

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Transfer Approvals for the Exchange of Water between Del Puerto Water District and Arvin- Edison Water Storage District

EA-17-031



Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated 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.

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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the Draft Finding of No Significant Impact (FONSI) and Draft Environmental Assessment (EA) between September 29, 2017 and October 13, 2017. Reclamation received no comment letters. Changes between the Draft EA and this Final EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

Del Puerto Water District (Del Puerto) is a Central Valley Project (CVP) contractor located on the west side of the San Joaquin Valley, south of the Sacramento-San Joaquin Delta (Delta) (Figure 1). Del Puerto's water supplies have been reduced over the last two decades because of regulatory limitations and adverse hydrologic conditions. As a result, Del Puerto seeks to acquire substantial quantities of water (CVP and non-CVP) in advance each year, which are historically stored in San Luis Reservoir, subject to available capacity. However, similar to the current year, where wet hydrology and high runoff from snowmelt caused the San Luis Reservoir to fill and subsequently spill, Del Puerto needs to pursue opportunities to expand storage options, and thus has requested authorization from the Reclamation to transfer up to 15,000 acre-feet (AF) per year (2017-2021 Contract Years¹) of its available water supplies which would otherwise be stored in San Luis Reservoir to Arvin-Edison Water Storage District (Arvin-Edison) for storage and later return.

In addition, due to the severity of the recent drought, Arvin-Edison has extracted more previously stored groundwater than could be recharged through precipitation and runoff, and thus seeks to access surface water supplies which can be conjunctively used to offset groundwater pumping. Arvin-Edison's access to CVP water supplies south of the Delta, including San Joaquin River Restoration Program's (SJRRP) recaptured/recirculated CVP water and Cross Valley Contractors' CVP water supply, enables Arvin-Edison to return Del Puerto's water supplies from the Delta when called upon.

1.2 Need for the Proposed Action

Arvin-Edison needs to offset previously stored groundwater extractions and Del Puerto needs a storage mechanism for up to 15,000 AF per year of its available water supply normally stored in San Luis Reservoir, and which could be lost during San Luis Reservoir spills. The Proposed Action would allow Arvin-Edison and Del Puerto to better manage their available water supplies during both wet and dry hydrologic years.

¹ Contract Year shall mean the period from and including March 1 of each calendar year through the last day of February of the following calendar year.

