

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Storage, Conveyance, or Exchange of Yuba Accord Water in Federal Facilities for South of Delta Central Valley Project Contractors

EA-13-014



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California**

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Table of Contents

Section 1	Introduction	1
1.1	Background.....	1
1.2	Need for the Proposed Action.....	1
1.3	Scope	2
1.4	Resources Requiring Further Analysis	2
Section 2	Alternatives Including the Proposed Action	4
2.1	No Action Alternative	4
2.2	Proposed Action	4
Section 3	Affected Environment and Environmental Consequences	6
3.1	Resources Eliminated from Further Analysis.....	6
3.2	Water Resources	7
	3.2.1 Affected Environment	7
	3.2.2 Environmental Consequences.....	10
3.3	Land Use.....	11
	3.3.1 Affected Environment	11
	3.3.2 Environmental Consequences.....	13
3.4	Biological Resources	13
	3.4.1 Affected Environment	13
	3.4.2 Environmental Consequences.....	18
3.5	Socioeconomic Resources	19
	3.5.1 Affected Environment	19
	3.5.2 Environmental Consequences.....	19
3.6	Global Climate.....	19
	3.6.1 Affected Environment	20
	3.6.2 Environmental Consequences.....	21
Section 4	Consultation and Coordination	21
4.1	Public Review Period	21
4.2	Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.).....	22
4.3	Endangered Species Act (16 U.S.C. § 1531 et seq.)	22
4.4	Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)	22
4.5	Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.).....	23
Section 5	Preparers and Reviewers	24
Section 6	Acronyms and Abbreviations	24
Section 7	References.....	25

List of Tables

Table 2-1	Member Districts and Warren Act Contract Requests (Maximum Quantities)	5
Table 3-1	Resources Eliminated from Further Analysis.....	6
Table 3-2	Westlands Water District CVP Contracts.....	9
Table 3-3	T&E Species List – Areas to Receive Non-CVP Water.....	14
Table 3-4	Energy Use and Greenhouse Gas Emissions for the Life of the Yuba Accord.....	21

List of Figures

Figure 1-1	Location of Member Districts and CVP Facilities.....	3
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Appendices

Appendix A	Cultural Resources Determination
Appendix B	Indian Trust Assets Determination

Section 1 Introduction

1.1 Background

California has experienced severe droughts in recent years that have reduced water supplies to many water districts. South-of-Delta (SOD) Central Valley Project (CVP) water service contractors experienced reduced water supply allocations in 2007, 2008, and 2009, and 2012 due to hydrologic conditions and regulatory constraints. While 2010 and 2011 had above normal rainfall, SOD CVP contractors received only 45% of their CVP agricultural contract supply in 2010, 80% in 2011 and 40% in 2012. In 2013, following a wet start to the water year in November and December 2012, the January – March period was the driest on record, resulting in a critical classification for both the Sacramento and San Joaquin river basins. As of March 23, 2013 the SOD CVP agricultural allocation for 2013 is 20%, and the SOD CVP municipal and industrial (M&I) allocation is 70% of historic use (Reclamation, 2013). Operations of the Federal Jones Pumping Plant will continue to be limited due to the various constraints on Delta operations, which will reduce available CVP contract supplies.

The Warren Act (Act as of February 21, 1911; ch. 141, 36 Stat. 925) authorizes Reclamation to negotiate agreements to store and convey non-CVP water when excess capacity is available in Federal facilities.

The Lower Yuba River Accord (Yuba Accord) provides supplemental dry year water supplies to state and Federal water contractors under a Water Purchase Agreement between the Yuba County Water Agency and the California Department of Water Resources (DWR). Subsequent to the execution of the Yuba Accord Water Purchase Agreement, DWR and The San Luis & Delta-Mendota Water Authority (Authority) entered into an agreement for the supply and conveyance of Yuba Accord water, to benefit nine of the Authority's member districts (Member Districts) that are SOD CVP water service contractors. The Authority has requested that Reclamation execute Warren Act contracts or exchange agreements with the Member Districts to store, convey, or exchange purchased Yuba Accord water in Federal facilities, when excess capacity exists.

While not a party to the Yuba Accord at this time, Reclamation participated in the development of the Final Environmental Impact Report (EIR) / Environmental Impact Statement (EIS) for the Lower Yuba River Accord (DWR, Yuba County Water Agency, & Reclamation, 2007). Additionally, Reclamation entered into one-year Warren Act contracts in 2009 and again in 2012 to store and convey water in a manner similar to the Proposed Action: those contracts were analyzed in Environmental Assessment (EA) / Finding of No Significant Impact (FONSI) numbers EA-09-109 and EA-12-033, which are incorporated by reference.

1.2 Need for the Proposed Action

SOD CVP contractors have a need to find alternative sources of water to offset reductions in supply due to hydrologic conditions and/or regulatory restrictions. Alternative water supplies

have been found through the Yuba Accord. Participating member districts need Warren Act contracts and/or exchange agreements in order to provide conveyance and storage of this non-CVP water.

1.3 Scope

This Environmental Assessment has been prepared to examine the potential impacts on environmental resources as a result of the No Action Alternative of neither storing, conveying, or exchanging non-CVP water in Federal facilities, and the Proposed Action of storing, conveying, and/or exchanging non-CVP water in Federal facilities when excess capacity exists. The location of the Proposed Action would be the Member Districts and facilities displayed in Figure 1-1. The time period evaluated in this document would be between July 2013 and the Yuba Accord's end date on December 31, 2025.

Since DWR's purchase of Yuba Accord water and conveyance to O'Neill Forebay is not a Federal discretionary action, the effects of that action will not be discussed further. The Yuba Accord Final EIR/EIS includes discussion of the environmental effects of the Yuba Accord, including DWR's purchase and conveyance of water to the O'Neill Forebay.

1.4 Resources Requiring Further Analysis

This Environmental Assessment will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct, indirect, and cumulative effects to the following resources:

- Water Resources
- Land Use
- Biological Resources
- Socioeconomic Resources
- Global Climate

