's annual position analysis. In addition, a Water Delivery Status Report is also posted on the CCWA's website. This report provides the amount of available water supply for the current year, and the amount delivered to date for the given year.

6.6 Climate Change Impact on State Water Project Water

This section includes a general discussion on climate change followed by analyses of climate change impacts to water demands, water supply, and water supply reliability.

General Discussion on Climate Change

Climate change model projections indicate that California in general can expect to be impacted by the following:

- Increased temperatures
- Changes in the timing and quantity of precipitation
- Increased risk of wildfires
- Increased risk of flooding, and
- Sea-level rise

The Santa Barbara County Integrated Regional Water Management Plan (IRWMP) (Dudek, 2019)[22] presented a summary of climate change findings from various studies and models, which is included in **Table 6-7**.

Table 6-7: Impacts of Climate Change on the Region by Mid-Century

Impact	Ranges*
Temperature	Winter: Projected increases of 4°F to 5°F Summer: Projected increases of 5°F to 6°F
Precipitation	5- to 7-inch decrease in average annual rainfall Increase in annual precipitation variability, fewer and more intense storms, and longer dry periods
Sea-Level Rise	4–30 centimeters (cm) by 2030 12–61 cm by 2050 42–167 cm by 2100
Supply	State Water Project delivery decrease of 7%–10% by 2050, and 21%–25% by 2100; changes to local supply not quantified
Wildfire	Low to moderate increase in projected fire risk
Flooding	Greater flood magnitudes**

Source: Information compiled by the Cooperating Partners in 2018.

* Changes to occur by 2100 unless otherwise noted.

** Greater flood magnitudes are anticipated to result from more frequent atmospheric river-storm events (Fourth California Climate Change Assessment and the corresponding Regional Reports (http://www.climateassessment.ca.gov).

The effects of climate change are addressed and quantified in the DCR, as previously described. CCWA communicates this information to CCWA Participants to characterize the impacts of climate change. CCWA Participants will, in turn, utilize this information and incorporate it into their own unique plans for managing the effects of climate change. Additional information regarding climate change effects to the water supplies available to Santa Barbara County can be found in the County's IRWMP.

Impacts to Water Demands

The IRWMP identified the primary expected effect from climate change in the future is an increase in average global temperature. By the mid-century, temperatures in the Central Coast area are projected to increase 4°–5°Fahrenheit during the winter and increase 5°–6°Fahrenheit during the summer. By the end of the century, annual average temperatures are anticipated to be 7°–8°Fahrenheit higher than the historic average. Increases in temperature may be expected to impact water resources through changes to precipitation patterns, evapotranspiration rate increases, increased customer water use, increased wildfire potential, and faster snowmelt. These potential impacts are likely to impact the SWP supplies.

The IRWMP also noted the frequency of extreme hot days was also projected to increase significantly from 3 to 4 extreme hot days in the historical period (1985–2014), 6 to 10 extreme hot days by 2030, 9 to 18 extreme hot days by 2050, and 23 to 43 extreme hot days by 2090.

As climate change becomes noticeable and quantifiable, the CCWA Participants' responses will need to include reducing demands for SWP supplies to match possible reduction of water supplies from the SWP. At this point, impacts from possible climate change are not quantifiable. Reduction of demands in the SWP system can help respond to climate change in two ways. Reduced SWP water demands equate to less energy use through reduced movement of water supplies within the system. The CCWA Participants have already implemented many demand management or conservation methodologies.

It is anticipated that climate change related temperatures will increase, and more hot days will impact landscape water demands within member agency jurisdictions,; which in turn may trigger possible mitigation measures to reduce water demands for landscape such as requiring less landscaping, increased use of drought tolerant plantings, or more efficient irrigation strategies by CCWA Participants.

Impacts to Water Supplies

The IRWMP quoted the County's Long-term Supplemental Water Supply Alternatives Report (Long-term Supplemental Water Supply Alternatives Report, County of Santa Barbara, 2015)[23], which stated that future water availability for some municipal suppliers will be reduced by lost reservoir capacity and reduced reliability of SWP deliveries. In addition, climate change effects such as extended periods of drought and more frequent occurrence as well as variance in the frequency and intensity of rain and storm events and the increased frequency and intensity of fires will all further limit water supplies locally and throughout the state. SWP deliveries are affected each year by weather conditions within the source areas and measures to protect habitat in key water transport facilities, particularly within the Delta.

