BUREAU OF RECLAMATION

Arvin-Edison Water Storage District and Metropolitan Water District 10-year Water Transfer/Exchange Program

CGB-EA-2024-015
Final Environmental Assessment

U.S. Department of the Interior

May 2024

Mission Statements

The U.S. 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

In conformance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] §4321), Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Department of the Interior Regulations (43 CFR Part 46), the Bureau of Reclamation (Reclamation) prepared this Environmental Assessment (EA) to evaluate and disclose potential environmental impacts associated with a proposed 10-year water management program between Arvin-Edison Water Storage District (AESWD) and Metropolitan Water District of Southern California (MWD). Completion of the NEPA process does not constitute approval of a proposal. Actual approval would be done through a separate process once environmental review is complete.

Reclamation provided the public with an opportunity to comment on the Draft EA between January 19, 2024 and February 20, 2024. No comments were received. Changes between this Final EA and the Draft EA, which are not minor editorial changes, are indicated by vertical lines in the left margin of this document.

1.1 Background

Since the 1990s, AESWD has maintained a long-term Water Management Program (Program) with MWD. Under the Program, a portion of MWD's State Water Project (SWP) supply (up to 388,889 acre-feet (AF), which equates to approximately 350,000 AF after a 10 percent loss factor is applied) could be banked within AESWD's groundwater bank at any one time. Upon request, AEWSD would return MWD's banked SWP water. This has resulted in an effective and efficient water management program benefiting both districts.

1.2 Purpose and Need for the Proposed Action

The State of California has recently experienced continued water management challenges due to severe drought and increased water regulations. Available water supplies need to be managed in the most efficient way possible. The purpose of the Proposed Action is to provide for the expeditious and timely delivery of AEWSD's available and contracted surface water supplies to MWD in lieu of groundwater that otherwise would have been pumped and delivered to MWD in order to fulfill return water obligations under the Program. In addition, the Program would allow AEWSD to temporarily store water with MWD for return at a time that is more useful to AEWSD's customers, thereby making more efficient use of its contract water supplies.

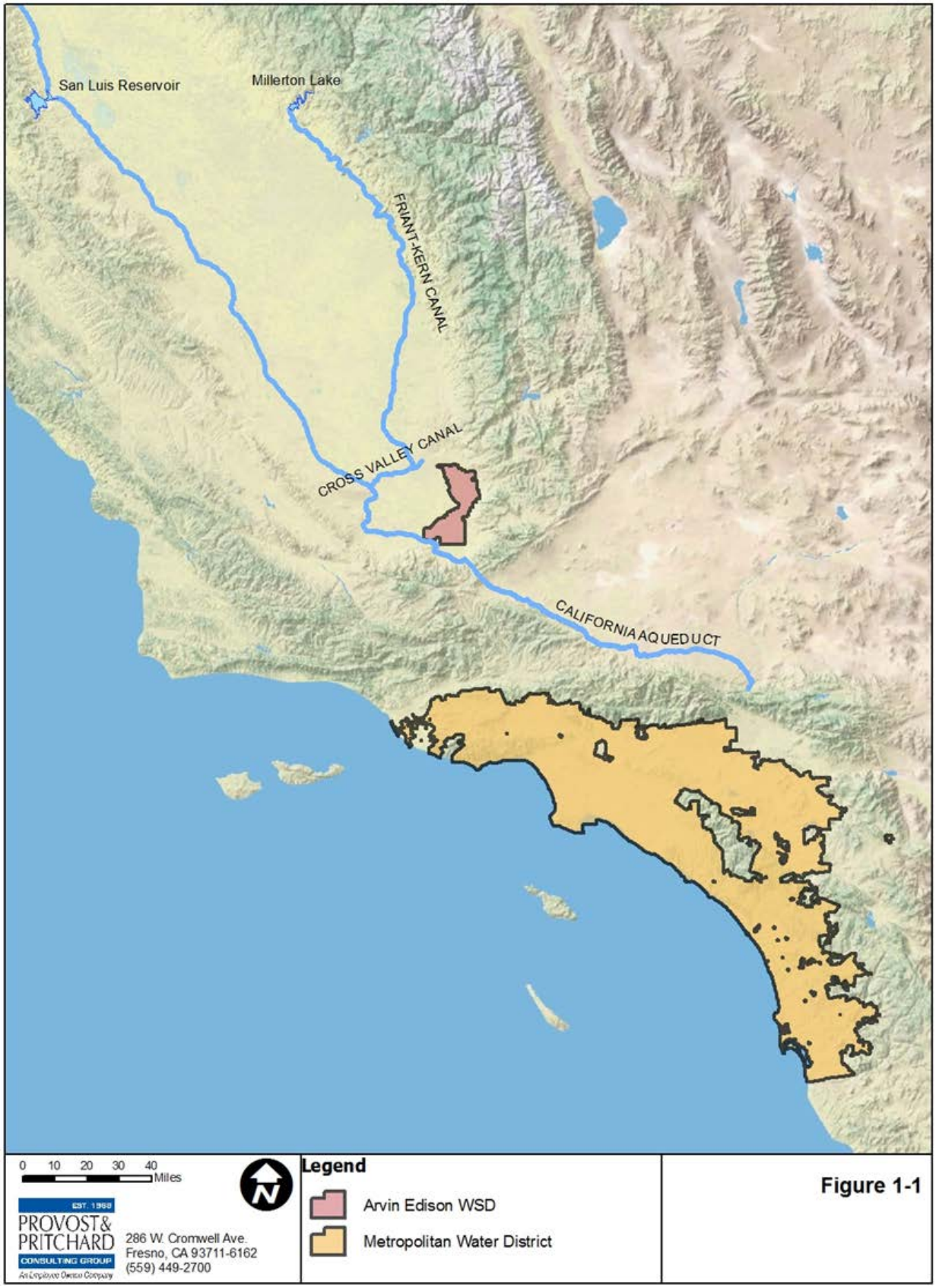

Figure 1. Map of Project Area and Arvin-Edison Water Storage District and Metropolitan Water District