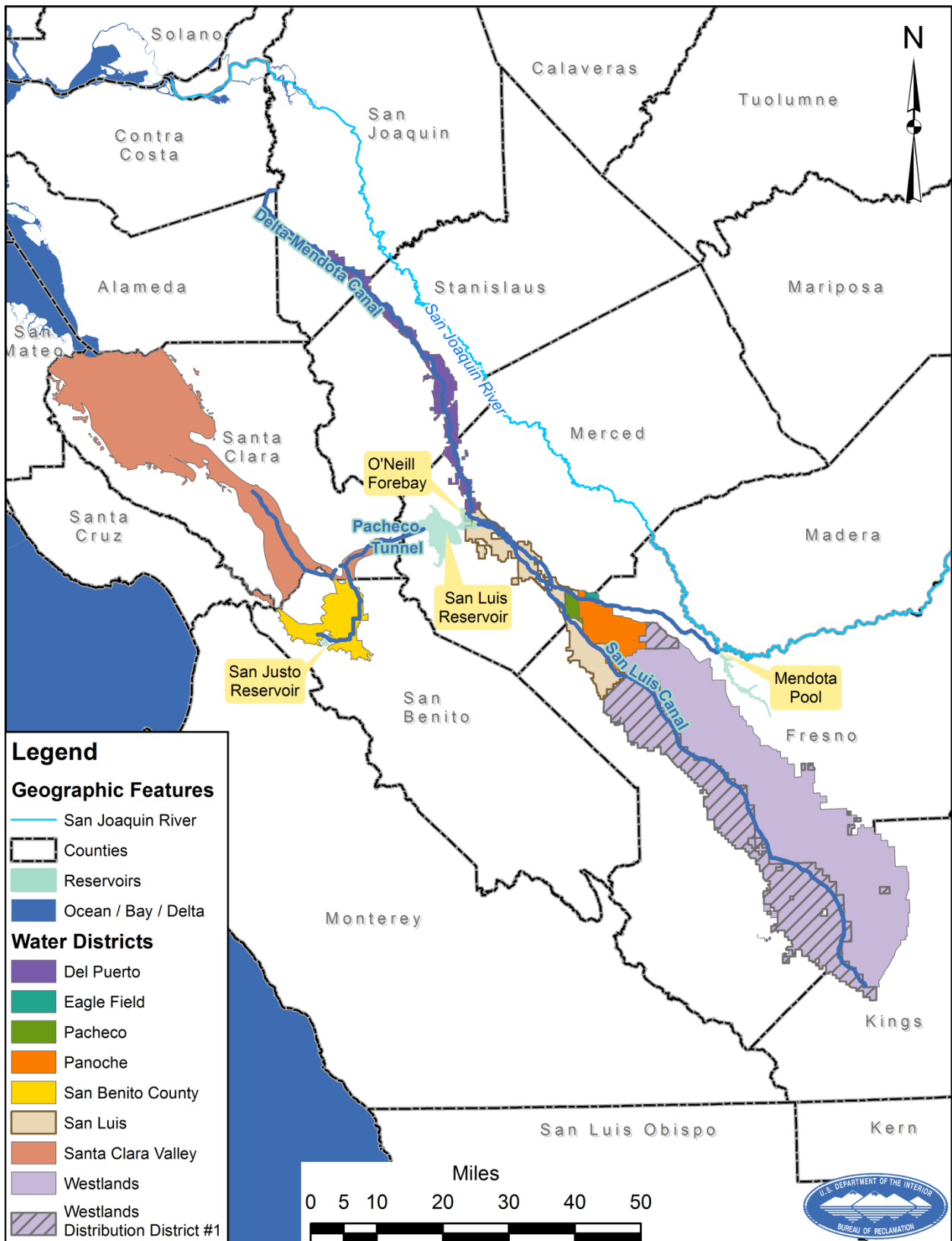


Figure 1-1 Location of Member Districts and CVP Facilities

Section 2 Alternatives Including the Proposed Action

2.1 No Action Alternative

The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

Under the No Action Alternative, Reclamation would not execute Warren Act contracts with the Member Districts for the conveyance of Yuba Accord water, and therefore the non-CVP water would not be stored or conveyed in Federal facilities, nor would Reclamation exchange Yuba Accord water for CVP water.

2.2 Proposed Action

The Authority would purchase up to 80,000 acre-feet (af) of water per year from DWR, made available by the Yuba Accord, on behalf of the Member Districts (Figure 1-1, Table 2-1). The water purchased, minus a 20%-30% loss from carriage through the Delta, would be pumped and stored by DWR for the Authority in the O'Neill Forebay.

Reclamation proposes to execute Warren Act contracts with the Member Districts in order to store and convey this non-CVP water in Federal facilities, at times when excess capacity exists and when DWR makes Yuba Accord water available for purchase. Reclamation would also enter into exchange agreements in order to exchange Yuba Accord water in O'Neill Forebay for CVP water in other SOD CVP facilities. The contracts would be in effect for varying lengths of time between July 2013 and December 2025.

Any remaining non-CVP Water in San Luis Reservoir after each February 28/29 each year would be subject to available capacity and Reclamation's then current Rescheduled Water Guidelines. DWR would convey the non-CVP water to the Federal share of O'Neill Forebay. The non-CVP water in O'Neill Forebay would either be pumped into the San Luis Reservoir for storage or delivered to the San Luis Unit contractors via the San Luis Canal (SLC), the Delta Division contractors via the Delta-Mendota Canal (DMC), and to the San Felipe Division contractors via the Pacheco Tunnel.

There would be no new construction or excavation occurring as part of the Proposed Action. No native or untilled land (fallow for 3 years or more) would be cultivated with water involved with these actions. The Proposed Action would not increase or decrease water supplies that would result in development.

Table 2-1 Member Districts and Warren Act Contract Requests (Maximum Quantities)

Member District	Warren Act Contract Request (acre-feet/year)
Del Puerto Water District	6,768
Eagle Field Water District	224
Pacheco Water District	488
Panoche Water District	4,536
San Benito County Water District	1,720
San Luis Water District	6,952
Santa Clara Valley Water District	1,600
Westlands Water District	56,408
Westlands Water District Distribution District # 1 (Broadview Water District assignment)	1,304
Total	80,000

Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that neither Proposed Action nor the No Action Alternative have the potential to cause direct, indirect, or cumulative effects to the resources listed in Table 3-1.

Table 3-1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Cultural Resources	There would be no modification of CVP storage or conveyance facilities and no activities that would result in ground disturbance under the Proposed Action or No Action Alternative. On May 1, 2013, Reclamation's Mid-Pacific Region, Cultural Resources Branch, determined that the Proposed Action and No Action Alternative involve the type of activity that has no potential to cause effects on historic properties, pursuant to 36 CFR Part 800.3(a)(1) (Appendix A).
Indian Sacred Sites	No impact to Indian Sacred Sites would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not limit access to ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites, since no new construction or ground disturbing activities would occur as part of the Proposed Action. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	No impact to Indian Trust Assets would occur under the No Action Alternative as conditions would remain the same as existing conditions. Reclamation determined on May 2, 2013 that the Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area (Appendix B).
Environmental Justice	No impact to minority or low-income populations would occur under the No Action Alternative as conditions would remain the same as existing conditions. The Proposed Action does not propose any features that would result in adverse human health or environmental effects, have any physical effects on minority or low-income populations, and/or alter socioeconomic conditions of populations that reside or work in the vicinity of the Proposed Action.
Air Quality	No new facilities would be needed as a result of the Proposed Action, so no construction-related emissions would be produced.. The pumps that would be used to convey the water under the Proposed Action are electric. These pumps would not emit pollutants at the pump; the source of the pollutants originates at the power plant. Power plants are permitted based on their maximum operating potential. The additional electricity would not result in the power plant exceeding operating capacity, and, thus, the applicable emissions permit.

3.2 Water Resources

3.2.1 Affected Environment

CVP Facilities

C.W. “Bill” Jones Pumping Plant Reclamation awarded the first contract related to construction of the Tracy (C.W. “Bill” Jones) Pumping Plant and appurtenant facilities on June 23, 1947. Reclamation completed the plant in 1951. It consists of an inlet channel, pumping plant, and discharge pipes. Water in the delta is lifted 197 feet into the Delta-Mendota Canal. Each of the six pumps at Tracy is powered by a 22,500 horsepower motor and is capable of pumping 767 cubic feet per second. Power to run the huge pumps is supplied by Central Valley Project powerplants. The water is pumped through three 15-foot-diameter discharge pipes and carried about 1 mile up to the Delta-Mendota Canal. The intake canal includes the Tracy Fish Screen, which was built to intercept downstream migrant fish so they may be returned to the main channel to resume their journey to the ocean.

