

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Kaweah River Water Warren Act Agreements

EA-14-037



**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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Section 1 Introduction

The Bureau of Reclamation (Reclamation) provided the public with an opportunity to comment on the draft Environmental Assessment (EA) and draft Finding of No Significant Impact between July 16, 2014 and July 31, 2014. Arvin-Edison Water Storage District (Arvin-Edison WSD) submitted a comment letter during that time. The comments and Reclamation's responses may be found in Appendix A. Changes from the draft EA that are not minor editorial changes are indicated by vertical lines in the left margin of this document.

1.1 Background

In recent years, California has experienced droughts that have reduced water supplies to many water districts. As a result of the drought, as well as environmental and regulatory restrictions, Friant Division Central Valley Project (CVP) water service contractors have received unprecedented zero percent water supply allocations in 2014. The zero allocation follows previous dry years in 2012 and 2013, in which Friant Division CVP contractors received 57 and 62 percent of their full Class 1 contract supply, respectively.

In order to continue meeting their customers' needs, affected contractors are pursuing a range of additional water supplies, such as transfers, pumped groundwater and other surface water sources. Seven of these contractors have now purchased a total of 8,250 acre-feet (AF) of non-CVP Kaweah River water from the Wutchumna Mutual Water Company, which they would like to deliver for agricultural use by way of the federal Friant-Kern Canal (FKC). The districts have requested Warren Act agreements for conveyance of this non-CVP water in federal facilities. Participating districts are shown in Figure 1-1.

The districts have proposed introducing the Kaweah River water into the FKC using Lindsay-Strathmore Irrigation District's (Lindsay-Strathmore ID's) turnout at FKC Milepost (MP) 69.13. Some of the participating districts are located upstream of the introduction point, so they would also have need of exchange agreements to deliver their water where it is needed.

