

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Arvin-Edison Water Storage District and Rosedale-Rio Bravo Water Storage District Exchange (2011-2012)

EA-11-017



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

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Mission Statements

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

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

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List of Acronyms and Abbreviations

AEWSD	Arvin-Edison Water Storage District
af	acre-feet (the volume of water one foot deep and an acre in area)
af/y	acre-feet per year
APE	area of potential effects
CAA	Clean Air Act
cfs	cubic-feet per second
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Improvement Act
DWR	California Department of Water Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FKC	Friant-Kern Canal
FWCA	Fish & Wildlife Coordination Act
FWS	U.S. Fish and Wildlife Service
ITA	Indian Trust Asset
KCWA	Kern County Water Authority
KR	Kern River
KTWD	Kern-Tulare Water District
MBTA	Migratory Bird Treaty Act
M&I	municipal and industrial
MP	milepost
MWD	Metropolitan Water District of Southern California
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
RWA	Recovered Water Account
R/R	Recaptured and Recirculated water
Reclamation	Bureau of Reclamation
RRBWSD	Rosedale-Rio Bravo Water Storage District
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
State	State of California
SWID	Shafter-Wasco Irrigation District
SWP	California State Water Project
USFWS	U. S. Fish and Wildlife Service

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Section 1 Purpose and Need for Action

1.1 Background

The State of California has historically experienced periods of drought and flooding. Water agencies continually strive to prepare for varying water supply conditions to the extent possible so that agricultural or urban water supply needs can be met every year regardless of the water availability conditions. Friant Division contractors need to pursue water management options in order to maximize the beneficial uses of its varied water resources. When available, this could be accomplished by having a variety of water supply management options that can be implemented as needed such as the ability to regulate water supplies that exceed the current demand. The flexibility in the timing of delivery afforded by water regulation would be advantageous to water agencies during periods of deficit.

1.2 Purpose and Need

Arvin-Edison Water Storage District (AEWSD) desires to maximize the beneficial use of its varied water supplies by regulating supplies. AEWSD needs to supplement its own conjunctive use program and protect the groundwater resources within its service area. The use of CVP water for the purpose of regulating available supplies, including but not limited to transfers, exchanges, and groundwater banking, provides AEWSD with operational flexibility and facilitates better water management of its CVP water supply.

AEWSD and Rosedale-Rio Bravo Water Storage District (RRBWSD) have a long history of water management actions including seven exchanges approved by Reclamation between 1996 and 2007. This proposed action is consistent with prior Reclamation approvals. Because these exchanges have not resulted in significant adverse impacts or comments from the public or public agencies in the past, Reclamation will not be circulating this Environmental Assessment (EA) or Finding of No Significant Impact (FONSI) for public review and comment.

1.3 Scope

This Environmental Assessment (EA) has been prepared to examine the impacts on environmental resources as a result of exchanging up to 100,000 acre-feet (af) of AEWSD's CVP water supplies with RRBWSD. AEWSD would deliver water including but not limited to:

- Class 1-Firm supply of water within the Friant Division
- Class 2-Water supply dependent on conditions
- Class 2 Uncontrolled Season water supply
- Section 215 water-Unstorable flood flows behind Friant Dam
- Recaptured and Recirculated water (R/R)
- Recovered Water Account (RWA)

These deliveries could also include any other CVP water supplies made available under AEWS's water Contract and exchanged with RRBWSD in their immediate and/or surrounding service area lands/and or facilities of which RRBWSD has rights to.

AEWS supplies would be delivered to RRBWSD for future return to AEWS on a 1 to 1 or "bucket for bucket" basis up to 100,000 af. It is anticipated that up to 10 percent of conveyance losses may occur, which will slightly decrease the net exchange amount. RRBWSD may return SWP water, Kern River supplies, and/or groundwater supplies to AEWS as repayment of previously delivered supplies. The Friant-Kern Canal (FKC), Cross Valley Canal (CVC), Kern River (KR), California Aqueduct and other existing infrastructure may be utilized in order to convey the delivered and return water.

The action area is located in the southeastern portion of the San Joaquin Valley, specifically in Kern County. Refer to Figures 2-1, and 2-2 for an AEWS facilities map and an AEWS-RRBWSD Boundary Map, respectively.

The proposed exchange between AEWS and RRBWSD would begin in 2011 and be in effect through the end of February 29, 2012 or 100,000 af, whichever comes first; therefore, the temporal scope of this EA would be for up to 1-year.

1.4 Potential Issues

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

- Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trusts Assets
- Indian Sacred Sites
- Environmental Justice
- Socioeconomic Resources
- Air Quality
- Global Climate

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 there would not be an exchange of up to 100,000 af of AEWSDs CVP supplies for an equivalent amount of SWP water, Kern River supplies, and/or groundwater supplies from RRBWSD at a later date.

2.2 Proposed Action

Under the Proposed Action AEWSD would deliver up to 100,000 af of its CVP supplies, including but not limited to Class 1, Class 2, Uncontrolled Seasons, Section 215 Water, R/R water, RWA and other contracted CVP supplies to RRBWSD. AEWSD would be allowed to convey a maximum of 100,000 af of water at any one time, and RRBWSD would return an equivalent amount to AEWSD, upon request, at mutually acceptable schedules and flow rates. The exchange could take place between March 2011 and February 29, 2012. AEWSD's water would be delivered to RRBWSD by one or more of the following methods:

- FKC to CVC via the AEWSD Intake Canal/CVC Intertie then to RRBWSD turnouts off of the CVC;
- FKC to CVC via the FKC/CVC Intertie then to RRBWSD turnouts off of the CVC;
- FKC to Kern River (FKC terminates into the Kern River) and/or then to RRBWSD through its Kern River intake.

Water supplies delivered by AEWSD to RRBWSD, may incur up to 10 percent conveyance losses, of which will be mutually agreeable between RRBWSD and AEWSD; however, will not exceed 10 percent losses.

Upon AEWSD request, RRBWSD would return equivalent (1 for 1) water supplies up to 100,000 af, or the amount initially conveyed by AEWSD to RRBWSD, including but not limited to groundwater, SWP supplies, and/or Kern River supplies, RRBWSD may have available. RRBWSD return of groundwater to AEWSD is provided for in RRBWSD MEIR ("Final MEIR Groundwater Storage, Banking, Exchange, Extraction & Conjunctive Use Program" – SCH#2000101059).

The return water can be delivered directly to AEWSD at either their Intake Canal turnouts from the CVC and Kern River or from the California Aqueduct at AEWSD's turnout as described below:

- Delivery of SWP and/or groundwater into the CVC then conveyed into the AEWSD Intake Canal;
- From the Kern River turnout into AEWSD Intake Canal;
- From the California Aqueduct into AEWSD South Canal from AEWSD's California Aqueduct turnout.