Delta-Mendota Canal The DMC, completed in 1951, carries water southeasterly from the Jones Pumping Plant along the west side of the San Joaquin Valley for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera systems. The canal is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno. The initial diversion capacity is 4,600 cubic feet per second, which is gradually decreased to 3,211 cubic feet per second at the terminus.

Delta-Mendota Canal/California Aqueduct Intertie The Intertie, a shared federal-state water system improvement, connects the DMC and the California Aqueduct, which is a State Water Project (SWP) facility, via two 108-inch-diameter pipes and pumping capacity of 467 cubic feet per second (900 cfs gravity flow from the California Aqueduct to the DMC). The Intertie connection is 500 linear feet. The Intertie addresses DMC conveyance conditions that had restricted use of the C.W. “Bill” Jones Pumping Plant to less than its design capacity, potentially restoring as much as 35,000 acre-feet of average annual deliveries to the CVP.

San Luis Reservoir The B.F. Sisk Dam impounds up to 2 million acre-feet of water in San Luis Reservoir. The facility was built between 1963 and 1967 to provide supplemental irrigation and M&I water storage for the CVP and the SWP. Water is lifted into the reservoir for storage by the Gianelli Pumping-Generating Plant from the California Aqueduct and from the DMC via O’Neill Forebay. B.F. Sisk Dam is owned by the Bureau of Reclamation and operated by DWR. Reservoir storage space is allotted 55 percent to SWP and 45 percent to CVP.

In late summer and fall San Luis Reservoir experiences what is known as the “low-point problem”, in which low reservoir levels and dense algal growth can contribute to water quality problems. The low-point problem begins when the reservoir water surface elevation approaches 369 feet, corresponding to a storage capacity of 300,000 acre-feet. At this capacity, the water surface elevation in the reservoir is approximately 35 feet above the lower intake to the Pacheco Pumping Plant. Because the near-surface algae layer can be more than 30 feet thick in late summer, algae may be drawn into the lower intake. High algae content reduces the effectiveness of water treatment and can affect the quality and taste of treated water. As the reservoir is progressively drawn down below 300,000 acre-feet, increasing amounts of algae may enter the

intake, and water quality problems can worsen. When the water surface elevation reaches approximately 354 feet (209,000 acre-feet), algae concentrations may be so high that the water delivered to the Pacheco Pumping Plant is untreatable (Reclamation, 2012).

San Luis Canal The SLC is a joint Federal/State facility. It is a concrete-lined canal with a capacity ranging from 8,350 to 13,100 cubic feet per second. The SLC is the biggest earth-moving project in Reclamation history. It is the Federally-built and operated section of the California Aqueduct and extends 102.5 miles from the O'Neill Forebay, near Los Banos, in a southeasterly direction to a point west of Kettleman City. The first release of water from the O'Neill Forebay to the initial reach of the canal was on April 13, 1967. The 138-foot-wide channel is 36 feet deep, 40 feet wide at the bottom, and lined with concrete. Capacity in the SLC is restricted by the physical limitations of the canal, pumping limits of the Banks Pumping Plant, and releases from San Luis Reservoir (Reclamation, 2012).

Pacheco Tunnel and San Felipe Division The Pacheco Tunnel and Pumping Plant allow San Luis Reservoir water to be moved through the Diablo Mountains. Water is diverted from San Luis Reservoir through the 1.8 mile long Pacheco Tunnel Reach 1 to the Pacheco Pumping Plant. The pumping plant consists of twelve 2,000 horsepower pumps capable of lifting water 309 feet to the 5.3 mile long Pacheco Tunnel Reach 2. Water then flows via gravity through Reach 2, then underground through the 7.92 mile Pacheco Conduit to the bifurcation of the Santa Clara and Hollister Conduits for delivery to San Felipe Division contractors. Authorized in 1960, the division provides supplemental water to 63,500 acres of land, in addition to 132,400 acre-feet of water annually for municipal and industrial use (Reclamation, 2012).

Delta Division Contractors

Del Puerto Water District Del Puerto Water District is located in San Joaquin, Stanislaus, and Merced Counties. The district irrigates approximately 40,000 acres and its CVP contract amount is 131,000 af/year delivered from the DMC. The district's only M&I uses are approximately 2 af/month used for commercial landscape irrigation and dust suppression.

Eagle Field Water District Eagle Field Water District is located in both Merced and Fresno Counties. The district irrigates approximately 1,300 acres and its CVP contract amount is 4,550 af/year, delivered directly from two turnouts on the DMC. In addition to CVP supply, the district has groundwater wells to provide a supplemental supply in dry years.

San Luis Unit Contractors

Pacheco Water District Pacheco Water District is located near the city of Los Banos in both Merced and Fresno Counties and irrigates approximately 4,000 acres. The district's CVP contract is for 10,080 af/year delivered via the DMC and SLC. The CVP is their primary water supply, although they also receive a non-CVP surface water supply from the Central California Irrigation District. The district also owns one well, but does not pump groundwater due to water quality concerns.

Panoche Water District Panoche Water District is located in both Merced and Fresno Counties. The District irrigates approximately 35,000 acres and has a CVP contract for 93,988 af/year from either the DMC (2 turnouts), or the SLC (6 turnouts). With the exception of during drought conditions, almost no groundwater is utilized in the District. The District supplies about

50 acre-feet of water per year for M&I purposes; there is also some domestic use which is incidental to agriculture.

San Luis Water District The San Luis Water District is located in both Merced and Fresno Counties. The District irrigates between approximately 30,000 and 40,000 acres. They have a CVP contract for 125,080 af/year from either the DMC or SLC. Although water deliveries by SLWD historically have been almost exclusively used for agricultural use, substantial development in and around Los Banos and Santa Nella have resulted in a shift of some water supplies to M&I use. The district currently supplies approximately 800 af/year to 1,300 homes and businesses.

Westlands Water District Westlands Water District (Westlands) provides water to over 570,000 acres of farmland between the California Coast Range and the trough of the San Joaquin Valley in western Fresno and Kings Counties. Westlands' CVP supply portfolio includes several contracts (Table 3-2), providing delivery from the DMC, SLC, or Mendota Pool. In addition to these CVP supplies, approximately 200,000 af of groundwater is pumped within the district's boundaries during wet years. The district supplies groundwater to some district farmers and owns some groundwater wells, with the remaining wells privately owned by water users within the district. Other water supply sources in the district include flood flows from the Kings River, which are available periodically and diverted from the Mendota Pool as well as transfers of supplemental water from other sources.