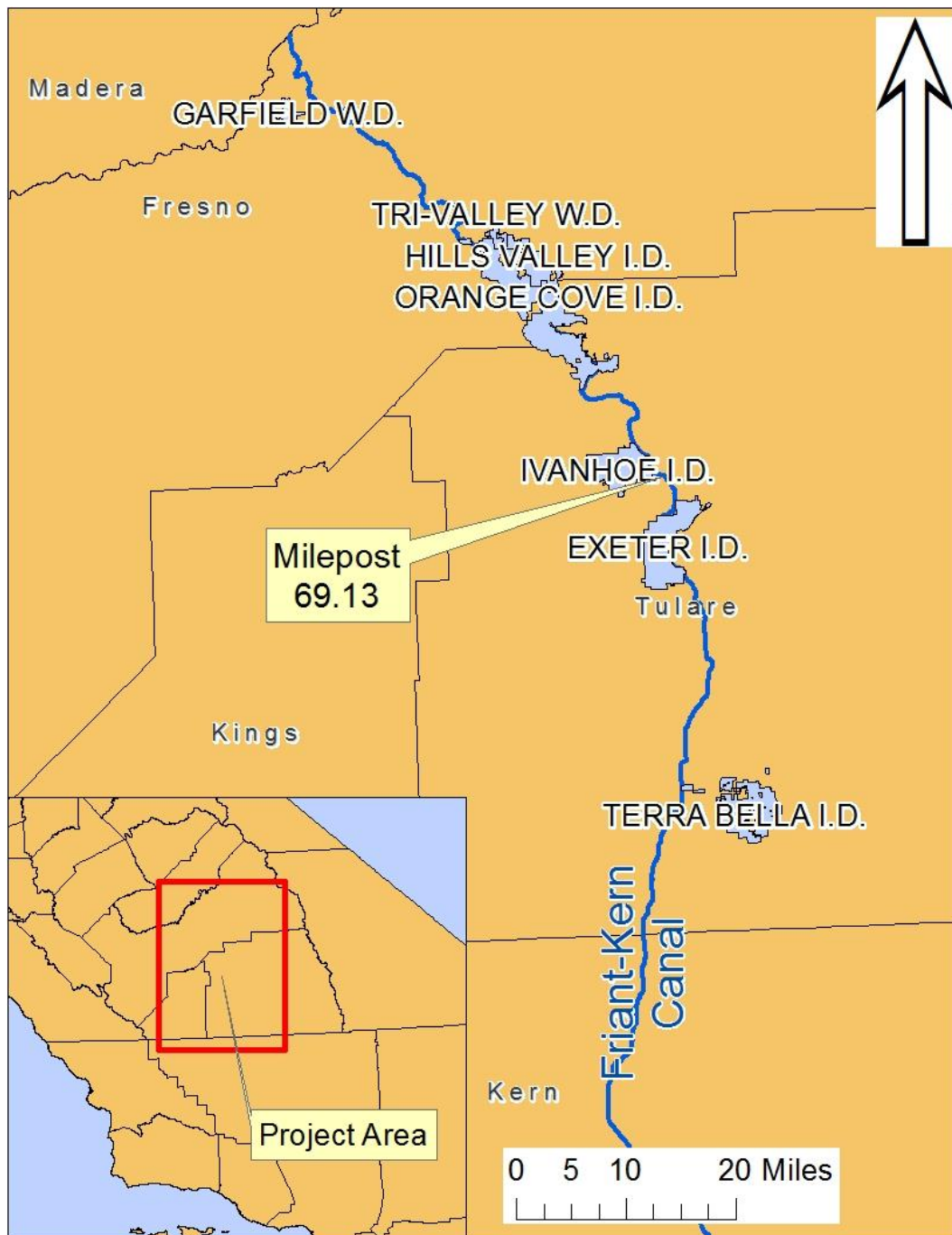


Figure 1-1 Participating Contractors

1.2 Need for the Proposed Action

The participating contractors do not have adequate water supplies to meet the needs of their customers. The purpose of the Proposed Action is to provide a conveyance mechanism to deliver supplemental supplies to support existing crops within the districts.

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

If no action were taken, the proponent districts' non-CVP Kaweah River water which they purchased from the Wutchumna Mutual Water Company would not be conveyed in the FKC. They would have to find an alternate water supply, or use another conveyance method to deliver this non-CVP water to their customers' crops. If no other source or conveyance mechanism were found, fallowing of cropland could be necessary, or crops could possibly be lost.

2.2 Proposed Action

2.2.1 Warren Act Agreements

Reclamation proposes to issue Warren Act agreements to seven Friant Division contractors under Article 18 of their Repayment Contracts. Under the proposed agreements, Lindsay-Strathmore ID would convey a total of up to 8,250 AF of non-CVP Kaweah River water into the FKC by way of their turnout/Wutchumna Ditch Siphon at MP 69.13. The various districts would then take delivery of the water at their respective turnouts, as shown below in Table 2-1.

Table 2-1 Participating Contractors

Contractor	Estimated Volume (AF)	Turnout(s) by Milepost
Garfield Water District (Garfield WD)	150	7.57
Hills Valley Irrigation District (Hills Valley VID)	1,600	41.15L
Tri-Valley Water District (Tri-Valley WD)	400	35.85L, 38.74R*
Orange Cove Irrigation District (Orange Cove ID)	1,700	35.85L, 35.87L, 36.79R, 38.74R, 39.82R, 41.76R, 42.89L, 44.56R, 44.56L, 45.46R, 47.03R, 48.58R, 49.87R, 50.38L, 51.62L, 52.44R, 53.32R
Ivanhoe Irrigation District (Ivanhoe ID)	400	65.04R, 67.05R, 68.13R
Exeter Irrigation District (Exeter ID)	1,000	72.52L, 75.18L,R , 76.35R, 76.98R, 78.08R, 79.24R
Terra Bella Irrigation District (Terra Bella ID)	3,000	102.65L, 103.64L

*- Shared with Orange Cove Irrigation District

Shaded turnouts are located upstream from the proposed introduction point at MP 69.13. An operational exchange would be needed to convey water to these locations.

Each Warren Act agreement would be individually issued effective through February 28, 2019.

2.2.2 Exchanges

Operational exchanges would be necessary as part of this action, to deliver water to the districts whose turnouts are located upstream of the introduction point (MP 69.13). These would include:

- Exchanges with Lindsay-Strathmore ID for their water designated for Health and Public Safety (HPS) from Millerton Lake, with its HPS needs instead being met using Kaweah River water, and
- Exchanges with Arvin-Edison WSD for CVP water they have stored in Millerton Lake.

2.2.3 Environmental Commitments

The participating contractors shall implement the following environmental protection measures to avoid, minimize and mitigate environmental consequences associated with the Proposed Action (Table 2-2). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of all reports and monitoring shall be submitted to Reclamation.

Table 2-2 Environmental Protection Measures and Commitments

Resource	Protection Measure
Multiple	There will be no construction or modification of water conveyance facilities.
Biological Resources	The Proposed Action would not involve the conversion of any natural land, or land fallowed and untilled for three or more years.

Section 3 Affected Environment and Environmental Consequences

This section identifies and assesses the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative.