In addition, and if certain other water operations/deliveries are occurring simultaneously, occasional "operational exchanges" could occur to more efficiently deliver return water to AEWSD's three (3) point of deliveries. An example of these operational exchanges could include:

- If Kern Delta Water District (KDWD) is delivering water to bank in RRBWSD at the same time RRBWSD is returning water to AEWSD, RRBWSD could exchange their surface water supplies to KDWD which then in turn KDWD would make available supplies to AEWSD on behalf of RRBWSD. KDWD has multiple interconnection facilities with AEWSD;

The Proposed Action would occur on mutually agreeable schedules and within capacity available to both AEWSD and RRBWSD in the Kern River, CVC, and FKC. In addition, the following conditions would also apply:

- AEWSD's CVP water would be used by RRBWSD for in-district demands or recharge purposes within the Friant permitted place-of-use;
- No land conversions that would degrade the suitability of habitat for native fish and wildlife species shall be supported by the delivery of the banked or returned water;
- Neither water delivered to RRBWSD or returned to AEWSD would be used to place untitled or new lands into production in either AEWSD or RRBWSD; and
- The delivery and return of AEWSD's water would not impact the FKC and CVC nor interfere with their respective ability to deliver water under normal operations and said deliveries will conform with the delivery and operation policies for both facilities.

This exchange program would not require the new construction or modification of any conveyance or diversion facilities.

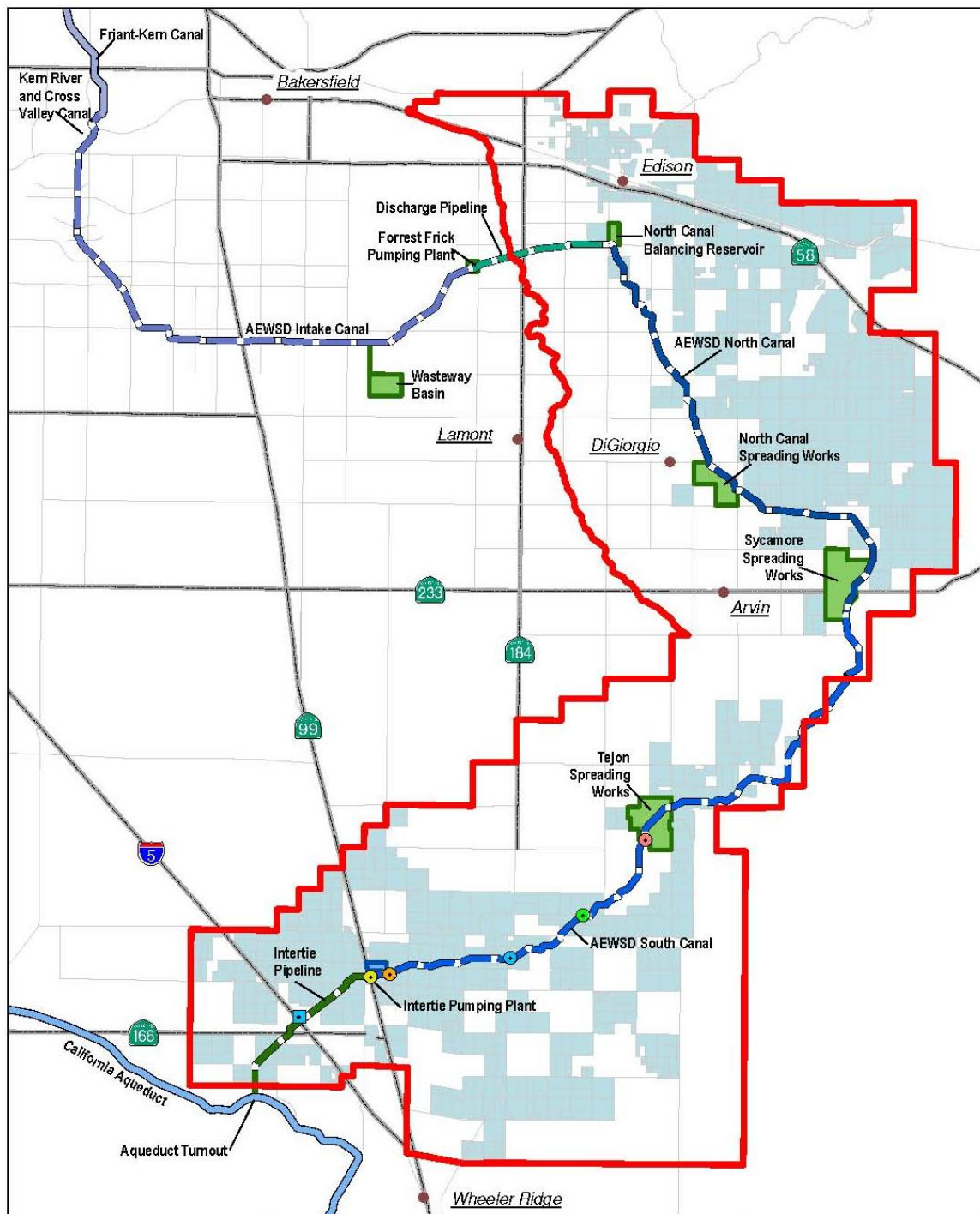
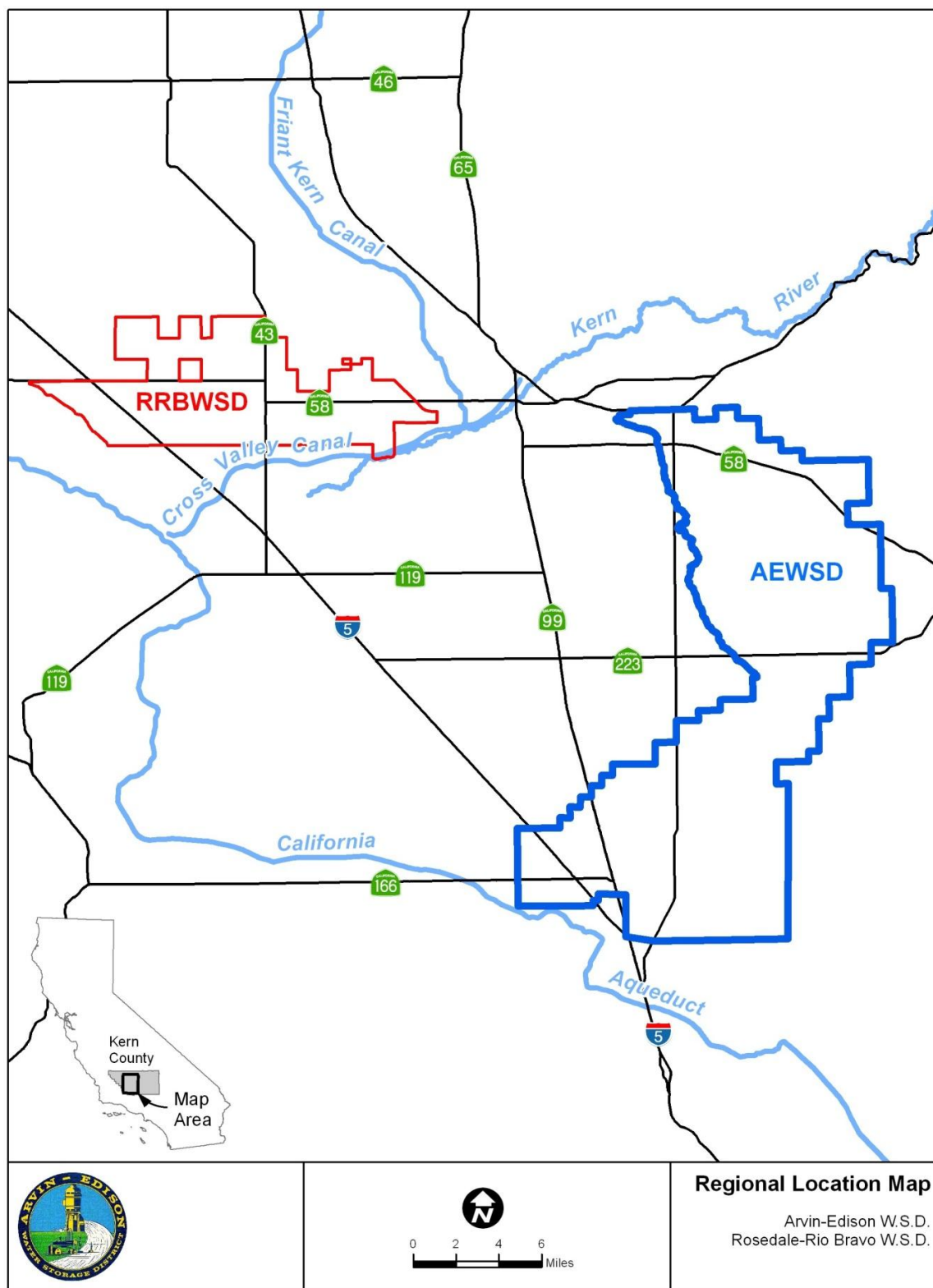