Table 3-2 Westlands Water District CVP Contracts

Contract or Assignment	Contract Supply (acre-feet / year)
Westlands Water District	1,150,000
Westlands Water District Distribution District #1 (full assignment from Broadview Water District)	27,000
Westlands Water District Distribution District #1 (full assignment from Centinella Water District)	2,500
Westlands Water District Distribution District # 1, Pajaro Valley Water Management Agency, and Santa Clara Valley Water District (3-way assignment from Mercy Springs Water District)	6,260
Westlands Water District Distribution District #1 (partial assignment from Oro Loma Water District)	4,000
Westlands Water District Distribution District #1 (full assignment from Widren Water District)	2,990
Westlands Water District Distribution District #2 (partial assignment from Mercy Springs Water District)	4,198
Source: Reclamation, 2012	

Westlands delivers small amounts of untreated, non-potable CVP water which is ultimately used for M&I purposes by Lemoore Naval Air Station and by various rural commercial and residential customers located within the district boundaries (Westlands, 2008). These M&I water deliveries are less than 0.5 percent of the water delivered by Westlands. Westlands also operates and maintains the 12-mile-long, concrete-lined Coalinga Canal, the Pleasant Valley Pumping Plant, and the laterals that supply CVP water to the cities of Coalinga and Huron, which have separate CVP supply contracts.

Westlands Water District Distribution District #1 A distribution district is a separate entity capable of acting independent of the larger water district. All land within a distribution district is by definition also within the larger water district.

Distribution District #1 includes roughly 200,000 acres within Westlands' boundaries, primarily along the western side (Figure 1-1). As a separate entity, Distribution District #1 can enter into contracts or other obligations separate from Westlands Water District itself. The distribution district has independently entered into several assignment contracts for CVP supplies (Table 3-2). Pursuant to their Broadview Water District assignment, Distribution District #1 has independently purchased non-CVP supplies and requests a separate Warren Act contract under the Proposed Action (Table 2-1).

San Felipe Division Contractors

San Benito County Water District Zone 6 is the portion of San Benito County Water District that is authorized to receive CVP water, and encompasses roughly 48,000 acres. The district's 43,800 af/year CVP contract allows for 35,550 af/year for agriculture and a maximum of 8,250 af/year for M&I use. M&I users are primarily located near or within the Cities of Hollister and San Juan Bautista. CVP water is delivered via the Pacheco Tunnel and Hollister Conduit to the 7,000 af San Justo Reservoir. CVP water is used in a coordinated manner with local surface waters and groundwater.

Santa Clara Valley Water District CVP water is delivered to the southern portion of Santa Clara Valley Water District via the Pacheco Tunnel and Santa Clara Conduits. The district's CVP contract is for 152,500 af per year. The northern portion of the District also receives up to 100,000 acre-feet of SWP water through a contract with DWR via the South Bay Pumping Plant and Aqueduct.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, the proposed Warren Act contracts and exchange agreements would not be issued. Yuba Accord water would not be pumped into the Federal share San Luis Reservoir, Delta-Mendota Canal, Federal share of the SLC, or Pacheco Tunnel. CVP contractors would continue to receive CVP water, and could receive other non-CVP water through other Warren Act contracts, transfers, or exchange agreements. SWP contractors could also receive SWP water. Under the No Action Alternative, there would be no change to CVP facilities or operations.

Those contractors that can take delivery from the State share of the California Aqueduct / SLC or San Luis Reservoir would need to obtain a wheeling agreement from DWR for the delivery of the Yuba Accord water. Those Member Districts that rely on the Delta-Mendota Canal and Member Districts in the San Felipe Division would not be able to take their share of the water, unless they perform exchanges with CVP San Luis Unit Contractors.

Proposed Action

The Proposed Action would allow non-CVP water to be stored and conveyed in CVP facilities. The non-CVP water would supplement diminished CVP water supplies and provide greater water supply reliability through 2025. No new facilities would be needed as a result of the Proposed Action. There would be no construction or modification to any Federal facilities; the capacity of the facilities would remain the same. The Proposed Action would use only excess capacity for storage and conveyance of non-CVP water. The Proposed Action would not interfere with the normal operations of Federal facilities nor would it impede any SWP or CVP obligations to deliver water to other contractors or to local fish and wildlife habitat. CVP operations and facilities would not vary considerably under either alternative.

Under existing conditions, water users would be subject to reductions in their water supply due to dry hydrologic conditions and regulatory constraints. Under the Proposed Action, additional water supply would benefit those participating water users. This increased water supply would produce a beneficial effect, and would not be in excess of contract totals.

Depending on timing, the Proposed Action could help reduce the effects of the low-point problem in San Luis Reservoir by increasing the water volume in the reservoir during the summer months.

Cumulative Impacts

Because the Proposed Action would involve neither construction, modification, nor interference with operations, there would be no cumulative impacts to existing facilities or other contractors. Because water quality of the non-CVP water would be identical to CVP water, there would be no cumulative impacts to water quality involving water delivered through CVP facilities.

3.3 Land Use**3.3.1 Affected Environment*****Delta Division Contractors***

Del Puerto Water District Del Puerto Water District is primarily an agricultural district. About 170 water users in the district irrigate approximately 40,000 acres, and more than 30 different crops have been grown commercially in the District over the years.

Despite the urban sprawl in the area resulting from the growth of Patterson and Tracy and along the Interstate 5 corridor, the district would like to remain primarily an agricultural District. The District does not intend to increase the amount of CVP water used for M&I purposes.

Eagle Field Water District Eagle Field Water District irrigates approximately 1,300 acres. The crops produced in the District include cotton, cannery tomatoes, and rice. In the past, some of the land has also been farmed with sugar beets and dry onions (Reclamation, 2005).

San Luis Unit

Pacheco Water District Pacheco Water District's current size is approximately 4,730 acres in size, of which 4,242 acres are irrigable with an agricultural demand of 11,000 af of water. Crops grown in the District consist of tomatoes, melons, grains, almonds, and asparagus.

Panoche Water District Panoche Water District is approximately 38,000 acres in size, of which approximately 37,000 acres are irrigated. Current crop trends in the District include cotton, tomatoes, grapes, melons, and almonds.

San Luis Water District San Luis Water District is approximately 66,000 acres in size. The southern section of the District located in Fresno County is primarily agricultural. The land is planted with either row crops, including cotton and melons, or permanent crops of primarily almonds.

M&I use primarily occurs in the northern section of the district, which is located in Merced County. It is anticipated that the conversion from agricultural use to M&I use will occur mostly in this section of the District. Approximately 10,000 acres identified as potential development locations are currently in the planning stages within Merced County and the District. Much of the land targeted for M&I development is currently unused for irrigated agriculture (Reclamation, 2007).

Westlands Water District Westlands covers almost 950 square miles of prime farmland and includes approximately 570,000 irrigable acres. More than 60 different crops are grown commercially in the district. The cropping patterns have changed over the years depending upon water availability, water quality and the agricultural economy and market factors. The acreage trend is toward the planting of vegetable and permanent crops while cotton and grain crops have decreased.

Westlands supplies small amounts of water for domestic and M&I uses, however the majority of their water supply is used for agriculture. The current population within the district is approximately 50,000 residents.

Westlands Water District Distribution District #1 Distribution District #1 includes roughly 200,000 acres within Westlands' boundaries, and serves a diverse crop mix similar to Westlands as a whole.