July 7, 2017

Del Puerto Water District and Arvin-Edison Water Storage District

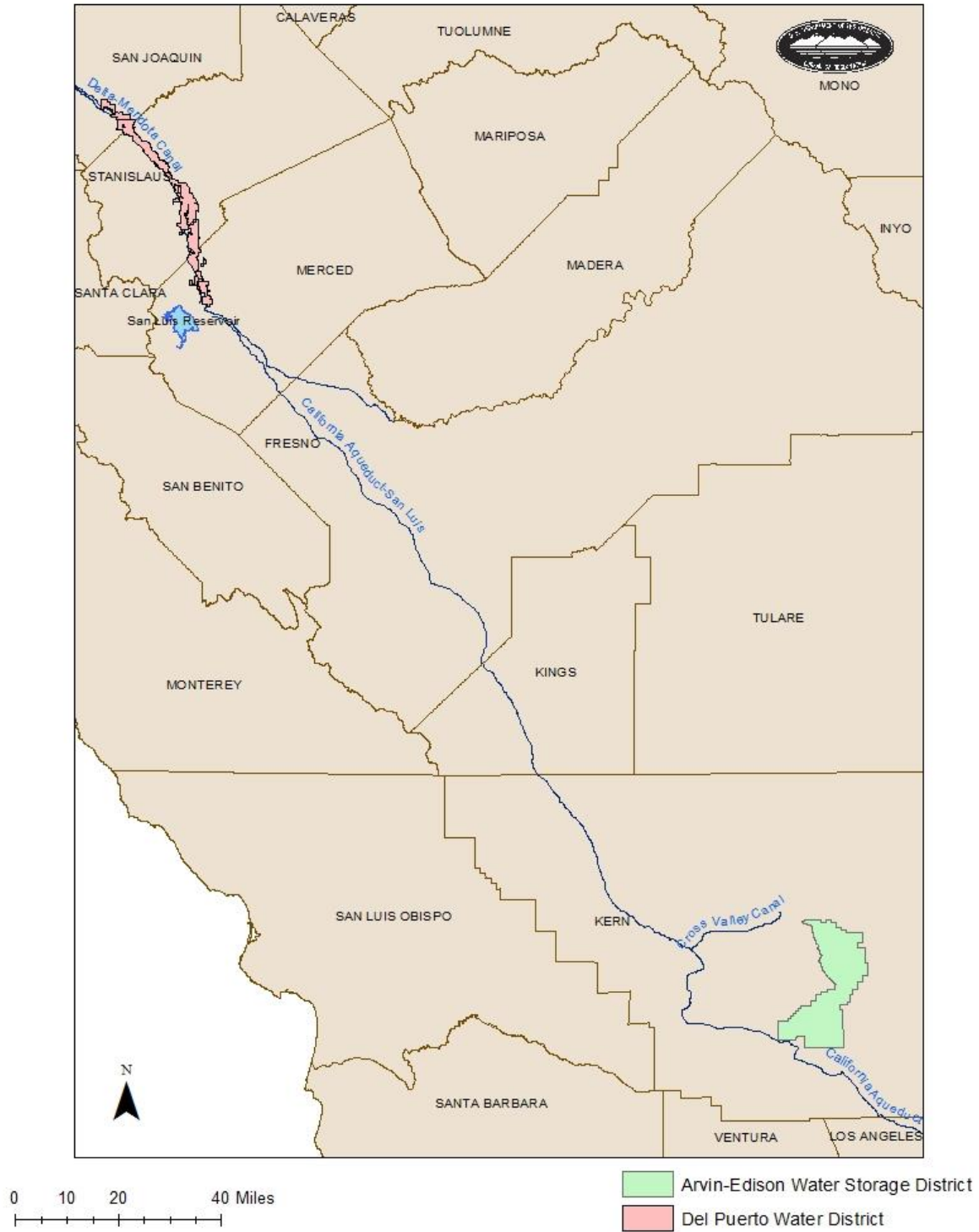


Figure 1 Proposed Action area

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. 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.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the transfer of up to 15,000 AF annually of Del Puerto's available CVP and non-CVP water supplies located in San Luis Reservoir to Arvin-Edison for storage and later return. Reclamation would continue to deliver CVP water to Del Puerto and Arvin-Edison pursuant to their CVP contracts.

Del Puerto's available CVP and non-CVP water supplies stored in San Luis Reservoir at the end of each water year are subject to "spill" pursuant to Reclamation policy.

2.2 Proposed Action

Reclamation proposes to approve the transfers of up to 15,000 AF per year (2017-2022 Contract Years) of water between Del Puerto and Arvin-Edison for storage and later return as described below.

2.2.1 Delivery of Water to Arvin-Edison Water Storage District

Del Puerto's available water supplies (CVP and non-CVP) would be released from San Luis Reservoir and conveyed through the California Aqueduct/San Luis Canal to the Cross Valley Canal where it would be delivered to Arvin-Edison. Arvin-Edison would use the transferred water for direct recharge or to meet in-district demands to offset groundwater extraction.

Any use of State facilities will require coordination and approval by the California Department of Water Resources (DWR). Any use of the Cross Valley Canal will require coordination and approval by the Kern County Water Agency. All approvals will be provided to Reclamation prior to approval of the transfer.

2.2.2 Return of Water to Del Puerto Water District

Arvin-Edison would later return a like amount of CVP water to Del Puerto, less 3% for conveyance losses, if applicable, when requested by Del Puerto. The available water supplies would include SJRRP recaptured/recirculated CVP water, including transfers from other Friant districts and/or Cross Valley Contractors' South-of-Delta CVP water supplies acquired by Arvin-Edison. The CVP water would be delivered to Del Puerto at its existing turnouts off the Delta-Mendota Canal upstream of San Luis Reservoir.

No ground disturbance or modification of existing facilities would be needed in order to convey water under the Proposed Action. Conveyance of water from Arvin-Edison to Del Puerto and from Del Puerto to Arvin-Edison would involve existing facilities as shown in Figure 1.

2.2.1 Environmental Commitments

Del Puerto and Arvin-Edison shall implement the following environmental protection measures to avoid and/or reduce environmental consequences associated with the Proposed Action (Table 1).

