

Environmental Assessment

Fresno Irrigation District's Installation of a Temporary Pumping Facility for the Introduction of Kings River Water into the Friant-Kern Canal at the Gould Canal for Transfer and/or Exchange



Prepared by:

**United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region**



**U.S. Department of the Interior
Bureau of Reclamation**

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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.

Definitions

Central Valley Project (CVP): The United States, acting through the Bureau of Reclamation, has constructed and is operating the Central Valley Project, California, for diversion, storage, carriage, distribution and beneficial use, for flood control, irrigation, municipal, domestic, industrial, fish and wildlife mitigation, protection and restoration, generation and distribution of electric energy, salinity control, navigation and other beneficial uses, of water of the Sacramento River, the American River, the Trinity River, and the San Joaquin River and their tributaries.

Class 1 Water: The supply of water stored in or flowing through Millerton Lake which, subject to the contingencies described in the water service or repayment contracts 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 service or repayment contracts for delivery from Millerton Lake and the Friant-Kern and Madera Canals in addition to the supply of Class 1 water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable in character and will be furnished only if, as, and when it can be made available as determined by the Contracting Officer.

CVP Water: All water that is developed, diverted, stored, or delivered by the Secretary in accordance with the statutes authorizing the CVP and in accordance with the terms and conditions of water rights acquired pursuant to California Law.

Friant Division: The main features of this division are: Friant Dam, Millerton Lake, Friant-Kern Canal (FKC), and Madera Canal, all constructed and operated by the Bureau of Reclamation.

Friant Division Long-Term Contractor Service Area: The area to which a Friant Division Long-Term Contractor is permitted to provide CVP Water under its contract.

Friant Division Long-Term Contractors or Friant Contractors: All long-term water service or repayment contracts between Friant Contractors and the United States

Department of the Interior, Bureau of Reclamation that provide water service from the Friant Division of the CVP.

Water Year: Water Year shall mean the period from and including March 1 of each calendar year through the last day of February of the following calendar year.

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Abbreviations and Acronyms

Act	San Joaquin River Restoration Settlement Act
AF	acre-feet
CAA	Clean Air Act
CEQA	California Environmental Quality Act
cfs	cubic-feet per second
Ch.	Chapter
CNDDDB	California Natural Diversity Database
Co.	County
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
Delta	Sacramento-San Joaquin Delta
District	Fresno Irrigation District
EA	Environmental Assessment
Friant Division	Central Valley Project Friant Division
GHG	greenhouse gas
ID	Irrigation District
ITAs	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
M&I	municipal and industrial
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
No.	Number
NRDC	Natural Resources Defense Council
NRHP	National Register of Historic Places
PEIS/R	Program Environmental Impact Statement/Report
PWRPA	Power and Water Resources Pooling Authority
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
ROD	Record of Decision
Settlement	Stipulation of Settlement in <i>NRDC, et al., v. Kirk Rodgers, et al.</i>
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District

Stat.	Statute
SWP	State Water Project
USFWS	U.S. Fish and Wildlife Service
WD	Water District
WSD	Water Storage District

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Section 1

Introduction

The State of California is currently experiencing unprecedented water management challenges due to severe drought in recent years. Both the State and Federal water projects are forecasting very low storage conditions in all major reservoirs. In addition, Friant Division Central Valley Project (CVP) contractors have recently experienced reduced water supply allocations due to hydrologic conditions and implementation of the Stipulation of Settlement in *NRDC, et al., v. Kirk Rodgers, et al.* (Settlement). Based on hydrologic conditions, the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) declared an initial allocation of 0 percent Class 1 and Class 2 supplies for CVP Friant Division (Friant Division) contractors for the 2014 Contract Year (a Contract Year is from March 1 through the last day of February of the following year). As a result, Friant Division contractors have a need to find alternative sources of water to fulfill demands.

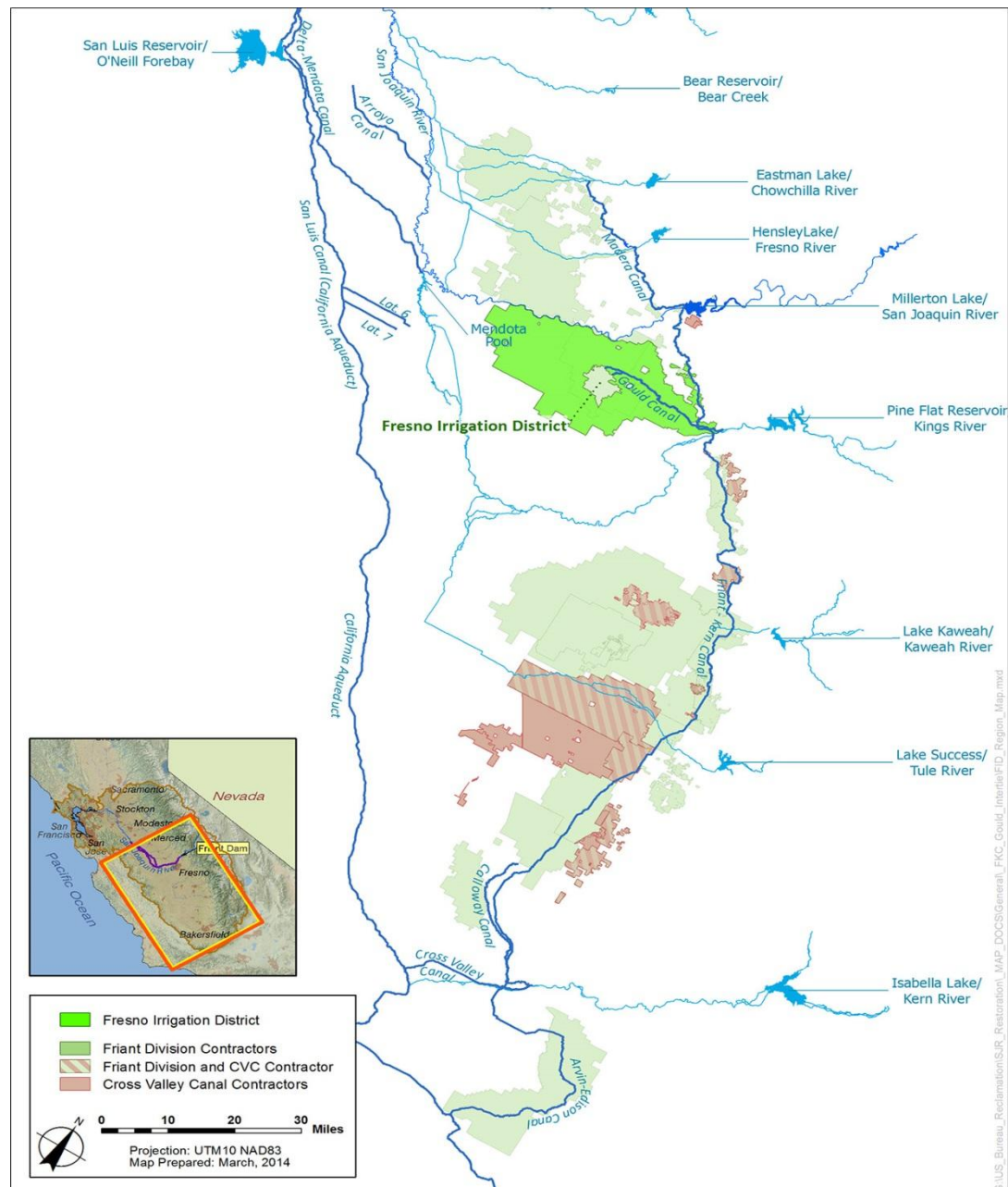
1.1 Background

The Fresno Irrigation District (District) was formed in 1920 under the California Irrigation Districts Act, as the successor to the privately owned Fresno Canal and Land Company. The District purchased all of the rights and property of the company. The assets of the company consisted of over 600 miles of canals and distribution works which were constructed between the years 1850 and 1880, as well as water rights on Kings River.

The District, shown in Figure 1-1, is located entirely within Fresno County and has a water entitlement for approximately 26-percent of the average runoff of the Kings River, its main supply. The District originally entered into a long-term contract with Reclamation in 1964. In 2001, the District entered into a long-term renewal contract with Reclamation for 75,000 acre-feet (AF) per year of Friant Division Class 2 water; the District does not have a contract with Reclamation for Friant Division Class 1 water. As part of the Settlement, the District agreed to accelerate the repayment of their financial obligation for the capital cost of the Friant Division system under a repayment contract under Section 9d of the Reclamation Project Act of 1939.

