

RECLAMATION

Managing Water in the West

Final Environmental Assessment

Recirculation of Recaptured Water Year 2010 San Joaquin River Restoration Program Interim Flows



**U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
Sacramento, 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
BO	Biological Opinion
CAA	Clean Air Act
CFR	Code of Federal Regulations
cfs	cubic-feet per second
CiF	City of Fresno
CVC	Cross Valley Canal
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DMC	Delta-Mendota Canal
DWR	Department of Water Resources
EA	environmental assessment
EA/IS	Environmental Assessment/Initial Study
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FID	Fresno Irrigation District
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
FWUA	Friant Water Users Authority
GHG	greenhouse gases
ITA	Indian Trust Assets
LTRID	Lower Tule River Irrigation District
MBTA	Migratory Bird Treaty Act
National Register	Nation Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRDC	National Resources Defense Council
NWR	National Wildlife Refuge
OCID	Orange Cove Irrigation District
Reclamation	Bureau of Reclamation
Settlement	Stipulation of Settlement in <i>NRDC, et al., v. Kirk Rodgers, et al.</i>
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District

SLR	San Luis Reservoir
SWP	State Water Project
SWRCB	State Water Resources Control Board
TLBWSD	Tulare Lake Basin Water Storage District
TID	Tulare Irrigation District
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
WY	Water Year

Definitions

Central Valley Project (CVP): U.S. Bureau of Reclamation federal water project in California that was originated in 1933 to provide irrigation and municipal water by regulating and storing water in reservoirs and delivering it via a series of canals and pumping facilities throughout the Central Valley. The CVP also provides energy generation and flood control.

Class 1 Water: The supply of water stored in or flowing through Millerton Lake which, subject to the contingencies described in the water service contract, will be available for delivery from Millerton Lake and the Friant-Kern and Madera Canals as a dependable water supply during each Contract Year.

Class 2 Water: The supply of water which can be made available subject to the contingencies described in the water services 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.

Friant Division: The combined CVP facilities of Friant Dam, Millerton Lake, Friant-Kern Canal, and Madera Canal that are used to store, deliver, transport, and deliver Project Water to the Friant Division Service Areas.

Friant Division Service Area: The area within which CVP water may be served to Friant Division water users as defined by project authorizations and the State Water Resources Control Board.

Long-Term Contractors: All parties who have water service contracts for a specified quantity of Class 1 and/or Class 2 water from the Friant Division of the CVP with the United States pursuant to Federal Reclamation law.

Project Water: All water that is developed, diverted, stored, or delivered for the benefit of the Friant Division Service Area available from Millerton Lake in accordance with the statutes authorizing the Friant Division, and in accordance with the terms and conditions of water rights permits acquired pursuant to California Law.

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Section 1 Purpose and Need for Action

1.1 Background

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging renewal of long-term water service contracts between the United States and Central Valley Project (CVP) Friant Division contractors. After more than 18 years of litigation of this lawsuit, known as *NRDC, et al., v. Kirk Rodgers, et al.*, a Settlement was reached. On September 31, 2006, the Settling Parties, including NRDC, Friant Water Users Authority (FWUA), and the U.S. Departments of the Interior and Commerce, agreed on the terms and conditions of the Settlement, which was subsequently approved by the U.S. Eastern District Court of California (Court) on October 23, 2006.

The Settlement establishes two primary goals:

- Restoration Goal – To restore and maintain fish populations in “good condition” in the mainstem San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- Water Management Goal – To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

The planning and environmental review necessary to implement the Settlement is authorized under Section 3406(c)(1) of the Central Valley Project Improvement Act (Public Law 102-575) and the San Joaquin River Restoration Settlement Act (Act), included in Public Law 111-11, the Omnibus Public Land Management Act of 2009. The Secretary of the Interior is authorized and directed to implement the terms and conditions of the Settlement through the Act.

The San Joaquin River Restoration Program (SJRRP) will implement the Settlement. The Settlement identifies the need for a plan for recirculation, recapture, reuse, exchange or transfer of Interim Flows to reduce or avoid impacts to Friant long-term contractors.

1.2 Purpose and Need

NEPA regulations require a statement of “the underlying purpose and need to which the agency is responding in proposing the alternatives, including the Proposed Action (40 Code of Federal Regulation (CFR) 1502.13).

The purpose of the Proposed Action is to implement the provisions of the Settlement pertaining to the Water Management Goal for WY 2010 Interim Flows. The need for the action is to reduce or avoid water supply impacts to Friant Division long-term contractors by providing mechanisms to ensure that recirculation, recapture, reuse, exchange, or transfer of Interim Flows occurs.

An Environmental Assessment/Initial Study (EA/IS), Finding of No Significant Impact (FONSI), and Mitigated Negative Declaration (MND) were prepared and approved for WY 2010 Interim

Flows. Because Interim Flows and their associated actions are directly related to the availability of water for recirculation back to the Friant Division long-term contractors, the *Water Year 2010 Interim Flows Project Final Environmental Assessment and Finding of No Significant Impact/Initial Study and Mitigated Negative Declaration* is hereby incorporated by reference into this document.

1.3 Scope

The San Joaquin River Restoration Program (SJRRP) was established in late 2006 to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers, et al. (Settlement)*. As an initial action to guide implementation of the SJRRP, the Settlement requires that the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), modify releases from Friant Dam during water year from October 1, 2009, to September 30, 2010 for a program of interim flows in order to collect pertinent scientific data and to implement a monitoring program. Environmental effects for the release of interim flows from Friant Dam and down the San Joaquin River were addressed in the *Final Environmental Assessment and Finding of No Significant Impact/Initial Study and Mitigated Negative Declaration for Water Year 2010 Interim Flows Project*. Also addressed in this document was the potential recapture of interim flows at several diversion locations, including existing facilities in the Delta, the Mendota Pool at the downstream end of Reach 2B, the Lone Tree Unit of the Merced National Wildlife Refuge (NWR) (Lone Tree Unit) in the Eastside Bypass Reach 2, and the East Bear Creek Unit of the San Luis NWR (East Bear Creek Unit) in the Eastside Bypass Reach 3. Recirculation is subject to available capacity within the Central Valley Project (CVP)/State Water Project (SWP) storage and conveyance facilities, including the Jones and Banks pumping plants, California Aqueduct, DMC, San Luis Reservoir and related pumping facilities, and other facilities of CVP/SWP contractors. Available capacity is capacity that is available after all statutory and contractual obligations are satisfied to existing water service or supply contracts, exchange contracts, settlement contracts, transfers, or other agreements involving or intended to benefit CVP/SWP contractors served through CVP/SWP facilities. The WY 2010 EA/IS and FONSI/MND, including environmental analysis for recapture of Interim Flows, are incorporated by reference into this document and will not be discussed at length in this EA.

