RECLAMATION

Managing Water in the West

Draft Environmental Assessment

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

EA 13-026

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
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Mission Statements

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

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

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Section 1 Introduction

1.1 Background

In December 1997, Arvin Edison Water Storage District (AEWSD) entered into a long-term Water Management Program (Program) with Metropolitan Water District (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 AEWSD's groundwater bank at any one time. Upon request, AEWSD would return MWD's banked SWP water. While the program is predicated in large part on the return of banked groundwater, these same actions have been employed in past water years whereby AEWSD substituted and exchanged AEWSD's Central Valley Project (CVP) surface water for MWD SWP water (including previously banked water). This has resulted in an effective and efficient water management program.

1.2 Need for the Proposed Action

California continues to experience water management challenges resulting from several years of below normal precipitation. There is a need to manage available water supplies in the most efficient way possible. The purpose of the Proposed Action is:

- To provide for the expeditious and timely delivery of surface water supplies available to AEWSD in lieu of groundwater it otherwise would have pumped and delivered to MWD in fulfilling its return water obligations to MWD under the Program. In addition, the Program would allow AEWSD to temporarily store water with MWD for return later thereby making more efficient use of its contract water supplies.

- The Proposed Action would serve to reduce energy use, reduce pumping/spreading and associated operational costs, enhance water quality, and provide overall water management flexibility to AEWSD.

- The Proposed Action would, among other things, serve to offset the impacts to AEWSD of the San Joaquin River Restoration Program (SJRRP) by increasing AEWSD's ability to effectively regulate its water supplies and by increasing the opportunities to complete the return of SJRRP releases to AEWSD.

1.3 Related Environmental Documents

In June 2009 and July 2010, Reclamation prepared Environmental Assessments (EA) 09-97 and EA 10-38 respectively to approve the delivery of up to 40,000 Acre-Feet (AF) per year of AEWSD's 2009, 2010 and 2011 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 July 2009), and September 2010, respectively, to approve the exchange. Both

EA's and FONSI's are hereby incorporated by reference (Reclamation 2009 and 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 2012).

The Proposed Action is similar to the exchanges approved in 2009, 2010 and 2012, which were made possible due to the temporary consolidation of the CVP and SWP places-of-use and points-of-diversion from June 2009 to October 2011, and a CVP change in place-of-use from April 2012 to April 2013.

As part of the San Joaquin River Restoration Program (SJRRP), Reclamation, lead agency under the NEPA, and the California Department of Water Resources (DWR), lead agency under the CEQA, 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. Reclamation approved the FONSI and DWR adopted the Mitigated Negative Declaration (MND) on September 25, 2009. A Draft Supplemental EA for WY 2011 Interim Flows was prepared and the Final Supplemental EA for WY 2011 Interim Flows and FONSI were issued on September 21, 2010. A Draft Supplemental EA for WY 2012 Interim Flows was prepared and the Final Supplemental EA for WY 2012 Interim Flows and signed FONSI were issued on September 30, 2011.

In order to return the 2010 recaptured interim flows stored in the San Luis Reservoir (SLR) back to the Friant Division CVP contractors, Reclamation prepared an EA to analyze potential transfer and exchange scenarios to make up to 60,000 AF available from Millerton Lake as CVP water supplies. A Final EA was completed and a FONSI was signed on February 4, 2011. Both are hereby incorporated by reference (Reclamation 2011).

In order to return the 2011 recaptured interim flows stored in SLR back to the Friant Division CVP contractors, Reclamation prepared an EA to analyze potential transfer and exchange scenarios to make up to 260,000 AF available from Millerton Lake as Class 1 or Class 2 CVP water supplies. A Final EA was completed and a FONSI was signed on May 24, 2011, and both are hereby incorporated by reference (Reclamation 2010b).

In order to return the 2012 recaptured interim flows stored in SLR back to the Friant Division CVP contractors, Reclamation prepared an EA to analyze potential transfer and exchange scenarios to make up to 260,000 AF available from Millerton Lake as Class 1 or Class 2 CVP water supplies. A Final EA was completed and a FONSI was signed on April 3, 2012, and both are hereby incorporated by reference (Reclamation 2012).

In order to return the recaptured interim flows stored in SLR back to the Friant Division CVP contractors in Water Years 2013 through 2017, Reclamation has prepared a draft EA and FONSI to analyze potential transfer and exchange scenarios to make up to 260,000 AF available from Millerton Lake as Class 1 or Class 2 CVP water supplies. A Final EA was completed and a FONSI was signed on April 1, 2013, and both are hereby incorporated by reference (Reclamation 2013).