Fresno Irrigation District's Installation of a Temporary Pumping Facility

The District delivers the water to its customers through 680 miles of canals and pipelines. The District also has a long-term Cooperative Agreement with the City of Fresno for their water utilization and conveyance. Total irrigated area in the District exceeds 150,000 acres, mainly consisting of grapes, citrus, and almonds.



Note: Cross Valley Canal contractors Fresno County and Tulare County are represented by their respective subcontractors, including County Service Area #34 for Fresno County; and Alpaugh Irrigation District; Atwell Island Water District; Hills Valley Irrigation District; City of Lindsay; Saucelito Irrigation District; Frasinetto Farms, LLC; Stone Corral Irrigation District; Strathmore Public Utility District; Styro-Tek; and City of Visalia for Tulare County.

Figure 1-1. Vicinity Map

In a normal year, the District diverts approximately 450,000 AF of water from multiple sources including the Kings River, and delivers most of that to agricultural users, although an increasing share of the District's water supply is used for human consumption and groundwater recharge in the urban area. Depending upon hydrological conditions and Kings River flows, the District diverts water and allocates a proportional share of the water to its customers including the City of Fresno and City of Clovis. In addition to its entitlement from Kings River, the District and the City of Fresno have signed water service contracts for up to 135,000 AF annually from the Friant Division.

The District has combined resources with the City of Fresno, the City of Clovis, the County of Fresno, and the Fresno Metropolitan Flood Control District in a cooperative effort to develop and implement a comprehensive surface and groundwater management program. The main goal of the program involves using flood control basins for recharge during the summer when the basins are not needed to control urban storm runoff. This program also contains elements designed to protect the quality of groundwater in the area.

The District is a conjunctive use district and historically, excess water applied by the farmers has percolated beyond the root zone and recharged the extensive aquifer underlying the District. Between 85 to 90-percent of the groundwater supply can be attributed to water imported and distributed by the District.

The District's comprehensive surface and groundwater management program and supply of pre 1914 water from the Kings River allows the District to make water available to the Friant Division during these critically dry hydrologic conditions.

1.2 San Joaquin River Restoration Program

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging the renewal of long-term water service contracts between the United States and CVP Friant Division. After more than 18 years of litigation the 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 (now represented by the Friant Water Authority), 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 on October 23, 2006. The Settlement establishes two primary goals:

- **Restoration Goal** – To restore and maintain fish populations in “good condition” in the main stem of the 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 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 (CVPIA) (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) is implementing the Settlement. Paragraph 13(i) of the Settlement stipulates that if full Restoration Flows are not released in any year beginning January 1, 2014, the Secretary of the Interior, in consultation with the Restoration Administrator, shall use the amount of the Restoration Flows not released in any such year by taking one or more prescribed steps that best achieve the Restoration Goal, as determined by the Secretary of the Interior.

The Settlement includes six different Restoration Year types to achieve the Restoration Goal, each with different volumes of water based on hydrologic conditions. Based on current conditions, the SJRRP is scheduled to be in the driest Restoration Year type, the “critical low.” Accordingly, no water is currently allocated to the SJRRP and unless hydrologic conditions improve there will not be any Restoration Flows until March 2015. In consideration of these critical hydrologic conditions and achievement of the Restoration Goal, Reclamation, in consultation with and based on a

recommendation from the Restoration Administrator, discontinued the release of Restoration Flows on Saturday, February 1, 2014, one month earlier than normal. The volume of Unreleased Restoration Flows resulting from this early reduction is 12,694 AF. Pursuant to Paragraph 13(i), Reclamation has banked the Unreleased Restoration Flows with the District for future exchange to achieve the Restoration Goal. This water will be made available by Reclamation, in a manner consistent with the Settlement and the Act, to the Friant Division long-term contractors, with first priority to meet human health and safety needs due to current severe drought conditions.

The SJRRP Program Environmental Impact Statement/Report (PEIS/R) analyzed and disclosed the potential impacts of implementing SJRRP Restoration Flows under a range of hydrologic conditions, including critical low water years, such as this year. While this action occurred one month sooner than described in the PEIS/R, the impacts of the action are the same as those identified in the PEIS/R and related environmental compliance documents (i.e., Endangered Species Act consultation).

Additional Unreleased Restoration Flows may become available in 2014 if hydrologic conditions improve and full release of the Restoration Flows is not possible due to San Joaquin River channel capacity constraints, in-channel construction under the SJRRP, or other unknown events.

1.3 Purpose and Need

The purpose of the proposed action is to contribute to achieving the provisions of the Settlement related to management of Unreleased Restoration Flows and to provide supplemental supplies primarily to reduce or avoid water supply-related human health and safety impacts to those contractors capable of diverting from the CVP Friant Division.

California continues to experience water management challenges resulting from several years of below normal precipitation. The current year, 2014, is developing into one of the driest years on record. The proposed action is intended to address some of the need created by these extreme hydrologic conditions.

1.3.1 Incorporation of Related Environmental Documents

The SJRRP PEIS/R was finalized in July 2012 and the corresponding Record of Decision (ROD) was issued on September 28, 2012 (SJRRP 2012a and 2012b). The PEIS/R and ROD analyzed at a project-level the reoperation of Friant Dam to release Interim and Restoration Flows to the San Joaquin River, making water supplies available to Friant Division long-term contractors at a pre-established rate, and the recapture of Interim and Restoration Flows at existing facilities within the Restoration Area and the Sacramento-San Joaquin Delta (Delta).

The PEIS/R and ROD also include program-level actions, which are identified as actions that require the completion of additional analysis pursuant to the National Environmental Policy Act (NEPA) and/or California Environmental Quality Act (CEQA), as appropriate. Some of the program-level actions identified in the document include Settlement Paragraph 13(i) actions. Paragraph 13(i) of the Settlement provides guidance on how to manage any unreleased Restoration Flows starting in 2014, including but not limited to options to enter into mutually acceptable agreements with Friant Division long-term contractors or third parties, "...to (A) bank, store, or exchange such water for future use to supplement future Restoration Flows, or (B) transfer or sell such water and deposit the proceeds of such transfer or sale into the Restoration Fund created by this Settlement." Paragraph 13(i) also specifies the release of water from Friant Dam during times of the year other than those specified in the applicable hydrograph. Any mutual agreements negotiated to facilitate the actions under Paragraph 13(i) would be negotiated so as not to increase water supply reductions to Friant Division long-term contractors beyond what would have been caused by releases in accordance with the hydrograph releases in Exhibit B of the Settlement. The PEIS/R acknowledges that such agreements may require additional analysis for NEPA and/or CEQA. Inasmuch, this Environmental Assessment (EA) incorporates by reference the following information from the PEIS/R, as applicable to this action:

- **Chapter 3.0 – Considerations for Describing the Affected Environment and Environmental Consequences.** This EA incorporates the analysis and assumptions presented in the chapter. Specifically, analysis of the Study Area for the PEIS/R as it relates to this action is incorporated into the contents of this EA.

- **Chapter 4.0 – Air Quality.** This EA incorporates the analysis performed to assess impacts related to air quality, which would include stationary sources in the CVP/State Water Project (SWP) water service areas. All impacts to air quality associated with the conveyance and delivery of Unreleased Restoration Flows were determined to be less than significant or no impact. As described in Section 3.10, “Air Quality,” the Proposed Action is anticipated to have minor impacts on air quality related to the temporary use of diesel pumps, but would alleviate some of the impacts related to groundwater pumping described in the PEIS/R.
- **Chapter 6.0 – Biological Resources – Vegetation and Wildlife.** This EA incorporates the analysis performed in the PEIS/R related to the assessment of sensitive species and habitats in or near the project area, including the CVP/SWP water service areas. The incorporated material includes the investigation of the impacts of the SJRRP on alteration of special-status plant species or habitats in the CVP/SWP water service areas. The PEIS/R found that effects on special-status species, sensitive natural communities, waters of the United States, and implementation of adopted conservation plans in the CVP/SWP water service areas would be less than significant. Similarly, the Proposed Action is anticipated to have no impacts to biological resources, as described in Section 3.3, “Biological Resources.”
- **Chapter 7.0 – Climate Change and Greenhouse Gas Emissions.** This EA incorporates by reference the analysis of climate change and greenhouse gas emissions related to Settlement implementation. NEPA and CEQA standards related to climate change analysis vary greatly and the PEIS/R analysis incorporates the more stringent State of California measures to analyze and model greenhouse gas emissions. While 80-90 percent of groundwater pumps in the Friant Division are electric, the remaining additional diesel-powered pumping could result in increased greenhouse gas emissions. Impacts related to operations and maintenance activities were determined to be less than significant, while impacts related to traffic from increased recreational visitors, increased groundwater pumping, and changes in CVP/SWP energy generation and consumption were found to be potentially

significant and unavoidable. As described in Section 3.11, "Global Climate Change," the Proposed Action would cause minor and temporary greenhouse gas emissions, and would not substantially add to the global inventory of gases that would contribute to global climate change.