The Water Management Goal of the Settlement and Act includes a requirement for the development and implementation of a plan for recirculation, recapture, reuse, exchange or transfer of Interim Flows for the purpose of reducing or avoiding impacts to water deliveries to all of the participating Friant Division long-term contractors whose supplies may have been impacted by Interim Flow Releases. Paragraph 16 of the Settlement states:

16. In order to achieve the Water Management Goal, immediately upon the Effective Date of this Settlement, the Secretary, in consultation with the Plaintiffs and Friant Parties, shall commence activities pursuant to applicable law and provisions of this Settlement to develop and implement the following:

(a) A plan for recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows for the purpose of reducing or avoiding impacts to water deliveries to all of the Friant Division long-term contractors caused by the

Interim Flows and Restoration Flows. The plan shall include provisions for funding necessary measures to implement the plan. The plan shall:

- (1) ensure that any recirculation, recapture, reuse, exchange or transfer of the Interim Flows and Restoration Flows shall have no adverse impact on the Restoration Goal, downstream water quality or fisheries;*
- (2) be developed and implemented in accordance with all applicable laws, regulations and standards. The Parties agree that this Paragraph 16 shall not be relied upon in connection with any request or proceeding relating to any increase in Delta pumping rates or capacity beyond current criteria existing as of the Effective Date of this Settlement;*
- (3) be developed and implemented in a manner that does not adversely impact the Secretary's ability to meet contractual obligations existing as of the Effective Date of this Settlement; and*
- (4) the plan shall not be inconsistent with agreements between the United States Bureau of Reclamation and the California Department of Water Resources existing on the Effective Date of this Settlement, with regard to operation of the CVP and State Water Project.*

Reclamation, as the lead agency under the National Environmental Policy Act (NEPA) is preparing this document. This Environmental Assessment (EA) intends to analyze the environmental effects of completing the requirement of returning the recaptured water to the Friant Division long-term contractors.

1.4 Reclamation's Legal and Statutory Authorities and Jurisdiction Relevant to the Proposed Federal Action

Several Federal laws, permits, licenses and policy requirements have directed, limited, or guided the National Environmental Policy Act analysis and decision-making process of this EA and include the following as amended, updated, and/or superceded:

- Stipulation of Settlement in *NRDC, et al., v. Kirk Rodgers, et al.*;
- San Joaquin River Restoration Settlement Act, included in Public Law 111-11, the Omnibus Public Land Management Act of 2009;
- California State Water Resources Control Board, Division of Water Rights Order: WR2009-0058-DWR
- Central Valley Project Improvement Act (Public Law 102-575)
- Long-Term Water Service Contracts for Friant Division
- Title XXXIV Central Valley Project Improvement Act (CVPIA), October 30, 1992, Section 3405(a);
- Reclamation Reform Act, October 12, 1982;
- Reclamation's Interim Guidelines for Implementation of Water Transfers under Title XXXIV of Public Law 102-575 (Water Transfer), February 25, 1993;
- Reclamation and United States Fish and Wildlife Service (USFWS) Regional, Final Administrative Proposal on Water Transfers April 16, 1998; and

- Reclamation's Mid-Pacific Regional Director's Letter entitled “*Delegation of Regional Functional Responsibilities to the Central Valley Project (CVP) Area Offices - Water Transfers*”, March 17, 2008.

1.5 Resources of Potential Concern

Potentially affected resources and cumulative impacts in the project vicinity include: water resources, land use, biological resources, cultural resources, Indian Trust Assets, socioeconomic resources, environmental justice, air quality, and global climate change.



Figure 1
SJRRP Interim Flows Project Area in Relation to Friant Division and Other CVP/SWP Water Service Areas

Section 2 Alternatives Including the Proposed Action

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not pursue recirculating recaptured San Joaquin River Restoration to the Friant Division long-term contractors. This would not adhere to the Water Management Goal and the terms of the Settlement and Act. Therefore, Friant Division long-term contractors would not receive water “for the purpose of reducing or avoiding impacts to water deliveries to all of the Friant Division long-term contractors caused by the Interim and Restoration Flows”. Water in SLR that would not be recirculated to Friant would potentially result in evaporative loss to some degree and may “spill” if not delivered out of the reservoir before demands for storage with high priorities occur.

2.2 Proposed Action

Recaptured water available for transfer to the Friant Division as a result of releases of flows from Friant Dam from the implementation of the SJRRP Interim Flows for Water Year 2010, specified as October 1, 2009 through September 30, 2010, is estimated to be up to 60,000 AF of the CVP Friant Division Class 2 water supply. This recaptured water will be available at SLR. The federal action is for Reclamation to enter into various 12 consecutive month transfer and exchange agreements to recirculate the recaptured water to the Friant Division. The transfers and exchanges would be completed through several mechanisms utilizing potential Federal, State, and Local Facilities, as outlined in the phases that follow. The recaptured water will be recirculated back to 16 of the Friant Division contractors whose supplies may be impacted by 2010 Interim Flow releases as Class 2 supplies.

Reclamation sought feedback from water contractors in order to develop options for the recirculation of water, consistent with the Settlement’s Water Management Goal. This inquiry letter, included as Appendix A, requested options and scenarios from members of the Friant Division long-term contractors to distribute up to 60,000 AF of water out of SLR. These scenarios, considered in the Proposed Action of this environmental document, have been incorporated into separate recirculation phases, which have specific conveyance mechanisms and quantities associated with each phase, as outlined in the following text. The summary of the scenarios, as prepared by Reclamation, including a letter sent to the Friant Division long-term contractors outlining the approach, are included as Appendix B.

2.2.1 Phase 1: Fresno Irrigation District – Exchange and East to West Transfer

Phase 1 of the Proposed Action would include having up to 25,000 AF of Friant Recirculation (Friant) water made available in Millerton Lake as a result of an exchange with Fresno Irrigation District (FID) and the City of Fresno (CiF). FID and CiF will exchange up to 25,000 AF of their CVP Friant Division Class 1 and Class 2 water supplies for a like amount of Friant Recirculation water in San Luis Reservoir. The Friant water now available in Millerton Lake would be made available for integration into Class 2 supplies as shown in Table 1. The transfer of the FID and CiF water is being covered under a separate contract and was analyzed in the *Environmental*

Assessment (EA-10-26) for East to West Transfers between Friant Division and South-of-Delta Central Valley Contractors, 2010-2011, which is hereby incorporated by reference.

2.2.2 Phase 2: Tulare Irrigation District and Lower Tule River Irrigation District Exchange with Tulare Lake Basin Water Storage District

Phase 2 of the Proposed Action includes Tulare Irrigation District (TID) and the Lower Tule River Irrigation District (LTRID) exchanging up to 16,225 AF of Friant water with Tulare Lake Basin Water Storage District (TLBWSD) where TID and LTRID's delivery of Friant water available in SLR would be used by the TLBWSD in exchange for TID and LTRID to use TLBWSD's Kaweah and Tule River water rights water as their CVP water allocation. By completing this exchange, water would be returned to TID and LTRID as shown in Table 1.

2.2.3 Phase 3: Fresno Irrigation District Exchange with Tulare Lake Basin Water Storage District

In Phase 3 of the Proposed Action, Tulare Lake Basin Water Storage District (TLBWSD), a SWP contractor, would take delivery of up to 12,000 AF of Friant water in SLR. In turn, FID would take delivery of up to 11,400 AF of Kings River water and release an equal amount up to 11,400 AF of its Class 2 water in Millerton Lake for delivery to Class 2 contractors proportionally as shown in Table 1.

2.2.4 Phase 4: Arvin-Edison Water Storage District Exchange

For Phase 4, Arvin-Edison Water Storage District (AEWSD) would take delivery of the remaining water off the California Aqueduct and in exchange, AEWSD would make an equivalent amount of their Class 1 or Class 2 supplies available in Millerton Lake for delivery to Class 2 contractors proportionally as shown in Table 1.

AEWSD may be able to take delivery of the Friant water off of the California Aqueduct either at the Tupman turnout for the Cross Valley Canal or via the AEWSD turnout 39 miles downstream of Tupman. The total amount of recirculation water being transferred out of SLR would not exceed the 60,000 AF maximum. Whether or not FID, LTRID, TLBWSD and TID take their maximum quantities, AEWSD would take delivery of the difference, up to the maximum allowable amount based on recaptured quantities of restoration flows, and make an equivalent amount of their Class 1 or Class 2 water supplies available in Millerton Lake.