The California State Water Resources Control Board (SWRCB), Division of Water Rights, issued corrected Water Rights Order (Order) WR 2010-0029-DWR. The order specifies necessary terms and conditions to be carried out through WY 2013 while Interim Flows are in place Condition #2 of the Order states:

> *"Any San Joaquin River water temporarily stored or routed through San Luis Reservoir shall not be delivered to south-of-Delta contractors other than Friant Division Contractors. The water need not be directly delivered, but can be made available through transfers and exchanges. Reclamation shall document that it has taken all practicable measures to provide contract water to the Friant Division Contractors, while complying with all other conditions of this Order."*

Therefore, this Order allows for transfers and exchanges of Friant water that need not be directly delivered to the Friant contractors provided this water is put to beneficial use in other districts. The Proposed Action would comply with this approval from the SWRCB.

1.4 Scope

AEWSD is located on the southern end of the San Joaquin Valley in Kern County and MWD is located in Southern California (Figure 1-1). The timeframe for this environmental analysis would be for 10 years from the approval of the Final EA/FONSI. The timeframe for the contracts over this 10-year period would be from the approval date of the EA/FONSI through the remainder of the 10-year period as long as a Change of Place of Use (CPOU) is in place.

1.5 Resources of Potential Concern

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

- Water Resources
- Land Use
- Biological Resources

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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 exchange of AEWSD's CVP water for MWD's SWP water. AEWSD would still be able to pump MWD's previously stored SWP water within AEWSD's groundwater bank and deliver it to MWD via the Aqueduct but will not be able to reduce energy use as contemplated by the Proposed Action. In addition, AEWSD would not have the ability to reduce the risk of forfeiting their CVP water supplies that would help offset groundwater extraction and/or have supplies for irrigation or recharge later in the year. MWD would not receive CVP water available to AEWSD and the associated water quality benefits.

2.2 Proposed Action

There are three components to the Proposed Action.

Groundwater Banking

MWD stores a portion of its SWP supply in CVP contractor AEWSD's groundwater banking facilities depending on annual allocations. If requested, AEWSD is obligated to return previously banked SWP water to MWD. In the absence of this proposed exchange, previously banked SWP water can only be recovered from the AEWSD banking facilities through groundwater extraction. The expansion of the CVP place of use (separate action) and the approval of the Proposed Action will allow AEWSD the option and flexibility to return MWD's banked water through an exchange of its available CVP Delta/San Luis Reservoir, or Friant surface supplies (CVP water). The exchange will allow AEWSD greater flexibility in the scheduling and use of its CVP supplies as well as a reduction in energy and costs associated with groundwater extraction. CVP water supplied to MWD by AEWSD in lieu of extraction to recover previously stored SWP water will result in a balanced exchange or one-for-one reduction of MWD's groundwater banking account with AEWSD. The exchange will occur only to the extent MWD has a positive bank account. Upon return of water to MWD, MWD's previously banked SWP water would transfer to AEWSD.

Regulation Program

Additionally, the approval of the Proposed Action and the change in place of use would allow AEWSD to deliver CVP water supplies to MWD first, and 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 directly recharge and subsequently extract water on a one-for-one basis.

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 will be delivered to MWD by exchange in San Luis Reservoir 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 (return 2 acre-feet for every 3 acre-feet regulated) to AEWSD. The unbalanced nature of the exchange reflects the compensation to MWD for its water management services, which would protect a portion of the water from spilling and loss. In the absence of the exchange with MWD, AEWSD would attempt to avoid spilling the water by delivering the available CVP contract supplies to groundwater banking programs within the AEWSD service area or other areas that are within the CVP place of use.

One of the benefits of the above exchanges is reduction of the impacts to AEWSD of the San Joaquin River Restoration Program (SJRRP). The exchanges increase AEWSD's ability to efficiently use water supplies and increase the opportunities to reduce impacts of SJRRP releases to AEWSD via recapture, regulation and return.

The proposed exchanges total up to 100,000 acre-feet (AF) per year of CVP water supplies for all three program components described above. CVP Delta supplies will be provided as stated above. Friant Division CVP water will be provided directly via delivery from the Friant-Kern Canal 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).

Reclamation proposes to approve AEWSD's request to exchange/transfer a portion of its CVP water supply for MWD's SWP supply (including previously banked supplies). The delivery of up to 100,000 AF per year from AEWSD to MWD could include the following CVP water types:

- Class 1;
- Class 2;
- SJRRP Recovered Water Account Article 16(b);
- Recaptured SJRRP Interim Flows (including those supplies made available through transfers/exchanges as analyzed in the 2010, 2011 and 2012 EA for recirculation of recaptured interim flows as well as subsequent/future SJRRP environmental documentation);
- Section 215 water supplies, to the extent Section 215 water is declared by Reclamation and is available to AEWSD.