- **Chapter 12.0 – Hydrology – Groundwater.** This EA incorporates by reference the discussion of groundwater conditions presented in the PEIS/R, and the analysis of potential impacts to groundwater levels and quality in the CVP/SWP water service areas related to the Proposed Action. The chapter describes current and historical conditions and explains the aquifer regions surrounding the San Joaquin River, many of which suffer from groundwater overdraft, land subsidence, and water quality concerns. Generally, both the groundwater levels and groundwater quality impacts are anticipated to be potentially significant and unavoidable for the SJRRP overall, in association with the reduction of water supply to the Friant Division long-term contractors. As further discussed in Section 3.1, "Water Resources," the Proposed Action includes a temporary five-year action that may slow continued declines in groundwater supply and quality within the Friant Division. The Proposed Action may also slow land subsidence related to groundwater use that is addressed in the PEIS/R.
- **Chapter 13.0 – Hydrology – Surface Water Supplies and Facilities Operations.** This EA incorporates by reference the discussion of operations and facilities for water deliveries, storage, and other relevant information related to the CVP and SWP presented in this chapter of the PEIS/R, and the analysis of potential impacts to surface water supplies and facilities related to the Proposed Action. All impacts for these factors associated with the implementation of the SJRRP were determined to be less than significant. As described in Section 3.1, "Water Resources," the Proposed Action is anticipated to have no impact or beneficial impacts to surface water supplies and facilities operations.
- **Chapter 14.0 – Hydrology – Surface Water Quality.** This EA incorporates by reference the discussion of the environmental setting and the analysis of potential impacts related to surface water quality. Of particular

relevance to this EA is the analysis performed in this chapter related to impacts on water quality in the CVP/SWP water service areas related to the Proposed Action. All impacts for these factors associated with the implementation of the SJRRP were determined to be less than significant or less than significant and beneficial. Similarly, the Proposed Action is anticipated to have no impact or beneficial impacts to surface water quality, as described in Section 3.1, “Water Resources.”

- **Chapter 16.0 – Land Use Planning and Agricultural Resources.** This EA incorporates by reference the analysis performed to support the findings in *Impact LUP- 8: Substantial Diminishment of Agricultural Land Resource Quality and Importance Because of Altered Water Deliveries*. The PEIS/R found this impact to be significant and unavoidable due to reductions in water deliveries to Friant Division long-term contractors, leading to the potential for changes in agricultural practices (e.g., crop selection), and idling of cropland. As described in Section 3.2, “Land Use,” the Proposed Action would help reduce the severity of this impact, and no long-term changes in land use are anticipated as a result of this project.
- **Chapter 26.0 – Cumulative Impacts.** This EA incorporates by reference the discussion of the effects of the SJRRP in relation to past, present, and reasonably foreseeable future actions, specifically in the CVP/SWP water service area. This includes discussions of planned actions associated with the collective CALFED Water Resources Projects, other water resource projects, resource management plans and programs, and the related impact analysis from the SJRRP on cumulative air quality, fisheries, vegetation and wildlife, groundwater, surface water supplies and facilities operations, surface water quality, and land use planning. The PEIS/R found the potential for the SJRRP to make a considerable contribution to a significant cumulative impact for two resource topics that are relevant to the Proposed Action analyzed in this EA: (1) changes in groundwater levels and groundwater quality in CVP/SWP water service areas, and (2) substantial diminishment of agricultural land resource quality and importance because of altered water deliveries. As discussed above and in Section 3.12, “Cumulative Impacts,” the Proposed Action would

have beneficial impacts to these resources, and would not have a cumulatively considerable contribution to a significant cumulative impact on these resource areas.

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 NEPA analysis and decision-making process of this EA and include the following as amended, updated, and/or superseded:

- Section 14 of the Reclamation Act of 1939 (Act of August 4, 1939; ch. 418; 53 Stat. 1187), as amended and supplemented
- The Warren Act (Act as of February 21, 1911; ch. 141, 36 Stat. 925), as amended and supplemented
- 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
- 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

- Reclamation's Mid-Pacific Regional Director's Letter entitled "Delegation of Regional Functional Responsibilities to the CVP Area Offices - Water Transfers," March 17, 2008
- California State Water Resources Control Board, Division of Water Rights, Change and Dedication of Water for Instream Flow Purposes Pursuant to Water Code Sections 1707 and 1700, October 21, 2013
- San Joaquin River Restoration Program Record of Decision, September 28, 2012

1.5 Resources Eliminated from Further Analysis

The Proposed Action does not have the potential to cause direct, indirect, or cumulative adverse effects to the following resources:

- **Fisheries and Aquatic Resources** – The Proposed Action would not alter aquatic ecosystems or have the potential to affect fisheries.
- **Geology and Soils** – The Proposed Action would not result in the loss of availability of mineral resources, increase the potential for loss of topsoil, or put people at risk associated with geologic hazards.
- **Noise and Vibration** – The Proposed Action construction site is not located near sensitive receptors, and the Proposed Action would therefore not cause impacts related to noise or vibration.
- **Transportation and Utilities** – The Proposed Action involves minimal construction activities and would not impair transportation or circulation. The Proposed Action includes modifications to an existing power supply to power electric pumps, but would not cause a substantial increase in power consumption or otherwise impact utilities.
- **Visual Resources** – Based on a review of maps and aerial photographs, the Proposed Action would not cause visual changes inconsistent with the existing

visual context of the construction site, and would not cause visual changes in other areas.

- **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 significantly adversely affect the physical integrity of such sacred sites. There would be no impacts to Indian Sacred Sites as a result of the Proposed Action.

1.6 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 (ITAs), environmental justice, public health, air quality, and global climate change.

Section 2

Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not facilitate delivery of water from the District to contractors capable of diverting from the CVP Friant Division and would be at risk of not meeting public health needs and would not contribute to achieving the provisions of the Settlement related to management of Unreleased Restoration Flows. Reclamation also would not issue Warren Act contracts for the conveyance of non-CVP water, or issue land use authorization to the District for installation of their temporary facilities.

2.2 Proposed Action

Reclamation proposes to do the following: (1) enter into an exchange agreement with the District for the return of previously banked Unreleased Restoration Flows, (2) enter into Warren Act contracts and/or exchange agreements for the introduction and conveyance of the District's available water supply into and through Friant Division facilities, and (3) issue a land use authorization to the District for the installation, operation, and maintenance of temporary pumping facilities within its right-of-way at or near the Gould Canal.

2.2.1 Return of Previously Banked Unreleased Restoration Flows

Under the Proposed Action, Reclamation would enter into a temporary agreement with the District to exchange/return 11,425 AF of previously banked Unreleased Restoration Flows for delivery to Friant Division long-term contractors to meet public health needs and contribute to achieving the provisions of the Settlement related to management of Unreleased Restoration Flows. This temporary action would begin no later than March 24, 2014, and would continue for a period of up to five years.

Reclamation proposes to execute Warren Act contracts and/or exchange agreements for the introduction and conveyance of up to 20,000 AF per year of the District's available water supply into and through Friant Division facilities. Once the temporary infrastructure, shown in Figure 2-1 and described in Section 2.2.3, is in place, introduction of the District's non-Project water would occur at the Gould Canal crossing of the Friant-Kern Canal (milepost 27.7), as shown on Figure 2-1, starting March 24, 2014 and continuing through March 23 of 2019. The proposed Warren Act contracts and/or exchange agreements would be between the District and those contractors able to divert from Friant Division facilities (see Figure 1-1), including those listed in Table 2-1.



To make the District's water supplies available for introduction into the Friant-Kern Canal, the District would pump up to 20,000 AF per year of previously recharged groundwater supplies from its existing recharge facilities (see Figure 2-2). The recharged groundwater supplies would be used to meet in-district demands in lieu of receiving the same quantity of the District's pre-1914 Kings River water supplies. The recharged groundwater would be discharged into the District's conveyance system, freeing up a like amount of the Kings River water for introduction into the Friant-Kern Canal.