Table 1: Proposed Water Year 2010 SJRRP Recirculation Plan

Friant Division Class 2 Contractor	Class 2 Contract (AF)	Class 2 Contract (%)	Maximum Friant Recirculation Water Available (AF)	Percent Recirculation Amount Available from Millerton	Phase 1: FID and CiF Millerton Supply Exchange with Friant Recirculation Water in SLR (25,000 AF ¹)	Phase 2: TID and LTRID Friant Recirculation Water Exchange with SWP TLBWS Tule/Kaweah River Water (16,225 AF ¹)	Phase 3: FID Millerton Supply Exchange with SWP TLBWS Kings River; FID CVP Water Made Available in Millerton (11,400 AF ¹)	Phase 4: AEWSD Takes Friant Recirculation Water in SLR and Exchange with CVP Water in Millerton (7,374 AF ¹)
Arvin-Edison WSD	311,675	22.2%	13,343	32.90%	7,168	0	3,750	2,426
Chowchilla WD	160,000	11.4%	6,850	16.89%	3,680	0	1,925	1,245
Delano-Earlimart ID	74,500	5.3%	3,189	7.86%	1,713	0	896	580
Exeter ID	19,000	1.4%	813	2.01%	437	0	229	148
Fresno ID	75,000	5.4%	3,211	0	3,211	0	0	0
Gravelly Ford WD	14,000	1.0%	599	1.48%	322	0	168	109
Ivanhoe ID	500	0.0%	21	0.05%	11	0	6	4
Kaweah-Delta WCD	7,400	0.5%	317	0.78%	170	0	89	58
Lindmore ID	22,000	1.6%	942	2.32%	506	0	265	171
Lower Tule River ID	238,000	17.0%	10,189	0	0	10,189	0	0
Madera ID	186,000	13.3%	7,963	19.63%	4,277	0	2,238	1,448
Porterville ID	30,000	2.1%	1,284	3.17%	690	0	361	233
Saucelito ID	32,800	2.3%	1,404	3.46%	754	0	395	255
Shafter-Wasco ID	39,600	2.8%	1,695	4.18%	911	0	476	308
S. San Joaquin MUD	50,000	3.6%	2,141	5.28%	1,150	0	602	389
Tulare ID	141,000	10.1%	6,036	0	0	6,036	0	0

¹ For Water Year 2010, it is assumed that recaptured flows will be up to, but will not exceed 60,000 AF total. Therefore, the numbers shown are potential maximums.

Section 3 Affected Environment and Environmental Consequences

This section provides an overview of the physical environment and existing conditions that could be affected by the Proposed Action consistent with NEPA guidelines. Each resource discussion in this section will evaluate the impacts of the proposed action's alternatives. The baseline conditions assumed in this document consist of the existing physical environmental conditions as of June 2010. Therefore, the baseline environment includes the existing releases and recapture of Interim Flows on the San Joaquin River between Friant Dam and the confluence of the Merced River. Baseline conditions also assume water is stored SLR, and immediately ready for transfer.

CEQ regulations for implementing NEPA specify that environmental documents must succinctly describe the environment in the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than necessary to understand the effects of the alternatives. Data and analysis must be commensurate with the importance of an impact, with less important material summarized, consolidated, or simply referenced.

3.1 Water Resources

3.1.1 Affected Environment

3.1.1.1 *Friant Division Long-Term Contractors*

The Friant Division is part of the original Central Valley Project. It irrigates over 1 million acres along the Central Valley's east side between Arvin and Chowchilla through the Friant-Kern and Madera canals with San Joaquin River water diverted out of Friant Dam. There are 29 Friant Division long-term water service contractors. Of these contractors, 24 deliver primarily agricultural water. An additional 7 agencies have Cross Valley Canal water exchange contracts capable of importing more than 128,000 acre-feet per year (AF/y) of additional water annually into the Friant service area from Northern California.

3.1.1.2 *Fresno Irrigation District*

FID is located entirely within Fresno County and has contracts for approximately 26 percent of the average runoff of the Kings River (its main supply). FID originally entered into a long-term contract with Reclamation in 1964. In 2001, FID entered into a long-term renewal contract with Reclamation for 75,000 AF/y of Friant Division Class 2 water (FID does not have a Friant Division Class 1 CVP contract). FID delivers the water to its customers through 800 miles of canals and pipelines. FID also has a long-term Cooperative Agreement with the City of Fresno (CiF) for their water utilization and conveyance.

FID has had an average supply of 6,450 AF/y of Class 2 water supplies from Millerton Lake. Currently, the 2010 water year Friant Division CVP Class 2 allocation is 30 percent, which provides FID with 22,500 AF. As a result, FID is 16,050 AF above their ten-year average supply.

3.1.1.3 The City of Fresno

CiF is a municipal and industrial Friant Division CVP contractor that utilizes a portion of their 60,000 AF/y Class 1 water supply to recharge the groundwater in and around the city, allowing them to withdraw groundwater on demand to serve municipal needs. CiF has had an average supply of 96.5 percent Class 1 water, which equates to 57,900 AF/y from Millerton Lake. With the current 2010 Friant Division CVP Class 1 allocation of 100 percent, CiF is 2,100 AF above their 10-year average supply. CiF has CVP water made temporarily surplus to their immediate needs by way of long-standing internal exchange agreements with FID for banked groundwater supplies, since the two districts share a common groundwater basin and distribution facilities.

3.1.1.4 Tulare Irrigation District

TID is located in western Tulare County on the east side of the San Joaquin Valley. TID provides agricultural water supplies and does not service the City of Tulare. TID entered into a long-term (40-year) contract with Reclamation in 1950 for 30,000 AF/y of Class 1 and 141,000 AF/y of Class 2 water supplies from the Friant Unit of the CVP. This contract was renewed in 1991 for 25 years. The district has pre-1914 water rights on the Kaweah River for approximately 75,000 AF/y of water. The district-owned Kaweah River water rights are Crocker Cut, Deep Creek, and Packwood Creek on the Lower Kaweah Branch; and Packwood Canal and Tulare Irrigation District on the St. Johns Branch. Water is also made available through share holdings in the following Kaweah River ditch companies likewise possessing pre-1914 water rights: 1) Tulare Irrigation Company on both the Lower Kaweah Branch and the St. Johns Branch, 2) Evans Ditch Company on the Lower Kaweah Branch and the St. Johns Branch, 3) Wutchumna Water Company on the Kaweah River, and 4) Persian Ditch Company on the Lower Kaweah Branch.

TID obtains CVP water supplies from its primary turnout on the Friant-Kern Canal which is located approximately 14 miles northeast of the District's service area. The water is diverted into the District's Main Intake Canal. TID also utilizes the St. Johns and Lowe Kaweah River turnouts from the Friant-Kern Canal. Local supply diversions into this Main Intake Canal include water from the Lower Kaweah and St. Johns River branches. The Packwood Creek diversion system begins at the terminus of the Lower Kaweah River, approximately 10 miles northeast of TID. Other diversion points include Cameron Creek, Evans Ditch, Tulare Irrigation Company Ditch, and the Ketchum Ditch.