1.3 Related Environmental Documents

In June 2009 and July 2010, Reclamation prepared EA 09-97 and EA 10-38, respectively, to approve the delivery of up to 40,000 AF per year of AEWSD's 2009, 2010 and 2011 Central Valley Project (CVP) supplies to MWD in-lieu of pumping, and returning a like-amount of MWD's previously banked SWP supplies within AEWSD's groundwater bank under the Program. A Finding of No Significant Impact (FONSI) was signed in July 2009, December 2009 (augmenting the July 2009 FONSI), and September 2010, respectively, to approve the exchange. Both EAs and FONSIs are hereby incorporated by reference (Reclamation 2009, Reclamation 2010).

Additionally, in February 2012 (EA 11-085), Reclamation prepared an EA to approve the delivery of up to 100,000 AF of AEWSD's 2012 and 2013 CVP supplies to MWD from April 2012 to April 2013 in-lieu of pumping and returning a like amount of MWD's previously banked SWP supplies within AEWSD's groundwater bank under the Program, and allowing AEWSD to temporarily store water with MWD within a 12-month period for return later. A FONSI was signed in April 2012 to approve the exchange. The 2012 EA and FONSI are also hereby incorporated by reference (Reclamation 2012b).

In March 2014, Reclamation approved a 10-year EA and FONSI through February 2023 (EA 13-026) approving similar exchanges, which is hereby incorporated by reference (Reclamation 2014).

As part of the San Joaquin River Restoration Program (SJRRP), Reclamation, lead agency under the National Environmental Policy Act, and the California Department of Water Resources (DWR), lead agency under the California Environmental Quality Act, prepared an EA/Initial Study to evaluate activities necessary to convey the flows in the San Joaquin River from Friant Dam to the Sacramento-San Joaquin Delta (Delta), and to conduct data collection and monitoring activities during Interim Flow releases during Water Year (WY) 2010. On February 27, 2018 Reclamation approved a FONSI to continue the implementation of the Settlement provisions pertaining to recirculation of recaptured Restoration Flows as previously analyzed in the Final Environmental Assessment Recirculation of Recaptured Water Year 2013-2017.

The Proposed Action is similar to the exchanges approved in since 2009, which were made possible due to the temporary consolidation of the CVP and SWP places-of-use and points-of-diversion and a CVP change in place-of-use. The California State Water Resources Control Board (SWRCB), Division of Water Rights, has issued multiple Water Rights Orders for statewide exchanges that also include this Arvin-Edison Program with MWD and are hereby incorporated by reference. The 2023 Water Rights Order specifies necessary terms and conditions to be carried out from July 22, 2023 through July 21, 2024. The Proposed Action would comply with this current approval from the SWRCB as well as any future SWRCB approvals, and effectively continue existing exchanges through 2034.

Section 2. Alternatives Including 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. For purposes of analysis, the No Action Alternative is the same as baseline conditions.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not approve the exchange of AEWSD's CVP water for MWD's SWP water. AEWSD would still be able to pump MWD's previously stored SWP water from AEWSD's groundwater bank and deliver it to MWD via the California Aqueduct, albeit at a greatly reduced quantity. MWD would not receive CVP water available to AEWSD.

~~Under the No Action Alternative, Reclamation would not facilitate the exchange of water supplies between the Friant Division and SWP. SWP water supplies available in San Luis Reservoir would be directly delivered to SWP contractors, including MWD. AESWD's available Friant Division water supplies would remain within the Friant Division for AESWD's use. Additional San Joaquin River water supplies within Millerton Lake may need to be released to the San Joaquin River to meet Exchange Contractors' contract obligations.~~

2.2 Proposed Action

Reclamation proposes to approve AEWSD's request to transfer/exchange a portion of its CVP water supply for MWD's SWP supply (including previously banked supplies) over a 10-year period from Contract Year 2024 through Contract Year 2034 (March 1, 2024 through February 28, 2035) and as described in more detail below. The proposed exchanges/transfers would total up to 100,000 AF per year of CVP water supplies.

The following CVP water types (including those supplies made available through transfers/exchanges) would potentially be part of the Program:

- Friant Division Class 1;
- Friant Division Class 2;
- SJRRP Recovered Water Account Article 16(b) and Unreleased Restoration Flows;
- Recaptured SJRRP Flows;
- Section 215 water supplies, to the extent Section 215 water declared by Reclamation is available to AEWSD.

The following conveyance mechanisms would take place for MWD to receive AESWD's CVP water:

Friant Division CVP water would be provided directly via delivery from the Friant-Kern Canal (FKC) and AEWSD's distribution system, including its connections to the California Aqueduct at Milepost 227 (Reach 14C) or via its capacity in the Cross Valley Canal to the California Aqueduct at Tupman/Milepost 238 (Reach 12E).

South of Delta CVP water supplies, including SJRRP recaptured flows, would be provided to DWR at O'Neill Forebay for delivery to MWD.

The Proposed Action is contingent upon approval of the Change in Place of Use (CPOU) by the SWRCB, and would only be permitted during the timeframe for which the CPOU is in effect. As described in Section 1.3, the SWRCB has already approved a CPOU from July 21, 2023 through July 20, 2024 for this Proposed Action as well as other programs. Future approvals will only be approved once a new temporary CPOU is in place.