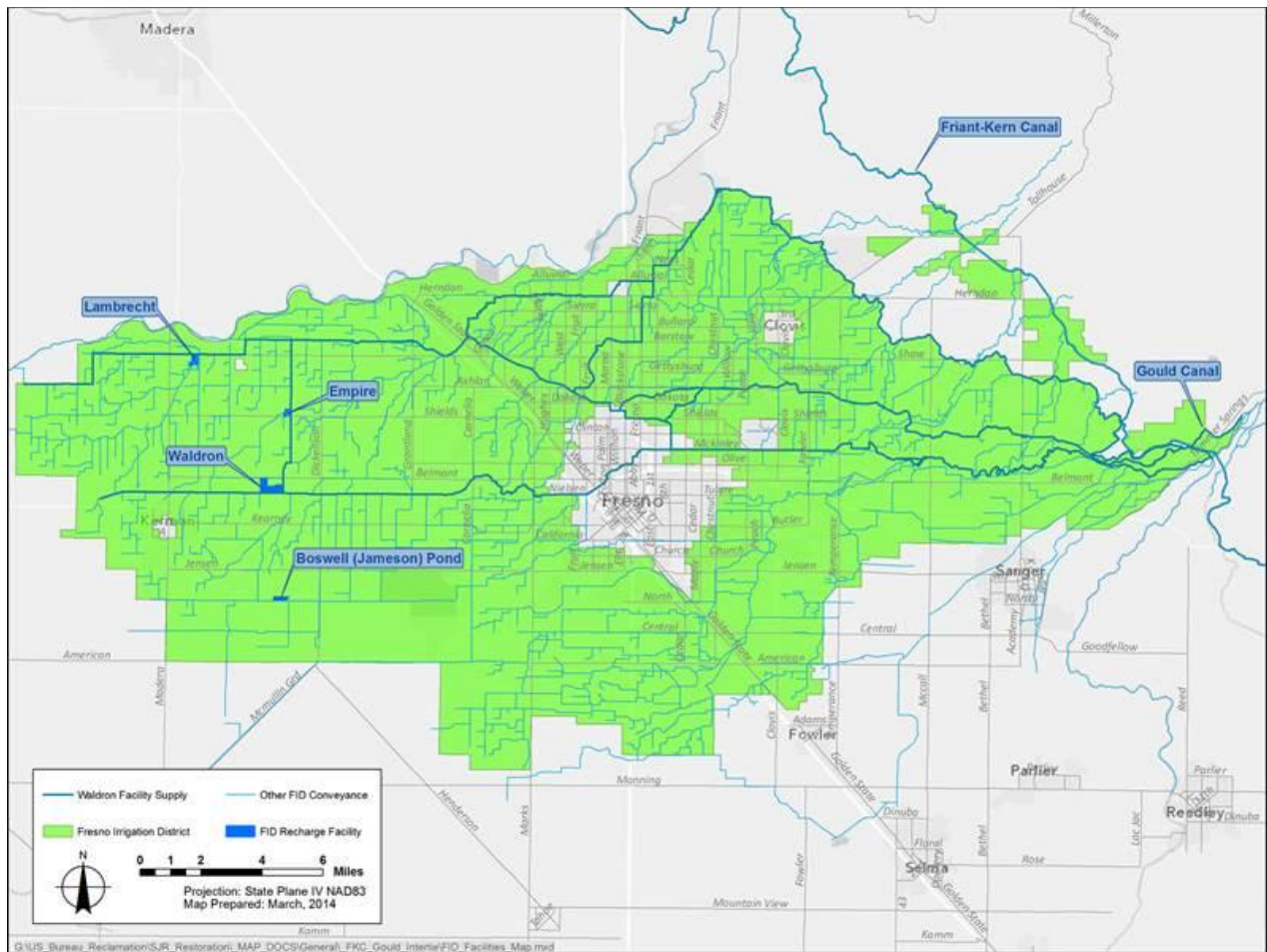


Figure 2-2. Fresno Irrigation District

Fresno Irrigation District's Installation
of a Temporary Pumping Facility

Table 2-1. Contract Amounts for Friant Contractors and Cross Valley Canal Contractors

Friant Contractors	Class 1 CVP Supply (AF/year)	Class 2 CVP Supply (AF/year)
Arvin-Edison WSD (PWRPA member)	40,000	311,675
Chowchilla WD	55,000	160,000
City of Fresno	60,000	0
City of Lindsay	2,500	0
City of Orange Cove	1,400	0
County of Madera	200	0
Delano-Earlimart ID	108,800	74,500
Exeter Irrigation District	11,500	19,000
Fresno Co. Waterworks No. 18	150	0
Fresno ID	0	75,000
Garfield WD	3,500	0
Gravelly Ford WD	0	14,000
International WD	1,200	0
Ivanhoe WD	6,500	500
Kaweah Delta Water CD	1,200	7,400
Kern-Tulare WD – partial assignment	0	5,000
Lewis Creek WD	1,450	0
Lindmore ID	33,000	22,000
Lindsay-Strathmore ID	27,500	0
Lower Tule River ID	61,200	238,000
Madera ID	85,000	186,000
Orange Cove ID	39,200	0
Porterville ID	16,000	30,000
Saucelito ID	21,500	32,800
Shafter-Wasco ID	50,000	39,600
Southern San Joaquin MUD	97,000	50,000
Stone Corral ID	10,000	0
Tea Pot Dome WD	7,500	0
Terra Bella ID	29,000	0
Tulare ID	30,000	141,000
Cross Valley Canal Contractors	Supply (AF/year)	
Fresno County	3,000	
Tulare County	5,308	
Hills Valley ID	3,346	
Kern-Tulare WD Includes Rag Gulch WD	40,000	
Lower Tule River ID	31,102	
Pixley ID	31,102	
Tri-Valley WD	1,142	

Key:

AF = acre-feet

Co. = County

CVP = Central Valley Project

ID = Irrigation District

No. = number

PWRPA = Power and Water Resources Pooling Authority

WD = Water District

WSD = Water Storage District

2.2.3 Land Use Authorization

The Proposed Action includes the installation, operation, maintenance, and removal of temporary pumping facilities at milepost 27.7 on the Friant-Kern Canal, as shown in Figure 2-

1. Specific infrastructure would include the following:

- Two 20 cubic-feet per second (cfs) pumps (combined nominal capacity of 40 cfs) along the Gould Canal to pump Kings River water;
- Two temporary (approximately three months) 550-gallon diesel tanks with secondary containment;
- Infrastructure to switch from diesel pumps to electric pumps; and,
- Steel and polyethylene pipes to convey water from the Gould Canal into the Friant-Kern Canal.

The pumps and appurtenant structures would require land use authorization from Reclamation to construct within the Friant-Kern Canal right-of-way. The pumps and pipes are designed to operate year round, for up to five years. Initially, the District will be installing two 20 cfs pumps (combined nominal capacity of 40 cfs), with appurtenant pipes to convey water through the embankment of the Friant-Kern Canal, and which would be supplied from 550-gallon tanks placed next to the pumps. The diesel tanks will be placed in secondary containment structures that would contain any spill, should it occur. During maximum operation, the tanks would have to be resupplied by truck every two days. Fueling activities would be attended by personnel who have been trained in spill response procedures, and would include disposal of water that collects in secondary containments.

The diesel pumps would be replaced in approximately 3 months with electric-powered pumps, pending modification to the available power supply. A temporary service connection would be installed near the Gould Canal (see Figure 2-1) to provide electric power.

Upon conclusion of the Proposed Action, all of the facilities would be removed by the District within two months and the site restored to the condition existing as of March 23, 2014.

2.2.4 Additional Parameters

The Proposed Action shall further be subject to the following parameters:

- No native or untilled land (fallow for three consecutive years or more) would be cultivated with the water involved in this action.
- The water under this action would be used for existing agricultural or municipal and industrial (M&I) uses.
- The agreements will be between willing sellers and willing buyers.
- The agreements shall be limited to existing contractual amounts and will not increase overall consumptive use.
- The agreements for agricultural water will be used on lands irrigated within the last three consecutive years.
- The agreements will not lead to any land conversions.
- The agreements shall comply with all applicable Federal, State, Local or Tribal laws or requirements imposed for the protection of the environment and ITAs.
- The agreements will not alter the flow regime of natural water bodies such as rivers, streams, creeks, ponds, pools, wetlands, etc., so as to avoid detrimental effects on fish and wildlife, and their habitats.
- Prior to installation and removal of the facilities, a biological survey would be conducted to verify absence of species of concern. If species of concern are identified, relevant measures identified in the Conservation Strategy presented in Chapter 2, "Description of Alternatives," of the SJRRP PEIS/R, including avoidance and minimization measures, will be implemented, as appropriate.
- Any non-Project water introduced into Friant Division facilities would be required to meet Reclamation's then-current water quality criteria.