Figure 2-1 AEWSD Facilities map

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Figure 2-2 AEWSD-RRBWSD Boundary Map

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Section 3 Affected Environment and Environmental Consequences

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

3.1 Water Resources

3.1.1 Affected Environment

Arvin-Edison Water Storage District

AEWSD is a 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, State Water Project (SWP), Kings River (KR), and groundwater resources that underlie most of AEWSD (Figure 1). AEWSD owns wells that it uses to supply previously banked groundwater to farms within its service area when surface water supplies are deficient.

AEWSD has a Contract with Reclamation for 40,000 acre-feet per year (af/y) of Class 1 and 311,675 af/y of Class 2 CVP supplies and an annual irrigation demand of about 150,000 af/y. The Class 2 supply comprises a large fraction of their contract allocation; however, the Class 2 CVP supply is variable. The district manages this supply by using an underlying groundwater reservoir to regulate water availability and to stabilize water reliability by percolating water through its spreading basins. AEWSD takes Friant CVP water from their 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 engages in Article 5 exchanges of CVP water with Cross Valley contractors, such as KTWD. Over the last 5 years, up to 30,000 af/y has been exchanged with CVC Exchangers. Water delivered to AEWSD has been a combination of the CVC Exchanger contractors' CVP water, and other supplies such as Kern River or other exchange water (at times SWP). The CVP water is diverted from the Sacramento-San Joaquin River Delta through the California Aqueduct and to the CVC. In exchange, the Friant CVP water that would have flowed down the FKC to AEWSD is taken upstream by a Cross Valley contractor off of the FKC for an equivalent 30,000 af/y.

Rosedale-Rio Bravo Water Storage District

RRBWSD is a SWP contractor with an annual irrigation demand of approximately 72,000 af/y. RRBWSD does not provide any municipal and industrial water to customers within its service area and irrigation water used within the RRBWSD is presently supplied from landowner wells pumping from the groundwater basin. RRBWSD owns and operates over 2,000 acres of recharge ponds capable of recharging up to 600 cubic feet per second (cfs). RRBWSD manages the portion of the regional Kern County groundwater subbasin that is within its boundaries.

RRBWSD acquires water for recharge purposes from the Kern River through a water service agreement with the City of Bakersfield, water from the Friant Kern Canal (FKC) as available, and from the SWP through a water service contract with the Kern County Water Authority (KCWA), which holds a master contract with the State Department of Water Resources (DWR). All of the water received by RRBWSD is used for groundwater replenishment in established recharge basins within its service area.

3.1.1.1 Surface Water Resources

The ten-year average allocation of Friant Division CVP water supplies delivered to AEWS is described in Table 1. It lists maximum deliveries of CVP water on a yearly basis from 2001 to 2011. The ten-year average is 97.0 percent of Class 1 and 27.6 percent of Class 2 contract amounts. The annual contract entitlement for AEWS is 40,000 af Class 1 and 311,675 af Class 2, thus the ten-year average supply is 38,800 af Class 1 and 86,022 af Class 2 (total = 124,822 af).

AEWS's 2011 Friant Division allocated water supply is currently unlimited Class 2 Uncontrolled Season through May with a projected residual declaration of 100% Class 1 and 20% of Class 2.

Table 1 - Average Friant Allocation

Contract Year	Total FKC supplies (af)*	Allocation (Percentage of Contract Amounts)	
		Class 1	Class 2**
10-11	212,174	100	55
09 – 10	113,931	100	24
08 – 09	55,689	100	5
07 – 08	28,014	70	0
06 – 07	179,594	100	45
05 – 06	273,725	100	75
04 – 05	122,382	100	26
03 – 04	133,224	100	30
02 – 03	67,387	100	9
01 – 02	59,138	100	6
Average	124,526	97.0	27.6

Notes:

*Total FKC supplies including Recovered Water Account (RWA) and Recirculation water as provided for by the Act

**Class 2 is an effective allocation considering Uncontrolled Season and supplies cited in the above note.

According to AEWS's Contract (as well as all of the Friant Division contracts) Class 2 Water means "that supply of water which can be made available subject to the contingencies described" in the contract "for delivery from Millerton Lake and the Friant-Kern and Madera Canals in addition to the supply of Class 1 Water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available as determined by the Contracting Officer." The maximum amount of Class 2 water contracted for in the Friant Division is 1,401,475 acre feet per year, of which AEWS has a Contract of 311,675 acre feet per year.

Additionally, AEWSD's Contract describes "Uncontrolled Season" as any time during the year the Contracting Officer determines that a need exists to evacuate water from Millerton Lake in order to prevent or minimize spill or to meet flood control criteria, taking into consideration, among other things, anticipated upstream reservoir operations and the most probable forecast of snowmelt and runoff projections for the upper San Joaquin River. Friant Division Project Contractors utilize a portion of their undependable Class 2 Water in their service areas to, among other things, assist in the management and alleviation of groundwater overdraft in the Friant Division service area, provide opportunities for restoration of the San Joaquin River below Friant Dam, minimize flooding along the San Joaquin River, encourage optimal water management, and maximize the reasonable and beneficial use of the water."

3.1.1.2 Groundwater Resources

The regulation program area overlies the Kern County Groundwater Sub-basins of the San Joaquin Valley Basin, and confined within the Tulare Lake Hydrologic Region. In general, groundwater quality throughout the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high nitrate, arsenic, and organic compounds (DWR, 2005).