The Proposed Action is contingent upon approval by the State Water Resources Control Board SWRCB to consolidate the CPOU, and would only occur during the timeframe for which the CPOU is in effect. It shall be noted that the SWRCB has already approved a CPOU from July 1, 2013 through June 30, 2014 for this Proposed Action as well as other programs (reference SWRCB Order dated July 1, 2013).

In addition, the Proposed Action would include the following commitments:

Table 2.1 Environmental 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	Exchange involving CVP and SWP 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 insure that water quality would not be adversely impacted.
General	• No new construction or modification of existing facilities would be required; • Exchange involving CVP and SWP facilities, and the CVC would be required to obtain the applicable approval/permission so as not to hinder the respective normal operations and maintenance of the facilities; Exchange involving CVP and SWP facilities, and the CVC would be required to schedule accordingly with Reclamation, DWR and the Kern County Water Agency (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 the CVPIA Biological Opinion.

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Section 3 Affected Environment and Environmental Consequences

This section of the EA includes the analysis portion of the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative.

3.1 Water Resources

3.1.1 Affected Environment

AEWSD/MWD Water Management Program

Under the AEWSD/MWD Water Management 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, a 4.5-mile bi-directional pipeline connecting the terminus of AEWSD's South Canal with the Aqueduct and recently expanded its South Canal capacity as well as 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 15 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 also 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

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 flows have been provided since in accordance with the SJRRP. To reduce/avoid water supply impacts to Friant Division CVP contractors, the interim flows have/would be recaptured and stored in SLR for return to the Friant Division CVP contractors. Reclamation has since determined that the amount of water to be recaptured in SLR and recirculated back to Friant long-term contractors is between approximately 20,000 and 90,000 AF for Water Year 2013 (March 2013 through February 2014).

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) and typically 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 entitlement 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 exchange/transfer agreements that were analyzed under a separate EA for recirculation of recaptured interim flows. The volume of recaptured and recirculated interim flows to be available to AEWSD in 2013 is currently estimated at approximately 4,000 AF. In addition, AEWSD assists in recirculation of other District's SJRRP allocations so that recirculated interim 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 twenty six member agencies through a regional network of canals, pipelines, reservoirs, treatment plants and related facilities. In the late 1990's, 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 quality within the subbasin contains 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 of 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, a locally-financed facility completed in 1975. The canal extends from the California Aqueduct near Tupman to Bakersfield. It consists of 6 pumping lifts, which has 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 AEWSD Intake Canal, of 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.

3.1.2 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 interim 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. As a result, AEWSD would fulfill its obligation to return water under the Program by extracting/pumping previously banked SWP supplies for delivery to MWD. MWD would 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. There also would not be any benefits to the environment from the reduction in power generation.

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 (unless the water is not taken), its projects, and objectives.

Proposed Action

The Proposed Action would allow AEWSD to deliver their CVP supplies to MWD in exchange for MWD's SWP water (including previously banked SWP). Nothing in the Proposed Action would hinder the Program's ability to continue operating as has historically occurred.

Allowing AEWSD to temporarily send CVP water to MWD for return within a SWRCB issued CPOU period would allow AEWSD to better manage supply that is already available to AEWSD but for which there isn't any instantaneous grower demands and/or available recharge capacity within the District. AEWSD would have the ability to better utilize this supply as a result of this temporary exchange. This may allow AEWSD to better regulate the supply to reduce or eliminate groundwater extractions to meet deficient supply later in the year and/or direct groundwater recharge in their recharge basins later in the year (regulate supply).

AEWSD would still have sufficient water resources to provide to their landowners for agricultural purposes and MWD would use this water to supplement their reduced SWP supplies in order to meet its customers' demand for municipal and industrial use. The Proposed Action could improve the timing in delivery, increase return volumes (return rates could be greater than instantaneous well extraction rates and/or potential capacity limitations), and improve water quality for MWD.

Under this condition, AEWSD would have water available that is temporarily surplus to their current operational needs, is at risk of spill, and would benefit by sending this water to MWD, and returned for AEWSD's in-district use in the following contract year. MWD would have storage capacity available, and it would benefit by being able to move and store additional water.

Although MWD would receive a net increase of up to one-third of 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 are at risk of spill due to insufficient CVP reservoir storage.