San Felipe Division

San Benito County Water District San Benito County Water District delivers agricultural water to approximately 32,000 acres. Farmers in San Benito County produce over 40 different crops, and agriculture continues to be the county's major industry.

The district's M&I use primarily occurs within the cities of Hollister and San Juan Bautista, and the total population within the district's Zone 6 is approximately 40,000 residents (Census, 2010).

Santa Clara Valley Water District Most development and water use in the district occurs on the 350-square-mile valley floor. The northern part of the valley, north of the Coyote Narrows, is extensively urbanized and houses over 90 percent of Santa Clara County's 1.7 million residents and 13 of its 15 cities. The southern part of the valley remains predominately rural with some low-density residential development, with the exception of the cities of Morgan Hill and Gilroy (Santa Clara Valley Water District, 2013).

3.3.2 Environmental Consequences

No Action

No changes to land use would occur under this alternative. There could be some adverse impacts to crops if supplemental supplies of water cannot be delivered or stored. The Member Districts could attempt to obtain other contracts or purchase other sources of water; however, timing of storage and conveyance would still present an issue without the Warren Act contracts or exchange agreements. The Districts could construct new facilities; however, construction would likely not be feasible given the duration of the Yuba Accord.

Proposed Action

Land use would remain the same as described in the Affected Environment section above. The storage and conveyance of the non-CVP water through CVP facilities would not contribute to changes in land use. No new construction or excavation would occur as a result of the Proposed Action. No native or untilled land (fallow for 3 years or more) would be cultivated with water involved with these actions. The Proposed Action would not increase or decrease water supplies that would result in development.

Cumulative Impacts

Because land use would remain the same as described in the affected environment and the Proposed Action supports current land use, there would be no cumulative impacts to land use as a result of the Proposed Action.

3.4 Biological Resources

3.4.1 Affected Environment

By the mid-1940s, most of the Central Valley's native habitat had been altered by man, and as a result, was degraded or removed. It has been estimated that more than 85 percent of the valley's wetlands had been lost by 1939 (Dahl and Johnson, 1991). When the CVP began operations, over 30 percent of all natural habitats in the Central Valley and surrounding foothills had been converted to urban and agricultural land use (Reclamation, 1999). Prior to widespread agriculture, land within the Proposed Action area provided habitat for a variety of plants and animals. With the advent of irrigated agriculture and urban development over the last 100 years, many species have become threatened and endangered because of habitat loss. Of the approximately 5.6 million acres of valley grasslands and San Joaquin saltbrush scrub, the primary natural habitats across the valley, less than 10 percent remains today. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable populations (Reclamation, 1999). The project area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants.

A list of Federally listed candidate, threatened, and endangered species that occur within project area and/or may be affected as a result of the Proposed or Alternative Action was obtained on April 30, 2013, by accessing the United States Fish and Wildlife Service Database: http://www.fws.gov/sacramento/es_species/Lists/es_species_lists-form.cfm.

Table 3-3 T&E Species List – Areas to Receive Non-CVP Water

Species	Status	Effects	Summary Basis for Endangered Species Act Determination
Amphibians			
California red-legged frog (<i>Rana draytonii</i>)	T ¹ , X ²	NE ³	Present. Documented as extant within Santa Clara W.D. and suitable habitat present; no conversion of native lands or lands fallowed for three years or less
California tiger salamander (<i>Ambystoma californiense</i>)	T, X	NE	Present. Documented as extant within Santa Clara W.D. and suitable habitat present; no conversion of native lands or lands fallowed for three years or less
Mountain yellow-legged frog (<i>Rana muscosa</i>)	C	NE	Absent. Occurs along high-elevation watercourses in the Sierra Nevada mountains.
Yosemite toad (<i>Bufo canorus</i>)	C	NE	Absent. Lives in aquatic habitat at high elevations in the central Sierra Nevada mountains.
Birds			
California brown pelican	E	NE	Possible. Only documented in southern California, but could occur in Santa Clara Co.
California clapper rail (<i>Rallus longirostris obsoletus</i>)	E ⁴	NE	Present. Documented as extant within northern most section of Santa Clara W.D.; no conversion of native lands or lands fallowed for three years or less
California condor (<i>Gymnogyps californianus</i>)	E	NE	Possible. Will forage up to 100m from roost/nest. There are records for this species approx. occur 50m east of Broadview W.D.; no conversion of native lands or lands fallowed for three years or less
California least tern (<i>Sternula antillarum browni</i>)	E	NE	Possible. Documented as extant in Santa Clara Co.; no conversion of native lands or lands fallowed for three years or less
Least Bell's Vireo (<i>Vireo bellii pusillus</i>)	E	NE	Possible. Documented once in Santa Clara County; no conversion of native lands or lands fallowed for three years or less.
marbled murrelet (<i>Brachyramphus marmoratus</i>)	T, X	NE	Possible. Last record was 1974 and believed possibly extirpated from area; no conversion of native lands or lands fallowed for three years or less
western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	T	NE	Present. Documented as extant in Santa Clara Co.; no conversion of native lands or lands fallowed for three years or less
western yellow-billed cuckoo (<i>Coccyzus americanus</i>)	C ⁵	NE	Possible. Requires extensive areas of cottonwood-willow riparian forest. Still known to breed along a stretch of the Sacramento River and these individuals could fly over during migration.
Fish			
Central California Coastal Steelhead (<i>Oncorhynchus mykiss</i>)	T, X, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Central Valley spring-run chinook salmon (<i>Oncorhynchus tshawytscha</i>)	T, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Central Valley Steelhead (<i>Oncorhynchus mykiss</i>)	T, X, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Coho salmon – central CA coast (<i>Oncorhynchus kisutch</i>)	E, X, NMFS	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.