3.1.1.5 Lower Tule River Irrigation District

LTRID is located in Tulare County. LTRID originally entered into a long-term renewable contract with Reclamation in 1951. In 1975, LTRID entered into a three-way contract with Reclamation and DWR to provide an additional 31,102 AF/y of CVP water supply. Under the original three-way contract, CVP water was diverted from the Sacramento-San Joaquin River Delta (Delta), conveyed through SWP facilities via the California Aqueduct to the Cross Valley Canal (CVC) and delivered to Arvin-Edison Water Storage District (AEWSD). Through the CVC Exchange Program, LTRID and AEWSD "swapped" their Delta and Friant CVP water supplies. The exchange agreement between AEWSD was eventually terminated, but LTRID may enter into similar exchange arrangements with other water districts to obtain their CVP water supplies from the Delta. In 2001, LTRID renewed its long-term contract with Reclamation for 61,200 AF/y of Class 1 and 238,000 AF/y of Class 2 water.

3.1.1.6 Tulare Lake Basin Water Storage District

TLBWSD is located southwest of the City of Corcoran in Kings County. TLBWSD is a SWP contractor and obtains its water supply from the SWP, Kings River, Tule River, and Kaweah River. TLBWSD is part of the 35-unit Kings River Conservation District and is also within the existing Friant Division Place of Use. TLBWSD manages Kings River South Fork water deliveries in Kings County. Empire No. 2 Weir diverts Kings River water into the Tulare Lake, Kings River-South Fork, and Blakeley canals which serve the Tulare Lake Bed. Although TLBWSD is connected to the California Aqueduct, the Tulare Lake Bed relies most heavily on Kings River water for irrigation purposes. Water is conveyed to TLBWSD via the California Aqueduct or released into the Kings River, Kaweah River, or Tule River from the Friant-Kern Canal (FKC).

3.1.1.7 Arvin-Edison Water Storage District

AEWSD is located in southern Kern County. AEWSD originally entered into a contract with Reclamation in 1964. In 2001, AEWSD renewed its contract with Reclamation for 40,000 AF/y of Class 1 and 311,675 AF/y of Class 2 water supplies. The Class 2 water supply comprises a large fraction of their contract allocation. However, this 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 five 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 can take Friant water off of the California Aqueduct either at the Tupman turnout for the Cross Valley Canal or via the AEWSD turnout 39 miles downstream of Tupman

3.1.1.8 Groundwater Resources

Fresno Irrigation District and the City of Fresno FID and CiF are located within the Kings Sub-basin of the Tulare Lake Hydrologic Region of the San Joaquin Valley Groundwater Basin (DWR 2003). The Kings Sub-basin groundwater aquifer system consists of unconsolidated continental deposits (DWR 2003). These deposits are an older series of Tertiary and Quaternary age overlain by a younger series of deposits of Quaternary age (DWR 2003). The Quaternary age deposits are divided into older alluvium, lacustrine and marsh deposits, younger alluvium, and flood-basin deposits (DWR 2003).

Most well water levels indicated a response to the 1976-77 drought (DWR 2003). After the 1987-92 drought, wells in the northeast showed water levels from 10 to 40 feet below pre-1976-77 drought water levels (DWR 2003). Water levels in the western sub-basin experienced declines of 10 to 50 feet during the 1987-92 drought and are in various stages of recovery to mid-1980s levels (DWR 2003). The Kings Sub-basin is one of 11 basins in California identified as being in a critical condition of overdraft. Overdraft is the condition of a groundwater basin in which the amount of water withdrawn by pumping over the long term exceeds the amount of water that recharges the basin. Overdraft is characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. Overdraft can lead to increased extraction costs, land subsidence, water quality degradation, and environmental impacts (DWR, 2003). 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 economic impacts (DWR, 2003).

Tulare ID TID is located in the Kaweah Sub-basin of the San Joaquin Valley Groundwater Basin which lies within Kings and Tulare Counties. The sub-basin's surface area is 446,000 acres. The Kaweah Sub-basin is bounded on the north by the Kings Sub-basin, by the Tule Sub-basin to the south, and by the Kings River Conservation District to the west. The Sierra Nevada foothills lie to the east. The Kaweah and St. Johns Rivers are the major rivers in the sub-basin. The Kaweah River system, as well as imported Class 2 and surplus supplies from the CVP Friant Unit, are the primary sources of groundwater recharge. Tulare ID practices conjunctive use recharge via direct deliveries to basins and in-lieu deliveries to water users within its sub-basin.

Most groundwater flow is to the southwest. In 1999 (DWR 2003), there were small groundwater depressions north and south of Visalia and at the northwest corner of the sub-basin. A mound was present in the central western portion of the basin. Land subsidence of up to four feet has occurred in the past in different areas within the western and southern portions of the sub-basin (DWR 2003). The Kaweah Sub-basin is one of 11 basins in California identified as being in a critical condition of overdraft

Lower Tule River ID LTRID is located in the Tule Sub-basin of the San Joaquin Valley Groundwater Basin. This sub-basin is generally bounded by the Tulare County line on the west, by the Sierra Nevada bedrock on the east, the Tulare-Kern County line on the south, and the northern boundary of the LTRID on the north (DWR 2003). Continental deposits that make up the aquifer include flood-basin, younger alluvium, older alluvium, undifferentiated continental, and the Tulare Formation. Most are major sources of groundwater and are moderately to highly permeable. Groundwater recharge is done directly by stream recharge of the Tule River, White River, and Deer Creek, as well as delivery channel seepage, recharge basin percolation and deep percolation from applied irrigation water within LTRID (DWR 2003). Annual extraction of groundwater within the Tule Sub-basin is estimated to be 19,300 AF for urban and 641,000 AF for agricultural purposes. Recharge of the sub-basin from natural and applied water is estimated to be approximately 34,000 AF/y and 201,000 AF/y, respectively. In 1980, Tule Sub-basin was identified by DWR as being in critical overdraft (DWR 2003).

Tulare Lake Basin WSD TLBWSD is located in the Tulare Lake Sub-basin of the San Joaquin Valley Basin. The sub-basin has an areas of 524,000 acres. Tulare Lake Sub-basin is bounded on the west by the California Aqueduct, the Westside Sub-basin, and the Kettleman Hills. The Kings Sub-basin is to the north and the Kaweah and Tule Sub-basins are to the east. The southern half of the sub-basin is in the bed of the former Tule Lake. Recharge is primarily from rivers and streams and deep percolation of irrigation water (DWR 1995). Corcoran Clay underlies the sub-basin.

Groundwater flows is generally to the southwest, in the direction of the former Tulare Lake. Land subsidence of one to four feet has occurred (DWR 2003). The Tulare Lake Sub-basin is one of 11 basins in California identified as being in a critical condition of overdraft

Arvin Edison WSD AEWSD lies within the Kern County Groundwater Subbasin of the San Joaquin Valley Basin. This subbasin has a surface area of just under two million acres and underlies most of western Kern County. Natural recharge is primarily from stream seepage along the eastern subbasin and the Kern River. However, the largest contributor to recharge is

the system is applied irrigation water (DWR, 2006). Review of the subbasin indicates that except for seasonal variation resulting from recharge and pumping, the groundwater level wells have remained relatively unchanged from 1970 to 2000 (DWR, 2006). However, the Kern County Groundwater Subbasin has been identified by DWR as being critically overdrafted.

3.1.1.9 Conveyance Facilities

California Aqueduct/San Luis Canal and San Luis Reservoir/O'Neill Forebay

Except for the California Aqueduct, these joint-use facilities are a part of the SWP and CVP, respectively. The San Luis Canal is the Federally-built section of the California Aqueduct and extends 102.5 miles from O'Neill Forebay in a southeasterly direction to a point west of Kettleman City. At this point, the facility becomes the State's California Aqueduct; however, the California Aqueduct actually begins at the Banks Pumping Plant where the canal conveys water pumped from the Sacramento-San Joaquin River Delta directly into O'Neill Forebay.