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. In addition to adopting a groundwater management plan, AEWSD has successfully operated a conjunctive use program by which to balance its surface and groundwater supplies. Surface water imported into the district is used to recharge the groundwater through AEWSD's many spreading works after first satisfying agricultural irrigation purposes. The Proposed Action would allow AEWSD to exchange its CVP water supplies for MWD's SWP supplies (including previously banked water supplies). AEWSD could benefit in the form of reducing the risk of forfeiting their CVP water supplies using MWD's demands and storage system of otherwise uncontrollable flows. MWD could also

obtain additional water supplies by virtue of the imbalanced exchange component (3 for 2) of the Program. The supplemental water would be used to satisfy current customers' needs and could alleviate the region's reliance on groundwater pumping; however, groundwater pumping as part of the region's conjunctive use practice would continue as has historically occurred and would occur with or without the Proposed Action.

The CVC, CVP and SWP facilities would not be impacted as the Proposed Action must be scheduled and approved by Kern County Water Agency (KCWA), Reclamation and State Department of Water Resources (DWR), respectively. If a canal capacity prorate is required during the period this water is moving through the FKC, the prorate priority shall be pursuant to the tiers defined in Section VII of the Operational Guidelines for Water Service, Friant Division CVP, dated March 18, 2005. Additionally, the exchange must be conducted in a manner that would not harm other CVP contractors or other CVP contractual or environmental obligations, or SWP contractors. Therefore, normal obligations by the overseeing agencies to deliver water to their contractors and other obligations would not be impacted. In continuance of commitments from the Program, existing Aqueduct Pump-in Facilitation Group guidelines would followed by both AEWSD and KCWA when introducing water into the Aqueduct to insure that water quality would not be adversely impacted.

Cumulative Impacts

No adverse cumulative impacts to water resources is expected as the Proposed Action would likely have similar results as the No Action Alternative as surface water would be delivered to the same general area for irrigation and recharge. The water transferred to MWD would likely be replaced as AEWSD would be able to reduce risk of spill of CVP water supplies as part of the Fall/Winter Supplies Exchange component of the Proposed Action.

3.2 Land Use

3.2.1 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. The vast majority of farmland in the AEWSD's service area is classified as Irrigated Farmland by the California Department of Conservation (DOC 2010). The second main farmland classification in the service area is Non-irrigated Farmland.

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 is 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.

3.2.2 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. Therefore, no new land use impacts associated with the No Action Alternative would occur.

Proposed Action

As to facilitating the return of previously banked water under the Program, 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 exchange would be "bucket for bucket"; except in wet years when water was likely to spill or be lost to storage within CVP reservoirs in which case MWD's system would be utilized to reduce losses and increase conserved water for both parties. AEWSD would benefit by reducing the risk of forfeiting their CVP water supplies by using MWD's ability to store and regulate otherwise unstorable flows, receiving surface water back from MWD at times when it can be used by AEWSD (for growers demands and/or recharge) and MWD would benefit by receiving a portion of the flows so reregulated as a result of the unbalanced exchange. When CVP water is provided by AEWSD in lieu of pumped groundwater, MWD would exchange an equivalent amount of banked SWP water under the Program for AEWSD's CVP supplies and the SWP water exchanged would change in ownership over to AEWSD and remain in AEWSD's groundwater bank. At a time of its choosing, AEWSD would pump the banked water and deliver it to their landowners for existing agricultural purposes.

Allowing AEWSD to temporarily send CVP water to MWD for return in the same year would allow AEWSD to better manage supply that is already available to AEWSD but for which there isn't any instantaneous grower demands and/or available recharge capacity within the District. AEWSD would have the ability to better utilize this supply as a result of this temporary exchange which may allow AEWSD to reduce or eliminate groundwater extractions to meet deficient supply later in the year and/or groundwater recharge in their recharge basins later in the year (regulate supply).

AEWSD would not experience a decrease in water supply that would impact existing irrigated farmlands within its service area, nor would the banked or return water be used to cultivate native or fallowed land that has been in those conditions for three or more consecutive 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.

As to facilitating the return of previously banked water under the Program, 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 exchange would be "bucket for bucket"; except in wet years when water was likely to spill or be lost to storage within CVP reservoirs in which case MWD's system would be utilized to reduce losses and increase conserved water for both parties. AEWSD would benefit by reducing the risk of forfeiting their CVP water supplies by using MWD's ability to store and regulate otherwise unstorable flows, receiving surface water back from MWD at times when it can be used by AEWSD (for growers demands and/or recharge) and MWD would benefit by receiving a portion of the flows so reregulated as a result of the unbalanced exchange. When CVP water is provided by AEWSD in lieu of pumped groundwater, MWD would exchange an equivalent amount of banked SWP water under the Program for AEWSD's CVP supplies and the SWP water exchanged would change in ownership over to AEWSD and remain in AEWSD's groundwater bank. At a time of its choosing, AEWSD would pump the banked water and deliver it to their landowners for existing agricultural purposes.