Species	Status	Effects	Summary Basis for Endangered Species Act Determination
Delta smelt (<i>Hypomesus transpacificus</i>)	T, X	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Green sturgeon (<i>Acipenser medirostris</i>)	T, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Lahontan cutthroat trout (<i>Oncorhynchus clarki henshawi</i>)	T	NE	Absent. Range is outside of Proposed Action area.
Owens tui chub (<i>Gila bicolor snyderi</i>)	E	NE	Absent. Range is outside of Proposed Action area.
Palute cutthroat trout (<i>Oncorhynchus clarki seleniris</i>)	T	NE	Absent. Range is outside of Proposed Action area.
South Central California Steelhead (<i>Oncorhynchus mykiss</i>)	T, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Tidewater goby (<i>Eucyclogobius newberryi</i>)	E	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Winter-run chinook salmon, Sacramento River (<i>Oncorhynchus tshawytscha</i>)	E, NMFS ⁶	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
Invertebrates			
Bay checkerspot butterfly (<i>Euphydryas editha bayensis</i>)	T, X	NE	Present. Documented as extant in area with suitable habitat present.; no conversion of native lands or lands fallowed for three years or less
Delta green ground beetle (<i>Elaphrus viridis</i>)	T	NE	Absent. Known from grasslands and playa pool areas in Solano County (Jepson Prairie).
Conservancy Fairy shrimp (<i>Branchinecta conservatio</i>)	E, X	NE	Possible. No conversion of native lands or lands fallowed for three years or less.
Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	E, X	NE	Possible. No conversion of native lands or lands fallowed for three years or less.
Valley elderberry longhorn beetle (<i>Desmoceris californicus dimorphus</i>)	T	NE	Possible. Could occur in elderberry shrubs in parts of the Proposed Action area; no construction of new facilities.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T, X	NE	Present. One known record in San Benito County; no conversion of native lands or lands fallowed for three years or less.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E, X	NE	Possible. No conversion of native lands or lands fallowed for three years or less.
Mammals			
Buena Vista Lake shrew (<i>Sorex ornatus relictus</i>)	E, X	NE	Possible. The Lemoore Wetland Unit of critical habitat is located just east of Westlands WD and west of the City of Lemoore, and is a wetland managed by the Natural Resources Conservation Service for waterfowl.
Fisher (<i>Martes pennanti</i>)	C	NE	Absent. In California, historically found in coniferous and mixed coniferous forests from the southern Cascade Mountains to the southern Sierra Nevada Mountains, and the North Coast Ranges and Klamath Mountains.
Fresno kangaroo rat (<i>Dipodomys nitratoideis exilis</i>)	E, X	NE	Absent. Range is outside of Proposed Action area.
giant kangaroo rat (<i>Dipodomys ingens</i>)	E	NE	Absent. Range is outside of Proposed Action area.
riparian brush rabbit (<i>Sylvilagus bachmani riparius</i>)	E	NE	Absent. Range is outside of Proposed Action area (restricted to south Delta, Caswell Memorial State Park, and the San Joaquin River National Wildlife Refuge).
riparian woodrat (<i>Neotoma</i>)	E	NE	Absent. Range is outside of Proposed Action

Species	Status	Effects	Summary Basis for Endangered Species Act Determination
<i>fuscipes riparia</i>)			area (found at Caswell Memorial State Park and San Joaquin River National Wildlife Refuge).
Salt marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	E	NE	Present. CNDDDB records indicate this species occurs in northern Santa Clara W.D.; no conversion of native lands or lands fallowed for three years or less
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	NE	Present. CNDDDB records indicate this species occurs in the project area; no conversion of native lands or lands fallowed for three years or less
Sierra Nevada bighorn sheep (<i>Ovis canadensis californiana</i>)	E	NE	Absent. Range is outside of Proposed Action area.
Tipton kangaroo rat (<i>Dipodomys nitratoideus</i> <i>nitratoideus</i>)	E	NE	Possible. May still occur at southern end of Westlands Water District. No construction of new facilities; no conversion of lands from existing uses
Plant			
California jewelflower (<i>Caulanthus californicus</i>)	E	NE	Absent. Occurs in grass and shrublands in the Santa Barbara Canyon and Carizzo Plain and foothill areas at the margin of the San Joaquin Valley; formerly occurred on the valley floor and Cuyama Valley.
California sea blite (<i>Suaeda californica</i>)	E	NE	Possible. Documented as extant in Santa Clara Co. CNDDDB records indicate last recorded 1996 in area; no conversion of lands from existing uses
Chinese Camp brodiaea (<i>Brodiaea pallida</i>)	T	NE	Absent. Occurs only along seeps, springs and intermittent streams in limited areas on serpentine soils within the foothills of Tuolumne and Calaveras Counties (near the town of Chinese Camp).
Colusa grass (<i>Neostapfia colusana</i>)	T, X	NE	Absent. Occurs in vernal pools along the eastern side of the central Sierra Nevada foothills.
Contra Costa goldfields (<i>Lasthenia conjugens</i>)	E, X	NE	Possible. No conversion of native lands.
Coyote ceanothus (<i>Ceanothus ferrisae</i>)	E	NE	Present. CNDDDB records indicate this species occurs in the project area; no conversion of lands from existing uses
Fountain thistle (<i>Cirsium fontinale</i> var. <i>fontinale</i>)	E	NE	Absent. Open, moist areas on serpentine soils in riparian habitat and chaparral in the Bay Area. No longer believed to occur in Santa Clara County; still occurs in San Mateo County.
Greene's tuctoria (<i>Tuctoria greenii</i>)	E, X	NE	Absent. Occurs in vernal pools on the eastern side of the valley and Sierra Nevada foothills.
Hairy Orcutt grass (<i>Orcuttia pilosa</i>)	E, X	NE	Absent. Occurs in vernal pools on the eastern side of the valley and Sierra Nevada foothills.
Hoover's spurge (<i>Chamaesyce hooveri</i>)	T, X	NE	Absent. Occurs in vernal pools on the eastern side of the valley and Sierra Nevada foothills.
lone manzanita (<i>Arctostaphylos myrtifolia</i>)	T	NE	Absent. Occurs only on acidic, coarse, poorly drained soils in limited areas within Amador and Calaveras Counties.
Keck's checker-mallow (<i>Sidalcea keckii</i>)	E, X	NE	Absent. Grows on open grassy slopes of the Sierra Nevada foothills.
Large-flowered fiddleneck (<i>Amsinckia grandiflora</i>)	E	NE	Absent. Occurs near Del Puerto WD, but not within.
Mariposa pussy-paws (<i>Calyptidium pulchellum</i>)	T	NE	Absent. Occurs on decomposed granitic soils in the southwestern Sierra Nevada foothills.

Species	Status	Effects	Summary Basis for Endangered Species Act Determination
Metcalf Canyon jewelflower (<i>Streptanthus albidus</i> ssp. <i>albidus</i>)	E	NE	Present. Documented as extant in area; no conversion of lands from existing uses
Palmate-bracted bird's-beak (<i>Cordylanthus palmatus</i>)	E	NE	Absent. Alkali sink habitat not present within the Proposed Action area.
Red Hills vervain (<i>Verbena californica</i>)	T	NE	Absent. Occurs only on serpentine soils in the Red Hills.
Robust spineflower (<i>Chorizanthe robusta</i> var. <i>robusta</i>)	E	NE	Absent. Restricted to sandy soils in and near coastal areas within Santa Cruz County.
Sacramento Orcutt grass (<i>Orcuttia viscida</i>)	E, X	NE	Absent. Occurs well to the north of the Proposed Action area.
San Benito evening-Primrose (<i>Camissonia benitensis</i>)	T	NE	Absent. No individuals documented in this area
San Joaquin abobe sunburst (<i>Pseudobahia bahiifolia</i>)	E	NE	Absent. Occurs on adobe clay soils in valley and foothill grasslands and woodlands along the eastern edge of the southern San Joaquin Valley.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	T, X	NE	Absent. Occurs in vernal pools on the eastern side of the valley and Sierra Nevada foothills.
San Joaquin woolly-threads (<i>Monolopia congdonii</i>)	E	NE	Absent. Species not expected to occur close enough to croplands to colonize bare soil
San Mateo thornmint (<i>Acanthomintha duttonii</i>)	E	NE	Absent. Only occurs in grasslands and chaparral on serpentine soils in San Mateo County.
San Mateo woolly sunflower (<i>Eriophyllum latilobum</i>)	E	NE	Possible. Could occur in northwestern Santa Clara County; no conversion of native lands.
Santa Clara Valley dudleya (<i>Dudleya setchellii</i>)	E	NE	Present. Documented as extant in area; no conversion of lands from existing uses
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	T, X	NE	Absent. Occurs nearer to the coast than the Proposed Action area, primarily in Santa Cruz County.
Showy Indian clover (<i>Trifolium amoenum</i>)	E	NE	Absent. Found in areas with heavy moist soils in grasslands of the Bay Area and Sacramento Valley.
Succulent owl's-clover (<i>Castilleja affinis</i> ssp. <i>neglecta</i>)	T, X	NE	Absent. Occurs in vernal pools on the eastern side of the valley and Sierra Nevada foothills.
Tiburon paintbrush (<i>Castilleja affinis</i> ssp. <i>neglecta</i>)	E	NE	Present. Found on serpentine soils in Santa Clara County. No conversion of native lands.
Reptiles			
Alameda whipsnake (<i>Masticophis lateralis euryxanthus</i>)	T, X	NE	Present. Documented in chaparral habitat in northeastern Santa Clara County; no conversion of native lands.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	NE	Present. Documented as extant along western border of San Luis and Broadview W.Ds.; no conversion of lands from existing uses
Giant garter snake (<i>Thamnophis gigas</i>)	T	NE	Possible. Presumed extant in area. Latest records are from 1979. No construction of new facilities; no conversion of lands from existing uses
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	E	NE	Possible. Could occur in northwestern Santa Clara County; no conversion of native lands.