SLR serves as the major storage reservoir and O'Neill Forebay acts as an equalizing reservoir for the upper stage dual-purpose pumping-generating plant. O'Neill Forebay is used as the hydraulic junction point for Federal and State waters. Pumps located at the base of O'Neill Dam take water from the DMC through an intake channel (a Federal feature) and discharge it into O'Neill Forebay. The pumping-generating units lift the water from O'Neill Forebay and discharge it into SLR. When not pumping, these units generate electric power by reversing flow through the turbines. During irrigation months, water from the California Aqueduct flows through O'Neill Forebay into the San Luis Canal instead of being pumped into SLR.

Cross Valley Canal and Intertie

The CVC, a locally-financed facility completed in 1975, extends from the California Aqueduct near Tupman to Bakersfield. Starting in 2007 and ending recently, the CVC was expanded. This expansion consisted of increasing the canal capacity and installing five new 500 cubic-feet-per-second (cfs) pumping plants, raising the canal liner in certain stretches, and constructing siphons and turnouts over 15 miles of its length. Kern County Water Agency (KCWA) also constructed a turn-out on the south side of the control structure to the AEWSD Intake Canal, a gravity bypass pipeline that connects to the newly-lined canal with an approximate capacity of 500 cfs, and a stub connection from the control structure that connects to a 500 cfs bi-directional pipeline intertie with the Friant-Kern Canal. A 500 cfs turnout/turn-in structure and pipeline was also constructed, which connects the California Aqueduct to the CVC. The overall design capacity was expanded to 1,422 cfs.

Delta-Mendota Canal

The DMC, completed in 1951, carries water southeasterly from the Tracy (C.W. "Bill" Jones) Pumping Plant along the west side of the San Joaquin Valley for irrigation supply, for use in the San Luis Unit, and to replace San Joaquin River water stored at Friant Dam and used in the Friant-Kern and Madera Canals. The DMC also provides water for municipal and industrial use. The DMC is about 117 miles long and terminates at the Mendota Pool, about 30 miles west of Fresno. The initial diversion design capacity is 4,600 cfs, which is gradually decreased to 3,211 cfs at the terminus. The DMC is a part of the CVP, Delta Division.

Friant-Kern Canal

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

Madera Canal

The Madera Canal originates at Millerton Lake and runs approximately 36 miles north along the eastern edge of the San Joaquin Valley, ending at the Chowchilla River. The canal makes CVP water deliveries to the north to augment irrigation capacity. The canal has a design capacity of 1,000 cfs, and decreases in capacity along its length to 625 cfs at the terminus. Water conveyed in the Madera Canal is considered of good quality as its origin is that of snow melt from the Sierra Nevada range.



Figure 2
Depiction of Federal, State, and Local Conveyance Facilities in California
From Department of Water Resources (DWR). 2003. California's Groundwater, Bulletin 118, 2003

3.1.2 Environmental Consequences

3.1.2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not pursue recirculating recaptured San Joaquin River Restoration to the Friant Division long-term contractors. This would not adhere to the Water Management Goal and the terms of the Settlement and Act. Therefore, Friant Division long-term contractors would not receive water “for the purpose of reducing or avoiding impacts to water deliveries to all of the Friant Division long-term contractors caused by the Interim and Restoration Flows”. Water in SLR that would not be recirculated to Friant would potentially result in evaporative loss to some degree and may “spill” if not delivered out of the reservoir before demands for storage with high priorities occur.

3.1.2.2 Proposed Action

Overall water supply changes for the Friant Division long-term contractors as a result of the implementation of the SJRRP Interim Flow actions, and including recapture of Interim Flows, is discussed in the WY 2010 EA/IS. The WY 2010 EA/IS also included a potential range of recaptured water that could be returned to the Friant Division as part of the project description in order to assess water supply impacts. Therefore, discussion of water supply impacts associated with the implementation of Interim Flow releases from Friant or the recapture of flows will not be discussed in this document. This document intends only to focus on recirculation of flows. Recirculation, in this document, means moving recaptured SJRRP water from storage facilities back to the Friant Division long-term contractors or facilitating the transfers or exchanges necessary to meet the terms of the Settlement.

Under the Proposed Action, recirculation of water and delivery of recaptured water to Friant Contractors would occur through the execution of transfers or exchanges utilizing existing facilities for conveyance. The exchange would not increase or decrease existing CVP or SWP allocations. Water moved through this process would not require additional diversions and would not impact the overall existing operation of the water districts or their facilities.

On October 1, 2009, the California State Water Resources Control Board (SWRCB), Division of Water Rights, issued Water Rights Order (Order) 2009-0058-DWR. The order specifies necessary terms and conditions to be carried out for WY 2010. Condition #2 of the Order states “*Any San Joaquin River water temporarily stored or routed through San Luis Reservoir shall not be delivered to south-of-Delta contractors other than Friant Division Contractors.*” Reclamation is complying with this Order through the implementation of proposed transfers and exchanges of water for the ultimate delivery of San Joaquin River water from San Luis Reservoir to the Friant Division Contractors.

The Proposed Action would provide recirculated water for the Friant Division long-term contractors from SLR . It can be predicted that the Friant Division long-term contractors would not experience any loss or gain in water supply as a result of this action.

3.2 Land Use

3.2.1 Affected Environment

Fresno Irrigation District and the City of Fresno

FID and CiF are located entirely within Fresno County and includes the Fresno-Clovis metropolitan area. FID is comprised of 245,000 acres, of which 150,000 are irrigable. The main crops in FID are grapes, almonds, oranges and tangerines, alfalfa, and miscellaneous vegetables. FID delivers water to its customers through 800 miles of canals and pipelines. CiF serves municipal and industrial water supplies and does not supply irrigation water.

Tulare Irrigation District

TID encompasses 70,000 acres, of which, approximately 62,000 are irrigated. The main crops in TID are alfalfa, field corn, wheat, and cotton.

Lower Tule River Irrigation District

LTRID encompasses 161 square miles. Of the approximately 104,000 acres within LTRID, 84,500 acres are irrigated. The primary crops are alfalfa, silage, and cotton. Over 98 percent of LTRID is zoned for agricultural use by the County of Tulare (Tulare County 1964).

Tulare Lake Basin Water Storage District

TLBWSD encompasses approximately 17,700 acres. Of this amount, the majority is utilized for crop, rangeland, or pasture purposes at approximately 16,900 acres. The main crops within TLBWSD are cotton, seed alfalfa, and grain.

Arvin Edison Water Storage District

Agriculture, in the form of row crops, orchards and vineyards are the primary land use within AEWSD. Permitted agricultural uses, per the Kern County General Plan, include irrigated cropland, orchards, vineyards, horse ranches, beekeeping, and ranch/farm facilities. AEWSD also includes the City of Arvin and is located within the unincorporated communities of Edison, Lamont, Mettler, and DiGiorgio.

3.2.2 Environmental Consequences

3.2.2.1 No Action

Under the No Action Alternative, the water in SLR would not be delivered to the Friant Division contractors. This has the potential to result in land fallowing as a result of the loss of up to 60,000 AF of water which would have been used to irrigate agricultural lands. This land fallowing could result in potentially adverse impacts on agricultural land use.

3.2.2.2 Proposed Action

Under the Proposed Action, there would not be any land conversions and no land fallowing or habitat restoration would be deferred as a result of the transfer or exchange of Friant Recirculation Water. No lands would be annexed into any existing service areas to specifically use the exchanged water. Based on existing land use patterns in the area, the majority of land use is agricultural and irrigation water is provided mainly for agricultural purposes. This is not

expected to change as a result of the transfer or exchange of water under the proposal. Because the Proposed Action is for Reclamation to enter into various 12 consecutive month transfer and exchange agreements to recirculate the recaptured water to the Friant Division, this would not provide a long-term or reliable supply to support long-term land use changes. The Proposed Action represents the optimization of the use of water available from SJRRP recapture that is available in SLR. The Proposed Action will not have an impact on land use.