Allowing AEWSD to temporarily send CVP water to MWD for return in the same year would allow AEWSD to better manage supply that is already available to AEWSD but for which there isn't any instantaneous grower demands and/or available recharge capacity within the District. AEWSD would have the ability to better utilize this supply as a result of this temporary exchange which may allow AEWSD to reduce or eliminate groundwater extractions to meet deficient supply later in the year and/or groundwater recharge in their recharge basins later in the year (regulate supply).

AEWSD would not experience a decrease in water supply that would impact existing irrigated farmlands within its service area, nor would the banked or return water be used to cultivate native or fallowed land that has been in those conditions for three or more consecutive 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.

3.3 Biological Resources

3.3.1 Affected Environment

On May 16, 2013 Reclamation requested an official species list from the USFWS via the Sacramento Field Office's website, http://www.fws.gov/sacramento/es/spp list.htm (document number: 130516030630). The list is for the eleven U.S. Geological Survey (USGS) 7½-minute quadrangles (Quads) that make up the AEWSD service area. On May 20, 2013 Reclamation requested an official species list from the USFWS, for portions of the Action Area under the jurisdiction of the Carlsbad and Ventura Field Offices, via the Ventura Office's website, http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action. The list is for the 123 USGS 7½- minute Quads that make up the MWD service area. The CDFG California Natural Diversity Database was also queried for records of protected species within 10 miles of 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.

Table 3-1: Federally Protected Species with the Potential to Occur within AEWSD

Common Name	*Scientific Name*	*Status* [Δ]	*Effects* [#]
Invertebrates			
Vernal pool fairy shrimp	*Branchinecta lynchi*	T	NE
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	T	NE
Fish			
Delta smelt	*Hypomesus transpacificus*	T	NE
Amphibians			
California red-legged frog	*Rana draytonii*	T	NE
Reptiles			
Blunt-nosed leopard lizard	*Gambelia (Crotaphytus) sila*	E	NE
Giant garter snake	*Thamnophis gigas*	T	NE
Birds			
Southwestern willow flycatcher	*Empidonax traillii extimus*	E	NE
California condor	*Gymnogyps californianus*	E	NE
Mammals			

Giant kangaroo rat	*Dipodomys ingens*	E	NE
Tipton kangaroo rat	*Dipodomys nitratoides nitratoides*	E	NE
Buena Vista Lake shrew	*Sorex ornatus relictus*	E	NE
San Joaquin kit fox	*Vulpes macrotis mutica*	E	NE
Plants			
California jewelflower	*Caulanthus californicus*	E	NE
San Joaquin woolly-threads	*Monolopia congdonii (lembertia congdonii)*	E	NE
Bakersfield cactus	*Opuntia treleasei*	E	NE
San Joaquin adobe sunburst	*Pseudobahia peirsonii*	T	NE

Δ Status= Status of federally protected species protected under federal Endangered Species Act
E: Listed as Endangered under the federal Endangered Species Act
T: Listed as Threatened under the federal Endangered Species Act
NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service.
X: Critical habitat designated under the federal Endangered Species Act
C: Candidate proposed for listing
Effects = Effect determination
NE: No Effect to federally listed species anticipated as a result of the Proposed Action

Table 3-2: Federally Protected Species with the Potential to Occur within MWD

Common Name	*Scientific Name*	*Status* Δ	*Effects* #
Invertebrates			
Riverside fairy shrimp	*Streptocephalus woottoni*	E, X	NE
San Diego fairy shrimp	*Branchinecta sandiegonensis*	E, X	NE
Vernal Pool fairy shrimp	*Branchinecta lynchi*	T	NE
Delhi Sands Flower-Loving fly	*Rhaphiomidas terminatus abdominalis*	E	NE
El Segundo Blue butterfly	*Euphilotes battoides allyni*	E	NE
Laguna Mountains skipper	*Pyrgus ruralis lagunae*	E, X	NE
Palos Verdes blue butterfly	*Glaucopsyche lygdamus palosverdesensis*	E, X	NE
Quino Checkerspot butterfly	*Euphydryas editha quino*	E, X	NE
Fish			