3.1 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment and determined that the Proposed Action did not have the potential to cause direct, indirect, or cumulative adverse effects to the resources listed in Table 3-1.

Table 3-1 Resources Eliminated from Further Analysis

Resource	Reason Eliminated
Cultural Resources	The Proposed Action has no potential to cause effects to historic properties pursuant to 36 CFR Part 800.3(a)(1). A copy of the determination is attached as Appendix B.
Indian Sacred Sites	The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or adversely affect the physical integrity of such sacred sites.
Indian Trust Assets	The Proposed Action would not impact Indian Trust Assets, as there are none in the Proposed Action area. A copy of the determination is attached as Appendix C.
Air Quality	There would be no construction or modification of facilities as a result of the Proposed Action, so there would be no construction-related emissions. Any pumping would make use of existing equipment operating within typical ranges. Therefore no air emissions are anticipated beyond what has already been evaluated and permitted.
Global Climate	The Proposed Action would not involve physical changes to the environment or construction activities that could impact global climate change. Any pumping would make use of existing equipment operating within normal ranges. Therefore no greenhouse gas emissions are anticipated beyond what has already been evaluated and permitted.

3.2 Water Resources

3.2.1 Affected Environment

Friant-Kern Canal

The FKC carries water over 151.8 miles in a southerly direction from Millerton Lake to the Kern River, four miles west of Bakersfield. The water is used for supplemental and new irrigation supplies in Fresno, Tulare, Kings and Kern Counties. The canal has an initial capacity of 5,000 cubic feet per second that gradually decreases to 2,000 cubic feet per second at its terminus near the Kern River.

Arvin-Edison Water Storage District

Arvin-Edison WSD is a Friant Division CVP contractor with a water service contract for up to 40,000 AF per year (AF/y) of Class 1 and 311,675 AF/y of Class 2 Friant Division CVP supplies for irrigation and municipal purposes. Arvin-Edison WSD 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 Delta, diverted and wheeled through the California Aqueduct for ultimate delivery to Arvin-Edison WSD. Due to a decrease in supply reliability, cost increases, and water quality concerns, several of these exchanges are no longer feasible to the extent they once were. As a result, it has been necessary for Arvin-Edison WSD to identify and implement additional programs to manage its highly variable CVP water supplies. Other surface water supplies available to Arvin-Edison WSD include water from the State Water Project, Kern River, and flood flows when available.

Exeter Irrigation District

Exeter ID is located in Tulare County on the east side of the San Joaquin Valley, 9 miles east of the City of Visalia. Exeter ID was formed in 1937, and in 1950 entered into a long-term contract with Reclamation for 10,000 AF/y of Class 1 and 19,000 AF/y of Class 2 water. In 1953, the Class 1 water supply was increased to 11,500 by an amendment to the contract. Exeter ID is comprised of approximately 15,184 acres, of which 12,700 are irrigated. The City of Exeter is located within Exeter ID, but Exeter ID does not provide water for municipal/industrial purposes. On October 1, 2012, Tri-Valley WD purchased a partial contract assignment from Exeter ID for 400 AF/y of Class 1 water.

Garfield Water District

Garfield WD is located in Fresno County on the east side of the San Joaquin Valley. Garfield WD is comprised of 1,750 acres, of which 1,300 are irrigated. Garfield WD is a long-term Friant Division CVP contractor with a contract for 3,500 AF/y of Class 1 water. Garfield WD has no other sources of surface water. Garfield WD is near the foothills of the Sierra Nevada mountains, and the available groundwater supply is limited.

Hills Valley Irrigation District

Hills Valley ID is located about 20 miles east of Fresno and 5 miles north of Orange Cove. Most of the district is located in Fresno County, with a small portion in Tulare County. In 1976, Hills Valley ID entered into a long-term renewable contract with Reclamation for 2,146 AF/y. In 1995, the contract amount was amended to 3,346 AF/y. On October 1, 2012, Hills Valley ID became a long-term Friant Division CVP contractor with two partial contract assignments totaling 1,250 AF/y of Class 1 water. The first partial contract assignment was purchased from the Lewis Creek Water District for 250 AF/y of Class 1 water, with the second purchased from the Porterville Irrigation District for 1,000 AF/y of Class 1 water.

Hills Valley ID does not directly own any groundwater extraction facilities. Some landowners within the district do have private wells to sustain irrigation during periods when surface water supplies are inadequate. However, local geological conditions (i.e. low aquifer storage capacity and drainage limitations) make these wells an unreliable long-term source of water.