Table 1 Environmental Commitments

Biological Resources	No native lands or untilled lands that have been fallow for three consecutive years or more may be cultivated with this water.
Biological Resources	The Proposed Action cannot alter the flow regime of natural waterways or natural watercourses such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to have a detrimental effect on fish or wildlife or their habitats.
Biological Resources	The Proposed Action shall 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 (MBTA).

Environmental consequences for resource areas assume the measures specified would be fully implemented.

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 the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 2.

Table 2 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Air Quality	Extraction of previously stored groundwater by Arvin-Edison would occur with or without the Proposed Action and is therefore part of the existing conditions. No new construction or new facilities would be needed under the Proposed Action to transfer water between the Districts. In addition, delivery of water to the Districts would be delivered from existing facilities with or without the Proposed Action and is therefore part of the existing conditions. As there would be no change from existing conditions, a conformity analysis is not required and there would be no impact to air quality as a result of the Proposed Action.
Cultural Resources	There would be no impacts to cultural resources under either alternative as conditions would remain the same. No new construction or ground disturbing activities would occur as part of the Proposed Action. The pumping, conveyance, and storage of water would be confined to existing CVP, Cross Valley Canal, and SWP facilities. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). See Appendix A for Reclamation's determination.
Environmental Justice	The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease. The Proposed Action would not disproportionately impact economically disadvantaged or minority populations as there would be no changes to existing conditions.
Global Climate Change	No new construction or new facilities are proposed. Some pumping would be required to move water under the Proposed Action, but power usage would be within the typical range for the facilities involved and are a part of the baseline condition. No greenhouse gas emissions are anticipated outside normal operational fluctuations. As such, there would be no additional impacts to global climate change. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility under either alternative.
Indian Sacred Sites	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. Therefore, there would be no impacts to Indian Sacred Sites as a result of the Proposed Action.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets as there are none in the Proposed Action area.

Resource	Reason Eliminated
Land Use	Water delivered to Arvin-Edison or Del Puerto would be done through existing facilities and would be used for groundwater recharge and on existing crops. The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses. Therefore, there would be no change to land use.
Recreation	The Proposed Action would not impact Recreational Resources as there are none in the Proposed Action area.
Socioeconomics	The Proposed Action would have beneficial impacts on socioeconomic resources as transferred water would be used to help sustain existing crops and maintain farming in Arvin-Edison and Del Puerto.

3.2 Biological Resources

3.2.1 Affected Environment

The Action area includes Del Puerto, Arvin-Edison, San Luis Reservoir/O'Neill Forebay, the Cross Valley Canal, the California Aqueduct/San Luis Canal, and the Delta-Mendota Canal. All of the lands in production within Del Puerto and Arvin-Edison are used for agricultural purposes.

Reclamation requested an official species list from the United States Fish and Wildlife Service (Service) for the Proposed Action area on September 1, 2016 via the Service's website, <http://ecos.fws.gov/ipac>, (Consultation Code: 08ESMF00-2016-SLI-2144). The California Department of Fish and Wildlife's California Natural Diversity Database (CNDDDB) was also queried for records of protected species in or near the Proposed Action Area (CNDDDB 2016). The information collected above, in addition to information within Reclamation's files, was combined to determine the likelihood of protected species occurrence within the Proposed Action area and this information is summarized in Table 3.

Table 3 Federally Listed Species and Critical Habitat in the Proposed Action Area

Species	Status ¹	Effects ²	Occurrence in the Proposed Action ³
INVERTEBRATES			
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
San Bruno Elfin butterfly (<i>Callophrys mossii bayensis</i>)	E	NE	Absent. This species does not occur within the Proposed Action area.