Santa Ana sucker	*Catostomus santaanae*	T, X	NE
Southern California Coast Steelhead	*Oncorhynchus mykiss*	E, X	NE
Tidewater goby	*Eucyclogobius newberryi*	E, X	NE
Unarmored Threespine stickleback	*Gasterosteus aculeatus williamsoni*	E	NE
Amphibians			
Arroyo toad	*Anaxyrus californicus*	E, X	NE
California red-legged frog	*Rana draytonii*	T, X	NE
Mountain Yellow-Legged frog	*Rana mucosa*	E	NE
Reptiles			
Blunt-nosed leopard lizard	*Gambelia (Crotaphytus) sila*	E	NE
Birds			
California Least tern	*Sterna antillarum browni*	E	NE
California condor	*Gymnogyps californianus*	E	NE
Coastal California gnatcatcher	*Polioptila californica californica*	T, X	NE
Least Bell's vireo	*Vireo bellii pusillus*	E,X	NE
Light-footed clapper rail	*Rallus longirostris levipes*	E	NE
Marbled murrelet	*Brachyramphus marmoratus*	T	NE
Southwestern willow flycatcher	*Empidonax traillii extimus*	E, X	NE
Western snowy plover	*Charadrius alexandrines nivosus*	T,X	NE
Mammals			
Pacific pocket mouse	*Perognathus longimembris pacificus*	E	NE
Peninsular bighorn sheep	*Ovis Canadensis spp. nelsoni*	E	NE
San Bernardino Merriam's kangaroo rat	*Dipodomys merriami parvus*	E, X	NE
Stephen's kangaroo rat	*Dipodomys stephensi*	E	NE
Plants			
Big-leaved crownbeard	*Verbesina dissita*	T	NE

Brand's phacelia	*Phacelia stellaris*	C	NE
Braunton's milk-vetch	*Astragalus brauntonii*	E, X	NE
California orcutt grass	*Orcuttia californica*	E	NE
Coastal dunes milk-vetch	*Astragalus tener var. titi*	E	NE
Conejo dudleya	*Dudleya abramsii ssp. parva*	T	NE
Del mar manzanita	*Arctostaphylos glandulosa ssp. crassifolia*	E	NE
Encinitas baccharis	*Baccharis vanessae*	T	NE
Gambel's watercress	*Rorippa gambellii*	E	NE
Laguna beach liveforever	*Dudleya stolonifera*	T	NE
Lyon's pentachaeta	*Pentachaeta lyonii*	E, X	NE
Marcescent dudleya	*Dudleya cymosa ssp. marcescens*	T	NE
Marsh sandwort	*Arenaria paludicola*	E	NE
Mexican flannelbush	*Fremontodendron mexicanum*	E, X	NE
Munz's onion	*Allium munzii*	E,X	NE
Nevin's barberry	*Berberis nevinii*	E, X	NE
Orcutt's hazardia	*Hazardia orcuttii*	C	NE
Orcutt's spineflower	*Chorizanthe orcuttiana*	E	NE
Otay mesa-mint	*Pogogyne nudiuscula*	E	NE
Otay tarplant	*Deinandra conjugens*	T, X	NE
Salt Marsh bird's beak	*Cordylanthus maritimus ssp. maritimus*	E	NE

San Bernardino bluegrass	*Poa atropurpurea*	E	NE
San Diego ambrosia	*Ambrosia pumila*	E, X	NE
San Diego button-celery	*Eryngium aristulatum var. parishii*	E	NE
San Diego mesa-mint	*Pogogyne abramsii*	E	NE
San Diego thornmint	*Acanthomintha ilicifolia*	T, X	NE
San Fernando Valley spineflower	*Chorizanthe parryi var. fernandina*	C	NE
San jacinto Valley crownscale	*Atriplex coronata var. notatior*	E	NE
Santa Ana River woolly-star	*Eriastrum densifolium ssp. sanctorum*	E	NE
Santa Monica Mountains dudleya	*Dudleya cymosa ssp. ovatifolia*	T	NE
Slender-horned spineflower	*Dodecahema leptoceras*	E	NE
Spreading navarretia	*Navarretia fossalis*	T, X	NE
Thread-Leaved brodiaea	*Brodiaea filifolia*	T, X	NE
Triple-ribbed milk vetch	*Astragalus tricarinatus*	E	NE
Vail Lake ceanothus	*Ceanothus ophiochilus*	T, X	NE
Ventura Marsh milk-vetch	*Astragalus pycnostachyus var. lanosissimus*	E, X	NE
Verity's dudleya	*Dudleya verityi*	T	NE
Willowy monardella	*Monardella linoides ssp. viminea*	E, X	NE

Δ Status= Status of federally protected species protected under federal Endangered Species Act
E: Listed as Endangered under the federal Endangered Species Act
T: Listed as Threatened under the federal Endangered Species Act
NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service.
X: Critical habitat designated under the federal Endangered Species Act
C: Candidate proposed for listing
Effects = Effect determination
NE: No Effect to federally listed species anticipated as a result of the Proposed Action

3.3.2 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.