3.3 Biological Resources

3.3.1 Affected Environment

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. It has been estimated that more than 85 percent of the valley's wetlands had been lost by 1939 (Dahl and Johnson 1991). 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 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 1999). The Proposed Action area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants.

Reclamation requested an official species list from the United States Fish and Wildlife Service (USFWS) through the Sacramento Field Office's website:

http://www.fws.gov/sacramento/spp_lists on June 21, 2010. The list is for Fresno, Tulare, Kings, and Kern Counties in United States Geological Survey 7 ½ minute quadrangles (Appendix C), Document Number 100621071228. Species and critical habitat potentially in the Proposed Action area are included in Table 2.

Because all transfers and exchanges are occurring between the SLR and points inland through existing conveyance facilities, it can be assumed that anadromous and Delta species, such as steelhead and any species listed by National Marine Fisheries Service (NMFS) and their designated critical habitat, are outside of the Proposed Action area and are therefore not discussed further (Appendix D). Based on maps obtained from NMFS' Essential Fish Habitat (EFH) mapper: http://www.nmfs.noaa.gov/habitat/habitatprotection/efh/GIS_mapper.htm, there is no EFH designated within the Proposed Action area, therefore, EFH will not be discussed further.

3.3.2 Environmental Consequences

3.3.2.1 No Action

Under the No Action Alternative, water in SLR that would not be recirculated to the Friant Division would potentially result in evaporative loss to some degree and may be forced to spill if

not delivered out of the reservoir. As this spill would occur by utilizing existing conveyance facilities, this would have no known effect to species or critical habitat in area. It is also reasonable to assume an increase in groundwater pumping in the districts as a result of the potential loss of recirculation could occur. In some areas, groundwater quality is degraded, and irrigation with this water could result in detrimental impacts to species related to selenium concentrations.

3.3.2.2 Proposed Action

The Proposed Action plans to utilize existing facilities to transfer and exchange water that will be present in SLR. As a result, there will be no disturbance of ecologically sensitive lands due to construction activities. As this is a 12 consecutive month transfer and exchange agreement to recirculate the recaptured water to the Friant Division of WY 2010 recaptured Friant Division recirculation water from the SJRRP, no land use changes will occur due to increased or decreases in cultivation activities or fallowing of fields. All water will be delivered to existing agricultural lands. As no land use changes or additional disturbance would occur as a result of the Proposed Action, no habitat changes would occur that could potentially affect species covered under the Migratory Bird Treaty Act (MBTA).

The USFWS issued a biological opinion (BO) in 2001. This BO, called the Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contractors, specifies measures the Friant water service contractors must take to avoid jeopardy to endangered and threatened species. This BO commits Reclamation to implementing a long-term plan to address the needs of listed species in the San Joaquin Valley. Reclamation will continue to coordinate with USFWS to abide by the terms of the BO for this Proposed Action.

Because there will be no disturbance or land use changes associated with this Proposed Action, there will be no effect to listed species, critical habitats, or species listed under MBTA.

Table 2: Listed Species and Critical Habitat Potentially Present in the Proposed Action Area

Species Common Name	Scientific Name	Listing Status	Designated Critical Habitat?
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	Endangered	No
Longhorn fairy shrimp	<i>Branchinecta longiantenna</i>	Endangered	Yes
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Threatened	Yes
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	Threatened	No
Kern primrose sphinx moth	<i>Euproserpinus euterpe</i>	Threatened	No
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Endangered	Yes
Little Kern golden trout	<i>Oncorhynchus aquabonita whitei</i>	Threatened	Yes
Loahontan cutthroat trout	<i>Oncorhynchus clarki henshawi</i>	Threatened	No
Paiute cutthroat trout	<i>Oncorhynchus clarki seleniris</i>	Threatened	No
Central Valley steelhead	<i>Oncorhynchus mykiss</i>	Threatened	No
California tiger salamander	<i>Ambystoma californiense</i>	Threatened	Yes
California red-legged frog	<i>Rana draytonii</i>	Threatened	Yes
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	Endangered	No
Giant garter snake	<i>Thamnophis gigas</i>	Threatened	No
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	Threatened	No
Southwestern willow flycatcher	<i>Empidonas traillii extimus</i>	Endangered	Yes
California condor	<i>Gymnogyps californianus</i>	Endangered	Yes
Least Bell's vireo	<i>Vireo bellii pusillus</i>	Endangered	No
Giant kangaroo rat	<i>Dipodomys lingens</i>	Endangered	No
Fresno kangaroo rat	<i>Dipodomys nitratoides exilis</i>	Endangered	Yes
Tipton kangaroo rat	<i>Dipodomys nitratoides nitradoides</i>	Endangered	No
Sierra Nevada bighorn sheep	<i>Ovis Canadensis californiana</i>	Endangered	No
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	Endangered	Yes
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	Endangered	No
Mariposa pussy-paws	<i>Calyptridium pulchellum</i>	Threatened	No
San Benito evening-primrose	<i>Samissonia benitensis</i>	Threatened	No
Succulent owl's-clover	<i>Castilleja campestris ssp. succulenta</i>	Threatened	Yes
California jewelflower	<i>Caulanthus californicus</i>	Endangered	No
Hoover's spurge	<i>Chamaesyce hooveri</i>	Threatened	Yes
Springville clarkia	<i>Clarkia springvillensis</i>	Threatened	No
Palmate-bracted bird's beak	<i>Cordylanthus palmatus</i>	Endangered	No
Kern mallow	<i>Eremalche kernensis</i>	Endangered	No
San Joaquin woolly-threads	<i>Monolopia congdonii</i>	Endangered	No
Bakersfield cactus	<i>Opuntia treleasei</i>	Endangered	No
San Joaquin Vally Orcutt grass	<i>Orcuttia inaequalis</i>	Threatened	Yes
Hairy Orcutt grass	<i>Orcuttia pilosa</i>	Endangered	Yes
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	Endangered	No
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	Threatened	No
Keck's checker-mallow	<i>Sidalcea keckii</i>	Endangered	Yes
Yosemite toad	<i>Bufo canorus</i>	Candidate	No
Mountain yellow-legged frog	<i>Rana muscosa</i>	Candidate	No
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Candidate	No
Fisher	<i>Martes pennanti</i>	Candidate	No
Ramshaw sand-verbena	<i>Abronia alpine</i>	Candidate	No

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 San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century has probably disturbed many Native American cultural sites.

3.4.1 Affected Environment

Resources within the scope of this project include historic features of the built environment primarily those of the CVP and SWP. Components of the CVP have been determined eligible for inclusion in the National Register and have been prepared for inclusion in the National Register through a multiple property nomination. The CVP multiple property nomination is currently being reviewed for submission to the Keeper of the National Register for inclusion in the National Register.

Friant Dam is located on the San Joaquin River, 25 miles northeast of Fresno, California. Completed in 1942, the dam is a concrete gravity structure, 319 feet high, with a crest length of 3,488 feet. 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, and Kern Counties. Construction of the canal began in 1945 and was completed in 1951. Both Friant Dam and the FKC are considered contributing elements of the CVP multiple property listing and are considered eligible for inclusion in the National Register.