Seawater inundation in coastal aquifers; increased evapotranspiration rates due to increased temperatures; changes in the amount, timing, and quality of runoff and recharge as precipitation patterns change; increased sedimentation to reservoirs due to increased wildfires; more extreme storm events; longer and more frequent droughts; and damage to infrastructure due to increased flooding and sea-level rise all present potential risks to local water supply. Although these risks have not been quantified, they are recognized and evaluated individually by CCWA Participants.

The IRWMP states that sea-level rise has the potential to impact water supplies in Santa Barbara County through seawater intrusion into coastal aquifers, impacts to water infrastructure, and decreased deliveries from the SWP. Seawater intrusion did occur in the Santa Barbara Groundwater Basin in the late 1970s due to heavy pumping, which was later reversed by effective pumping practices and groundwater injection. In Santa Barbara County, basins that are subject to the Sustainable Groundwater Management Act (SGMA) have prepared Groundwater Sustainability Plans (GSPs) and will be monitoring for possible seawater intrusion, as applicable. If needed, certain Groundwater Sustainability Agencies (GSAs) may implement measures to limit seawater intrusion that might impact local groundwater supplies.

Impacts on Water Supply Reliability

As provided in the 2025 DCR, the cumulative effects of climate change on the hydrologic conditions relevant to the Delivery Capability of the SWP can be categorized into three parts: (1) Changes to monthly patterns of flows, (2) more extreme events, and (3) lower reservoir storage levels. Climate change will likely cause more precipitation to fall as rain instead of snow. and as a result, the monthly patterns of flows into reservoirs and into the Delta are expected to be higher in winter months, and lower flows the rest of the year. Increased flows during the winter months are not stored as effectively in reservoirs as inflows that occur later in the water year. This is because storage during the winter months is subject to stricter flood control levels. These levels are set to mediate the risk of reaching critical operational thresholds in each reservoir. Due to these limits, even when there are higher flows in winter months in the future climate scenarios, much of the additional flow cannot be stored. At the local level, changes in the timing and intensity of precipitation could negatively affect groundwater recharge, runoff flowing to rivers and reservoirs, flooding frequency, and length of the dry season and resulting increased risk of wildfires and vegetation die off. The local impacts could affect the local supplies of CCWA Participants.

A significant portion of Santa Barbara County is occupied by forest land, and wildfire is already a common occurrence in the Region due primarily to the warm, dry climate. Earlier onset of dryness that lasts longer and becomes more intense is likely to result in a low to moderate increase in fire risk according to the IRWMP. The annual area burned by fire in Santa Barbara County is projected to increase under climate change. An increase in the average annual area burned by wildfires would result in increased sedimentation to reservoirs, negatively impacting water quality, reducing storage capacity, and potentially reducing delivery of local supplies due to operational impacts to CCWA Participants.

The Coastal Branch of the SWP delivers water originating in Northern California to water agencies in Santa Barbara and San Luis Obispo Counties including the CCWA. The Delta is the central hub of the SWP. Potential impacts to the Delta resulting from climate change include increased risk of levee failure, reduced water quality, and reduced water supply, all of which could significantly impact SWP operations, and the reliability of the supply of water delivered through the CCWA to its CCWA Participants. Sea-level rise threatens to disrupt deliveries from the SWP if saltwater advances into the Delta and increased quantities of fresh water would need to be released to protect water quality.

The CCWA Participants will need to consider adapting to reduced deliveries from the SWP as a component of climate change adaptation. Climate change and sea level rise have both been considered in determining the future reliability and future allocations as presented in the 2025 DCR (DWR, 2025).

6.7 Interruption of Delta Supplies

It has been estimated by DWR that in the event of a major earthquake in or near the Delta, water supplies could be interrupted for up to three years, posing a significant and unacceptable risk to the California business economy. A post-event strategy would provide necessary water supply protections to avert this catastrophe. Such a plan has been coordinated through DWR, Corps of Engineers (Corps), USBR, California Office of Emergency Services (Cal OES), the Metropolitan Water District of Southern California (Metropolitan) and the State Water contractors. The state and federal government have developed emergency management plans and emergency operations plans to address these situations.

This would result in a very significant disruption to CCWA and CCWA Participants. In this situation, only water south of the Delta would be available. CCWA would need to rely on banked water and other supplies they could purchase on the open market.