2.2.1 Groundwater Banking

MWD stores a portion of its SWP supply in AEWSD's groundwater banking facilities, depending on annual allocations. AEWSD is then obligated to return the banked SWP water to MWD on request on a one-for-one basis. Under the Proposed Action, AEWSD would be allowed the option and flexibility to return water to MWD through an exchange of its available CVP Delta/San Luis Reservoir (SLR) or Friant surface supplies (CVP water). CVP water supplied to MWD by AEWSD in lieu of extraction to recover previously stored SWP water would result in a balanced exchange or one-for-one reduction of MWD's groundwater banking account with AEWSD, less losses.

2.2.2 Regulation Program

Additionally, the approval of the Proposed Action and the temporary CPOU would allow AEWSD to deliver CVP water supplies to MWD when they are available, and then receive back SWP water supplies in exchange, at a later time. This program better facilitates the use of AEWSD CVP water supplies that have a limited opportunity for use under current CVP operations. The ability to regulate water in this manner reduces the need to store the water by way of direct recharge and subsequent extraction. This portion of the Proposed Action would be on a one-for-one basis, less losses.

2.2.3 Fall/Winter Supplies Exchange

In the event that hydrologic conditions permit, and AEWSD believes that there may be limited ability to carry over CVP supplies in CVP reservoirs, AEWSD CVP water supplies would be delivered to MWD to reduce risk of spill and subsequent potential forfeiture of CVP water supplies. The CVP water would be delivered to MWD by exchange in SLR or directly into the California Aqueduct via the Friant-Kern Canal and AEWSD facilities, including the Cross Valley Canal. MWD would later return a lesser amount (returning 2 acre-feet for every 3 acre-feet) to AEWSD. The unbalanced nature of the exchange reflects the compensation to MWD for its water management services, less losses.

2.2.4 Environmental Commitments

AEWSD and MWD shall implement the environmental protection measures included in Table 1.

Table 1. Environmental Protection Measures and Commitments

Resource	Environmental Commitment
Biological Resources	The Proposed Action may not involve the conversion of any land fallowed and untilled for three or more years. The Proposed Action may not change the land use patterns of cultivated or fallowed fields that potentially have some value to listed species or birds protected by the Migratory Bird Treaty Act.
Biological Resources	These transfers/exchanges involving CVP water cannot alter the flow regime of natural water bodies such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to not have a detrimental effect on fish or wildlife, or their habitats.
Water Resources	In continuance of commitments from the Program, existing Aqueduct Pump-in Facilitation Group guidelines would be followed by both AEWSD and Kern County Water Agency (KCWA) when introducing water into the Aqueduct to ensure that water quality would not be adversely impacted.
Land Use/ Biological Resources	No new construction or modification of existing facilities would be allowed under this action.
Water Resources	Exchanges involving CVP and SWP facilities, and the Cross Valley Canal (CVC) would be required to schedule accordingly with Reclamation, DWR and the KCWA, respectively, so as not to hinder their respective obligations to deliver water to contractors, participants, wildlife refuges, and to meet regulatory requirements.
General	Comply with all environmental commitments imposed by existing environmental documents, including, but not limited to, applicable Biological Opinions.

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

Section 3. Affected Environment and Environmental Consequences

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 adverse effects to the following resources:

3.1.1 Air Quality

The Proposed Action would not require construction or modification of facilities to move the transferred and/or exchanged water supplies. Exchanged water would be moved via gravity which would not produce emissions that impact air quality. As such, no impacts to air quality would occur and a determination of general conformity under the Clean Air Act is not required.

3.1.2 Climate Change

The Proposed Action does not include construction of new facilities or modification to existing facilities. While pumping may be necessary to deliver CVP water, no additional electrical production beyond baseline conditions would occur. In addition, the generating power plant that produces electricity for the electric pumps operates under permits that are regulated for greenhouse gas emissions. As such, there would be no additional impacts to global climate change. Global climate change is expected to have some effect on the snowpack of the Sierra Nevada and the runoff regime. Rising temperatures cause snowpack to melt earlier in the spring, which creates a shift in the timing of runoff and streamflow. Snowpack, as measured by April 1st Snow Water Equivalent, is projected to decrease continuously throughout the 21st century. (Reclamation 2021, pg. 9-10). However, the effects of this are long-term and are not expected to impact CVP operations within the 10-year window of this action. Further, 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 operational flexibility.

3.1.3 Cultural Resources

There would be no impacts to cultural resources as a result of implementing the Proposed Action as the Proposed Action would facilitate the flow of water through existing facilities to existing users. No new construction or ground disturbing activities would occur as part of the Proposed Action. Reclamation has determined that these activities have no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1).

3.1.4 Environmental Justice

Executive Order 12898 requires each federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. The Proposed Action is intended to allow the expeditious delivery of surface water supplies available to AEWSD and delivered to MWD in exchange for water supplies available to MWD (SWP or previously banked groundwater). Water so delivered would primarily serve to reduce energy use with attendant cost savings and would also allow AEWSD to increase their groundwater banking account to meet current and future summertime peaking demands, which would support agricultural jobs in the region. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.

3.1.5 Indian Sacred Sites

Executive Order 13007 (May 24, 1996) a requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. There would be no impacts to Indian sacred sites as a result of the Proposed Action.

3.1.6 Indian Trust Assets

Indian Trust Assets are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the Proposed Action area. Approval of the exchange between AEWSD and MWD would not involve any construction on lands or impact water, hunting, and fishing rights associated with Indian Trust Assets. The Proposed Action does not have a potential to affect Indian Trust Assets.

3.1.7 Socioeconomic Resources

The Proposed Action would have beneficial impacts on socioeconomic resources with Arvin-Edison and MWD, as the exchanged water would be used to help sustain existing crops and maintain farming practices. Allowing AEWSD and MWD to manage their water resources cooperatively allows them to match available supplies to needs on a timely basis. This helps reduce water supply disruptions, which is a socioeconomic benefit to their customers.