Ivanhoe Irrigation District

Ivanhoe ID is located in Tulare County, approximately 50 miles southeast of Fresno and 8 miles northeast of Visalia. The St. Johns River lies to the south, and Cottonwood Creek is to the north. The district has 11,202 acres, of which 10,648 are irrigated.

Ivanhoe ID was formed in 1948, and in 1949 they entered into a long-term contact with Reclamation for 7,700 AF/y of Class 1 and 7,900 AF/y of Class 2 water. In addition, Ivanhoe ID

owns 7.9 shares of Wutchumna Mutual Water Company stock, corresponding to approximately 3,950 AF of non-CVP water. The non-CVP water supplies are diverted from the Kaweah River through the Wutchumna Ditch to Ivanhoe ID's diversion facility.

In 2010, Ivanhoe ID along with the Kaweah Delta Water Conservation District (Kaweah Delta WCD), executed a resources exchange in which Kaweah Delta WCD became a long-term Friant Division CVP contractor through a partial contract assignment totaling 1,200 AF/y of Class 1 water and 7,400 AF/y of Class 2 water. In exchange for the partial assignment, Ivanhoe ID received Kaweah Delta WCD's water supply from the Longs Canal Company, 2,500 AF of storage capacity in Kaweah Reservoir and a cash payment.

Ivanhoe ID has three groundwater recharge areas over approximately 15 acres, as well as approximately three miles of Cottonwood Creek which are also used for recharge purposes. However, Ivanhoe ID does not own or operate groundwater extraction facilities. Therefore, landowners must provide their own wells to sustain irrigation during periods when Ivanhoe ID does not have surface water supplies available.

Lindsay-Strathmore Irrigation District

Lindsay-Strathmore ID is a repayment contractor formed in Tulare County in 1915, with a maximum annual entitlement of 27,500 AF of Friant Division Class 1 water. Land use within Lindsay-Strathmore ID is mainly agricultural, consisting of roughly 15,700 acres of which 15,123 are currently irrigated. Most irrigable acres grow permanent crops; the main crops in Lindsay-Strathmore ID are oranges and olives. In addition, Lindsay-Strathmore ID also provides water to approximately 1,400 homes for municipal and industrial purposes.

When surface water is unavailable, Lindsay-Strathmore ID operates five groundwater wells. Lindsay-Strathmore ID does not overlie a reliable groundwater basin and in addition to surface water runoff flowing into areas down slope from the district, groundwater supplies are inadequate. Lindsay-Strathmore ID does not operate recharge areas or have a conjunctive use program. Instead, Lindsay-Strathmore ID contractually uses the conjunctive use capacity of Tulare Irrigation District (Tulare ID) by delivering a portion of its non-CVP supplies to Tulare ID for groundwater banking. Through an agreement with Tulare ID, this non-CVP water can then be made available to Lindsay-Strathmore ID during dry years.

Lindsay-Strathmore ID's source of non-CVP water derives from its ownership of 21 shares of Wutchumna Mutual Water Company stock from the Kaweah River, which historically has been approximately 10,000 AF, although in wet years it can be much greater.

Orange Cove Irrigation District

Orange Cove ID is an agricultural district 14 miles long and 3 miles wide, located in Fresno and Tulare Counties. Orange Cove ID is about 30 miles southeast of Fresno and 20 miles north of Visalia. The district has 28,000 acres, of which approximately 26,788 are irrigated. The district was formed in 1937, and in 1949, Orange Cove ID entered into a long-term contract with Reclamation for 31,800 AF/y. The contract amount was amended in 1989 to 39,200 AF/y of Class 1 water.

Groundwater resources are limited under Orange Cove ID, with the exception of an area immediately east of Smith Mountain and the area in the vicinity of Navelencia. Orange Cove ID does not operate any groundwater wells or recharge facilities, but some individual property owners do pump groundwater to make up deficiencies in their water supply. In years when water supplies are plentiful, Orange Cove ID may transfer unused water out of the district for storage and banking.

Terra Bella Irrigation District

Terra Bella ID is located in Tulare County, about 75 miles southeast of Fresno and about 8 miles south of Porterville. Terra Bella ID is comprised of 13,962 acres, of which 11,165 are irrigated. In 1950, Terra Bella ID entered into a long-term contract with Reclamation for 29,000 AF/y of Class 1 water. Terra Bella ID does not have any other long-term surface water supplies. Currently, Terra Bella ID owns and operates 10 wells. There are no significant privately-owned grower or landowner wells in the district.