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 evaluates the impacts of the No Action Alternative and the Proposed Action. The baseline conditions assumed consist of the existing physical environmental conditions as of February 2014. Therefore, the baseline environment includes the existing delivery and banking of Unreleased Restoration Flows to the District.

3.1 Water Resources

3.1.1 Affected Environment

Fresno Irrigation District

As previously described, the District is located entirely within Fresno County and has a water entitlement for approximately 26 percent of the average runoff of the Kings River, its main supply. The District has appropriative and pre-1914 water rights on the Kings River. Kings River water is conveyed to the District through the Gould Canal.

The District originally entered into a long-term contract with Reclamation in 1964. In 2001, the District entered into a long-term renewal contract with Reclamation for 75,000 AF per year of Friant Division Class 2 water; the District does not have a contract with Reclamation for Friant Division Class 1 water. As part of the Settlement, the District (and other Friant Division long-term contractors) agreed to accelerate the repayment of their financial obligation for the capital cost of the Friant Division system under a repayment contract under Section 9d of the Reclamation Project Act of 1939. The District delivers the water to its customers through 680 miles of canals and pipelines. The District also has a long-term Cooperative Agreement with the City of Fresno for their water utilization and conveyance. Total irrigated area in the District exceeds 150,000 acres, mainly consisting of grapes, citrus, and

almonds. The District's water profile is summarized in Table 3-1.

Table 3-1. Fresno Irrigation District Water Profile

Water Right/Contract	Annual Amount (Acre-feet/year)
CVP (Friant-Kern Canal) M&I, Agricultural: Class 2	75,000
Kings River ¹ Appropriative, including Pre-1914	Approximately 26% of Annual Runoff ² & 11.9% of the 1,000,000 Acre-feet capacity of Pine Flat Reservoir
Pre-1914: Fancher Creek Detention Basin, Big Creek (Levee), Fancher Creek (Dam), Fancher Creek 1, Fancher Creek 2, Mud Creek 1, Mud Creek 2, Redbank Slough (Dam), Alluvial Drain, Pup Creek, Redbank and Dog Creeks ³	19,162
Groundwater (District Owned Wells)	Unknown

Key:

CVP = Central Valley Project

M&I = Municipal and Industrial

Notes:

¹ Source: Reclamation. Draft Environmental Assessment Water Transfer of 500 Acre-Feet from Fresno Irrigation District and City of Fresno to County of Fresno – Friant, CA

² Kings River water rights are administered by the Kings River Water Association, and volumes are determined according to monthly schedules and calculated daily unimpaired runoff.

³ Source: State Water Resources Control Board's Electronic Water Rights Information Management System (eWRIMS) www.waterboards.ca.gov/ewrims

In a normal year, the District diverts approximately 450,000 AF of water and delivers most of that to agricultural users, although an increasing share of the District's water supply is used for human consumption and groundwater recharge in the urban area. Depending upon hydrological conditions and Kings River flows, the District diverts water and allocates a proportional share of the water to its customers including the City of Fresno and City of Clovis. In addition to its entitlement from Kings River, the District and the City of Fresno have signed water service contracts for up to 135,000 AF annually from the Friant Division. Historically, excess water applied by the farmers has percolated beyond the root zone and recharged the extensive aquifer underlying the District. Between 85 to 90-percent of the groundwater supply can be attributed to water imported and distributed by the District.

The District has combined resources with the City of Fresno, the City of Clovis, the County of Fresno, and the Fresno

Metropolitan Flood Control District in a cooperative effort to develop and implement a comprehensive surface and groundwater management program. The main goal of the program involves using flood control basins for recharge during the summer when the basins are not needed to control urban storm runoff. This program also contains elements designed to protect the quality of groundwater in the area.

The District's groundwater banking facilities include Waldron, Empire, Lambrecht, and Boswell banking facilities (see Figure 2-2). The banking facilities are operated to capture water that is excess to the system or waters that would have otherwise gone unused, including Class 2 and Section 215 water from the Friant Division, flood flows from the Kings River basin, stormwater pump-ins from the metropolitan areas within the District, and now, Unreleased Restoration Flows.

The District's comprehensive surface and groundwater management program and supply of pre 1914 water from the Kings River allows the District to make water available to the Friant Division, CVP, during these critically dry hydrologic conditions.

Friant Division

The Friant Division was authorized by Congress under the concept of conjunctive use where the CVP water was meant to be a supplemental supply to alleviate groundwater overdraft in the area. Based on the conjunctive use concept within the Friant Division, contractors are expected to continue mixed use of CVP and other surface water supplies and groundwater, with greater emphasis on groundwater use during dry periods when surface water is limited or expensive and percolate excess surface water in wet years. The Friant Division is an integral part of the CVP, but is hydrologically independent and therefore operated separately from the other divisions of the CVP (Reclamation 2012). Major facilities of the Friant Division include Friant Dam and Millerton Lake, the Friant-Kern Canal and the Madera Canal.

Cross Valley Canal Contractors

Cross Valley contractors are CVP contractors that are geographically located within the Friant Division but receive their CVP supplies from the Delta. Due to direct conveyance hurdles, Cross Valley contractors obtain their CVP supplies either by direct delivery from the Cross Valley Canal or via exchanges pursuant to Article 5(a) of the water service contracts. Cross Valley Canal contractors include Fresno

County, Tulare County, Hills Valley Irrigation District (ID), Kern-Tulare Water District (WD), Lower Tule River ID, Pixley ID, and Tri-Valley WD, as shown in Table 2-1.

Groundwater Resources

San Joaquin River Hydrologic Region

The San Joaquin River Hydrologic Region covers approximately 9.7 million acres and includes all of Calaveras, Tuolumne, Mariposa, Madera, San Joaquin, and Stanislaus counties, most of Merced and Amador counties, and parts of Alpine, Fresno, Alameda, Contra Costa, Sacramento, El Dorado, and San Benito counties. The region is heavily reliant on groundwater. Changes in groundwater levels are evaluated on annual water level measurements by the DWR and cooperators. Water level changes were evaluated at the quarter-township level using a DWR computer modeling program. On average, the sub basin water level has increased by 2.2 feet total from 1970 through 2000. The period from 1970 through 1985 showed a general increase, topping out in 1985 at 7.5 feet above the 1970 water level. The nine-year period from 1985 to 1994 saw general declines in groundwater levels, reaching back down to the 1970 groundwater level in 1994. Groundwater levels rose in 1995 to about 2.2 feet above the 1970 groundwater level, then water levels fluctuated around this value until 2000 (DWR 2003).

Tulare Lake Hydrologic Region

The Tulare Lake Hydrologic Region covers approximately 10.9 million acres and includes all of Kings and Tulare counties and most of Fresno and Kern counties. The extensive use of groundwater has historically caused subsidence of the land surface along the west and south end of the San Joaquin Valley. Groundwater levels were generally at their lowest levels in the late 1960s, prior to importation of surface water. Groundwater levels gradually increased to a maximum in about 1987 through 1988. Water levels began to drop again during the 1987 through 1992 drought. Through a series of wet years after the drought, water levels recovered to nearly 1987 through 1988 levels by 1998 (DWR 2003).

Local Conditions

The District is located within the Kings Subbasin of the San Joaquin Valley Groundwater Basin which was identified as being in critical overdraft by the California Department of Water Resources (DWR) in 1980 (DWR 2003). Historically, excess water applied by farmers has percolated beyond the root

zone and recharged the extensive aquifer underlying the District. Between 85 and 90 percent of the groundwater supply can be attributed to surface water imported and distributed by the District. Nevertheless, the conversion of agricultural lands to high-density urban uses in the expanding Fresno-Clovis metropolitan area has reduced the ability to recharge on these lands and has increased groundwater overdraft since the primary source of municipal and industrial water is groundwater pumping.

The District is a conjunctive use district, with 30 regulating and recharge reservoirs totaling approximately 2,100 acres. The District's groundwater banking facilities include Waldron, Empire, Lambrecht, and Boswell banking facilities (see Figure 2-2). As previously mentioned, the banking facilities are operated to capture water that is excess to the system or waters that would have otherwise gone unused, including Section 215 water from the Friant Division, flood flows from the Kings River basin, stormwater pump-ins from the metropolitan areas within the District, and now, Unreleased Restoration Flows.