3.2 Biological Resources

3.2.1 Affected Environment

An official list of federally listed threatened and endangered species and critical habitat that occur within project area and/or may be affected as a result of the Proposed Action was obtained on January 12, 2024, by accessing the U.S. Fish and Wildlife Service database: https://ecos.fws.gov/ipac/. The list is summarized in Table 2 and was generated for a polygon that encompassed the entire Action area.

The California Natural Diversity Database (CNDDB 2024) was also queried for the Proposed Action Area. The information collected above, in addition to information within Reclamation's files, was combined to create Tables 3-1 and 3-2 for AEWSD and MWD respectively.

Most of the lands in the affected environment are agricultural lands. Of the federally listed species included in Table 2, most cannot use this type of land. Agricultural lands are generally not suitable for long-term occupation by kit foxes, although lands adjacent to natural habitats may be used for occasional foraging (Warrick et al. 2007). A variety of birds that are not Federally listed, or proposed for listing, are nonetheless protected by the Migratory Bird Treaty Act, and occur in the Proposed Action Area.

Critical habitat exists in the affected environment for the following species: arroyo toad, Braunton's milk-vetch, California red-legged frog, Coastal California Gnatcatcher, Fresno kangaroo rat, Hermes copper butterfly, Least Bell's Vireo, Lyon's pentachaeta, Mexican flannelbush, Munz's onion, Nevin's barberry, Otay tarplant, Palos Verdes blue butterfly, Quino checkerspot butterfly, Riverside fairy shrimp, San Bernardino kangaroo rat, San Diego ambrosia, San Diego fairy shrimp, San Diego thornmint, Santa Ana sucker, Southwestern Willow Flycatcher, spreading navarretia, thread-leaved brodiaea, tidewater goby, Vail Lake ceanothus, Ventura marsh milk-vetch, Western Snowy Plover, willowy monardella.

Table 2 Federally Listed Threatened and Endangered Species

Species	Status[1]	Effects
AMPHIBIANS		
Arroyo toad (*Anaxyrus californicus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
California red-legged frog (*Rana draytonii*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
California tiger salamander, central population (*Ambystoma californiense*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Desert slender salamander (*Batrachoseps aridus*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Foothill yellow-legged frog (*Rana boylii*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Mountain yellow-legged frog (*Rana mucosa*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Western spadefoot (*Spea hammondii*)	PT	No effect determination; no conversion of native lands as a result of the Proposed Action.
BIRDS		
California Condor (*Gymnogyps californianus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
California Least Tern (*Sterna antillarum browni*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
California Spotted Owl (*Strix occidentalis occidentalis*)	P, E	No effect determination; Proposed Action area is outside species' range.
Coastal California Gnatcatcher (*Polioptila californica californica*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Hawaiian Petrel (Petrodroma sandwichensis)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Least Bell's Vireo (*Vireo bellii pusillus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.

Species	Status[1]	Effects
Light-footed Ridgeway's Rail (*Rallus obsoletus levipes*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Marbled Murrelet (*Brachyramphus marmoratus*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Short-tailed Albatross (*Phoebastria albatrus*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Southwestern Willow Flycatcher (*Empidonax trailli extimus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Western Snowy Plover (*Charadrius alexandrinus nivosus*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	T, X	No effect determination. This species could fly over during migration but nesting habitat is absent.
FISH		
Central Valley steelhead (*Oncorhynchus mykiss*)	T, X NMFS	Water in San Luis Reservoir has already been pumped, and effects of pumping in the San Joaquin-Sacramento Delta have been/are being addressed separately (USFWS 2019; NMFS 2019)[1].
Central Valley spring-run chinook salmon (*Oncorhynchus tshawytscha*)	T, X NMFS	Water in San Luis Reservoir has already been pumped, and effects of pumping in the San Joaquin-Sacramento Delta have been/are being addressed separately (USFWS 2019; NMFS 2019).
delta smelt (*Hypomesus transpacificus*)	T, X	Water in San Luis Reservoir has already been pumped, and effects of pumping in the San Joaquin-Sacramento Delta have been/are being addressed separately (USFWS 2019; NMFS 2019).
North American green sturgeon (*Acipenser medirostris*)	T, X NMFS	Water in San Luis Reservoir has already been pumped, and effects of pumping in the San Joaquin-Sacramento Delta have been/are being addressed separately (USFWS 2019; NMFS 2019).
Sacramento River winter-run chinook salmon	E, X NMFS	Water in San Luis Reservoir has already been pumped, and effects of pumping in the San

[1] Reclamation requested reinitiation of consultation in 2021, which is expected to be completed sometime in 2024.

Species	Status[1]	Effects
(*Oncorhynchus tshawytscha*)		Joaquin-Sacramento Delta have been/are being addressed separately (USFWS 2019; NMFS 2019).
Santa Ana sucker (*Catostomus santaanae*)	T, X	No effect determination; no conversion of native lands and no new diversions as a result of the Proposed Action.
Southern California Coast steelhead (*Oncorhynchus mykiss*)	E, X NMFS	No effect determination; no conversion of native lands and no new diversions as a result of the Proposed Action.
Tidewater goby (*Eucyclogobius newberryi*)	E, X	No effect determination; no conversion of native lands and no new diversions as a result of the Proposed Action.
INVERTEBRATES		
Delhi Sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
El Segundo Blue butterfly (*Euphilotes battoides allyni*)	E, PX	No effect determination; no conversion of native lands as a result of the Proposed Action.
Hermes copper butterfly (*Lycaena hermes*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Monarch butterfly (*Danaus pexlippus*)	C	No effect determination; no conversion of native lands as a result of the Proposed Action.
Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Quino checkerspot butterfly (*Euphydryas editha quino*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Riverside fairy shrimp (*Streptocephalus woottoni*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
MAMMALS		