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. 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, there would be no change in land use patterns, no alteration of natural stream courses, and no construction included in the proposed action, so 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.

3.4 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there is no potential for direct, indirect, or cumulative effects to the following resources:

Cultural Resources

The Proposed Action to exchange water as described in the Section 2.2 of this EA constitutes an undertaking as pursuant to Section 301(7) of the NHPA, initiating Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. All exchanges would occur through existing facilities and water would be provided within existing service area boundaries to areas that currently use water. The Proposed Action would not result in modification of any existing facilities, construction of new facilities, change in land use, or growth. Because the Proposed Action would result in no physical alterations of existing facilities and no ground disturbance as stipulated in Section 2.2 of this EA/IS, Reclamation concludes that the Proposed Action has no

potential to cause effect to historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1), and would result in no impacts to cultural resources (Appendix A).

Indian Sacred Sites

Native American consultation activities consisted of a Sacred Lands File Search performed by the Native American Heritage Commission (NAHC); no resources were identified during this activity. Project notification letters and requests for consultation were sent to the designated Native American area contacts as identified by the NAHC. No responses were received from the Native American representatives regarding the Proposed Action. At this time, no Indian sacred sites have been identified. In addition, the Proposed Action would not impede access to or ceremonial use of Indian sacred sites. If sites are identified in the future, Reclamation would comply with Executive Order 13007.

Indian Trust Assets

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 (ITA). Therefore, the Proposed Action does not have a potential to affect ITA.

Environmental Justice

Similar to the No Action Alternative, the Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease within the affected environment. The Proposed Action would not disproportionately impact economically disadvantaged or minority 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.

Socioeconomic Resources

The Proposed Action would result in less energy use with virtually no changes in flow path from what was analyzed under the Program. This would save AEWSD the energy and costs associated with otherwise pumping and returning groundwater. If AEWSD is also directly recharging water to their groundwater at this time on their own behalf, it would also save AEWSD the expenses associated with operating their recharge basins. Agricultural practices within AEWSD would be within historical conditions and would not be adversely impacted by the implementing the Proposed Action.

Air Quality

The delivery of water would require no modification of existing facilities or construction of new facilities. In addition, the movement of water would be done via gravity flow and/or pumped using electric motors which have no emissions. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical motors and therefore a conformity analysis is not required under the Clean Air Act and there would be no impact on air quality. The Proposed Action could result in

a small net beneficial effect in air quality since groundwater pumping involving diesel engines would be reduced.

Cumulative Impacts

The Proposed Action would utilize gravity and/or pumped using electric motors which have no emissions. Therefore, when taking into consideration other similar actions, no adverse cumulative impacts to air quality are expected.

Energy Use and Global Climate

There would be no Greenhouse Gas (GHG) emissions resulting from the Proposed Action due to construction activity. Additionally, there would be no GHG emissions from gas or diesel engines as the movement of water would be done via gravity flow and/or pumped using electric motors which have no emissions. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. The Proposed Action could result in a small net decrease in GHG since groundwater pumping involving diesel engines would be reduced.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft FONSI and Draft EA between November 21, 2013 and December 21, 2013 followed by completion and posting of the final EA and final FONSI on Reclamation's environmental document website. This timeframe supersedes the 15-day period originally posted due to concerns expressed by some Federal contractors within the Friant Division.

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

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

The Proposed Action does not involve any new impoundment or diversion of waters, channel deepening, or other control or modification of a stream or body of water as described in the statute, but the exchange of pumped groundwater for CVP water. In addition, no construction or modification of water conveyance facilities are required for movement of this water. Consequently, Reclamation has determined that FWCA does not apply.

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

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

Reclamation has determined that there would be No Effect to listed species or designated critical habitat under the ESA (16 U.S.C. §1531 et. seq.) for the proposed federal action.

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

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

Reclamation has determined that there would be No Effect to migratory birds for the proposed federal action of approving this Assignment.

4.5 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The NHPA of 1966, as amended (16 U.S.C. 470 et seq.), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties.

Reclamation concludes that the Proposed Action has no potential to cause effect to historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1), and would result in no impacts to cultural resources.