Conveyance Facilities

Friant-Kern Canal and Madera Canal

Friant Dam serves the Friant Division through three separate river and canal outlets: the San Joaquin River outlet works, the Friant-Kern Canal, and the Madera Canal. The Friant-Kern and Madera canals originate at Millerton Lake and run approximately 152 miles south and 36 miles north, respectively, along the eastern edge of the San Joaquin Valley. The Friant-Kern Canal terminates at the Kern River, while the Madera Canal terminates at the Chowchilla River. The Friant-Kern Canal has a design capacity of 5,300 cfs, and decreases in capacity along its length to 2,500 cfs at the terminus. The Madera Canal has a design capacity of 1,000 cfs, and decreases in capacity along its length to 625 cfs at the terminus. The canals make CVP water deliveries to the Friant Division. Water conveyed in the canals originates as snow melt from the Sierra Nevada range, and is considered of good quality.

Gould Canal

The District has two primary diversion points along the Kings River, the Fresno Weir and the Gould Weir. From these two locations, about 680 miles of District conveyance facilities direct Kings River water throughout the District. The headwork at Gould Weir diverts water to the Gould Canal, and has a capacity of 500 cfs. The Gould Canal crosses the Friant-Kern

Canal approximately 2.3 miles downstream from the Gould Weir, just west of East Trimmer Springs Road.

3.1.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, those contractors with access to groundwater supplies would access this water to meet water supply needs, including public health needs. This would further contribute to regional groundwater overdraft and groundwater quality issues associated with overdraft conditions.

Proposed Action

Conveyance of Kings River water would occur for a period of up to five years and would not result in any long-term changes in surface water diversions or groundwater supplies, or increase or decrease existing CVP or SWP allocations. Water moved under the Proposed Action would not require additional diversions beyond the temporary pumping facility at milepost 27.7, and would not impact the overall existing operation of the water districts or their facilities.

Kings River water originates as snow in the Kings River watershed, and is generally of very high quality. Currently, water from the Kings River is treated and used for direct human consumption by two cities within the District's service area. Kings River water supplies conveyed to other contractors would be used to meet existing demand, including municipal demand for drinking water. Reclamation will sample Kings River water in the Gould Canal to ensure that the water introduced into the Friant-Kern Canal would meet existing water quality criteria, consistent with the parameters described in Section 2.2.4. Because this water is of high quality and would be tested to ensure water quality criteria compliance, this delivery would not result in any additional violations of existing water quality standards or substantial water quality changes that would adversely affect beneficial uses.

Water previously banked within the District's groundwater bank would be made available to users within the District under existing contracts. Of the banked water, 10 percent (1,269 AF) is required to remain in the District's groundwater bank to avoid land subsidence and groundwater quality issues. Water delivered from the Gould Canal to other contractors would minimize the need for those contractors to pump their local groundwater supplies. Because the project would operate within the requirements established for the banking facilities,

groundwater levels would not be depleted such that the operations of local groundwater wells would be unable to support existing permitted uses; while depletion of groundwater in the areas receiving transferred or exchanged supplies would be minimized.

3.2 Land Use

3.2.1 Affected Environment

The District is located in southern Fresno County, surrounding and overlapping with the City of Fresno Service area and the cities of Clovis and Kerman (see Figure 2-1). The District encompasses approximately 245,000 acres, of which over 150,000 are irrigated, and serves agricultural landowners growing permanent crops. The Friant Division contractors include agricultural and M&I contractors. Each contractor's boundary area corresponds to its service area, and its land use is designated by both regional and local planning agencies. Land use within the Friant Division is predominantly agricultural, including annual crops, vineyards orchards, and other semi-agricultural uses (apiary products, cattle, poultry, dairy, and wool) or agriculture-related infrastructure. Urban land uses include cities, major roadways, and other urban features; open space land uses, which occur in only a few of the districts, correspond to various conservation easements.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, agricultural lands in the Friant Division would continue to be irrigated utilizing the remaining surface water sources and existing groundwater wells, or potentially sinking more wells to meet irrigation demands. Contractors would continue using water from overdrafted groundwater resources; if alternative supplies are unavailable or insufficient, additional land fallowing could occur.

Proposed Action

Under the Proposed Action, there would not be any land conversions and no land fallowing would be deferred as a result of the delivery of Kings River water supply for up to five years. No new lands would be brought into agricultural production as a result of this action, because water deliveries would remain within existing contractual amounts. Existing land use is agricultural and M&I and this is not expected to

change as a result of the delivery of water under the Proposed Action, because the Proposed Action would not provide a long-term or reliable supply to support long-term land use changes.

3.3 Biological Resources

3.3.1 Affected Environment

By the mid-1940s, most of the Central 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 Central Valley's wetlands had been lost by 1939 (Dahl and Johnson 1991). 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 saltbush 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 vineyards.

Reclamation obtained a list of sensitive biological communities from the California Natural Diversity Database (CNDDDB) on February 27, 2014. The CNDDDB is a Statewide inventory of the locations and conditions of the State's rarest plant and animal taxa and vegetation types. The list of identified species for the Piedra quadrangle, which contains the proposed construction footprint, is included as Attachment A. No species of concern were identified in the vicinity of the construction footprint, including access roads and staging areas. Reclamation also obtained a list of Federal endangered and threatened species from USFWS on March 8, 2014. The list of species, included as Attachment B, identifies all of the sensitive species that have been found in the U.S. Geological Survey Piedra quadrangle and Fresno County, and also ones that may be affected by projects in the quadrangle or county. This information, in addition to the CNDDDB information, was used to determine the likelihood of protected species occurrence within the project area.

Existing Biological Opinions

Reclamation and certain CVP Contractors are subject to commitments from two BOs that govern exchanges, among

other things. These are the “Biological Opinion on Implementation of the CVPIA and Continued Operation and Maintenance of the CVP” issued in 2000, and the “Biological Opinion on U.S. Bureau of Reclamation Long Term Contract Renewal of Friant Division and Cross Valley Unit Contracts” issued in 2001. The commitments are listed below. The second opinion governs exchanges and transfers involving Friant and/or Cross Valley Canal contractors.

CVPIA Biological Opinion

Water transfers pursuant to any exchange agreements will be consistent with section §3405(a)(1) of the CVPIA in that, among other considerations: (1) no transfer will be authorized unless the transfer is consistent with State law, including but not limited to provisions of the California Environmental Quality Act (§3406(a)(1)(D)); (2) no transfer will be authorized if it has a significant adverse impact on the ability to deliver CVP contract water or fish and wildlife obligations under the CVPIA because of limitations in conveyance or pumping capacity (§3406(a)(1)(H)); and (3) no transfer will be authorized if it results in a significant reduction in quantity or quality of water currently used for fish and wildlife purposes, unless it is determined that such adverse effects would be more than offset by the benefits of the proposed transfer. In the event of such a determination, mitigation activities will be developed and implemented as integral and concurrent elements of any such transfer, so as to provide fish and wildlife benefits substantially equivalent to those lost as a consequence of such transfer (§3406(a)(1)(L)).

2001 Friant/Cross Valley Biological Opinion

1. Transfers and exchanges will be executed for one year only for any district that does not have an established listed-species baseline as described in the draft Biological Opinion on operations and maintenance of the CVP and implementation of the CVPIA;
2. Transferred or exchanged water will be delivered and applied only to areas that were in cultivation from October 15, 1991 (the date of the Friant Biological Opinion), until one of the following occur and there is no net loss of potential listed-species habitat as a direct or indirect result of the transfer:
 - consultation on the effect of putting the area into cultivation has been completed, or,

- there is a Habitat Conservation Plan in place that addresses impacts to the area receiving the water, or,
 - the CVP Conservation Program has a line-item, specific increase in funding to compensate fully for the transfer and is in place prior to the transfer.
3. All other non-historic CVP transfers and exchanges that do not meet the above criteria would require separate section 7 or section 10 authorization (carried over from 2000 Interim Opinion Term and Condition IV(F)).

3.3.2 Environmental Consequences

No Action

Under the No Action Alternative, conveyance and use of Kings River water, and continued storage of banked Unreleased Restoration Flows, would occur through existing facilities and would not change the land use patterns of the cultivated or fallowed fields that do have some value to listed species.

Those contractors with access to groundwater supplies would access this water to meet water supply needs, including public health needs. This would further contribute to regional groundwater overdraft.

Proposed Action

No species of concern were identified in the vicinity of the construction footprint, including access roads and staging areas; therefore construction is not anticipated to result in disturbance of ecologically sensitive lands due to construction activities. Prior to installation and removal of the facilities, Reclamation would conduct a biological survey to verify absence of species of concern. If any species of concern are identified, measures, including modifications to construction design, as necessary, will be implemented, as appropriate, to avoid impacts to species of concern.