Species	Status[1]	Effects
Buena Vista Lake shrew (*Sorex ornatus relictus*)	E, X	No effect determination. No conversion of native lands as a result of the Proposed Action.
Fisher, West Coast DPS (*Pakania pennanti*)	E, PX	No effect determination; Proposed Action area is outside species' range.
Giant kangaroo rat (*Dipodomys ingens*)	E	No effect determination; suitable habitat not present.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Peninsular bighorn sheep (*Ovis candensesis nelsoni*)	E, X	No effect determination; Proposed Action area is outside species' range.
San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Joaquin kit fox (*Vulpes macrotis mutica*)	E	No effect determination. No conversion of native lands as a result of the Proposed Action.
Stephen's kangaroo rat (*Dipodomys stephensi*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	E	No effect determination. No conversion of native lands as a result of the Proposed Action.
PLANTS		
Bakersfield cactus (*Opuntia treleasei*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Big-leaved crownbeard (*Verbesina dissita*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Braunton's milk-vetch (*Astragalus brauntonii*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
California jewelflower (*Caulanthus californicus*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
California Orcutt grass (*Orcuttia californica*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Coastal dunes milk-vetch (*Astragalus tener* var. *titi*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.

Species	Status[1]	Effects
Conejo dudleya (*Dudleya abramsii* ssp. *parva*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Encinitas baccharis (*Baccharis vanessae*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Gambel's watercress (*Rorippa gambellii*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Laguna Beach liveforever (*Dudleya stolonifera*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Lyon's pentachaeta (*Pentachaeta lyonii*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Marsh sandwort (*Arenaria paludicola*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Mexican flannelbush (*Fremontodendron mexicanum*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Munz's onion (*Allium munzii*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Nevin's barberry (*Berberis nevinii*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Orcutt's spineflower (*Chorizanthe orcuttiana*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Otay mesa-mint (*Pogogyne nudiuscula*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Otay tarplant (*Deinandra conjugens*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.

Species	Status[1]	Effects
palmate-bracted bird's-beak (*Cordylanthus palmatus*)	E	No effect determination; suitable habitat not present.
Salt marsh bird's beak (*Cordylanthus maritimus* ssp. *maritimus*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Diego ambrosia (*Ambrosia pumila*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Diego mesa-mint (*Pogogyne abramsii*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Diego thornmint (*Acanthomintha ilicifolia*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
San Joaquin woolly-threads (*Monolopia congdonii*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Santa Ana River woolly-star (*Eriastrum densifolium* ssp. *sanctorum*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Santa Cruz Island fringepod (*Thysanocarpus conchuliferus*)	E	No effect determination; occurs in Santa Monica Mountains on public lands and lands set aside for conservation; no conversion of native lands as a result of the Proposed Action.
Santa Monica Mountains dudleyea (*Dudleya cymosa* ssp. *ovatifolia*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Slender-horned spineflower (*Dodecahema leptoceras*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Spreading navarretia (*Navarretia fossalis*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Thread-leaved brodiaea (*Brodiaea filifolia*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.

Species	Status[1]	Effects
Vail Lake ceanothus (*Ceanothus ophiochilus*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Ventura Marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Verity's dudleya (*Dudleya verityi*)	T	No effect determination; no conversion of native lands as a result of the Proposed Action.
Willowy monardella (*Monardella linoides* ssp. *viminea*)	E, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
REPTILES		
Blunt-nosed leopard lizard (*Gambelia sila*)	E	No effect determination; no conversion of native lands as a result of the Proposed Action.
Desert tortoise (*Gopherus agassizii*)	T, X	No effect determination; no conversion of native lands as a result of the Proposed Action.
Giant garter snake (*Thamnophis gigas*)	T	No effect determination. This species has been extirpated from the Tulare Basin, but occurs in low numbers at Mendota Pool. The Proposed Action would not alter habitat for the species as no native lands would be impacted and no changes in water quality would occur at Mendota Pool as a result of the Proposed Action.
Northwestern pond turtle (*Actinemys marmorata*)	PT	No effect determination. This species likely occurs in ditches and canals and at Mendota Pool. The Proposed Action would not alter habitat for the species as no native lands would be impacted and no changes in water quality would occur at Mendota Pool as a result of the Proposed Action.
Southwestern pond turtle (*Actinemys pallida*)	PT	No effect determination; no conversion of native lands as a result of the Proposed Action.

[1] Status = Status of federally protected species protected under the ESA.
E: Listed as Endangered
T: Listed as Threatened
PT: Proposed for listing as Threatened
C: Candidate for listing
PX: Critical Habitat proposed for this species

X: Critical Habitat designated for this species

[3] Definition of Occurrence Indicators

Present: Species recorded in area and suitable habitat present.

Possible: Species recorded in area and habitat suboptimal.

Absent: Species not recorded in study area and suitable habitat absent.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, the baseline conditions of the Action Area would not change, so there would be no effects to biological resources. Agricultural lands are regularly tilled; therefore, those few species (e.g., the San Joaquin kangaroo rat, Tipton kangaroo rat, Kern mallow, San Joaquin woollythreads) that may colonize fallowed lands when they occur near native lands cannot become established and would be unaffected under either alternative.