6.8 WP Adaptation Strategy

In August 2025, DWR released the State Water Project Adaptation Strategy (Report) to reduce risk to the SWP water supply and other broad benefits from climate change vulnerabilities through 2085 timeframe. The Report identifies a set of actions with the most promise to protect the benefits of the SWP. It concludes that maintenance of the SWP aging infrastructure and a modernized tunnel system to transport water under the Delta are the most valuable adaptations.

The Report considered structural, operational and maintenance, and nature-based solution strategies. Of the 17 strategies considered, five have been identified as the most promising. Each individual strategy addresses different climate stressors such as increasing drought frequency, more extreme precipitation, earlier runoff, and sea level rise. A combination of responses is needed to address these climate stressors. The five strategies included in the adaptation portfolios include enhanced asset management, California Aqueduct subsidence remediation, Delta Conveyance Project, Forecast-Informed Reservoir Operations at Oroville Dam, and South-of-Delta storage augmentation.

CCWA supports efforts to improve SWP reliability, but for now has chosen not to participate in the Delta Conveyance Project.

7 Water Shortage Contingency Planning

The UWMP Act requires that the UWMP include a Water Shortage Contingency Plan (WSCP) that documents procedures for evaluating water supplies, declaring water shortages due to a drought or catastrophic event, and responding with conservation measures or mitigation actions. Since CCWA is a pass-through wholesale water agency some of the components of the WSCP, such as water conservation measures, are not applicable.

CCWA's WSCP is an independent document from the UWMP and can be found in **Appendix H**. The WSCP was last updated as part of the 2020 UWMP. There are no new requirements to update the WSCP in 2025. The main topics covered in the updated WSCP include:

- Water Supply Agreement with CCWA Participants
- Procedures for Evaluating Water Supplies
- Water Shortage Stages and Response Actions
- Mitigation Measures
- Catastrophic Water Supply Interruption
- Public Outreach
- Legal Authority of the Plan
- Revenue Reductions and Expense Increases
- Monitoring and Evaluating the Plan

8 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, SWRCB or California Bay-Delta Authority (Funding Agencies) and issued to an urban water supplier must be conditioned to require implementation of applicable DMMs.

For wholesale water suppliers, there are three specific measures and a fourth "other" category of DMMs, as listed below:

- Metering
- Public Education and Outreach
- Water Conservation program coordination and staffing support
- Other DMMs that have a significant impact on water use as measured in gallons per capita per day.

The UWMP Act also requires wholesale water suppliers to provide a narrative discussion in their UWMP that addresses asset management and wholesale assistance programs.

CCWA powers are set forth in the Joint Exercise of Powers Agreement that created CCWA. CCWA does not have the legal authority to implement some of the wholesaler DMMs.

8.1 CCWA's Wholesale Demand Management Measures

CCWA does implement some of the wholesale DMMs. A description of the CCWA's wholesale DMM efforts is presented below:

8.1.1 Water Metering

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 provides totalized delivery volumes. The meters are monitored continuously through the CCWA Supervisory Control and Data Acquisition system. 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 CCWA 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. The meters in use are as follows:

Table 8-1: CCWA Meters

Turnout	Type of Meter	Min Flow gpm	Max Flow gpm
Chorro	Venturi	500	3,500
Lopez	Electromagnetic	150	3,500
Guadalupe	Venturi	65	680
Santa Maria	Venturi	1,480	15,500
So Cal	Venturi	185	1,950
Vandenberg	Venturi	550	5,500
Buellton	Venturi	100	500
Solvang	Venturi	140	1,300
Santa Ynez	Venturi	500	6,000
Lake Cachuma	Electromagnetic	0	14,360

8.1.2 Public Education and Outreach

CCWA does not disseminate water conservation information to the public or school system, other than by providing links to conservation resources on its website. In Santa Barbara County, public education and outreach is handled by the Regional Water Efficiency Program.

8.1.3 Water Conservation Program Coordination and Staffing

CCWA maintains a water loss program, which is a DMM for wholesale water suppliers. CCWA's Water Treatment Plant Supervisor is primarily responsible for implementing the water loss control program, as described in Section 8.3.4.

8.1.4 Water Loss Control

The CCWA distribution system consists of a 122-mile-long pipeline, ranging from 36-inches to 60-inches in diameter. The pressure within the pipeline can range from atmospheric pressure within the pipeline reservoirs to pressures reaching up to 400 pounds-per-square-inch. Due to the length of the pipeline and the remote locations in which the pipeline traverses, it is critically important to implement a comprehensive leak detection program.