In order to manage limited supplies, Terra Bella ID has developed groundwater banking arrangements with other districts. In years when surplus water is available, Terra Bella ID transfers water to other districts for direct use, resale, or percolation through recharge basins. This water is later returned during dry years to allow Terra Bella ID to continue to produce crops.

Tri-Valley Water District

Tri-Valley WD is comprised of 4,481 acres, of which 1,812 are irrigable. The nearest town is Orange Cove. Tri-Valley WD only serves agricultural water to seven growers and approximately 880 acres. Tri-Valley WD does not directly provide groundwater, but all landowners in the district have private wells. Due to the proximity of Tri-Valley WD to the Sierra foothills, groundwater supplies are typically inadequate for a reliable water supply. In 1976, Tri-Valley WD entered into a long-term renewable contract with Reclamation for 942 AF/y, and in 1995, the contract amount was amended to 1,142 AF/y. On October 1, 2012, Tri-Valley WD became a long-term Friant Division CVP contractor through a partial contract assignment purchased from Exeter ID totaling 400 AF/y of Class 1 water.

3.2.2 Environmental Consequences

No Action

If no action were taken, the proponent districts' non-CVP water would not be conveyed in the FKC. They would have to find an alternate water supply, use another conveyance method to deliver this non-CVP water to their customers' crops. If no alternative conveyance method could be found, the districts would likely have to find a way to exchange it for other, usable water supplies, or crops would be fallowed.

Proposed Action

The Proposed Action would allow non-CVP Kaweah River water purchased from the Wutchumna Mutual Water Company to be conveyed in CVP facilities when excess capacity is available. This would allow the water to be delivered to CVP contractors' service areas for agricultural use. There would be no permanent modification of the FKC, and the capacity of the facility would remain the same.

The Kaweah River water is already allocated for use, and would be made available through a combination of land fallowing and groundwater substitution. The Proposed Action does not represent a new diversion of the water, or a new water right, but an alternate use for existing supply.

The total quantity of water that would be conveyed in the FKC under the Proposed Action would be limited to 8,250 AF/year through February 28, 2019, split among the participating contractors roughly as outlined in Table 1. The quantity of water pumped into the FKC by a district would be delivered (less conveyance losses) and used for irrigation purposes. Some of the irrigation water would be lost to evapotranspiration, and some would also percolate back into the aquifer.

Non-CVP water introduced into the FKC must meet Reclamation's then-current *Policy for Accepting Non-Project Water in Friant Division Facilities* prior to approval for conveyance (see Appendix D). If testing shows that the water does not meet then-current standards, the contractors would not be allowed to discharge into the FKC until water quality concerns are addressed. This testing program is anticipated to adequately protect the quality of water and limit degradation of other users' supplies.

Operational exchanges would be necessary to deliver water to the districts whose turnouts are located upstream of the introduction point (MP 69.13), as described in Section 2.2.2.

Cumulative Impacts

The FKC is used to convey water for a variety of users from a variety of sources. The quality of water being introduced is tested regularly in order to limit the potential for degradation of mixed water supplies. This testing program is anticipated to adequately protect the quality of water in the FKC from the cumulative effects of this and other water conveyance actions.

Although capacity in the FKC is limited, Friant Water Authority and Reclamation actively operate it in order to balance competing demands. Non-CVP water such as the water which would be conveyed under the Proposed Action has a lower priority than CVP water. Therefore the Proposed Action is not anticipated to cause conflicts or create other cumulative impacts to FKC operations.

3.3 Land Use

3.3.1 Affected Environment

The participating contractors for this action are located in Fresno and Tulare Counties, in California's Central Valley. The Valley is generally rural and agricultural in nature, with several medium-sized cities located along major transportation corridors. The leading agricultural products in each county are outlined below in Table 3-2.

Table 3-2 Agricultural Products by County

County	Major Agricultural Products
Fresno	Almonds, livestock, raisins, milk, tomatoes
Tulare	Milk, grapes, cattle, navel oranges, silage corn
Source: California Farm Bureau Federation 2012	

No Action

If no action were taken, the proponent districts' non-CVP water would not be conveyed in the FKC. They would have to find an alternate water supply, use another conveyance method to deliver this non-CVP water to their customers' crops, or crops may be fallowed.

Proposed Action

Under the Proposed Action, non-CVP water would be conveyed to agricultural districts located along the FKC. The water would be used to maintain current land uses by supporting existing crops. Some short-term fallowing over the same period would take place in the districts making the water available to the proponent contractors.