As the Proposed Action would be a five-year short-term exchange to convey Kings River water supplies to meet existing demand consistent with existing contract amounts and within the range of historical water use, no land use changes will occur due to increases or decreases in cultivation activities or fallowing of fields. All water will be delivered to existing agricultural and M&I purposes. As no land use changes or additional disturbance would occur as a result of project operations or construction, no habitat changes would occur that

could potentially affect listed species or species covered under the Migratory Bird Treaty Act (MBTA).

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

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 Federal agencies to take into consideration the effects of their undertakings on cultural resources included in, or eligible for inclusion in the National Register of Historic Places (NRHP). Cultural resources that are included in or are eligible for, inclusion in the NRHP, are referred to as historic properties.

3.4.1 Affected Environment

The San Joaquin Valley is rich in both prehistoric and historical cultural resources. Prehistoric resources include a variety of cultural remnants, resulting from the use of the area by indigenous human populations for thousands of years before European settlement in the West. Prior to the 18th Century, numerous Native American groups inhabited California’s Central Valley, with the San Joaquin Valley and surrounding foothills supporting extensive populations.

Ethnographically, Northern Valley Yokuts, Southern Valley Yokuts, and Foothill Yokuts were the principal inhabitants of these areas. Land conversion and intensive farming practices over the past century have impacted many Native American cultural sites; however, it is possible that additional Native American cultural resources lie undiscovered throughout the region. Historic-era cultural resources within the San Joaquin Valley include various built environment features related to agriculture, ranching, and transportation. Many water storage and conveyance features, such as those comprising the CVP and SWP, have historical significance and can be considered cultural resources. Several components of the CVP have been determined to be historic properties eligible for inclusion in the NRHP. A multiple properties submission for the CVP, in

which the eligible property types and CVP contributing elements are identified, is under review for submission to the Keeper of the NRHP.

Cultural resources known to exist along the Friant-Kern Canal consist of the canal and associated features (e.g., siphons, drop structures, turnouts, inlet/outlet structures), concrete and timber (farm) bridges that cross the canal, and the Little Dry Creek Wasteway Facility. A recent cultural resources investigation did not identify any historic properties within the construction footprint. Archaeological remains could also be present along the canal, in undisturbed soils outside of the canal corridor. No archaeological surveys have been conducted for this undertaking.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no Federal undertaking as defined in Section 301(7) of the NHPA, and Reclamation would be under no obligation to complete the Section 106 process, as described in the NHPA implementing regulations at 36 Code of Federal Regulations (CFR) Part 800. The No Action Alternative would result in no impacts to cultural resources.

Proposed Action

The Proposed Action, which includes constructing a temporary pumping facility to pump Kings River water from the Gould Canal into the Friant-Kern Canal, is the type of undertaking that does not have the potential to cause effects to historic properties, should such properties be present, pursuant to the NHPA Section 106 regulations codified at 36 CFR § 800.3(a)(1). The Proposed Action includes ground disturbance along the existing within the existing built environment of the Friant-Kern and Gould canals, however the construction footprint (including access roads) is greatly disturbed and intact prehistoric resources are not expected to be found. Should archeological resources be identified, these resources will be evaluated and mitigated through consultations with the State Historic Preservation Officer (SHPO), Native American tribes, and interested parties.

Outside of the installation of new pumps at the intersection of the Friant-Kern and Gould canals, the conveyance of water under the Proposed Action would occur through existing facilities or within current water service area boundaries,

without modification to existing facilities, construction of new facilities, or change in land use. Thus the conveyance of the water has no potential to cause effects on historic properties pursuant to 36 CFR Part 800.3(a)(1).

3.5 Indian Trust Assets

ITAs 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 as compensation or injunction, if there is improper interference. ITAs cannot 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, ITAs may be located off trust land.

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

3.5.1 Affected Environment

Potential impacts to ITAs would stem from any actions that affect land, minerals, federally reserved hunting and fishing rights, federally reserved water rights, and in-stream flows associated with trust land in the study area. An examination of records held by the Bureau of Indian Affairs and Reclamation was conducted by the Regional ITA Coordinator. No reservations or rancherias are located within 10 miles of the intersection of the Friant-Kern and Gould canals.

3.5.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not facilitate a water transfer or exchange of water from the

District to other Friant Division long-term contractors or Friant Division short-term contractors. Kings River water supplies would be conveyed to users within the District under existing contractual arrangements. Unreleased Restoration Flows banked in the District's groundwater bank would remain in the bank. There would be no impacts to ITAs as conditions would remain the same as existing conditions; therefore, there would be no impacts to ITAs.

Proposed Action

No reservations or rancherias are located within 10 miles of the construction footprint. Therefore, no impacts would occur to ITAs as a result of the Proposed Action. Approval of the transfer and/or exchange of water from the District to other Friant Division long-term contractors or Friant Division short-term contractors would utilize existing conveyance facilities. Therefore, activities associated with the Proposed Action would not impact ITAs.

3.6 Socioeconomics

3.6.1 Affected Environment

The Friant Division includes areas in Fresno, Kern, Kings, Madera, Merced, and Tulare counties:

- Fresno is the sixth largest county in land area in the State and is located in the fertile Central Valley. Serving as the economic hub of the Central Valley, it remains the largest inland city in California with a large agriculture-based society. Fresno County relies, to a large extent, either directly or indirectly, on agriculture for employment. Median family income within Fresno County falls approximately \$16,000 below the state's (U.S. Census Bureau 2014).
- Kern County consistently ranks among the top five most-productive agricultural counties in the United States and also is one of the nation's leading petroleum-producing counties. Because of its unique geographical position, Kern County has also become the distribution center for some of the world's largest companies.
- Located in the heavily traveled San Joaquin Valley, Kings County is connected to a vast product distribution network that moves agricultural and other goods to many national and international markets.

- Madera County combines the high, rugged country of the Sierra Nevada and the farmlands of the valley. Most industrial and residential activity is located along State Route 99, a north-south corridor.
- More than half of Merced County's land is an agriculturally rich alluvial plain created by the Chowchilla, Merced, and San Joaquin rivers. Merced is the fifth leading agricultural county in California (California Employment Development Department 2014).
- Tulare County is located in the San Joaquin Valley, near the geographic center of California. Although primarily an agricultural county, almost half of Tulare County's area is devoted to national forests and parks.

Kings County has also been included in discussions of the Friant Division because a Friant Division contractor has a small portion of land in Kings County. Furthermore, because of Kings County's proximity to a large proportion of the Friant Division, there is a potential for Kings County residents to be affected socioeconomically in a manner similar to the rest of the Friant Division.

3.6.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, reduced water supply could result in reduced crop harvests and associated reductions in incomes within Fresno, Kern, Kings, Madera, Merced, and/or Tulare counties.

Proposed Action

The Proposed Action would minimize drought-related water supply impacts to those contractors who would receive Kings River supplies from the Friant Division facilities. This could minimize drought-related impacts to crop harvests and reduce adverse impacts to associated incomes within Fresno, Kern, Kings, Madera, Merced, and/or Tulare counties.

3.7 Environmental Justice

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of

environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of Federal programs. Executive Order 12898 (February 11, 1994) mandates Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

3.7.1 Affected Environment

The San Joaquin Valley relies, to a large extent, either directly or indirectly, on agriculture for employment. The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, increasing populations within these small communities during peak harvest periods. As shown in Table 3-2, all counties potentially affected by the Proposed Action have populations living below the poverty level, at concentrations between 5 and 10 percent higher than the State as a whole.

Table 3 2. County Demographics (2008 – 2012 Estimates)

	Fresno	Kern	Kings	Madera	Merced	Tulare	California
White (non-hispanic)	31.9%	37.6%	34.7%	37.1%	30.7%	31.4%	39.4%
Hispanic	51.2%	50.3%	52.0%	55.2%	56.1%	61.8%	38.2%
African American	5.9%	6.3%	7.5%	4.1%	4.3%	2.2%	6.6%
Asian	10.4%	4.8%	4.3%	2.3%	8.1%	4.0%	13.9%
American Indian/Alaskan Native	3.0%	2.7%	3.0%	4.6%	2.5%	2.8%	1.7%
Native Hawaiian/Pacific Islander	0.3%	0.3%	0.3%	0.2%	0.4%	0.2%	0.5%
Identified by two or more races	2.9%	3.0%	3.5%	2.4%	2.9%	2.4%	3.6%
Persons below poverty level	24.8%	22.5%	20.7%	21.1%	24.6%	24.8%	15.3%

Source: U.S. Census Bureau 2014

3.7.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, reduced water supply could result in reduced crop harvests and associated reductions in

employment opportunities for minority and low-income farm laborers.