Kern County Groundwater Sub-basin

AEWSD and RRBWSD are located within the Kern County Groundwater Sub-basin, which has a surface area of approximately 1,945,000 acres. Review of the literature indicates that except for seasonal variation resulting from recharge and pumping, the groundwater levels wells have remained relatively unchanged from 1970 to 2000 (DWR, 2006). However, the Kern County Groundwater Sub-basin has been identified by DWR as being critically overdrafted. By definition, "a basin is subject to critical conditions of overdraft when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economical impacts (Reclamation, 2005)."

Natural recharge is primarily from stream seepage along the eastern sub-basin and the Kern River; recharge of applied irrigation water, however, is the largest contributor (DWR, 2006). In addition to other water providers in Kern County, AEWSD adopted an AB3030 Groundwater Management Plan in 2003 and RRBWSD adopted the AB3030 Groundwater Management Plan in 1994 to help offset overdraft conditions in the county. Both AEWSD and RRBWSD are currently, with numerous other Kern County districts and public agencies, developing an Integrated Regional Water Management Plan.

3.1.1.3 Water Quality

The proposed exchange would not introduce any water into Federal facilities; therefore, there will be no water quality impacts to federal facilities resulting from this exchange.

It should also be noted that, since the delivery to RRBWSD will most likely be when AEWSD has large amounts of unregulated water available, and when AEWSD will be utilizing those supplies in-district to its full ability, this program generally does not reduce the amount of high quality Friant Division water AEWSD would otherwise receive in-district, and upon which it relies to balance water quality impacts from other supplies. AEWSD manages water supplies from the California Aqueduct, Kern River, the CVC, and AEWSD wells, which when melded

with high quality FKC supplies is acceptable for irrigation. This program will not introduce any water into the FKC and thus will not degrade those water supplies.

Also, groundwater quality throughout the region is suitable for most urban and agricultural uses with only local impairments. The primary constituents of concern are high Total Dissolved Solids, nitrate, arsenic, and organic compounds (Reclamation 2006).

3.1.1.4 Conveyance Facilities and Rivers

AEWSD Canals

The AEWSD Intake Canal takes delivery from multiple water sources for ultimate delivery to its service area. The Intake Canal has a capacity of 1,000 cfs and includes a 1,000 cfs turnout from the FKC, a 900 cfs in turnouts from the CVC, a 400 cfs turnout from the Kern River Carrier Canal and a couple of turnouts from KDWD. The Intake Canal also has a 400 cfs turnout into the CVC and a couple of turnouts into KDWD.

The AEWSD South Canal takes gravity delivery from the California Aqueduct and has a gravity capacity of approximately 130 cfs. The AEWSD recently expanded its South Canal and constructed lift stations within the canal prism to deliver water to 9 miles of upstream reaches for demand and or spreading at its Tejon Spreading Works.

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.. 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, 2009). The water conveyed in the FKC is from the San Joaquin River and is considered to be of high quality because it originates 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.

Kern River

The Kern River is about 165 miles long and is the southernmost river in the San Joaquin Valley. The river originates from the Sierra Nevada mountains on the eastern side of Tulare County and terminates on the west side of Kern County where it is mainly diverted for local water supplies. When the Kern River enters Kern County, it deposits into Lake Isabella which was created after construction of Isabella Dam. Below the dam, the river is highly diverted through a series of canals to irrigate farms in the southern San Joaquin Valley and provide municipal water supplies to the City of Bakersfield and surrounding areas. The Kern River is one of the few rivers in the Central Valley which does not contribute water to the CVP; however, the FKC joins the river approximately four miles west of downtown Bakersfield.

Cross Valley Canal

The CVC, a locally owned and financed facility completed in 1975, extends from the California Aqueduct near Tupman to Bakersfield. It consists of four reaches which have capacities ranging from 1,400 cfs through the first two pumping plants to 342 cfs in the unlined extension near Bakersfield. The CVC is a joint-use facility operated by the KCWA that could convey water from the CVC to the Kern Water Bank, the City of Bakersfield, the Berrenda Mesa Property, the

Kern River channel, the Pioneer Banking project, AEWSD and to member units of KCWA (which RRBWSD is a member as well as various other participants). Over the last few years, the canal was expanded by 500 cfs and also included a 500 cfs facility interconnection between the CVC and FKC.

California Aqueduct

The California Aqueduct is operated by the State of California Department of Water Resources (DWR) and conveys water from Northern California to Southern California, including Kern County. In 2002, AEWSD constructed a turnout and connected the terminus of its canal system with the Intertie Pump Station and Pipeline as part of its water management program with Metropolitan Water District of Southern California (MWD). Use of the facility is not limited to the AE/MWD program and has been used in the past for other water management programs.

3.1.2 Environmental Consequences

3.1.2.1 No Action

Under the No Action Alternative, Reclamation would not approve the exchange between AEWSD and RRBWD. There could be larger deficits in dry years and both groundwater levels and groundwater quality could decline.

There may be impacts to the Kern County Groundwater Sub-basin level as compared to the baseline since landowners in AEWSD would likely continue to rely on groundwater as in the past; the amount pumped would vary with the fluctuating availability of surface water supplies. AEWSD could engage in exchanges and banking programs with other agencies in order to regulate the timing of their water supplies; however, the scope of that EA could be similar to this EA.

3.1.2.2 Proposed Action

With the ability to regulate its water supplies by controlling the timing of delivery, the Proposed Action would provide AEWSD with surface water reliability and likely decrease reliance on groundwater pumping by AEWSD and its landowners during drought years. As FKC supplies often are available during short duration high flow periods, the ability to deliver AEWSD supplies to RRBWSD, in addition to typical AEWSD deliveries, will allow AEWSD Contract supplies to be better captured and managed. The Proposed Action would result in an increase in groundwater levels for the groundwater sub-basin underlying AEWSD than would have occurred absent the Proposed Action. There would not be any depletion of groundwater supplies and lowering of the local groundwater table level. The exchange could result in a net increase in the Kern County Groundwater Sub-basin levels underlying AEWSD; therefore, the Proposed Action could have a beneficial impact on groundwater resources.

There will be no water introduced into the FKC; therefore, there would be no significant adverse impacts to water quality as a result of the Proposed Action.

The Proposed Action would not interfere with the normal operations of any district involved with the exchange, nor would it impede any SWP or CVP obligations to deliver water to other contractors or to local fish and wildlife habitat. AEWSD and RRBWSD have delivery rights under their various contracts in the FKC, CVC, Kern River, and California Aqueduct and would

operate the exchange within those rights and capacities. The implementation of this exchange between AEWS and RRBWS would not affect the existing conveyance facilities or any water resources.

3.2 Land Use

3.2.1 Affected Environment

AEWS and RRBWS are both approximately 40-50 miles east of the Coast Range and approximately 12 miles west of the Sierra Nevada Mountain Range. The lands comprising the action area are predominantly agricultural with the majority being prime agricultural lands. Agriculture in the area includes permanent and row crops, dairies, and fruit orchards, most of which rely heavily on a combination of groundwater and surface water resources to support irrigation demands.