Cumulative Impacts

The Proposed Action would provide a source of water to support agriculture in a time of shortage. This helps to mitigate the impacts of California's ongoing drought. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to existing land uses.

3.4 Biological Resources

3.4.1 Affected Environment

The Proposed Action area includes the CVP service areas of Garfield WD, Hills Valley WD, Tri-Valley WD, Orange Cove ID, Ivanhoe ID, Exeter ID, and Terra Bella ID, located in Fresno and Tulare Counties. These service areas are primarily cultivated agricultural lands and include field crops, vineyards, and orchards. These areas are associated with irrigation water delivery systems and drainage canals. There is some urban development, although limited, and much of the non-agricultural vegetation includes weedy non-native annual and biennial plants.

Reclamation requested an official species list from the U.S. Fish and Wildlife Service (Service) via the Sacramento Field Office's website, http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm, on June 3, 2014 (Service 2014). A combined species list was obtained for Fresno and Tulare Counties (Service 2014). Reclamation further queried the California Department of Fish and Wildlife California Natural Diversity Database (CNDDDB) for records of protected species within 10 miles of the construction area associated with the Proposed Action (CNDDDB 2014). A summary table (Table 3-3) was created from the Service species list, CNDDDB records, and additional information within Reclamation's files.

Table 3-3 Federal Protected Species List and Effects Determination for the Proposed Action

Listed Species	Status ¹	District ²	ESA Effects ³	Summary basis for Effects determination
AMPHIBIANS				
California red-legged frog (<i>Rana draytonii</i>)	T, X	—	NE	Presumed extirpated from the Proposed Action Area and no ground disturbance or land conversion as a result of the Proposed Action.
California tiger salamander, central population (<i>Ambystoma californiense</i>)	T, X	Tri-Valley WD	NE	Known from vernal pool and uplands habitat in Fresno and Tulare CO., but no ground disturbance or land conversion as a result of the Proposed

Listed Species	Status ¹	District ²	ESA Effects ³	Summary basis for Effects determination
				Action.
Mountain yellow-legged frog, northern district population segment (<i>Rana muscosa</i>)	E, PX	—	NE	Not documented in the Proposed Action Area. No habitat would be affected.
Sierra Nevada yellow-legged frog (<i>Rana sierrae</i>)	E, PX	—	NE	Not documented in the Proposed Action Area. No habitat would be affected.
Yosemite toad (<i>Anaxyrus canorus</i>)	T, PX	—	NE	Not documented in the Proposed Action Area. No habitat would be affected.
BIRDS				
California condor (<i>Gymnogyps californianus</i>)	E, X	Any	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Least Bell's vireo (<i>Vireo bellii pusillus</i>)	E	Any	NE	Could fly over the Proposed Action Area during migration, but habitat is lacking.
Southwestern willow flycatcher (<i>Empidonax traillii eximius</i>)	E	Any	NE	Could fly over the Proposed Action Area during migration, but habitat is lacking.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	T	Any	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	C	Any	NE	Could fly over the Proposed Action Area during migration; no ground disturbance or land conversion as a result of the Proposed Action.
FISH				
Central Valley steelhead (<i>Oncorhynchus mykiss</i>)	T (NMFS)	—	NE	No waterways within the species' range would be affected by the Proposed Action.
Delta smelt (<i>Hypomesus transpacificus</i>)	T	—	NE	No waterways within the species' range would be affected by the Proposed Action.
Lahontan cutthroat trout (<i>Oncorhynchus clarki henshawi</i>)	T	—	NE	No waterways within the species' range would be affected by the Proposed Action.
Little Kern golden trout (<i>Oncorhynchus mykiss whitei</i>)	T, X	—	NE	No waterways within the species' range would be affected by the Proposed Action.
Owens tui chub (<i>Gila bicolor snyderi</i>)	E	—	NE	No waterways within the species' range would be affected by the Proposed Action.
Paiute cutthroat trout (<i>Oncorhynchus clarki seleniris</i>)	T	—	NE	No waterways within the species' range would be affected by the Proposed Action.
INVERTEBRATES				
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E	—	NE	Not documented in the Proposed Action Area, and no ground disturbance or land conversion as a result of the Proposed Action.
Longhorn fairy shrimp (<i>Branchinecta longiantenna</i>)	E	—	NE	Not documented in the Proposed Action Area, and no ground disturbance or land conversion as a result of the Proposed Action.