Proposed Action

The Proposed Action would minimize drought-related water supply impacts to those contractors who would receive Kings River supplies from the Friant Division facilities. This would minimize drought-related impacts to crop harvests and reduce adverse impacts to minority or low-income farm laborers.

3.8 Public Health

3.8.1 Affected Environment

The complete list of entities able to divert water from Friant Division facilities is shown in Table 2-1, and includes several small towns and communities that rely on a combination of CVP water and groundwater for drinking water supplies. During dry periods when surface water is limited or expensive, these communities rely more heavily on local groundwater supplies to meet drinking water demands. Entities that could receive water under the Proposed Action include, but would not be limited to, the following:

- City of Orange Cove,
- Fresno Water Works #18,
- Terra Bella Irrigation District, and
- Lindsay-Strathmore Irrigation District.

Heavy regional groundwater use in the past has led to reduced groundwater levels, and this in combination with regional land use practices have led to reduced groundwater quality. In many areas, groundwater contamination has made some wells unusable. The City of Orange Cove, for example, purchases Friant-Kern Canal water for residential distribution. The city has a limited amount of groundwater of impaired quality, and no entitlements to other alternative sources of drinking water. The Kings River is the only source of alternative surface water upstream from the city on the Friant-Kern Canal; however, the city does not have entitlements to water on this river (Moss 2005).

3.8.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, contractors would access alternative supplies, including surface water supplies where available. In some areas, such as the cities of Lindsay and Orange Cove, some amount groundwater could be used; however these supplies would likely be of insufficient quality and/or quantity to meet drinking water demands. Drinking water would need to be purchased or residents temporarily relocated to avoid human health impacts.

Proposed Action

Under the Proposed Action, Kings River water, which is of relatively high quality, could be used alone or combined with local groundwater supplies to meet some or all of the drinking water demand in some areas. This would provide a human health benefit.

3.9 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 provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the 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 a proposed action equal or exceed certain de minimis

amounts thus requiring the federal agency to make a determination of general conformity.

3.9.1 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 control measures to reduce emissions and improve overall air quality within the SJVAB.

3.9.2 Environmental Consequences

No Action

Under the No Action Alternative, those contractors with access to groundwater supplies would access this water to meet water supply needs, using pumps that currently utilize petroleum as a fuel source. These pumps would continue to generate emissions. These emissions would contribute to the SJVAB not meeting State and Federal health-based air quality standards.

Proposed Action

The Proposed Action includes initial use of two diesel pumps either in or along the Gould Canal to pump water into the Friant-Kern Canal. The diesel pumps would be replaced within 3 months with electric-powered pumps, pending modification to the available power supply. The pumps are anticipated to operate up to 12 consecutive months, for up to five years. Operation of diesel-powered pumps would generate emissions that would contribute to the SJVAB not meeting State and Federal health-based air quality standards. Operation of electric pumps would reduce this impact. Stationary equipment would be subject to SJVAPCD's permitting process and best available control technology and offset requirements. SJVAPCD's permitting process would keep emissions from equipment within acceptable limits.

Temporary and short-term emissions related to pump installation and operation could produce criteria air pollutants in excess of SJVAPCD thresholds, but would not result in a substantial increase in long-term regional or local emissions. Therefore, construction-related emissions would not be anticipated to violate an air quality standard, contribute substantially to an existing or projected air quality violation, or

conflict with or obstruct implementation of California Air Resources Board and SJVAPCD air planning efforts.

3.10 Global Climate Change

3.10.1 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.

3.10.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, there would be no increase in emissions and, therefore, no impacts or changes to climate change are anticipated. Contractors would continue to pump groundwater from pumps that currently utilize petroleum as a fuel source, and these pumps would continue to generate GHGs associated with the combustion of fossil fuels and would impact climate change.

Proposed Action

The Proposed Action includes initial use of diesel pumps either in or along the Gould Canal to pump water into the Friant-Kern Canal. The diesel pumps would be replaced within 3 months with electric-powered pumps, pending modification to the available power supply. The pumps are anticipated to operate up to 12 consecutive months, for up to five years. Operation of diesel-powered pumps would generate GHG emissions. Because these emissions would be generated for a short period of time, and stationary equipment would be subject to SJVAPCD's permitting process and best available control

technology and offset requirements, operations would not result in a substantial increase in long-term regional or local emissions. Because the Proposed Action would not substantially result in increases in GHG emissions, the Proposed Action would not substantially add to the global inventory of gases that would contribute to global climate change. Because the proposed action would only occur for up to five years, climate change would not affect operation of the proposed action.

3.11 Cumulative Impacts

The Proposed Action 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, groundwater banks, rivers, and conveyance facilities associated with the Proposed Action are managed primarily for agricultural supplies. The Proposed Action would not interfere with water deliveries, facility operation, or cause substantial adverse changes to the conveyance facilities.

The Proposed Action, when added to other actions, would not contribute to significant improvements or degradation in environmental conditions. The Proposed Action would occur only for five years and convey up to 20,000 AF of Kings River flows annually. The Proposed Action would not be precedent-setting. The Proposed Action would have no impact on land use, biological resources, cultural resources, ITAs, or Indian Sacred Sites, and would have beneficial impacts on water resources and public health; and therefore would not contribute to adverse cumulative impacts on these resources areas. The Proposed Action would have minor impacts on air quality and global climate change; however, because of the minor and temporary nature of these impacts, the Proposed Action would not have a cumulatively considerable contribution to a cumulative adverse impact on these resource areas.

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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 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. A draft of this EA was circulated for a nine day public review and comment period. No comments were received.

4.2 Fish and Wildlife Coordination Act of 1934 (16 USC § 661 et seq.)

The Fish and Wildlife Coordination Act 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 Fish and Wildlife Coordination Act 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. As described in Section 3.3, "Biological Resources," Reclamation obtained a list of Federal endangered and

threatened species from USFWS on March 8, 2014 and reviewed the California Natural Diversity Database.

This information was used to support Reclamation's determination that the project would have no effect on special status 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 requirements for water delivery under applicable laws would prevent any impact to any federally listed species or any critical habitat. Reclamation intends to conduct a site survey prior to construction activities to ensure that there would be no impacts to listed species.

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

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

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the NRHP. Compliance with Section 106 follows a series of steps that are designed to 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 Proposed Action includes ground disturbance along the existing right-of-way along the Friant-Kern and Gould canals, however the construction footprint (including access roads) is greatly disturbed and intact prehistoric resources are not expected to be found. Reclamation has determined that there would be no potential to affect historic properties by the Proposed Action 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 birds protected by the MBTA; and no vegetation would be removed during construction. Therefore, the Proposed Action would not affect birds protected by the MBTA.

4.6 Executive Order 13007 and American Indian Religious

Freedom Act of 1978 – Indian Trust Assets and Sacred Sites on Federal Lands Executive Order 13007 and the American Indian Religious Freedom Act of 1978 are designed to protect ITAs, accommodate 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 Proposed 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 the CVPIA.

4.9 California Environmental Quality Act

The District filed a Notice of Exemption for the Proposed Action in accordance with CEQA.

Section 5

List of Preparers and Reviewers

5.1 U.S. Department of the Interior, Bureau of Reclamation

Mario Manzo, Project Manager, San Joaquin River Restoration Program

Rebecca Victorine, Natural Resources Specialist, San Joaquin River Restoration Program

Rain Emerson, Natural Resources Specialist, South-Central California Area Office

Scott Taylor, Repayment Specialist, South-Central California Area Office

5.2 MWH

John Roldan, Principal Water Resources Planner

Jill Chomycia, Senior Water Resources Planner

5.3 Fresno Irrigation District

Gary Serrato, General Manager

Laurence Kimura, Assistant General Manager

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Section 6

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Environmental Assessment

Fresno Irrigation District's Installation of a Temporary Pumping Facility for the Introduction of Kings River Water into the Friant-Kern Canal at the Gould Canal for Transfer and/or Exchange

Attachment A – Results of California Natural Diversity Database Query for the Study Area, February 27, 2014

Prepared by:

**United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region**



**U.S. Department of the Interior
Bureau of Reclamation**

March 2014

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Environmental Assessment

Fresno Irrigation District's Installation of a Temporary Pumping Facility for the Introduction of Kings River Water into the Friant-Kern Canal at the Gould Canal for Transfer and/or Exchange

Attachment B - U.S. Fish and Wildlife, Sacramento Fish & Wildlife Office: Species List for Fresno Irrigation District's Installation of a Temporary Pumping Facility for the introduction of Kings River Water into the Friant-Kern Canal at the Gould Canal for Transfer and/or Exchange

Prepared by:

**United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Region**



**U.S. Department of the Interior
Bureau of Reclamation**

March 2014

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