Species	Status ¹	Effects ²	Occurrence in the Proposed Action ³
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T, X	NE	Possible. There are CNDDDB records of this species near the Proposed Action area; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any construction or ground disturbance. There would be <i>No Effect</i> to this species.
FISH			
Delta smelt (<i>Hypomesus transpacificus</i>)	T, X	NE	Absent. No natural waterways within this species' range would be affected by the Proposed Action. There is no designated critical habitat for this species within the Proposed Action area.
Northern California DPS steelhead (<i>Oncorhynchus mykiss</i>)	T, NMFS	NE	Absent. No natural waterways within this species' range would be affected by the Proposed Action.
AMPHIBIANS			
California tiger salamander Central California DPS (<i>Ambystoma californiense</i>)	T, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
California red-legged frog (<i>Rana aurora draytonii</i>)	T, X	NE	Possible. There is a record of this species in Del Puerto; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat that may be occupied by this species, and would not involve any construction or ground disturbance. There would be <i>No Effect</i> to this species.
REPTILES			
Alameda whipsnake (<i>Masticophis lateralis euryxanthus</i>)	T, X	NE	Possible. There are records of this species near Del Puerto; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any construction or ground disturbance. There would be <i>No Effect</i> to this species.
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	NE	Present. There are CNDDDB records of this species in and near the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any construction or ground disturbance. There would be <i>No Effect</i> to this species.

Species	Status ¹	Effects ²	Occurrence in the Proposed Action ³
Giant garter snake (<i>Thamnophis gigas</i>)	T	NE	Possible. There are CNDDDB records of this species near the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
BIRDS			
California condor (<i>Gymnogyps californianus</i>)	E, X	NE	Possible. There are CNDDDB records of this species near the Proposed Action area; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
Least bell's vireo (<i>Vireo bellii pusillus</i>)	E, X	NE	Possible. There are CNDDDB records of this species near the Proposed Action area; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any construction. There would be <i>No Effect</i> to this species.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	E, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
Western snowy plover (<i>Charadrius nivosus ssp. nivosus</i>)	T, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	T, PX	NE	Absent. This species does not occur within the Proposed Action area. There is no designated or proposed critical habitat for this species within the Proposed Action area.
Burrowing owl (<i>Athene cunicularia</i>)	MBTA	NT	Present. There are several records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Take</i> of this species.
Swainson's hawk (<i>Buteo swainsoni</i>)	MBTA	NT	Present. There are records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Take</i> of this species.
MAMMALS			

Species	Status ¹	Effects ²	Occurrence in the Proposed Action ³
Buena Vista Lake Ornate shrew (<i>Sorex ornatus relictus</i>)	E, X	NE	Possible. There are records of this species near the Proposed Action Area; however, there is no designated critical habitat for this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
Giant kangaroo rat (<i>Dipodomys ingens</i>)	E	NE	Absent. This species does not occur within the Proposed Action area.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	E, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
Riparian brush rabbit (<i>Sylvilagus bachmani riparius</i>)	E	NE	Absent. This species does not occur within the Proposed Action area.
Riparian woodrat (<i>Neotoma fuscipes riparia</i>)	E	NE	Absent. This species does not occur within the Proposed Action area.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	NE	Present. There are several records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
Tipton kangaroo rat (<i>Dipodomys nitratoides nitratoides</i>)	E	NE	Present. There are records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
PLANTS			
Bakersfield cactus (<i>Opuntia treleasei</i>)	E	NE	Present. There are records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
California jewelflower (<i>Caulanthus californicus</i>)	E	NE	Possible. There is one potentially extirpated record of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.

Species	Status ¹	Effects ²	Occurrence in the Proposed Action ³
Kern mallow (<i>Eremalche kernensis</i>)	E	NE	Present. There are records of this species in and near the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
Large-flowered fiddleneck (<i>Amsinckia grandiflora</i>)	E, X	NE	Absent. This species does not occur within the Proposed Action area. There is no designated critical habitat for this species within the Proposed Action area.
San Joaquin Adobe sunburst (<i>Pseudobahia peirsonii</i>)	T	NE	Absent. This species does not occur within the Proposed Action area.
San Joaquin wooly-threads (<i>Monolopia congdonii</i>)	E	NE	Present. There are records of this species within the Proposed Action area. The Proposed Action would not alter or convert any areas of suitable habitat which may be occupied by this species, and would not involve any ground disturbance or construction. There would be <i>No Effect</i> to this species.
<p>1 Status= Listing of Federally protected species under the Endangered Species Act E: Listed as Endangered T: Listed as Threatened X: Critical Habitat designated for this species PX: Critical Habitat proposed for this species MBTA: Protected under the Migratory Bird Treaty Act NMFS: Species under jurisdiction of National Oceanic & Atmospheric Administration Fisheries Service</p> <p>2 Effects = Endangered Species Act Effect determination NE: No Effect NT: No Take</p> <p>3 Definition Of Occurrence Indicators Absent: Species not recorded in study area and habitat requirements not met Possible: Species has the potential to occur in the study area Present: Species recorded in or near study area and habitat is present</p>			

3.2.2 Environmental Consequences

No Action

The districts involved would use available water supplies to keep currently farmed lands in production. Because conditions would remain the same as existing conditions, there would be no impact to biological resources.