Proposed Action

The effects of the Proposed Action are similar to the No Action alternative. A large portion of the Action Area in AEWSD consists of active farmland that no longer provides suitable habitat for federally protected species. Approximately 10% of MWD is urbanized, and the remainder of the district consists of undeveloped desert and mountain areas that are rich in natural resources. Fallowed lands that have been untilled for three or more consecutive years would not be converted as a result of the Proposed Action. The land use patterns of cultivated and fallowed fields that might provide suitable habitat for listed species or birds protected under the Migratory Bird Treaty Act would not be changed as a result of the Proposed Action. No natural stream courses would be altered, and no additional pumping would be conducted to carry out the Proposed Action, so there would be no effects to federally protected fish species. These transfers/exchanges would only occur in wet years when there is already sufficient water in the San Joaquin River to meet existing commitments. These transfers/exchanges would neither increase nor decrease the amount of water flowing into the Kern River. No critical habitat occurs within the AEWSD, so none would be affected by the proposed action. Although designated critical habitat for multiple federally listed species occurs within MWD, the proposed action would not cause alteration of natural stream courses, or construction activities, therefore no critical habitat would be affected. With the implementation of the provided avoidance measures, Reclamation has determined that there would be No Effect to listed species or designated critical habitat under the ESA (16 U.S.C. §1531 et. seq.) resulting from the approval of the Proposed Action.

Cumulative Impacts

Existing loss of habitat from urbanization and the expansion of agricultural lands, that cumulatively impacts listed species and their habitats, is expected to occur regardless of whether or not the Proposed Action is implemented. The exchange, or transfer, of CVP and SWP water between MWD and AEWSD is not expected to contribute to cumulative habitat loss because the water would be used in a way that is consistent with current practices. There would be no adverse cumulative impacts to biological resources as a result of the Proposed Action.

3.3 Land Use/Planning

3.3.1 Affected Environment

Arvin-Edison Water Storage District

AEWSD includes the City of Arvin and is located in the proximity of the unincorporated communities of Edison, Lamont, Mettler, and DiGiorgio. Agriculture in the form of row crops, orchards and vineyards, is the primary land use in the region. The Kern County General Plan designates most areas within the AEWSD service area as “intensive agriculture”. Supplemental irrigation is required for these activities as the area receives an average of only 8.5 inches of rainfall per year. Other agricultural uses, while not directly dependent on irrigation for production, are also consistent with the intensive agriculture designation. The Kern County General Plan defines intensive agriculture with a minimum parcel size of 20 acres, and permitted uses include, but are not limited to, irrigated cropland, orchards, vineyards, horse ranches, beekeeping, ranch and farm facilities, and related uses. One single-family dwelling unit is permitted per 20-acre parcel (KCPD 2007).

Metropolitan Water District

The Southern California Association of Governments area comprises the bulk of MWD’s service area both in terms of area and water usage. Only 10 percent of the region is urbanized. The remainder is largely uninhabited mountain and desert area, rich in natural resources.

Principal land use trends include densification of existing residential and commercial areas, urban fill on scattered pockets of vacant land, extension of urban development into hillside and mountainous terrain, and suburban expansion on the perimeter of the urbanized regions with new planned developments. Such trends are operating differently in various sub-regions, depending upon their respective histories, locations and socio-economic influences. City and county regional plans reflect mainly incremental changes to existing land use in coastal areas, while major expansions of the new urban development are shown for undeveloped land in outlying valleys and desert areas.

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, AEWSD would deliver banked SWP supplies in the form of pumped groundwater back to MWD as originally arranged and analyzed under the Program. This would continue current land use patterns.

Proposed Action

The Proposed Action would utilize existing facilities to convey waters involved and would not require the need to construct new facilities or modifications to existing facilities that would result in ground disturbance.

The proposed water transfers/exchanges would not be used to support changes in land use, either by encouraging new development or allowing cultivation of native or fallowed land (left untilled/fallowed for three or more years). MWD intends to use the exchanged CVP water to

supplement its water supplies for existing municipal and industrial purposes within its service area, replenish reserves, and would not contribute to any potential expansion within the area. Therefore, the Proposed Action would not have any impacts on existing land use.

Cumulative Impacts

In recent years, land use changes within the San Joaquin Valley have involved the urbanization of agricultural lands. These types of changes are typically driven by economic pressures and are as likely to occur with or without the Proposed Action; therefore, no cumulative effects to land use are expected as a result of the Proposed Action.

3.4 Water Resources

3.4.1 Affected Environment

AEWSD/MWD Water Management Program

Under the Program, AEWSD agreed that MWD would be able to deliver a minimum of 277,778 AF (which equates to approximately 250,000 AF after a 10 percent loss factor is applied) to AEWSD. It was also anticipated that MWD would cycle water through the Program, and at AEWSD's discretion, MWD would be able to store up to 388,889 AF (which equates to approximately 350,000 AF after a 10 percent loss factor is applied) at any one time in AEWSD's groundwater bank. In order to facilitate the Program, AEWSD constructed facilities including 500 acres of new spreading works, 15 new groundwater wells, and a 4.5-mile bi-directional pipeline connecting the terminus of AEWSD's South Canal with the Aqueduct. It also recently expanded its South Canal capacity, as well as made improvements in the last 9 miles of canal for the ability to "reverse flow" the canal and assist in operational flexibility. These new facilities are used in conjunction with AEWSD's existing facilities and distribution system to manage the Program.

The Program has operated successfully for nearly 25 years, resulting in benefits for both AEWSD and MWD. For AEWSD, the Program has generated revenue for new infrastructure to manage its water supplies, stabilize water rates, increased groundwater levels, and increased drought year supplies. In addition, improved conjunctive use operations and in-lieu banking have allowed AEWSD's farmers to utilize surface supplies instead of groundwater supplies at times when MWD banks water. AEWSD has benefitted from enhanced recharge capabilities resulting from the facilities that were constructed as part of the Program, as well as from higher groundwater levels resulting in lesser overall groundwater pumping, energy use, and costs. For MWD, the Program has provided an opportunity to convert its surplus wet year SWP supplies into a firm dry year supply and to improve water quality in the Aqueduct when AEWSD returns groundwater and/or Friant Division CVP water to MWD.