Arvin-Edison Water Storage District Service Area

Arvin-Edison Water Storage District 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 Arvin-Edison service area is classified as Irrigated Farmland by the California Department of Conservation. 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 Arvin-Edison 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 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.

Rosedale-Rio Bravo Water Storage District Service Area

Rosedale-Rio Bravo Water Storage District, located west of Bakersfield, is roughly 43,000 acres in size, serving 33,400 acres of irrigated croplands. Approximately 85 percent of RRBWS’s service area is farmed to alfalfa hay, almonds, grain, cotton, and corn. RRBWS also has approximately 6,000 acres developed for urban uses.

3.2.2 Environmental Consequences

3.2.2.1 No Action

No changes to land use would occur in AEWS and RRBWS under the No Action Alternative and conditions would likely remain the same as existing conditions as described above in the affected environment. Adverse impacts to crops in AEWS could occur without supplemental water during dry hydrological years, but the overall land use would be within historical conditions.

3.2.2.2 Proposed Action

AEWSD's water would be regulated through RRBWSD's in-district demands and/or existing groundwater recharge facilities and would not require the modification or construction of new conveyance facilities. The exchange program would not induce the construction of any new homes or businesses, or road extensions or other new infrastructure. The Proposed Action would not result in increased or decreased water supplies in AEWSD or RRBWSD that would induce growth or land use changes as both districts are fully built out and supply no water to customers other than agricultural users. There would be no adverse impacts from the Proposed Action as land use would remain the same as described in the affected environment.

3.3 Biological Resources

By the mid-1940s, most of the valley's native habitat had been altered by man, and as a result, was severely degraded or destroyed. Approximately 86 percent of the estimated four million acres of native wetlands in the Central Valley was converted to urban and agricultural uses between 1850 and 1985 (USFWS, 1989). When the CVP began operations, over 30 percent of all natural habitats in the Central Valley and surrounding foothills had been converted to urban and agricultural land use (Reclamation, 1999).

Prior to widespread agriculture, land within the Proposed Action area provided habitat for a variety of plants and animals. With the advent of irrigated agriculture and urban development over the last 100 years, many species have become threatened and endangered primarily because of habitat loss. Of the approximately 5.6 million acres of valley grasslands and San Joaquin saltbrush scrub, the primary natural habitats across the valley, less than 10 percent remains today. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable populations (Reclamation, 2001). The exchange area is dominated by agricultural lands which includes field crops, orchards, and pasture. In the project area the vegetation is primarily related to agricultural crops and frequently includes weedy non-native annual and biennial plants.

3.3.1 Affected Environment

Most of the land within the AEWSD and RRBWSD service areas are devoted to irrigated agricultural production and existing residential/commercial developments. Because the irrigated fields and urbanized area of Bakersfield are intensively managed, very little to no native vegetation currently exists, and little volunteer vegetation is allowed to grow. Cultivation often occurs up to the very margins of fields, roads or ditches. Herbicides are routinely used to control unwanted vegetation which typically includes all non-crop species. Occasionally, cultivated land is allowed to lie fallow, and ruderal plant associations take over. Ruderal habitats are subject to frequent disturbance and are quickly colonized by non-native and to a lesser extent native plant species. Species composition varies greatly depending on the location, type, and frequency of disturbance and proximity of natural habitats. In addition to fallow agricultural fields, roadsides within the southern San Joaquin Valley area often support ruderal plant communities. Row crops and orchards provide minimal food and cover for wildlife.

The list is for the following U.S. Geological Survey quadrangles, which overlapped the AEWSD and RRBWSD boundaries: Arvin, Bear Mountain, Bena, Buttonwillow, Coal Oil Canyon, East

Elk Hills, Edison, Gosford, Lamont, Mettler, Oil Center, Oildale, Rio Bravo, Rio Bravo Ranch, Rosedale, Stevens, Tejon Hills, Tupman, and Weed Patch.

Some bird species such as the yellow-billed magpie (*Pica nuttallif*), common crow (*Corvus brachyrhynchus*), Brewer's blackbird (*Euphagus cyanocephalus*), and American kestrel (*Falco sparverius*) may use trees in the exchange area for perching and nesting. Grain crops provide food and nesting sites for waterfowl, ring-necked pheasants (*Phasianus colchicus*), California quail (*Callipepla californicus*), short-eared owl (*Asio flammeus*), and various small mammals.

Black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus bachmanni*), valley pocket gopher (*Thomomys umbrinus*) and California ground squirrel (*Spermophilus beecheyi*) may be present, especially on ditch-side berms that surround many fields.

Grazing occurs in some areas of the valley floor and on the surrounding hillsides. Pasture lands consist primarily of alfalfa with some annual grasses. Wildlife values are similar to those described below for grasslands. Rows or small groves of non-native tamarisks (*Tamarix tetrandia*) and eucalyptus trees (*Eucalyptus spp.*) have been planted in a few locations to provide shade and wind breaks or to control overflow waters. As the only over story in the area, these trees provide roosting sites for several bird species, including house finches (*C. mexicanus*), song sparrows (*Melospiza melodia*), and lesser goldfinches (*S. psaltria*).

The indigenous habitat types previously found throughout the southern San Joaquin Valley were grassland, alkaline sink, and shrub land. Coupled with the infrequency of freezing temperatures, the moist winters allow growth of herbaceous, annual vegetation and small, woody shrubs despite the area's overall aridity. The open vegetation cover provides seed and insect forage yet is sparse enough to allow good visibility of approaching predators. Consequently, the dominant animals found in this habitat were burrowing rodents, which are water-conserving and may be inactive or dormant during the hottest and/or coldest periods of the year or when food supplies are scarce. Reptiles also found in this habitat type used existing rodent burrows. Predators attracted by the rodent and reptile populations included raptors, gray fox (*Urocyon cinereoargenteus*), San Joaquin kit fox (*Vulpes macrotis mutica*), and coyote (*Canis latrans*).

Plants

Small areas within the general area contain remnants of several indigenous plant communities, including valley saltbush scrub, valley sink scrub, and grasslands. Their limited extent is primarily due to conversion to agriculture, although mining and off-road vehicle use have also reduced the extent of native vegetation.

Valley saltbush scrub contains widely spaced, low shrubs tolerant to long, hot and dry summers. Saltbush of the genus *triplex* are the most conspicuous plants of this vegetative community. Western jimson weed (*Datura mereloides*), tree tobacco (*Nicotiana glauca*), bush buckwheat (*Eriogonum fasciculatum*), deerweed (*Lotus scoparius*), and locoweed (*Astragalus spp.*) are also common.

Wildlife

Wildlife typically found in the saltbush scrub community include black-tailed jackrabbit, California ground squirrel, coyote, side-blotched lizard (*Uta stansburiana*), red-shouldered hawk (*Buteo lineatus*), turkey vulture (*Cathartes aura*), greater roadrunner (*Geococcyx californicus*), and savanna sparrow (*Passerculus sandwichensis*).