3.4.2 Environmental Consequences

3.4.2.1 No Action

Under the No Action Alternative, there would be no Federal undertaking as described in the NHPA at Section 301(7). As a result, Reclamation would not be obligated to implement Section 106 of that NHPA and its implementing regulations at 36 CFR Part 800. Because there is no undertaking, impacts to cultural resources would not be evaluated through the Section 106 process. All operations would remain the same resulting in no impacts to cultural resources.

3.4.2.2 Proposed Action

Transferring water as described in the Proposed Action is an undertaking as described in Section 301(7) of the NHPA, initiating Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800. All transfers would occur through existing facilities and water would be provided within existing service area boundaries to areas that currently use CVP water. The Proposed Action would not result in modification of any existing facilities, construction of new facilities, change in land use, or growth. This action has no potential to cause effect to historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). As a result, the proposed undertaking would result in no impacts to cultural resources.

3.5 Indian Trust Assets

3.5.1 Affected Environment

ITA are legal interests in assets that are held in trust by the U.S. 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. ITA can not be sold, leased or otherwise alienated without the United States’ approval. Assets can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to 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.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative, Reclamation would not approve the transfers and conditions would remain the same as existing conditions; therefore, there would be no impacts to ITA.

3.5.2.2 Proposed Action

Approval of the transfers and exchanges between districts would not involve any construction and would utilize existing conveyance facilities. The Proposed Action is outside of the nearest ITA, which is located at Santa Rosa Rancheria, approximately 7 miles north of the project. Therefore, activities associated with the Proposed Action would not impact ITA.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

The majority of the service areas within the Proposed Action area are rural and agricultural. The agricultural industry significantly contributes to the overall economic stability of the San Joaquin

Valley. There are many small communities where farm workers live, and many small businesses that support the agricultural industry. These communities and businesses rely on the efficient and cost-effective utilization and supply of water to the surrounding agricultural lands to sustain the agriculturally-based economy. Depending upon the variable hydrologic and economic conditions, water transfers and exchanges can be prompted. Economic variances in the community may include fluctuating agricultural prices, insect infestation, changing hydrologic conditions, increased fuel and power costs. The cost and availability of water has historically had a direct secondary economic impact on the communities of the area as it can drive the type of crop grown or contribute to the potential fallowing of land.

3.6.2 Environmental Consequences

3.6.2.1 No Action

Under the No Action Alternative, economic conditions in the vicinity of the Proposed Action area could worsen. If the release of water from SLR back to the Friant Division was not carried out, the surrounding community could suffer from the result of up to a 60,000 AF shortfall of water for WY 2010. This may be significant enough to take agricultural land out of production, thus decreasing the need for farm labor and small business support from the local community. The economic impacts of reduced agricultural production could adversely impact the affected environment.

3.6.2.2 Proposed Action

The Proposed Action would assist in sustaining existing agricultural production and allow for water deliveries to be made within the existing districts. This would help maintain the stability of the agricultural market and economical vitality for the San Joaquin Valley to a certain degree. The transfers are temporary actions and would not result in long-term increases in water supplies that would encourage urbanization, construction or other land-disturbing activities. The Proposed Action will not have an impact on socioeconomic resources.

3.7 Environmental Justice

3.7.1 Affected Environment

The February 11, 1994, Executive Order 12898 requires all federal agencies to address potentially disproportionate impacts to economically disadvantaged and minority populations.

Many cities and towns in the San Joaquin Valley are steeped in the agricultural community, and include high percentages of minority and/or low-income populations. Some of these communities support centers of migrant laborers, and populations tend to increase during the late summer harvest. The San Joaquin Valley's migrant workers are typically of Hispanic origin, from Mexico and Central America. Migrant workers depend exclusively on seasonal agricultural practices to provide sufficient income to support themselves and their families. The agricultural industry and agricultural businesses are the main industry in the Proposed Action area, and thus, are the main industries to provide employment opportunities for minority and/or disadvantaged populations.

3.7.2 Environmental Consequences

3.7.2.1 No Action

The No Action Alternative could result in an adverse impact to minority and/or disadvantaged populations within the vicinity of the Recipient Districts because lands could be taken out of production if up to 60,000 AF of water was not released from SLR to provide irrigation to agricultural lands. This could potentially result in the fallowing of lands, and subsequently the loss of jobs in the local community.

3.7.2.2 Proposed Action

The Proposed Action would not disproportionately impact economically disadvantaged or minority populations. Water transfers, which would allow water in SLR to be utilized within the Friant Division in WY 2010, would allow the continued irrigation of agricultural lands in the Proposed Action area. This would result in neither employment gain nor loss, but rather in sustained job rates and would not create an overall change in the area. The Proposed Action would reduce dislocation and promote continued employment within the affected environment and would not disproportionately impact economically disadvantaged or minority populations. Agricultural unemployment rates in the Fresno, Tulare, Kings, and Kern Counties suggest that any actions that maintain seasonal jobs should be considered beneficial.

3.8 Air Quality

Section 176 (c) of the Clean Air Act (CAA) (42 U.S.C. 7506 (c)) 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 State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 U.S.C. 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 National Ambient Air Quality Standards 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.

On November 30, 1993, the Environmental Protection Agency 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 project area is located within the San Joaquin Valley Air Basin (SJVAB) which is the second largest air basin in California. Despite years of improvements, the SJVAB does not meet State and Federal health-based air quality standards. The governing body over the SJVAB, the San Joaquin Valley Air Pollution Control District (SJVAPCD), has adopted stringent control measures to reduce emissions and improve overall air quality within the SJVAB.

3.8.2 Environmental Consequences

3.8.2.1 No Action

Under the No Action Alternative, it would be reasonable to assume an increase in groundwater pumping in the districts as a result of the potential loss of 60,000 AF of Friant recirculation water. This could contribute to a greater release of emissions associated with combustion of fossil fuels, and thus, impacts to air quality.

3.8.2.2 Proposed Action

Under the Proposed Action, movement of water between districts and exchange partners would be done via gravity flow and/or pumped using electric motors which have no emissions. The air quality emissions from electrical power have been considered in environmental documentation for the generating power plant. There are no emissions from electrical motors and therefore a conformity analysis is not required under the CAA and there would be no impact on air quality. 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

3.9.1 Affected Environment

Climate change refers to significant change in measures of climate that last for decades or longer. Many environmental and anthropogenic factors can contribute to climate change, including the burning of fossil fuels, deforestation, changes in ocean currents, urbanization, etc.). Carbon dioxide, which is produced when fossil fuels are burned, is a greenhouse gas (GHG) that effectively traps heat in the lower atmosphere. Some carbon dioxide is liberated naturally, but this may be augmented greatly through human activities.

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. Approximately 20 million Californians rely on the CVP and SWP for water deliveries. Global shifts related to climate change may lead to impacts to California's water resources and project operations.

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

Under the No Action Alternative, it would be reasonable to assume an increase in groundwater pumping in the districts as a result of the potential loss of 60,000 AF of Friant recirculation water. This could contribute to a greater release of emissions, and thus GHGs, associated with combustion of fossil fuels and would impact air quality.

3.9.2.2 Proposed Action

GHG generated by a project is expected to be extremely small compared to sources contributing to potential climate change since the transfer 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 increases in GHG emissions and a net increase in GHG emissions among the pool of GHG would not be detectable.

3.10 Cumulative Impacts

Contract execution for the transfer and exchange of water within the CVP and through the Friant Division would not have any controversial or highly uncertain effects, or involve unique or unknown environmental risks. The Proposed Action would not trigger other water service actions and does not contribute to cumulative effects to physical resources when added to other water service actions. The canals, distribution, rivers, creeks, and conveyance facilities in the San Joaquin Valley associated with the Proposed Action are managed primarily for agricultural supplies. The Proposed Action would not interfere with the deliveries, operations, or cause substantial adverse changes to the conveyance facilities.