DEFINITION OF OCCURRENCE INDICATORS

Present: Species observed in area

Possible: Species not observed in area but suitable habitat within the species' range may be present.

Absent: Species not observed in study area and habitat requirements not met.

LISTING STATUS CODES

1 T: Listed as Threatened.

2 X: Designated Critical Habitat for this species.

3 NE: No Effect to the species or critical habitat determination under Endangered Species Act.

4 E: Listed as Endangered.

5 C: Candidate to become a proposed species.

6 NMFS: Species under the Jurisdiction of the National Marine Fisheries Service.

Special-Status Avian Species Burrowing owls (*Athene cunicularia*) have the potential to occur within the water districts, particularly in areas with low-stature vegetation and ground squirrel activity. Swainson's hawks (*Buteo swainsoni*) also are common in the proposed project area and will use agriculture lands for foraging habitat. Both these birds are migratory bird species protected under the Migratory Bird Treaty Act. Swainson's hawks are also listed as threatened by the California Fish and Game Commission pursuant to the California Endangered Species Act.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, non-CVP water would not be conveyed or stored in CVP facilities. There would be no impacts to biological resources; existing conditions would remain the same.

Proposed Action

The action area consists of agricultural fields that provide some habitat values for a few species listed above; however, there is routine disturbance due to on-going farming practices. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years. The Proposed Action also would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species or birds protected by the Migratory Bird Treaty Act.

The movement and pumping of the water would be covered by the biological opinions from the U.S. Fish and Wildlife Service (Service 2008) and National Marine Fisheries Service (NMFS 2009) on the Coordinated Long-term Operations of the CVP and SWP. The biological opinions cover 48,000 af/y (60,000 af minus 20% conveyance losses) of Component 1 Yuba Accord water, and the remainder is covered under the 600,000 af/y of transferred water (the total amount that would be transferred under this Proposed Action plus other transfers is under 600,000 af). As a result, the effects on the Delta smelt and its critical habitat, and the effects on the Central Valley steelhead, Central Valley spring-run chinook salmon, Sacramento River winter-run chinook salmon, North American green sturgeon and critical habitat for these species, and the Southern Resident killer whales have already been addressed. These biological opinions were remanded by the Court but not vacated; they remain in effect until new biological opinions are issued. Reclamation will complete NEPA analysis before accepting Reasonable and Prudent Alternatives (RPAs) developed by the Service and NMFS. Reclamation will continue to comply with any court orders and with the current and future biological opinions.

Impacts to Essential Fish Habitat for Pacific salmon were also addressed by consultation with NMFS (2009).

Cumulative Impacts

There would be no cumulative impacts to species other than the fish described above and the Southern Resident killer whales. Cumulative impacts to these remaining species will be thoroughly addressed by Reclamation's NEPA document that will be prepared before accepting

an RPA. These impacts include those identified in the Service (2008) and NMFS (2009) biological opinions, as well as those of past and present actions and future Federal actions. These impacts include past mining activities, invasions of non-native aquatic species, upstream impoundments and Delta diversions not part of the long-term coordinated operations of the CVP and SWP, power plant operations, pollution from runoff, and global climate change. The cumulative contributions of the Proposed Action to impacts on affected biological resources would be minimized through continued compliance with minimization measures required by the Service and NMFS.

3.5 Socioeconomic Resources

3.5.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. CVP allocations allow farmers to plan for the types of crops to grow and to secure loans to hire labor and purchase supplies from local businesses. Other conditions that influence farm profits include: fluctuating crop prices; insect infestation; changing hydrologic conditions; increased fuel and power costs.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would neither approve Warren Act contracts nor exchange agreements to convey and store non-CVP water in CVP facilities. Use of alternative supplies such as groundwater or alternative contracts could increase costs to the districts or individual farms. Under the No Action Alternative, there could be temporary adverse impacts to socioeconomic resources due to potential fallowing of farmland, which could reduce demand for local labor and farm supplies. However, this could change with the hydrological conditions.

Proposed Action

Under the Proposed Action, participating districts could convey and store non-CVP water in CVP facilities to supplement their CVP water supply. The Warren Act contracts and exchange agreements would allow the non-CVP water to be distributed to sustain permanent crops. This could help maintain the local agricultural economy.

Cumulative Impacts

There would be no adverse cumulative impacts to socioeconomic resources as a result of the Proposed Action. The Proposed Action could result in a stronger local agricultural economy during the program timeframe.

3.6 Global Climate

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change; changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc. (EPA 2011a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane (CH₄), nitrous oxide (N₂O), Ozone (O₃) and fluorinated gasses (EPA 2011a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and CH₄, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2011b).

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. As a result, the national, state, and local climate change regulatory setting is complex and evolving.

In 2006, the State of California issued the California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, which requires California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is further directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020.

In addition, the EPA has issued regulatory actions under the Clean Air Act as well as other statutory authorities to address climate change issues (EPA 2011c). In 2009, the EPA issued a rule (40 CFR Part 98) for mandatory reporting of GHG by large source emitters and suppliers that emit 25,000 metric tons or more of GHG as CO₂ equivalents (CO_{2e}) per year (EPA 2009). The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change and has undergone and is still undergoing revisions (EPA 2011c).

3.6.1 Affected Environment

Global mean surface temperatures have increased nearly 1.8°F from 1890 to 2006 (IPCC 2007). Models indicate that average temperature changes are likely to be greater in the northern hemisphere. Northern latitudes (above 24°North) have exhibited temperature increases of nearly 2.1°F since 1900, with nearly a 1.8°F increase since 1970 alone (IPCC 2007). Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHG are likely to accelerate the rate of climate change.

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

3.6.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no direct contribution to greenhouse gas emissions. However, indirect emissions may result from actions in absence of Warren Act contracts and exchange agreements for the Yuba water, such as: conveyance of the water in DWR facilities, pumping the water into alternate facilities, or groundwater pumping in order to satisfy demand.