To address the critical need for leak detection, CCWA has implemented a program that consists of a variety of physical inspection, testing and analytical techniques. The leak detection tasks that are in use at CCWA are as follows:

- Visual Ground Surface Inspections. The full 122-mile Right-of-Way for the CCWA pipeline is inspected for a variety of purposes throughout the year. One element of each inspection is to identify any evidence of leakage from the pipeline. The evidence can include excess growth of vegetation, water seeping from the ground surface, leakage from one of the pipeline appurtenance vaults, leakage in any aboveground pipe or piping within the appurtenance vaults. The pipeline right-of-way is inspected during the annual valve exercise and vault assessment program, the annual close interval survey of the cathodic protection system and the annual mowing of the right-of-way. There are other numerous maintenance and repair tasks that bring CCWA along the pipeline right-of-way.

  In addition to CCWA inspections, an informational flier is mailed to every owner of property in which the pipeline crosses. In this flier, information about the pipeline and its associated structures

is provided and also provides information about how to report a leak to CCWA. The CCWA website also provides important contact information if a leak is detected by a member of the public as well.

- Periodic Hydrostatic Testing of the Pipeline. Typically, DWR will shut down the Coastal Branch of the SWP once per calendar year to conduct maintenance work for a period of two to four weeks. This shut down results in the CCWA pipeline being shut down for delivery operations as well. Although maintenance work is planned for some sections of the pipeline, there are sections that will remain idle and fully charged with water. During this planned outage, CCWA will make pressure measurements within the sections of pipeline that are idle at the start of the shutdown and at the end of the shutdown. Considering that the shutdown lasts up to four weeks, even a small leak can be detected. The pressure measurements are reviewed annually immediately following a shutdown. If there is a loss of pressure, additional investigation will be implemented.

- Periodic Internal Inspection of the Pipeline. During the annual DWR Coastal Branch shutdown, CCWA staff will conduct internal pipeline inspections for selected sections of the pipeline. A different section of the pipeline is inspected with each shutdown to ensure a good coverage of all sections of the pipeline. The interior inspections look for potential damage to the pipe, such as pipe deflection arising from excessive ground surface loading or improper installation, delamination of the protective mortar lining, excessive corrosion or any other compromise of the pipe's integrity that may have led to leakage or lead to future leakage.

- Annual AWWA Water Loss Audit Analysis. The AWWA developed software designed to guide a water distribution system operator through a water audit. DWR prepared the DWR Water Loss Audit, which was based on the AWWA method. California Water Code Section 10631 (J) requires retail water suppliers to quantify distribution water losses using the DWR Water Audit Method, but they are optional for wholesale agencies. CCWA did however prepare these audits for 2021-2025, which are found in **Appendix G**.

  CCWA maintains a water delivery database, which serves as the basis of the water audit. This database contains the monthly delivery volumes to each CCWA Participant. Each CCWA Participant Turnout has a flow meter, and the total monthly delivery is logged. Also, at the end of each month, DWR will provide CCWA with the monthly total of water delivered to the CCWA Polonio Pass Water Treatment Plant, as the DWR meter is the official "sale" meter to CCWA. The DWR monthly total is compared to the sum of all turnouts monthly totals. If the DWR total and the Turnout totals are within 3%, the individual CCWA Participant totals will be reconciled to match the DWR monthly total. This entails an allocation based on the amount of water delivered in the month to each CCWA Participant to either add or subtract so that the sum of all Turnout meters will equal the DWR monthly total. If the difference between the DWR total and the turnout totals is greater than 3%, the difference is investigated further.

From 2021 to 2025, 66,006 AF was billed to CCWA Participants. This value matched the DWR total but was about 649 AF higher than the turnout meter raw values for this period. This difference is reported as distribution systems losses. This number includes all meter errors and water losses through the Polonio Pass Water Treatment Plant. This indicates that the pipeline has relatively low leakage and is currently in good condition.

- Analysis of Daily Delivery Data. The water entering the CCWA distribution system is measured by the Polonio Pass Water Treatment Plant outlet meter and the water leaving the distribution system is measured by ten turnout meters. As part of the leak detection program, the daily delivery

totals for the Polonio Pass Water Treatment Plant outlet meter are compared to the sum total of the Turnout meters. Due to the errors inherently associated with flow measurements, there will always be a difference between the total volume measured going into the distribution system and the total volume measured leaving the distribution system.