Listed Species	Status ¹	District ²	ESA Effects ³	Summary basis for Effects determination
Valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T	Tri-Valley WD	NE	Known from grazed lands and riparian habitats, but no ground disturbance or land conversion as a result of the Proposed Action.
Vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T, X	Orange Cove ID, Exeter ID	NE	Documented from vernal pool habitat, but no ground disturbance or land conversion as a result of the Proposed Action.
Vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E, X	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area, and no ground disturbance or land conversion as a result of the Proposed Action.
MAMMALS				
Fisher (<i>Martes pennanti</i>)	C	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area.
Fresno kangaroo rat (<i>Dipodomys nitratoideis exilis</i>)	E, X	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area.
Giant kangaroo rat (<i>Dipodomys ingens</i>)	E	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	Ivanhoe ID, Exeter ID, Terra Bella ID	NE	Although suitable habitat may be present, no land use change, conversion of cultivated or fallowed fields, construction or modification of existing facilities would occur as a result of the Proposed Action.
Sierra Nevada bighorn sheep (<i>Ovis canadensis californiana</i>)	E	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area.
Tipton kangaroo rat (<i>Dipodomys nitratoideis nitratoideis</i>)	E	—	NE	Suitable habitat not present. Not documented in the Proposed Action Area.
PLANTS				
California jewelflower (<i>Caulanthus californicus</i>)	E	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Greene's tuctoria (<i>Tuctoria greenei</i>)	E	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Hairy Orcutt grass (<i>Orcuttia pilosa</i>)	E, X	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Hartweg's golden sunburst (<i>Pseudobahia bahiifolia</i>)	E	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Hoover's spurge (<i>Chamaesyce hooveri</i>)	T, X	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Keck's checker-mallow (<i>Sidalcea keckii</i>)	E, X	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Kern mallow (<i>Eremalche kernensis</i>)	E	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.

Listed Species	Status ¹	District ²	ESA Effects ³	Summary basis for Effects determination
Mariposa pussy-paws (<i>Calyptidium pulchellum</i>)	T	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Palmate-bracted bird's-beak (<i>Cordylanthus palmatus</i>)	E	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Ramshaw sand-verbena (<i>Abronia alpina</i>)	C	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
San Benito evening-primrose (<i>Camissonia benitensis</i>)	T	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	T	Tri-Valley WD	NE	Reported from along HWY 180 in Tri-Valley WD. There would be no ground disturbance or land conversion as a result of the Proposed Action.
San Joaquin woolly-threads (<i>Monolopia congdonii</i>)	E	—	NE	No land use change, conversion of cultivated or fallowed fields, construction or modification of existing facilities would occur as a result of the Proposed Action.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	T, X	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Springville clarkia (<i>Clarkia springvillensis</i>)	T	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
Fleshy owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>)	T, X	—	NE	No ground disturbance or land conversion as a result of the Proposed Action.
REPTILES				
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	—	NE	No land use change, conversion of cultivated or fallowed fields, construction or modification of existing facilities would occur as a result of the Proposed Action. Agricultural lands do not provide suitable habitat.
Giant garter snake (<i>Thamnophis gigas</i>)	T	—	NE	Presumed extirpated from the Proposed Action Area. No land use change, adverse water quality changes, conversion of cultivated or fallowed fields, construction or modification of existing facilities would occur as a result of the Proposed Action.
<p>1 Status= Federally protected species under the Endangered Species Act (ESA), unless otherwise specified. C: Candidate to become a proposed species. E: Listed as Endangered. NMFS: Species under the jurisdiction of the National Marine Fisheries Service. T: Listed as Threatened. PX: <i>Proposed Critical Habitat</i> – critical habitat proposed for a species already listed. X: Critical Habitat designated for this species.</p> <p>2 District= CVP service areas where listed species may occur based on habitat suitability and review of the literature. See Table 2-1 for District Abbreviations. Any: Federally protected species may occur within any of the Districts: Garfield WD, Hills Valley WD, Tri-Valley WD, Orange Cove ID, Ivanhoe ID, Exeter ID, and Terra Bella ID.</p> <p>3 ESA Effects = Effect determination for Endangered Species Act Analysis NE: No Effect from the Proposed Action to federally listed species</p>				

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not permit non-CVP water to be conveyed in the FKC to various Districts, as listed in Table 2-1. The Districts would need to find alternative supplies of water and/or temporarily take land out of production. If land was removed from production, there might be some fallowed fields that could temporarily be used by the San Joaquin kit fox and the Tipton kangaroo rat. However, the fields would likely be disked so often that denning and burrowing would be unlikely to occur, and the value of the fallowed fields to those species would be low.