Proposed Action

The water involved in the Proposed Action would be used on existing crops within Arvin-Edison and Del Puerto, and would not be used to convert natural lands, or lands which have been fallowed or untilled for three or more years. The land use patterns of cultivated or fallowed fields which have some value to listed species or birds protected under the Migratory Bird Treaty Act would also remain unchanged. The infrastructure required to carry out the Proposed Action is already in place and no ground disturbance, modification of facilities, or construction would occur as a result of the Proposed Action.

Because the Proposed Action would not involve any construction, changes in water diversions from natural waterways, or changes in land use, Reclamation has determined that the Proposed Action would have *No Effect* to proposed or listed species or critical habitat under the Endangered Species Act of 1973, as amended (16 U.S.C. §1531 et seq.), and there would be *No Take* of birds protected under the Migratory Bird Treaty Act (16 U.S.C. §703 et seq.).

Cumulative Impacts

Because the Proposed Action would not result in any direct or indirect impacts to federally listed species or critical habitat, it would not contribute cumulatively to any impacts on these resources.

3.3 Water Resources

3.3.1 Affected Environment

The Action Area includes Del Puerto, Arvin-Edison, San Luis Reservoir/O'Neill Forebay, the Cross Valley Canal, the California Aqueduct/San Luis Canal, and the Delta-Mendota Canal.

Arvin-Edison Water Storage District

Arvin-Edison is located in Kern County and was formed in 1942 to provide a reliable water supply for its landowners for agricultural purposes. The current annual acreage under irrigation is approximately 110,000 acres. Arvin-Edison is a long-term CVP contractor; its current facilities were primarily constructed in the 1960s and support the conjunctive use of surface water imported from the CVP, State Water Project (SWP), Kern River, including other supplies (i.e. flood flows from northern rivers/creek on the Friant-Kern Canal), and groundwater resources that underlie Arvin-Edison. Arvin-Edison owns and operates spreading/percolation/recharge basins and groundwater extraction wells, which are used to supply previously stored groundwater to its landowners within its service area when surface water supplies are deficient. Arvin-Edison facilities (recharge and extraction) are also made available to other water agencies for their utilization through water management programs/agreements on a second priority basis.

Arvin-Edison has a long-term water service contract (Contract No. 14-06-200-229AD) with Reclamation for up to 40,000 AF of Class 1 and 311,675 AF of Class 2 Friant Division CVP supplies. The Class 2 supply comprises a large portion of their contract allocation; however, this supply is highly variable depending on availability and hydrology. Arvin-Edison takes Friant CVP water from its Intake Canal located at the terminus of the Friant-Kern Canal and serves landowners within its district through 45 miles of lined canals and 170 miles of pipeline. To better manage its water supplies, Arvin-Edison developed and continues to develop water management programs based on the concept of delivering imported water in years of above average water supplies to 1) spreading ponds for groundwater recharge and/or 2) transfers/exchanges with other agencies and entities (such as Del Puerto) that can in turn provide return water at times later in the same year (or in subsequent years) and typically during drought or low allocation years or periods. During below average or dry years or periods, Arvin-Edison extracts (via wells) previously stored groundwater and/or accepts return of water from water transfers and exchanges to meet its agricultural demands when surface supplies are deficient.

Arvin-Edison has historically made available a portion of its Friant Division CVP water supply to other CVP contractors located on the eastside of the San Joaquin Valley (i.e., Cross Valley Contractors) in exchange for alternate CVP supplies originating from the Delta, diverted and wheeled through the California Aqueduct for ultimate delivery to Arvin-Edison. However, due to a decrease in supply reliability, cost increases, and water quality concerns, several of these exchanges are no longer feasible to the extent they once were. As a result, it has been necessary for Arvin-Edison to identify and implement additional water management programs.