Proposed Action

Under the Proposed Action, some greenhouse gas emissions would result from electricity use from operation of pumps used to serve the Member Districts. In particular, water would be conveyed to the San Felipe Division contractors via the Pacheco Pumping Plant. For the period 2009 through 2011, the average annual operating efficiency of Pacheco Pumping Plant was 97 kilowatt hours per acre-foot. Maximum projected energy use and GHG emissions under the Proposed Action for the life of the Yuba Accord are displayed in Table 3-4. Total CO_{2e} emissions would be approximately 654.79 metric tons, which is well below the EPA mandatory reporting threshold and local limits.

Table 3-4 Energy Use and Greenhouse Gas Emissions for the Life of the Yuba Accord

Unit Name	Net Electric Use (MWh) ¹	Gross Electric Use (MWh) ²	Total CO _{2e} Generated (metric tons) ³
Pacheco Pumping Plant	2017.6	2183.2	654.79

Notes:

¹ Maximum energy estimated to be used by the unit for the life of the project.

² Based on EPA (2012) eGRID "Western US" Grid Gross Loss of 8.21%.

³Based on EPA (2012) eGRID "WECC California" subregion annual CO₂ equivalent total output emission rate of 661.20 lb/MWh

Cumulative Impacts

Nearly all releases of GHG could result in cumulative impacts to the environment; however, the releases listed in Table 3-4 are small compared to EPA reporting limits.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft EA and Draft FONSI between May 8th and June 7th, 2013.

4.2 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the Service and State fish and wildlife agencies “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license”. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources”.

The Proposed Action does not involve any construction and therefore the FWCA doesn’t apply.

4.3 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action would not result in any effects on Federally listed or proposed species that have not already been addressed. NMFS and the Service were contacted during development of the draft EA, and input was obtained from NMFS. Both NMFS and the Service will be sent a copy of the draft EA and FONSI when they are released for public review.

4.4 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

The MBTA implements various treaties and conventions between the United States and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action will not increase or reduce any migratory bird habitat, and would not result in any construction. Therefore, migratory birds would not be taken as a part of the Proposed Action.

4.5 Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.)

The Magnuson-Stevens Fishery Conservation and Management is the primary law governing marine fisheries management in United States federal waters. The Act was first enacted in 1976 and amended in 1996. Reclamation consulted with NMFS on impacts to Essential Fish Habitat for Pacific salmon as part of the consultation on the long-term coordinated operations of the CVP and SWP. The Proposed Action would not result in any additional impacts. NMFS will be sent a copy of the draft EA and FONSI when they are released for public review.

Section 5 Preparers and Reviewers

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Section 6 Acronyms and Abbreviations

af	acre-feet
Authority	The San Luis & Delta-Mendota Water Authority
CFR	Code of Federal Regulations
CO _{2e}	Carbon Dioxide Equivalent Units
DMC	Delta-Mendota Canal
EA	Environmental Assessment
FONSI	Finding of No Significant Impact
GHG	greenhouse gases
IPCC	Intergovernmental Panel on Climate Change
MBTA	Migratory Bird Treaty Act
Member Districts	The Water Districts listed in Table 2-1 and shown in Figure 1-1
M&I	Municipal and Industrial
SLC	San Luis Canal
SWP	California State Water Project

Section 7 References

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Appendix A Cultural Resources Determination



United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

IN REPLY
REFER TO:
MP-153
ENV-3.00

VIA ELECTRONIC MAIL ONLY

May 01, 2013
MEMORANDUM

To: Nicholas Kilb
Natural Resources Specialist – South-Central California Area Office

From: William Soule
Archaeologist– Division of Environmental Affairs

Subject: 13-SCAO-159 Storage and Conveyance of Yuba Accord Water in Federal Facilities for South of Delta
Central Valley Project (CVP) Contractors

This proposed undertaking by Reclamation is for the execution of Warren Act contracts with nine south of delta water districts for the storage and conveyance of up to 80,000 acre-feet of water per year from the Department of Water Resources (DWR), made available by the Yuba Accord. The nine districts are the Del Puerto Water District, Eagle Water District, Pacheco Water District, Panoche Water District, San Benito County Water District, San Luis Water District, Santa Clara Valley Water District, Westlands Water District, and the Westlands Water District Distribution District #1. This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the National Historic Preservation Act (NHPA) Section 106 regulations codified at 36 CFR § 800.3(a)(1). Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(1).

The proposed water transfers from the Yuba Accord will be released into the Delta and pumped and stored by DWR in the O'Neill Forebay. The Warren Act contracts are required in order to store and convey this non-CVP water in Federal facilities, at times when excess capacity exists and when DWR makes Yuba Accord water available for purchase. The non-CVP water diverted into the O'Neill Forebay will be either pumped into the San Luis Reservoir or delivered to the San Luis Unit contractors via the San Luis Canal, the Delta Division contractors via the Delta-Mendota Canal, and the San Felipe Division contractors via the Pacheco Tunnel. These actions will not result in any ground disturbing activities or changes in land use.

After reviewing EA-13-014, I concur with section 3.1 which states that both the no action and action alternatives have no potential to cause effects on historic properties pursuant to 36 CFR Part 800.3(a)(1). This memorandum is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106

review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

William E. Soule, M.A., Archaeologist
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CC: Cultural Resources Branch (MP-153), Anastasia Leigh – Regional Environmental Officer (MP-150)

Appendix B Indian Trust Assets Determination



Kilb, Nicholas <nkilb@usbr.gov>

Request for Determinations, Storage and Conveyance of Yuba Accord Water in Federal Facilities for South of Delta Central Valley Project Contractors

RIVERA, PATRICIA <privera@usbr.gov>

Thu, May 2, 2013 at 1:09 PM

To: "Kilb, Nicholas" <nkilb@usbr.gov>

Cc: Mary Williams <marywilliams@usbr.gov>, Kristi Seabrook <kseabrook@usbr.gov>, BOR MPR Cultural Resources Section <ibr2mprdculturalresources@usbr.gov>

Nick,

I reviewed the proposed action to execute Warren Act contracts with the Member Districts in order to store and convey this non-CVP water in Federal facilities, at times when excess capacity exists and when DWR makes Yuba Accord water available for purchase. The contracts would be for up to five years at a time, beginning July 2013 and renewable through December 2025.

Any remaining non-CVP Water in San Luis Reservoir after each February 28/29 each year would be subject to available capacity and Reclamation's then current Rescheduled Water Guidelines. DWR would convey the non-CVP water to the Federal share of O'Neill Forebay. The non-CVP water in O'Neill Forebay would either be pumped into the San Luis Reservoir for storage or delivered to the San Luis Unit contractors via the San Luis Canal (SLC), the Delta Division contractors via the Delta-Mendota Canal (DMC), and to the San Felipe Division contractors via the Pacheco Tunnel. There would be no new construction or excavation occurring as part of the Proposed Action. No native or untillied land (fallow for 3 years or more) would be cultivated with water involved with these actions. The Proposed Action would not increase or decrease water supplies that would result in development.

The proposed action does not have a potential to affect Indian Trust Assets.

Patricia Rivera
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