Valley scrub is a similar shrub land community that generally occurs on saline or alkaline soils. It is often found on shallow interior floodplains or playas where seasonal flooding is followed by a dry, hot summer. Dominant plants include iodine bush (*Allenrolfea occidentalis*), red brome (*Bromix rubens*), and saltgrass (*Distichlis spicata* var. *stricta*). Wildlife species are similar to those described above for valley saltbush scrub.

Grasslands occur on the hill slopes above agricultural plain and in a few uncultivated patches in the valley. The grasses are primarily red brome and annuals such as lupines (*Lupinus spp.*), blue dicks (*Dichelostemma pulchella*), and California poppy (*Eschscholzia californica*) in the spring. Western meadowlark (*Sturnella neglecta*), mourning dove (*Zerlaidura macroura*), and sparrows are common birds in the grasslands. Raptors will often be seen foraging over these grasslands for small rodents such as western harvest mice (*Reithrodontomys megalotis*) or Heermann's kangaroo rats (*Dipodomys heermanni*).

Special-Status Species

With the conversion of much of the valley floor to agriculture, suitable habitat for special-status species is scarce, and these species are becoming less common. Other reasons for their decline include sand mining operations, use of rodenticides, and off-road vehicle use. Few natural botanical resources are present because the area is dominated by active agricultural lands and other frequently disturbed areas.

A number of plant species that are listed as federally or state-threatened or endangered potentially occur in the general area. These include Bakersfield cactus (*Opuntia basilaris* var. *treleaseae*), Bakersfield smallscale (*Atriplex tularensis*), Buena Vista Lake shrew (*Sorex ornatus relictus*), California jewel-flower (*Caulanthus californicus*), San Joaquin adobe sunburst (*Pseudobahia peirsonii*), striped adobe-lily (*Fritillaria striata*), western snowy plover (*Charadrius alexandrinus nivosus*), and San Joaquin wooly threads (*Lembertia congonni*).

A number of animals that have some federally protected status or are listed by California as endangered, threatened, or species of concern potentially occur in the general area. These species include blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin coachwhip (*Masticophisflagellum ruddoch*), burrowing owl (*Xthene cunicularia*), giant garter snake (*Thamnophis gigas*), Tulare grasshopper mouse (*Onychomys torridus tolarensis*), giant kangaroo rat (*Dipodomys ingens*), short-nosed kangaroo rat (*Dipodomys nitratoideus brevinasus*), Tipton kangaroo rat (*Dipodomys nitratoideus nitratoideus*), Swainson's hawk (*Buteo swainsoni*), Nelson's antelope squirrel (*Ammospermophilus nelsoni*), San Joaquin antelope squirrel (*Ammospermophilus nelson*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and the San Joaquin kit fox (*Vulpes macrotis mutica*).

3.3.2 Environmental Consequences

3.3.2.1 No Action

Under the No Action Alternative, there would be no impacts to biological resources since conditions would remain the same as existing conditions.

3.3.2.2 Proposed Action

Under the proposed action alternative, effects are similar to the No Action Alternative. Most of the habitat types required by species protected by the Endangered Species Act (ESA) do not occur in the exchange area. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years. The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that have value to listed species or birds protected by the Migratory Bird Treaty Act (MBTA). No critical habitat occurs within the area affected by the Proposed Action and so none of the primary constituent elements of any critical habitat would be affected. As the Proposed Action would occur within existing conveyance facilities and no construction is associated with the Proposed Action, there would be no adverse effect to any biological species.

3.4 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary Federal legislation that outlines the Federal Government's responsibility to cultural resources. Section 106 of the NHPA requires the Federal Government to take into consideration the effects of an undertaking on cultural resources listed on or eligible for inclusion in the National Register of Historic Places (National Register). Those resources that are on or eligible for inclusion in the National Register are referred to as historic properties.

The Section 106 process is outlined in the Federal regulations at 36 Code of Federal Regulations (CFR) Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify cultural resources and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is the type of action that has the potential to affect historic properties. If the action is the type of action to affect historic properties, Reclamation must identify the area of potential effects (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Office, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian Tribes concerning the identification of sites of religious or cultural significance, and consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.4.1 Affected Environment

Archaeological sites are known to exist within the AEWS Service area. These sites tend to be bedrock motors but may include other potentially buried archaeological sites of some significance. Additionally, many water conveyance features including may be eligible for inclusion in the National Register. The Friant Kern Canal has been determined eligible through consensus with the California State Historic Preservation Officer (SHPO).

3.4.2 Environmental Consequences

3.4.2.1 No Action

Under the No Action Alternative, existing conditions would persist. Reclamation would not have an undertaking as defined by Section 301(7) of the NHPA and thus there would be no Federal nexus on Reclamations part to initiate Section 106 review. As a result, implementation of the No Action alternative would result in no impacts to cultural resources by Reclamation.

3.4.2.2 Proposed Action

The Proposed Action would not be result in change in land use within or outside service area boundaries. The implementation of the proposed action has no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). Because the proposed action has no potential to cause effect to historic properties and the proposed action will result in no change of land use, no new construction, or require new or modification of water conveyance facilities, the proposed action will have no impact on cultural resources.

In the unlikely event that cultural resources or human remains are identified during the implementation of this project there may be additional considerations pursuant to Section 106 of the NHPA. If inadvertent discoveries of cultural resources or human remains occur during project implementation, work shall temporarily stop and Reclamation cultural resources staff shall be contacted immediately.

3.5 Indian Trust Assets

Indian trust assets (ITA) are legal interests in assets that are held in trust by the United States Government for federally recognized Indian tribes or individuals. The trust relationship usually stems from a treaty, executive order, or act of Congress. The Secretary of the interior is the trustee for the United States on behalf of federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such a compensation or injunction, if there is improper interference. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something. ITA cannot be sold, leased or otherwise alienated without United States’ approval. Trust assets may include lands, minerals, and natural resources, as well as hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, ITA may be located off trust land.

Reclamation shares the Indian trust responsibility with all other agencies of the Executive Branch to protect and maintain ITA reserved by or granted to Indian tribes, or Indian individuals by treaty, statute, or Executive Order.

3.5.1 Affected Environment

The nearest ITA is a Public Domain Allotment located 20-miles northeast of the Proposed Action.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative there are no impacts to ITAs, since conditions would remain the same as existing conditions.

3.5.2.2 Proposed Action

There are no tribes possessing legal property interests held in trust by the United States in the water involved with this action, nor is there such a property interest in the lands designated to receive the water proposed in this action.

There are no ITAs, Indian Reservations, or public domain allotments found within the water districts involved. The Proposed would not affect or interfere with the observation of religious or other ceremonies associated with ITAs.

3.6 Environmental Justice

Executive Order 12898 (February 11, 1994) mandates Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

3.6.1 Affected Environment

The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America.

3.6.2 Environmental Consequences

3.6.2.1 No Action

The No Action Alternative would continue to allow the poor economic conditions in the area to worsen. As farm workers are almost entirely made up of individuals from disadvantaged communities and poor economic conditions in the farm economy have disproportionate impacts on those that work on the farm, the conditions of harm to minority or disadvantaged populations in this region would persist.