To evaluate if the pipeline is leaking, the daily flow data is analyzed to determine if the Polonio Pass Water Treatment Plant outlet meter and the Turnout meters are measuring the same volume. If the analysis suggests that the same volume is not being measured, this would constitute evidence of a potential leak that would require additional investigation.

8.2 CCWA Asset Management Program

An asset management program is in place at CCWA. The program consists of three elements addressing routine maintenance, condition assessment and long-term planning for replacing or improving CCWA assets. A description of the program follows:

8.2.1 Routine Maintenance

The goal of any asset management program is to ensure that all assets are routinely serviced to ensure reliable operation and to maximize service life. CCWA accomplishes this goal through two key tools: (1) use of a computerized maintenance management systems (CMMS) and (2) the use of qualified and skilled employees.

CCWA has utilized a CMMS since the CCWA's inception. CMMS is database software that will maintain an inventory of assets, the associated maintenance tasks for each asset, a schedule of all maintenance tasks and location of each asset. The software will also provide automated notification of when maintenance tasks are required, accept work completion reports and allow for entry of discrepancy reports for requesting work to be completed. There are also a wide range of capabilities of the software to allow for specific work instruction, safety procedures and any other pertinent data in the work order produced by the software. Finally, CMMS software can also produce management reports so that the status of maintenance activities can be rapidly assessed and utilized for work planning purposes.

CCWA convenes weekly meetings in which CMMS management reports are used to plan the workweek. Supervisors of each department attend, and work is coordinated among the departments, as needed.

The most important part of a maintenance program is the use of highly qualified and skilled staff. CCWA implements its maintenance program through four primary departments: (1) Instrumentation/Electrical/Network, (2) Distribution, (3) Treatment Operations and (4) Maintenance. Each department is staffed with employees that are qualified and skilled for the work they are responsible for. In addition, each department has a training plan to maintain and enhance the knowledge and skill of each employee.

8.2.2 Condition Assessment

Beyond routine maintenance, CCWA implements a variety of assessment programs to determine the performance of assets to plan for refurbishment or replacement. The programs currently in place at CCWA include the following:

- **Cathodic Protection Program**. The pipeline is protected from corrosion by an impressed current cathodic protection (CP) system. This system consists of a series of rectifiers that are electrically connected to the pipe. The rectifiers are also electrically connected to a nearby deep-bed anode. This

arrangement creates conditions where the pipeline is protected from corrosion while the deep-bed anode is corroded instead.

The operation of the CP system must be routinely assessed to ensure that the cathodic protection remains within its protective range. The assessment of the CP system function includes monitoring of the electrical potential created by the CP system at fixed testing stations located along the pipeline route as well as close interval survey where CCWA staff walks directly above the pipeline to measure the electrical potential. In addition, where needed, special cathodic investigations are carried out.

Since CP systems only protect the exterior of the pipeline, additional cathodic protection is needed to protect the interior of the pipeline. The pipeline has a mortar lining, which is designed to provide internal cathodic protection. To monitor the effectiveness of the lining, CCWA conducts annual internal inspections of selected sections of the pipeline to check the physical condition of the motor lining. The internal inspections are performed during the annual DWR maintenance shutdown, typically scheduled for two to four weeks in the fall of each calendar year. The sections of pipeline that are inspected rotate from year to year.

Finally, the chemistry of the water in the pipeline is sampled and tested weekly to determine if conditions exist that would facilitate degradation of the mortar lining of the pipe. The water samples are analyzed for the Calcium Carbonate Precipitation Potential and the Langelier Index. These indices will indicate if calcium carbonate will be likely to precipitate onto the walls of the pipe or not. A calcium carbonate precipitation on the pipe interior walls will assist with prevention of corrosion of the metal pipe.

- **Leak Detection Program**. As discussed in Section 7.3.4, CCWA implements a program to detect leakage from the pipeline. In short, the program includes hydro-static testing of pipeline segments during winter shutdown, pipeline Right-of-Way inspections for evidence of leakage, analysis of flow measurements into and out of the pipeline and internal pipeline inspections. The locations of leaks will be identified in the CCWA CMMS system.

- **Winter Preparation Inspection Program**. The pipeline is 122 miles long and passes through a wide variety of terrain. Along with the pipeline alignment, there are certain locations that are at a higher risk of erosional damage from heavy winter storms. To assess the erosion control systems put into place at these locations, annual winter preparation inspections are conducted, as well as post-storm inspections.

  The inspections will identify drainage area, concentrated flow paths of storm water run-off, condition of drainage facilities, if present, and the extent of damage, if present. If the erosion control features require service or repair, they will be serviced prior to the storm event.