Arvin-Edison also receives SJJRP recaptured/recirculated CVP water from San Luis Reservoir as a result of releases made into the San Joaquin River from Millerton Lake, captured at Mendota Pool or other San Joaquin River location and subsequently stored through exchange/transfer agreements that were analyzed under separate environmental review.

Del Puerto Water District

Del Puerto is located in San Joaquin, Stanislaus, and Merced Counties on the west side of the San Joaquin Valley north of San Luis Reservoir. It was founded in 1947 to contract for and administer delivery of water supplies to landowners within its geographic boundaries as part of Reclamation's CVP. In 1995, it was reorganized through a formal consolidation with 10 other local, similarly contracted water districts.

Del Puerto has a long-term water service contract (Contract No. 14-06-200-922-LTR1) with Reclamation for up to 140,210 AFY. This contract water supply, which is delivered directly from the Delta-Mendota Canal, is the district's only source of supply. Privately developed groundwater is available on a limited basis throughout the district, some of which is stored and/or conveyed under the terms of temporary Warren Act Contracts between the Del Puerto and Reclamation. There is some groundwater pumped by private landowners; however, its quantity and quality is highly variable throughout the District.

Del Puerto does not own any conveyance or storage facilities for the water it manages. All water deliveries to Del Puerto are made through turnouts installed and owned by Reclamation along the Delta-Mendota Canal and licensed for Del Puerto's use. All pumps, pipelines, and ditches in the district are maintained and operated by private landowners, while Del Puerto owns and operates the any subsidiary water meters needed to account for deliveries at turnouts with multiple landowners. The lack of storage facilities has created the need to find alternate methods to store water for use when demand is high and supply is low (drought and/or drier times of the growing season), and to best manage available supplies at all times.

Conveyance Facilities

A general diagram of South-Of-Delta CVP facilities proposed for use under the Proposed Action is shown in Figure 2. Facilities proposed for use under the Proposed Action include: San Luis Reservoir/O'Neill Forebay, the San Luis Canal, and the Delta-Mendota Canal in the West San Joaquin Division. Non-Federal facilities include the Cross Valley Canal and the State portion of the California Aqueduct/San Luis Canal.

California Aqueduct/San Luis Canal The California Aqueduct (SWP) and San Luis Canal (CVP) is a joint-use facility. The San Luis Canal is the Federally-built and operated section and extends 102.5 miles from O'Neill Forebay in a southeasterly direction to a point west of

Kettleman City. At this point, the facility becomes the State's California Aqueduct; however, the California Aqueduct actually begins at the Banks Pumping Plant where the canal conveys water pumped from the Delta directly into O'Neill Forebay. There is also a point of connectivity between the Delta Mendota Canal and the California Aqueduct at the California Aqueduct-Delta Mendota Canal Intertie north of the O'Neill Forebay pumping plant.

Cross Valley Canal The Cross Valley Canal is a locally-owned facility by various "Participants", including Arvin-Edison, which extends from the California Aqueduct near Tupman to Bakersfield. It consists of four reaches with 6 pumping lifts and has a capacity of 1,400 cubic-feet per second (cfs) from the California Aqueduct to Arvin-Edison's Intake Canal (also near the Friant-Kern Canal terminus and Kern River). The Cross Valley Canal "extension" is an unlined canal that continues past Arvin-Edison's Intake Canal and provides approximately 342 cfs with two additional pumping lifts. The Cross Valley Canal, which is operated by the Kern County Water Agency, can convey water from the California Aqueduct to various banking projects (Kern Water Bank, the City of Bakersfield groundwater recharge facility, the Berrenda Mesa Property, and the Pioneer Banking Project), the Kern River channel, Arvin-Edison's Intake Canal, various member units of Kern County Water Agency, and other districts who have access to the Cross Valley Canal. The Cross Valley Canal is also capable of conveying water, in reverse flow-gravity mode, to the California Aqueduct. In 2008, as part of the Cross Valley Canal expansion project, an additional 500 cfs turnout was constructed on the Friant-Kern Canal in order to deliver water by gravity into either the Arvin-Edison Intake Canal or the Cross Valley Canal.