San Joaquin River Restoration Program (SJRRP)

The SJRRP is a comprehensive, long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of Merced River in order to restore a self-sustaining Chinook salmon fishery in the river, while reducing/avoiding adverse water supply impacts to Friant Division CVP contractors. The SJRRP is the program that implements both the San Joaquin

River Restoration Settlement (a settlement that resulted from legal action) and the San Joaquin River Restoration Settlement Act (the law that directs Federal entity and Federal funding actions relative to the settlement). Reclamation initiated the SJRRP in October 2009 with the first interim flows project. Interim and Restoration flows have been provided since in accordance with the SJRRP. To reduce/avoid water supply impacts to Friant Division CVP contractors, the Restoration flows have/would be recaptured and stored in SLR for return to the Friant Division CVP contractors.

Arvin-Edison Water Storage District

AEWSD was formed in 1942 to provide a reliable water supply for its landowners for agricultural purposes. In order to regulate a highly variable water supply, AEWSD 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 MWD) that can in turn provide return water at times later in the same year (or in subsequent years) or during drought or low allocation years or periods. During below average or dry years or periods, AEWSD 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.

AEWSD is a long term CVP Contractor; its current facilities were primarily constructed in the 1960s and are based on the conjunctive use of surface water imported from the CVP, SWP, Kern River, including other supplies (i.e. flood flows) and groundwater resources that underlie AEWSD. AEWSD owns and operates spreading/percolation/recharge basins and groundwater extraction wells, which are used to supply previously banked groundwater to its landowners within its service area when surface water supplies are deficient. AEWSD 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.

AEWSD has an annual contract with Reclamation for 40,000 AF of Class 1 and 311,675 AF of Class 2 Friant Division CVP supplies. The Class 2 supply comprises the vast majority of its total contract allocation; however, this supply is highly variable depending on availability and hydrology. AEWSD manages this supply by using an underlying groundwater reservoir to regulate water availability and to stabilize water reliability by percolating water through spreading basins in addition to water management programs (i.e. transfers/exchanges) with other water agencies outside its service area. AEWSD takes Friant CVP water from its Intake Canal located at the terminus of the FKC and serves landowners within its district through 45 miles of lined canals and 170 miles of pipeline.

AEWSD 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 in exchange for alternate CVP supplies originating from the Sacramento-San Joaquin River Delta, diverted and wheeled through the Aqueduct for ultimate delivery to AEWSD. 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 AEWSD to identify and implement additional programs to manage its highly variable CVP water supplies.

AEWSD could also have recirculation water made available to it for delivery from SLR as a result of releases made into the San Joaquin River from Millerton Lake, captured at Mendota Pool or other locations, and subsequently stored through transfer/exchange agreements that were analyzed under a separate EA for recirculation of recaptured interim and Restoration flows. In addition, AEWSD assists in recirculation of other District's SJRRP allocations so that recirculated flows can be greatly increased.

Metropolitan Water District

MWD was created in 1928 under an enabling act of the California State Legislature to provide supplemental water to cities and counties in the Southern California coastal plain. This supplemental water is delivered to MWD's 26 member agencies through a regional network of canals, pipelines, reservoirs, treatment plants and related facilities. In the late 1990s, MWD developed an Integrated Resources Plan which predicted significant water supply deficits for its service area and also outlined the efforts needed on several fronts to avoid significant water shortages, especially in dry years. This plan called for a mix of water resources derived from conservation, reclamation, groundwater conjunctive use and water transfers to ensure adequate system flexibility to protect public safety, particularly during droughts. The plan specifically cites a need for diversification of MWD's source of supply including accessing transfers, exchanges and groundwater banking programs involving Central Valley water districts.

Groundwater Resources

Tulare Lake Hydrologic Region The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,000 square miles) and includes all of Kings and Tulare Counties and most of Fresno and Kern Counties. The extensive use of groundwater has historically caused subsidence of the land surface, primarily along the west side and south end of the San Joaquin Valley.

AEWSD is located within the Kern County Sub-basin of the Tulare Lake Hydrologic Region. In addition to adopting a groundwater management plan, AEWSD has successfully operated a conjunctive use program in order to balance and provide sufficient water supplies to their customers. AEWSD operates approximately 1,500 acres of spreading ponds including the North Canal, Sycamore, and Tejon Spreading Works. Water constituents within the subbasin are primarily calcium bicarbonate waters in the shallow zones, increasing in sodium with depth. While the local groundwater in AEWSD is of good quality, it is generally higher in total dissolved solids, nitrates, boron, and other constituents than that from the FKC (Program 1996).

South Coast Hydrologic Region The South Coast Hydrologic Region covers approximately 6.78 million acres (10,600 square miles) of the southern California watershed that drains to the Pacific Ocean. The region underlies all of Orange County, most of San Diego and Los Angeles Counties, parts of Riverside, San Bernardino, Ventura, Kern and Santa Barbara Counties. The majority of MWD is located within the South Coast Hydrologic Region. Groundwater provides about 23 percent of water demand in normal years and about 29 percent in drought years. Conjunctive use of surface water and groundwater is a long-standing practice in the region. Groundwater quality varies with local impairments from excess nitrate, sulfate, and volatile organic compounds (DWR 2003).

Conveyance Facilities

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 Aqueduct actually begins at the Banks Pumping Plant where the canal conveys water pumped from the Sacramento-San Joaquin River Delta directly into O'Neill Forebay.