- **Valve Exercise/Valve Vault Assessments**. Every year, all valves on the pipeline will be inspected and fully exercised through fulling opening and closing each valve. In addition, the condition of the concrete vaults will be assessed, along with the area immediately surrounding the vault. Standardized forms and common descriptive terms are used to document the condition of the valves, associated vaults and immediate area surrounding the vault.

- **Electric Motors and Pumps Assessments**. All electric motors and pumps are assessed as follows: (1) monthly vibration monitoring, (2) annual integrity testing of the electric motor winding insulation, (3) annual wire-to-wire efficiency testing, (4) annual infrared camera inspections of motor control

centers and switchgear, and (5) at reinstallation or as needed, a mechanical check of shaft alignment between motor and pump as well as verification of pump clearance specifications.

- **Major Facilities Assessment Program**. All major structures and facilities are assessed on an annual basis. CCWA conducts the following assessments: (1) pavement assessments, (2) structure paint assessments, (3) concrete assessments, (4) fencing/gates/locks/signage assessment and (5) assessment of the condition of miscellaneous appurtenances. CCWA receives training on assessment methods to ensure consistent assessments and the use of common nomenclature of conditions.

  In addition to assessments, specialized vendors are also utilized by CCWA to evaluate the conditions of CCWA assets. These specialized vendors include: (1) licensed land surveyors to conduct the biennial monument survey of the pipeline seismic joint, which crosses the San Andreas Fault, (2) potable water divers for the five-year internal tank inspection and cleaning, and (3) structural engineers for assessments of selected structure, as needed.

8.2.3 Capital Improvement Program

As the various facilities and systems that are operated and maintained by CCWA ages, there will be a need for projects to replace, refurbish and improve those facilities and systems. Not only will the number of these kinds of projects increase but their magnitude in both costs and potential impact on operations will increase as well. In addition, the CCWA Board of Directors may find that CCWA facilities can be improved or modified to provide addition benefits to CCWA Participants. Consequently, there is a need to carefully consider what specific projects are required or desired by the CCWA Board of Directors and to plan and schedule their implementation. The project identification, planning, prioritization, and scheduling steps are the basic steps of preparing a formal Capital Improvement Program (CIP).

Another important purpose of a formal CIP is that it provides a format in which to communicate to the CCWA Board of Directors a more comprehensive long-range plan for CCWA system operation and development. The current method for presenting projects to the CCWA Board of Directors is through the annual budgeting process. Historically, all projects are funded on a current year basis and are included in the agency's draft budget, which is submitted to the CCWA Board of Directors for approval. This process does not provide a full view of multi-year projects, nor does it provide a definitive long-term plan. A formal CIP is needed to adequately communicate to the CCWA Board Directors the ongoing work of careful planning and prioritizing of projects.

CCWA is moving forward with developing a formal CIP through retaining the services of an experienced engineering consultant to assist CCWA staff. As with all CIPs, the basic elements will include the following

- Identification of Projects. Since the purpose of the CIP is to communication the long-term development plans for CCWA, it is important to identify the size of the projects to highlight. For the purposes of initial evaluation, CCWA will use $75,000 as the threshold level in which to include a project in the CIP. The Board of Directors may decide to increase or reduce this threshold level

  In terms of identifying projects, there are two kinds of projects: (1) projects identified through routine facility assessments and (2) projects that improve the CCWA facilities that provided additional benefits to CCWA Participants, such as expanding the
  Polonio Pass Water Treatment Plant.
  .

- Identify Funding for Projects. All funding of projects occurs through the annual budgeting process for the CCWA operation. However, for large projects, the Board of Directors may decide to pursue

grant funding opportunities. Since applying for grants is a project and may require an extended timeframe to secure a grant, this may be the first step in developing a project.

- Budgeting Project. A formal CIP will allow the Board of Directors to fully consider the costs and schedule of a multi-year project. In addition, annual updates of the CIP will allow updates to project costs estimates and other important updates for the Board of Directors to consider. This will improve the current method of submitting projects on a current year budget basis only.

- Implementing Projects. A standard project management approach will be utilized in organizing and implementing projects. Every project will be described, in terms of cost and schedule, as a multi-phased project.

CCWA, completed a system capacity study in 2025. This study helped verify previous capacity estimates and showed that additional capacity may be available on a second priority basis. For more information, refer to the Coastal Branch Available Capacity Study.

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