Delta-Mendota Canal The Delta-Mendota Canal, the second largest of the CVP waterways, was completed in 1951. It includes a combination of both concrete-lined and earthen-lined sections and is about 117 miles in length. The canal transports water from the Jones Pumping Plant to the Mendota Pool, located at the confluence of the San Joaquin River and the North Fork of the Kings River, approximately 30 miles west of the city of Fresno. The Mendota Pool is controlled by a concrete storage dam that was constructed in 1917 and serves as the terminus for the Delta-Mendota Canal. Capacity in the Delta-Mendota Canal is restricted by the physical limitations of the canal and the pumping limits of the Jones Pumping Plant.

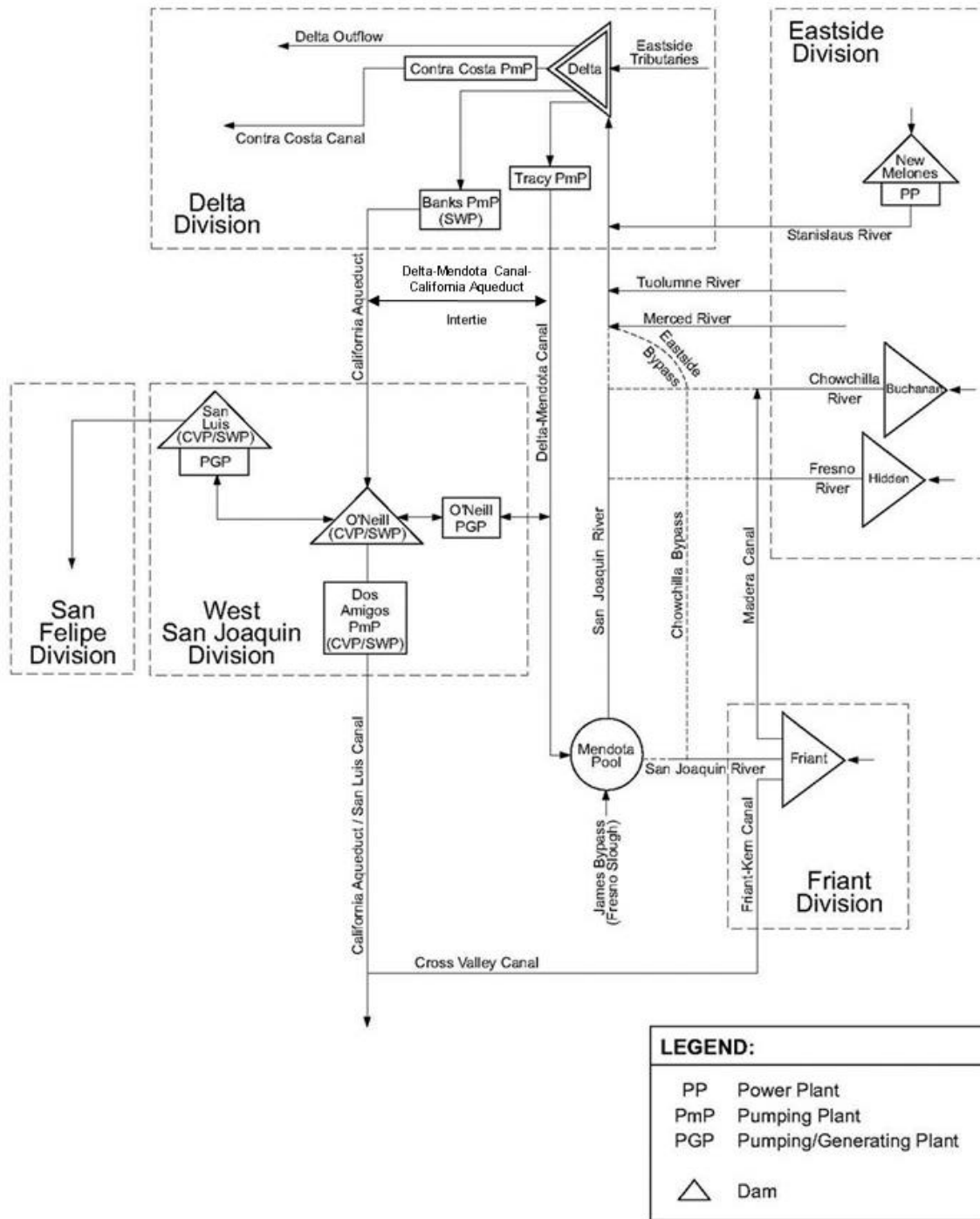


Figure 2 South-of-Delta CVP Facilities by Division (Source: Reclamation 1999, page III-19)²

3.3.2 Environmental Consequences

No Action

² Note: figure has been modified to include the Delta-Mendota Canal – California Aqueduct Intertie.