3.6.2.2 Proposed Action

Without the proposed exchange water, some field crops may not be planted or may become stressed. The proposed exchange could positively affect low income and minority populations because these populations include farm workers. Therefore the proposed exchange would not disproportionately impact minority and disadvantaged populations.

3.7 Socioeconomic Resources

3.7.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. The CVP allocations each year allow farmers to plan for the types of crops to grow and to secure loans to purchase supplies. Depending upon the variable hydrological and economical conditions, water transfers and exchanges could be prompted. The economic

variances may include fluctuating agricultural prices, insect infestation, changing hydrologic conditions, increased fuel and power costs.

3.7.2 Environmental Consequences

3.7.2.1 No Action

Under the No Action Alternative economic conditions in the vicinity of AEWS and RRBWS would remain the same. Economic impacts of the Proposed Action would not affect agricultural production or the surrounding communities.

3.7.2.2 Proposed Action

The proposed exchange primarily results in regulation of water supplies with virtually no changes in flow path. This will provide AEWS water supply reliability by maximizing its CVP water supply contract with Reclamation and thus provide reliability to the farming industry and its attendant economics.

3.8 Air Quality

Section 176 (C) of the Clean Air Act [CAA] (42 USC 7506 (C)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the Federal Clean Air Act (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact conform to the applicable SIP before the action is taken.

On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by the Proposed Action equal or exceed certain *de minimis* amounts thus requiring the federal agency to make a determination of general conformity.

3.8.1 Affected Environment

The Proposed Action area lies within the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The pollutants of greatest concern in the San Joaquin Valley are carbon monoxide (CO), ozone (O₃), O₃ precursors such as volatile organic compounds (VOC) or reactive organic gases (ROG), and inhalable particulate matter between 2.5 and 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}). The SJVAB has reached Federal and State attainment status for CO, nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Federal attainment status has been reached for PM₁₀ but is in non-attainment for O₃, PM_{2.5}, and VOC/ROG (see

Table 3-1). There are no established standards for nitrogen oxides (NO_x); however, NO_x does contribute to NO₂ standards (SJVAPCD 2010a).

Table 3-1 San Joaquin Valley Attainment Status

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
O ₃	8 Hour	0.070 ppm (137 µg/m ³)	Nonattainment	0.075 ppm	Nonattainment
	1 Hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
CO	8 Hour	9.0 ppm (10 mg/m ³)	Attainment	9.0 ppm (10 mg/m ³)	Attainment
	1 Hour	20.0 ppm (23 mg/m ³)	Unclassified	35.0 ppm (40 mg/m ³)	Unclassified
NO ₂	Annual arithmetic mean	0.030 ppm (56 µg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1 Hour	0.18 ppm (338 µg/m ³)	Attainment	--	--
SO ₂	Annual average	--	--	0.03 ppm (80 µg/m ³)	Attainment
	24 Hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	--	--
PM ₁₀	Annual arithmetic mean	20 µg/m ³	Nonattainment	--	--
	24 Hour	50 µg/m ³	Nonattainment	150 µg/m ³	Attainment
PM _{2.5}	Annual Arithmetic mean	12 µg/m ³	Nonattainment	15 µg/m ³	Nonattainment
	24 Hour	--	--	35 µg/m ³	Attainment
Lead	30 day average	1.5 µg/m ³	Attainment	--	--
	Rolling-3 month average	--	--	0.15 µg/m ³	Unclassified

Source: CARB 2010; SJVAPCD 2010b; 40 CFR 93.153

ppm = parts per million

mg/m³ = milligram per cubic meter

µg/m³ = microgram per cubic meter

-- = No standard established

3.8.2 Environmental Consequences

3.8.2.1 No Action

Under the No Action Alternative, AEWSD would continue to engage in banking opportunities and exchanges to maximize management of their water supply within the facilities available to them either in district or utilizing other district's facilities as approved by Reclamation and reduce the impacts of critical dry year shortages. Conditions would be the same as the existing conditions; therefore, no additional impacts are associated with this alternative.

3.8.2.2 Proposed Action

Under the Proposed Action, movement of water between AEWSD and RRBWSD would be done via gravity flow and/or pumped using electric motors which have no emissions. In addition, extraction of banked groundwater from RRBWSD's seven extraction wells would be pumped using electric motors and therefore there would be no impact on air quality and a conformity analysis is not required under the CAA. The Proposed Action would not involve any

construction or land disturbing activities that could lead to fugitive dust emissions and/or exhaust emissions associated with the operations of heavy machinery.

3.9 Global Climate Change

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (EPA 2008a)

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane, nitrous oxide, and fluorinated gasses (EPA 2008a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and methane, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2008b).

3.9.1 Affected Environment

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

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

3.9.2 Environmental Consequences

3.9.2.1 No Action

Implementation of the No Action Alternative would involve no change on the composition of GHG in the atmosphere and therefore would not contribute to global climate change.

3.9.2.2 Proposed Action

GHG generated by the proposed exchange is expected to be extremely small compared to sources contributing to potential climate change since the exchange of water would be conveyed mostly via gravity and little, if any, additional pumping from electric motors would be required. While any increase in GHG emissions would add to the global inventory of gases that would contribute to global climate change, the Proposed Action would result in potentially minimal to no increases in GHG emissions and a net increase in GHG emissions among the pool of GHG would not be detectable.

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Section 4 Cumulative Effects

Other similar projects currently taking place within the vicinity of the Proposed Action include:

- FONSI/EA 09-90 Arvin-Edison Water Storage District / Improvement District #4 Exchange-Facilitated Transfer 2010
- FONSI/EA 05-05 Transfer of up to 100,000 af of CVP Water from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (no return)
- FONSI/EA 03-43 ("Exchange of up to 50,000 acre-feet from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District") (2 for 3 and 1 for 1)
- 2001 Exchange from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (2 for 3)
- 2000 Exchange from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (2 for 3)
- 1998 Exchange from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (1 for 1)
- 1997 Exchange from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (1 for 1)
- 1996 Exchange from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (2 for 3)
- 1995 Transfer from Arvin-Edison Water Storage District to Rosedale Rio-Bravo Water Storage District (2 for 3)
- *FONSI/EA-05-01 Kern-Tulare Water District and Rag Gulch Water District Groundwater Banking Project in Rosedale-Rio Bravo Water Storage District.* KTWD entered into a 25-year banking and exchange program with RRBWSD. Under this project, up to 40,000 af/y of KTWD's water will be banked in RRBWSD and up to 9,000 af/y will be returned to KTWD for use at a later date upon request. The exchange for this project is on a 2 to 0.96 ratio.