The remainder of the SJRRP actions, including the continued release of future flows from Friant Dam, the recapture of flows at specific San Joaquin River diversion and/or pumping facilities, and future site-specific actions are all reasonably foreseeable and required under the Settlement and the Act. Future program actions related to the SJRRP will be addressed in a Program Environmental Impact Statement/Environmental Impact Report, which is scheduled to have a public draft released in the summer of 2010. Areas of potential concern, such as water supply impacts, recapture mechanisms, and cumulative impacts will be discussed within this program document. A Draft Supplemental EA was released on June 11, 2010 for a continuation of the 1-year Interim Flows action, as described in the WY 2010 Interim Flows EA. This document is being prepared for a 12 consecutive month transfer and exchange agreements to recirculate the recaptured water to the Friant Division. WY 2011 flows will potentially be released from Friant Dam during the time that WY 2010 recaptured flows are being recirculated back to the Friant Division contractors. However, the total amount of water transferred would not increase beyond the 60,000 AF quantity analyzed in this document for WY 2010. WY 2011 recirculation would be analyzed by a separate environmental process, similar to this one. It is speculation to assume what type of contracts, transfers, or exchanges will occur for WY 2011 or what quantities would be available for transfer based on water year type designation.

The proposed transfers, when added to other actions, do not contribute to significant increases or decreases in environmental conditions. These water service actions are proposed to occur only to distribute up to 60,000 AF out of SLR, and are short-term. These transfer actions are not precedent-setting. The Proposed Action was found to have no impact on water resources, land use, biological resources, cultural resources, ITA, socioeconomic resources, environmental justice, air quality, or global climate change and therefore there is no contribution to cumulative impacts on these resources areas. Overall, there would be no cumulative impacts caused by the Proposed Action.

Section 4 Consultation and Coordination

4.1 National Environmental Policy Act

This EA has been prepared pursuant to NEPA, which was signed into law in 1969 (42 USC Section 4321 et seq.). In addition, it was prepared in accordance with CEQ regulations for implementing NEPA, 40 CFR Parts 1500- 1508, and General Services Administration (GSA) Order ADM 1095.1F. NEPA provides a commitment that Federal agencies will consider the environmental effects of their proposed actions and adhere to regulations, policies, and programs to the fullest extent possible, in accordance with NEPA's policies of environmental protection. This EA assesses if the Proposed Action would cause any significant environmental effects. If it is determined that the Proposed Action would have no significant environmental effects, a FONSI will be signed.

4.2 Fish and Wildlife Coordination Act of 1934 (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.

4.3 Endangered Species Act of 1973 (16 USC § 1531 et seq.)

Section 7 of the ESA requires Federal agencies, in consultation with the Secretary of the Interior, 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.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species. In addition, the short duration of the water availability, the requirement that no native lands be converted without consultation with the USFWS, and the stringent requirements for transfers under applicable laws would prevent any adverse impact to any federally listed species or any critical habitat.

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

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary legislation that outlines the Federal government's responsibility to cultural resources. Cultural resources include both archaeological and built environment resources. Section 106 of the NHPA requires that Federal agencies take into consideration the effects of their undertakings on historic properties. Historic properties are cultural resources that are listed on or eligible for inclusion in the National Register of Historic Places (National Register). The 36 CFR Part 800 regulations implement Section 106 of the NHPA and outline the procedures necessary for compliance with the NHPA.

Compliance with the Section 106 process follows a series of steps that are designed to identify if cultural resources are present and to what level they will be affected by the proposed Federal undertaking. The Federal agency must first determine if the proposed action is the type of action that has the potential to affect historic properties. Once that has been determined and an action, or undertaking, has been identified, the Federal agency must identify interested parties, determine the area of potential effect (APE), conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties. The Federal agency consults with the State Historic Preservation Officer (SHPO) on agency determinations and findings and seeks their concurrence with the Federal agency findings.

For the No Action and three proposed alternatives, there will be no modification to existing facilities, no ground disturbance, and no new construction. There will be no new land use or new irrigation to agricultural as a result of the Proposed Action. Therefore, there will be no potential to affect historic properties pursuant to 36 CFR 800.3(a)(1).

4.5 Migratory Bird Treaty Act of 1918 (16 USC § 703 et seq.)

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA 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 MBTA, 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.

The Proposed Action would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species or birds protected by the MBTA; therefore, the Proposed Action would have no effect on birds protected by the MBTA.

4.6 Executive Order 113007 and American Indian Religious Freedom Act of 1978 – Indian Trust Assets and Sacred Sites on Federal Lands

Executive Order 113007 and the American Indian Religious Freedom Act of 1978 are designed to protect Indian Trust Assets, accommodates access and ceremonial use of Native American sacred sites by Native American religious practitioners, avoid adversely affecting the physical integrity of such sacred sites, and protect and preserve the observance of traditional Native American religions. The Proposed Action would not violate these protections.

4.7 Executive Order 12898 – Environmental Justice in Minority and Low-Income Populations

Executive Order 12898 requires Federal agencies to identify and address disproportionately high and adverse human health and environmental effects of Federal programs, policies, and activities on minority and low-income populations. The Proposed Action has been assessed for potential environmental, social, and economic impacts on minority and low-income populations. Minority and low-income populations would not be disproportionately exposed to adverse effects relative to the benefits of the action.

4.8 Central Valley Project Improvement Act

Reclamation's evolving mission was written into law on October 30, 1992, in the form of Public Law 102-575, the Reclamation Projects Authorization and Adjustment Act of 1992. Included in the law was Title 34, the CVPIA. The CVPIA amended previous authorizations of the CVP to include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic water supply uses, and fish and wildlife enhancement as having equal priority with power generation. The Proposed Action is consistent with CVPIA.

4.9 Central Valley Project Long-Term Water Service Contracts

In accordance with CVPIA Section 3404c, Reclamation is renegotiating long-term water service contracts. As many as 113 CVP water service contracts locations within the Central Valley of California may be renewed during this process. The Proposed Action is consistent with CVP long-term water service contracts.

4.10 State Water Resources Control Board Temporary Water Transfer Approval

Pursuant to Section 1725 et seq. of the California State Water Code, a permittee or licensee who proposes a temporary transfer of water (less than 1 year) shall submit to the SWRCB a petition to change the terms of the permit or license, as required, to accomplish the proposed temporary change. Such a petition will be filed, with a petition pursuant to Section 1707, to add a purpose of use, to add points of rediversion, and to add the San Joaquin River for the place of use for instream flows. SWRCB requires approval of a petition for the purposes of use due to a transfer or exchange of water, and will approve a petition under section 1725 – if the transfer would only involve the amount of water that would have been consumptively used or stored by the permittee or licensee in the absence of the proposed temporary change; would not injure any legal user of the water; and would not unreasonably affect fish, wildlife, or other instream beneficial uses. A Water Rights Order for WY 2011 will be obtained, which will allow recapture and recirculation of the Friant water from October 1, 2010 through September 30, 2011. This approval is anticipated prior to the release of WY 2011 flows commencing on October 1, 2010.

Reclamation obtained a Water Rights Order (Order WR 2009-0058-DWR) from the SWRCB for the temporary transfer of water to add a purpose of use; to add points of rediversion; and to add

the San Joaquin River for the place of use for instream flows for the WY 2010 Interim Flows, from October 1, 2009 through September 30, 2010.

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