Under the No Action Alternative, Reclamation would not approve the proposed transfers of water between Del Puerto and Arvin-Edison. Del Puerto could potentially lose up to 15,000 AF annually of its stored water should San Luis Reservoir fill and be subject to spills. This would negatively impact Del Puerto's available water supplies and water management.

Del Puerto and Arvin-Edison would continue to receive their respective CVP allocations and other available water supplies. There would be no improvements to current groundwater overdraft in Arvin-Edison as there would be under the Proposed Action.

Proposed Action

The Proposed Action would allow Del Puerto to transfer its CVP and non-CVP water supplies located in San Luis Reservoir to Arvin-Edison for storage and later return when needed. This would prevent potential loss of this water should San Luis Reservoir be subject to spill and would enable Del Puerto to better manage its water supply.

As Del Puerto's CVP and non-CVP water supplies are historically held in San Luis Reservoir, no additional Delta pumping would be needed to facilitate this transfer. In addition, any return of water to Del Puerto from Arvin-Edison's transfer of SJRRP recirculated/recaptured water or Cross Valley CVP water would be from allocated water supplies, which would not require additional pumping from the Delta.

Del Puerto's transferred water would be used to directly recharge groundwater in Arvin-Edison or to offset groundwater extraction (delivered to landowners for irrigation in-lieu of extracting groundwater). This would increase recharge in an area that has extracted more previously stored groundwater than could be replaced due to the recent drought providing a beneficial effect to groundwater levels in the area.

At a later date, Arvin-Edison would transfer its available SJRRP recaptured/recirculated including transfers from other Friant districts and/or acquired Cross Valley CVP water supplies to Del Puerto for return. Neither Del Puerto nor Arvin-Edison would experience a net gain or loss in their respective water supplies since the transfers between the districts would be one for one, less minor conveyance losses, if applicable.

As the transferred water supplies would be from existing allocations, the Proposed Action would not alter CVP operations, water storage or release patterns from CVP facilities, or the maximum volume of water delivered to the contractors. Therefore, the Proposed Action would not interfere with Reclamation's obligation to deliver CVP water to other CVP contractors, or other environmental purposes. Finally, CVP water would be delivered through existing infrastructure and would not require additional construction or modification of facilities for delivery. Thus, there would be no impact to CVP operations, facilities, or water supplies.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment.

Reclamation has reviewed existing or foreseeable projects in the same geographic area that could affect or could be affected by the Proposed Action since Reclamation and CVP contractors have been working on various drought-related and water management projects, including this one, in order to better manage limited water supplies due to variable hydrologic conditions and regulatory requirements. This and similar projects would have a cumulatively beneficial effect on water supply availability.

As in the past, hydrologic conditions and other factors are likely to result in fluctuating water supplies which drive requests for water service actions. Water districts provide water to their customers based on available water supplies and timing, while attempting to minimize costs. Landowners irrigate and grow crops based on these conditions and factors, and numerous water service actions are approved and executed each year to facilitate water needs. It is likely that over the course of the Proposed Action, districts will request various water service actions, such as transfers, exchanges, and Warren Act contracts (conveyance and storage of non-CVP water in CVP facilities). Each water transaction involving Reclamation undergoes environmental review prior to approval.

The Proposed Action and other similar projects would not hinder the normal operations of the CVP and Reclamation's obligation to deliver water to its contractors or to local fish and wildlife habitat. Since the Proposed Action would not involve construction or modification of facilities, there would be no cumulative impacts to existing facilities or other contractors.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft FONSI and Draft EA between September 29 and October 13, 2017. No comments were received.

4.2 List of Agencies and Persons Consulted

Reclamation is coordinating, or will coordinate, the Proposed Action with the following regarding the Proposed Action:

- Arvin-Edison Water Storage District
- Del Puerto Water District
- Department of Water Resources
- Kern County Water Agency

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Section 5 References

California Natural Diversity Database (CNDDB). 2016. California Department of Fish and Game's Natural Diversity Database. Accessed: September 2016.