Cross Valley Canal The CVC is a locally financed facility completed in 1975. The canal extends from the California Aqueduct near Tupman to Bakersfield. It consists of 6 pumping lifts, with a capacity of 1,400 cubic feet per second (cfs) from the Aqueduct to AEWSD's Intake Canal (also near the FKC terminus and Kern River). The CVC "extension", an unlined canal, continues past the AEWSD Intake Canal, which is rated 342 cfs and has an additional 2 pumping lifts. The CVC is a joint-use facility owned by various participants, including AEWSD. The CVC, which is operated by the KCWA, can convey water from the Aqueduct to the Kern Water Bank, the City of Bakersfield groundwater recharge facility, the Berrenda Mesa Property, the Pioneer Banking Project, the Kern River channel, to AEWSD's Intake Canal, or to various member units of KCWA and other districts who have access to the CVC. The CVC is also capable of conveying 500 cfs, in reverse flow-gravity mode, to the Aqueduct. In 2008, as part of the CVC expansion project, an additional 500 cfs turnout was constructed from the FKC that can deliver water by gravity into either the AEWSD Intake Canal or the CVC.

Friant-Kern Canal The FKC carries water over 151.8 miles in a southerly direction from Friant Dam to its terminus at the Kern River, four miles west of Bakersfield. The FKC has an initial capacity of 5,000 cfs that gradually decreases to 2,000 cfs at its terminus in the Kern River (Reclamation 2010). The water conveyed in the FKC is from the San Joaquin River and is considered to be of pristine quality because it originates from snow melt from the Sierra Nevada. The water is used for municipal and industrial, and agricultural purposes in Fresno, Tulare, and Kern Counties. The FKC is a part of the CVP, which annually delivers about seven million AF of water for agricultural, urban, and wildlife use.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the proposed exchange of AEWSD's CVP water for MWD's SWP water. AEWSD would retain their Friant Division CVP supplies and recaptured flows stored in SLR, and use them as allowed under their contract to meet in-district irrigation demands or apply the water to spreading works for groundwater recharge if available capacities exist. AEWSD would fulfill its obligation to return water under the Program by extracting/pumping previously banked SWP supplies for delivery to MWD. MWD would then use this water to satisfy their customers' needs. AEWSD would not have the ability to reduce the risk of forfeiting its CVP water supplies that would help offset groundwater extraction and/or have supplies for recharge later in the year. MWD would not receive CVP water available to AEWSD and associated water quality benefits.

Overall surface water supplies and contract obligations would continue to be met. AEWSD would continue to receive its allocated Friant Division water supply. MWD would continue to

receive its allocated SWP water supply. Both parties would continue their long-term banking and exchange program.

There would be no additional impacts to any of the conveyance facilities and water resources listed in the affected environment from what was already analyzed under the Program. There would be no impacts to the SJRRP, its projects, and objectives.

Proposed Action

The banking exchange and water regulation portions of the Proposed Action would allow AEWSD to deliver their CVP supplies to MWD in exchange for MWD's SWP water (including previously banked SWP). Allowing AEWSD to temporarily send CVP water to MWD for later return would allow AEWSD to better manage supply that is already available to AEWSD but for which there isn't any instantaneous grower demand and/or available recharge/storage capacity within the District. This allows AEWSD to better regulate the supply to reduce or eliminate groundwater extractions to meet intermittent deficiencies in supply.

Under a separate portion of the Proposed Action, AEWSD would make available water to MWD that is temporarily surplus to AEWSD's current operational needs and is at risk of spill from SLR. AEWSD would benefit by sending this water to MWD which would be returned for AEWSD's in-district use in the same or a following contract year. Although MWD would receive a net increase on the total amount of AEWSD CVP water delivered to them under this component of the Proposed Action, this would only occur because this water is surplus to AEWSD's current operational needs and is at risk of spill.

The Proposed Action would not increase groundwater pumping from what has historically occurred within the Kern County Sub-basin by AEWSD. Rather the Proposed Action has the potential to reduce groundwater pumping by providing additional options for balancing surface supplies with needs.

AEWSD's benefit would be a reduced risk of forfeiting their CVP water supplies by making use of MWD's demands and storage system for otherwise uncontrollable flows. MWD could also obtain additional water supplies by virtue of the imbalanced exchange component (3 for 2, less losses) of the Program. The supplemental water would be used to satisfy current customers' needs.

Everyday operations of the CVC, CVP and SWP facilities would not be impacted, as water movement considered under the Proposed Action must be scheduled and approved by KCWA, Reclamation and DWR, respectively. In continuance of commitments from the Program, existing Aqueduct Pump-in Facilitation Group guidelines would be followed by both AEWSD and KCWA when introducing water into the Aqueduct to ensure that water quality would not be adversely impacted.

The Proposed Action would, among other things, serve to offset the impacts to AEWSD of the SJRRP, by increasing AEWSD's ability to regulate its remaining water supplies more effectively.

The Proposed Action would enable Reclamation and the participants to better manage limited available water supplies and meet contract obligations without resulting in substantial losses of water to a dry riverbed that would adversely impact future water supplies.

Cumulative Impacts

No adverse cumulative impacts to water resources are expected, as the water to be exchanged to MWD would only be water which AEWSD is unable to otherwise use or store. The water exchanged to MWD would likely be returned to AEWSD as part of the Fall/Winter Supplies Exchange component of the Proposed Action. Water exchanges would be scheduled to ensure that there are no capacity conflicts in the affected conveyance facilities.

Section 4. Consultation and Coordination

4.1 Agencies and Persons Consulted

Reclamation consulted and coordinated with the AEWSD, MWD, DWR, and Friant Water Authority in the preparation of this EA.

4.2 Public Involvement

Reclamation provided the public with an opportunity to comment on the Draft EA during a 30-day public review period beginning January 19, 2024 and ending February 20, 2024. No comments were received.

4.3 Preparers and Reviewers:

- Chris Rigby, Senior Natural Resource Specialist
- Shauna McDonald, Biologist
- David Hyatt, Resource Management Division Chief - Reviewer

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