Reclamation's action is the approval to regulate AEWSD's CVP supplies up to 100,000 af in RRBWSD via existing facilities. The use of this water upon return to AEWSD would be to maintain and grow crops on existing agricultural lands. No native or previously untilled lands would be put into production. The Proposed Action would maintain existing land uses and would not contribute to cumulative changes or impacts to land uses or planning. Land use trends around the action area in recent years have resulted in urbanization of agricultural lands. This trend is

typically caused by economic pressures and is likely to continue with or without these water service actions. Therefore, there would be no cumulative effects to land use as a result of the Proposed Action.

Because the proposed action has no potential to cause effect to historic properties, the proposed action would have no cumulative impact on cultural resources. Because the nearest ITA is a Public Domain Allotment located 20-miles northeast of the Proposed Action there would be no cumulative impact to ITAs.

If RRBWSD uses groundwater extraction wells to return water to AEWSD the facilities involved with this regulation program are located within RRBWSD's existing banking facilities and would not interfere with any private wells. RRBWSD will always receive water from AEWSD prior to returning it so will always operate in a net positive position through the programs completion. Groundwater levels in the area would also slightly increase for short term. In addition, the groundwater level underlying AEWSD could experience a beneficial cumulative impact over the course of this regulation program because AEWSD and its landowners would need to rely less on groundwater pumping during dry years. The Proposed Action when added to other similar current and proposed actions may result in beneficial cumulative impacts to the groundwater on a small scale.

Because the movement of water would be gravity fed and groundwater pumping would be from electric motors, the Proposed Action would result in potentially minimal to no increases in GHG emissions and a net increase in GHG emissions among the pool of GHG would not be detectable.

Section 5 Consultation and Coordination

Fish and Wildlife Coordination Act (16 USC § 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 Proposed Action does not involve federal water development projects. Therefore the FWCA does not apply.

Endangered Species Act (16 USC § 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.

National Historic Preservation Act (16 USC § 470 et seq.)

The NHPA of 1966, as amended (16 USC 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.

Executive Order 13007 – Indian Sacred Sites

Executive Order 13007 requires Federal land managing agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. It also requires agencies to develop procedures for reasonable notification of proposed actions or land management policies that may restrict access to or ceremonial use of, or adversely affect, sacred sites.

Migratory Bird Treaty Act (16 USC § 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.

Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would not affect either concern.

Clean Air Act (42 USC § 7506 (C))

Section 176 of the CAA requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (42 USC § 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken. The Proposed Action involves the storage and conveyance of non-CVP water through existing federal facilities. Movement of water would be done via gravity or electrical pumps. There are no emissions associated with the movement of this water; therefore a conformity analysis is not required and there are no adverse impacts to air quality associated with the Proposed Action.

Clean Water Act (16 USC § 703 et seq.)

Section 401

Section 401 of the Clean Water Act (CWA) (33 USC § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 USC § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 404

Section 404 of the CWA authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 USC § 1344). No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required.

Section 6 List of Preparers and Reviewers

Reclamation Preparers and Reviewers

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Section 7 References

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Section 8 Appendices

Appendix A-Cultural Resource Determination

From: Nickels, Adam M
Sent: Friday, March 25, 2011 1:32 PM
To: Siek, Charles R
Cc: Barnes, Amy J; Bruce, Brandee E; Dunay, Amy L; Fogerty, John A; Goodsell, Joanne E; Overly, Stephen A; Perry, Laureen (Laurie) M
Subject: EA for Arvin-Edison Water Storage District and Rosedale Rio Bravo Water Storage District Regulation Program
Attachments: CR edits Arvin_Ed_Original.docx

Project no. 11-SCAO-110

Chuck:

I have reviewed the Draft EA for the Arvin-Edison Water Storage District and Rosedale Water Storage District Regulation Program. I have made some edits to the draft EA and request that you incorporate those edits into the final (edits attached). After Reviewing the document I am able to conclude that both the no action and proposed action alternatives will have no impact to cultural resources. The proposed alternative will result in water being transferred through existing facilities and the transfers will result in no change in land use and there is no new or modification of water conveyance facilities. The proposed action alternative has no potential to cause effects to historic properties assuming they are present pursuant to the regulations at 36 CFR Part 800.3(a)(1).

Location: Southern Central Valley

This email is intended to conclude the Section 106 process for this undertaking. The response and edits in the Draft EA are related to the project description as outlined in the EA. If there are significant changes to the project description, additional Section 106 review may be necessary. Thank you for providing the opportunity to comment on this EA.

Sincerely,

Adam M. Nickels - Archaeologist - M.S.
Phone: 916.978.5053 - Fax: 916978.5055 - www.usbr.gov

RECLAMATION



Mid-Pacific Regional Office MP-153 2800 Cottage Way - Sacramento, California 95825

Appendix B-Indian Trust Determination

From: Rivera, Patricia L
Sent: Friday, March 25, 2011 12:14 PM
To: Siek, Charles R
Subject: RE: Priority Request

Charles,

I reviewed the proposed action to approve Arvin-Edison Water Storage District (AEWSD) and Rosedale-Rio Bravo Water Storage District's (RRBWSD) request to maximize the beneficial use of its varied water supplies by regulating supplies, which when regulated, will serve a higher priority need, with RRBWSD on a long term basis. AEWSD needs to supplement its own conjunctive use program, protect the groundwater resources within its service area, and mitigate possible Contract water supply losses in future years due to drought, losses associated with the Act and as mandated by future "other" demands for water including but not limited to those sought by environmental agencies and/or legislation. The use of CVP water for the purpose of regulating available supplies, including but not limited to transfers, exchanges, and groundwater banking, (including areas outside the Contract service area) provides AEWSD with operational flexibility and facilitates better water management of its CVP water supply.

AEWSD and RRBWSD have a long history of water management actions including those approved by Reclamation in 1995, 1996, 1997, 1998, 2000, 2001, 2003, 2004, and 2005. This proposed regulation action is consistent with prior Reclamation approvals.

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

Patricia

Charles—you did not submit a request form and we need it. Made my determination without a statement of nearest ITA in order to meet your deadline. Will provide a second determination only to include the nearest ITA. Thanks

Please submit a request form to close our files and for location of ITA. Thanks so much!

APPENDIX C-Endangered Species Act Determination

From: Hyatt, David E
Sent: Friday, March 25, 2011 10:55 AM
To: Siek, Charles R
Cc: Ballew, Rena K
Subject: Arvin-Edison Water Storage District and Rosedale-Rio Bravo Water Storage -- ESA

Arvin-Edison Water Storage District and Rosedale-Rio Bravo Water Storage District Regulation Program 2011

I have reviewed the provided Environmental Assessment (EA) for the above project. Based upon the description of the proposed federal action (i.e. approval for a 1 year exchange) as well as the restrictions placed upon the District I have determined there will be no-effect to listed species.

Reclamation's determination of No Effect was based on the following factors:

- Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years.
- Proposed Action would not change the land use patterns of cultivated or fallowed fields.
- Proposed Action would not affect natural stream courses.
- No critical habitat occurs within the area affected by the Proposed Action
- No construction is associated with the Proposed Action and existing conveyance facilities will be used.

If my understanding of the project is incorrect, please let me know.

D

David E. Hyatt
Supervisory Biologist
South-Central California Area Office
Bureau of Reclamation
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