Proposed Action

Under the Proposed Action, federally listed, proposed or candidate species, and critical habitat would not be affected, nor would any migratory birds protected under the Migratory Bird Treaty Act (MBTA; 16 USC § 703-712). Many of the species and their critical habitat do not occur in the Proposed Action Area (Table 3-1). Most of the habitat types required by species protected by the Endangered Species Act (ESA; 16 USC § 1531 et seq.) do not occur in the Action area. The Proposed Action would not involve the conversion of any land fallowed and untilled for three or more years. There would be no change in land use patterns of cultivated or fallowed fields that do have some value to listed species or to birds protected under the MBTA. The non-CVP water would not reach streams containing listed fish species, therefore there would be no effects to species under the NMFS jurisdiction. No critical habitat would be affected by the Proposed Action. Based upon the reasons listed above, Reclamation has determined there would be No Effect to listed species or designated critical habitat under the ESA and No Take of birds protected by the MBTA.

Cumulative Impacts

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

3.5 Socioeconomic Resources

3.5.1 Affected Environment

The participating contractors are located in Fresno and Tulare Counties. According to 2012 Census estimates, both counties have lower per capita income, greater unemployment and higher rates of poverty than California as a whole. See Table 3-4, below.

Table 3-4 Economic Data, 2012

County	Per Capita Income	Unemployment Rate	Poverty Rate
Fresno County	\$20,391	15.7%	24.8%
Tulare County	\$18,021	13.6%	24.8%
California	\$29,551	11.4%	15.3%
Source: Census Bureau 2012 , Census Bureau 2013			

3.5.2 Environmental Consequences

No Action

If no action were taken, Reclamation would not allow conveyance of the non-CVP Kaweah River water in the FKC. The contractors would have to find an alternate conveyance mechanism, or secure another source of water. If no alternate way could be found to deliver supplemental water, land would be taken out of agricultural production. Agriculture is an important part of the area's economy, so a reduction in agricultural activity would have an adverse effect on socioeconomic conditions.

Proposed Action

Under the Proposed Action, non-CVP water would be conveyed to agricultural districts located along the FKC. The water would be used to maintain current land uses by supporting existing crops. This would support agriculture, which is a benefit to the area's economy.

Cumulative Impacts

The Proposed Action would provide a source of water to support agriculture in a time of shortage. Because of agriculture's importance to the area's economy, any impacts, either positive or negative, tend to have a disproportionate and cumulative effect on employment and wages. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to the area's economic well-being.

3.6 Environmental Justice

3.6.1 Affected Environment

The participating contractors are located in Fresno and Tulare Counties. According to Census Bureau estimates, the percentage of people living in both counties who identify as Hispanic or Latino is higher than the percentage for California as a whole (see Table 3-5). In addition, the market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, into the San Joaquin Valley.

Table 3-5 Demographic Data, 2012

	Total Population	White (not Hispanic)	Black or African American	American Indian	Asian	Native Hawaiian/ Pacific Islander	Two or More Races	Hispanic or Latino
Fresno County	947,895	77.5%	5.9%	3.0%	10.4%	0.3%	2.9%	51.2%
Tulare County	451,977	88.4%	2.2%	2.8%	4.0%	0.2%	2.4%	61.8%
California	37,999,878	73.7%	6.6%	1.7%	13.9%	0.5%	3.6%	38.2%
Source: Census Bureau 2013								

3.6.2 Environmental Consequences

No Action

If no action were taken, Reclamation would not allow conveyance of the non-CVP Kaweah River water in the FKC. The contractors would have to find an alternate conveyance mechanism, or secure another source of water. If no alternate way could be found to deliver supplemental water, land would be taken out of agricultural production. Since farm laborers tend

to come from disadvantaged communities, this would have a disproportionate adverse impact on those populations.

Proposed Action

The Proposed Action would support agriculture by making additional supplies of water available to support existing crops. Supporting farm employment is a benefit to those disadvantaged groups.

Cumulative Impacts

The Proposed Action would provide a source of water to support agriculture in a time of shortage. Because of agriculture's importance to the area's economy, any impacts, either positive or negative, tend to have a disproportionate and cumulative effect on employment and wages. Farm laborers often come from low-income and minority populations, and they are therefore disproportionately affected by these trends. Several similar water-moving actions have been authorized or are currently under review. Cumulatively they are expected to provide a benefit to the economic well-being of disadvantaged groups.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft EA during a 15 day public review period. Arvin-Edison WSD submitted a letter during the comment period. The letter and Reclamation's response may be found in Appendix A.

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Section 6 References

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