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Section 5 Preparers and Reviewers

Chuck Siek, Supervisory Natural Resources Specialist, SCCAO
Lisa Carlson, Wildlife Biologist, SCCAO
Bill Soule, Archaeologist or Architectural Historian, MP-153
Patricia Rivera, ITA, MP-400

Section 6 Acronyms and Abbreviations

AEWSD	Arvin-Edison Water Storage District
AF	acre-feet
APE	area of potential effects
Aqueduct	California Aqueduct
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic-feet per second
CO	carbon monoxide
CO_2	carbon dioxide
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPOU	Consolidated Place of Use
CVC	Cross Valley Canal
CVP	Central Valley Project
DWR	Department of Water Resources
EA	environmental assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
GHG	green house gases
ITA	Indian Trust Assets
IS	Initial Study
KCWA	Kern County Water Agency
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	Nation Register of Historic Places
ND	Negative Declaration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_3	ozone
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter

PM_{10}	particulate matter between 2.5 and 10 microns in diameter
Program	Water Management Program between AEWSD and MWD
Reclamation	Bureau of Reclamation
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLR	San Luis Reservoir
SO_2	sulfur dioxide
SWP	State Water Project
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service
U.S.C.	U.S. Code

Section 7 References

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DRAFT ENVIRONMENTAL ASSESSMENT (13-026)

Appendix A
Cultural Resources Determination

November, 2013

United States Department of the Interior

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

IN REPLY
REFER TO:
MP-153
ENV-3.00

VIA ELECTRONIC MAIL ONLY

May 10, 2013
MEMORANDUM

To: Charles Siek
GS0401-Supervisory Natural Resources–South-Central California Area Office

From: William Soule
Archaeologist – Division of Environmental Affairs

Subject: 13-SCAO-165: Arvin-Edison Water Storage District (AEWSD) and Metropolitan Water District (MWD) 5-Year Water Transfer/Exchange Program

This proposed undertaking by Reclamation is for a 5-year program to exchange or transfer up to 100,000 acre-feet (AF) of water annually between the AEWSD and the MWD. This is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the National Historic Preservation Act Section 106 regulations codified at 36 CFR Part 800.3(a)(1). Reclamation has no further obligations under NHPA Section 106, pursuant to 36 CFR § 800.3(a)(1).

There is no ground disturbance or change in land use associated with this proposed action. The transfer or exchange would take place over a 5-year period from March 01, 2014 to February 28, 2019. A maximum of 100,000 AF could be delivered during each contract year. This action involves Central Valley Project water and requires approval of a temporary change to Reclamation's Consolidated Place of Use provisions or Friant Division Place of Use provisions through a petition to the State Water Resources Control Board.

After reviewing the materials provided for the Section 106 determination of effect for this undertaking, I concur with an assessment in the EA which states that this action has no potential to cause effect on historic properties, assuming that such properties were present, pursuant to 36 CFR § 800.3(a)(1). This memorandum is intended to convey the completion of the NHPA Section 106 process for this undertaking. Please retain a copy in the administrative record for this action. Should changes be made to this project, additional NHPA Section 106 review, possibly including consultation with the State Historic Preservation Officer, may be necessary. Thank you for providing the opportunity to comment.

CC: Cultural Resources Branch (MP-153), Anastasia Leigh – Regional Environmental Officer (MP-150)

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DRAFT ENVIRONMENTAL ASSESSMENT (13-026)

Appendix B
Indian Trust Asset Determination

November, 2013

RIVERA, PATRICIA May 9, 2013)

Chuck,

I reviewed the proposed action to transfer or exchange of water between Arvin-Edison Water Storage District (AEWSD) and Metropolitan Water District (MWD). There is no ground disturbance associated with the Proposed Action. The transfer or exchange program would take place over a 5-year period (March 1, 2014-February 28, 2019). Up to 100,000 acre-feet of water could be delivered during each contract year. This action requires approval of a temporary change to the Reclamation's Consolidated Place of Use provisions or Friant Division Place of Use provisions through a petition to the State Water Resources Control Board. A Consolidated Place of Use petition is currently under review by the State Water Resources Control Board. Transfer/exchange specifics include:

- Transfer AEWSD's Central Valley Project (CVP) water to MWD. A like amount of MWD State Water Project (SWP) water was banked previously at AEWSD under a separate action.
- Deliver AEWSD's CVP water to MWD during times of abundant AEWSD supplies after which MWD would return a like amount (balanced exchange) of SWP water, metered at the California Aqueduct (Aqueduct), to AEWSD later within the 12-month period.
- Deliver AEWSD's CVP water to MWD during times those supplies are at-risk of loss to AEWSD after which MWD would return a portion (unbalanced exchange) of the water so delivered as SWP water, metered at the California Aqueduct (Aqueduct) to AEWSD later within the 12-month period.

The Proposed Action would allow for better regulation of water supplies by creating the opportunity to store otherwise unstorable water for use during high demand periods. The Proposed Action would also reduce energy use and the costs associated with groundwater pumping while improving water quality.

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

Patricia Rivera
Native American Affairs Program Manager
US Bureau of Reclamation
Mid-Pacific Region