

RECLAMATION


Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

2010 Warren Act Contract and License for Delta Lands Reclamation District 770


FONSI-09-177

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Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the South-Central California Area Office of the U.S. Bureau of Reclamation (Reclamation), has determined that an environmental impact statement is not required for the approval of a 12-month (June 1, 2010 through May 31, 2011) Warren Act contract and license with Delta Lands Reclamation District 770 (RD770). This Finding of No Significant Impact is supported by Reclamation's Final Environmental Assessment (EA) Number EA-09-177, *2010 Warren Act Contract and License for Delta Lands Reclamation District 770*, and is hereby incorporated by reference.

Reclamation anticipates RD770 will conduct pump-ins when damaging floodwaters exist, which is expected to occur every three to four years on average. Therefore, a long-term contract is under negotiation. The finalization and approval of a long-term contract and license is not expected to be completed and executed until after June 1, 2011. Therefore, another 12-month license and a temporary contract is needed in case damaging floodwater threatens RD770 while the long-term actions are under development. A separate environmental document will be prepared and completed for the long-term contract and license.

Background

Beginning in 1978, Reclamation has periodically entered into Warren Act contracts (both long-term and temporary) with RD770 to allow for the introduction and disposition of Non-Central Valley Project (Non-CVP) floodwaters from the Kings, St. John's (a channel of the Kaweah) and Tule Rivers through the Friant-Kern Canal (FKC) in order to help alleviate damage to farm land, property, and crops within RD770's boundaries. In addition, licenses have been issued in the past to allow access and installation of portable pumping equipment on Reclamation lands to pump the Non-CVP water from the rivers into the FKC.

Reclamation's approval of the 12-month 2010 Warren Act contract and license will allow RD770 to introduce damaging floodwater from the Kings, St. John's and Tule Rivers into the FKC at milepost (MP) 29.10 for the Kings River, MP 69.45 for the St. John's River, and MP 95.67 for the Tule River. The proposed one year license will permit the existing infrastructure to remain in place as well as allow RD770 to install pumps at the three MPs. After conveyance in the FKC, the Non-CVP water may be diverted, on behalf of RD770, by Friant Division contractors up to the amount they can put to beneficial use and/or discharged into the Kern River. Coordination with the Kern River watermaster will occur to ensure the acceptance of this water into the Kern River prior to the introduction of Non-CVP water to the FKC. Subsequent actions beyond the discharges to the Kern River or the diversions by Friant contractors are not within Reclamation's approval authority.

Damaging floodwater is defined for purposes of this FONSI as the flow from the Kings, St. John's, and/or Tule Rivers that is in excess of the irrigation and spreading demand in the basins and will, in the absence of the project, cause flooding and potential damage in the Tulare Lakebed.

Reclamation's finding that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following factors:

FINDINGS

Water Resources

Past introductions and conveyances of Non-CVP water have occurred infrequently during large flood events in the Kings, St. John's and Tule Rivers. Future introductions of Non-CVP water will be infrequent, intermittent, unreliable and small relative to existing river flows, water needs and operations as it has been in the past. Although the project does reduce potential flood flows which meet the goals of Executive Order (EO) 11988 Floodplain Management, the project does not affect the flood plain itself and therefore the project does not require Reclamation to take the actions required in EO 11988. The Proposed Action is consistent with the County of Tulare's General Plan 2025 flood protection goal since it will reduce the exposure of people, land and improvements to risk of damage as a result of flooding or levee failure. However, the level of flood protection will be contingent upon the amount of Non-CVP water that needed to be pumped and the available capacity in the FKC.

License terms and conditions explicitly address the pumping station operations and require compliance with water, ground and air pollution laws of Reclamation, and state and local authorities. In addition, the contract includes terms and conditions that explicitly address the aspects of Non-CVP water introductions, capacity and coordination among various agencies including compliance with water, ground and air pollution laws of local, state and federal agencies. Failure to comply will result in the termination of the contract and license. Requirements to comply with these laws and regulations provide additional safeguards to the water resources in the action area.

The Proposed Action will not substantially alter existing drainage patterns or the beneficial aspects periodic flood flows have on channel morphology. Variations in annual flows important to aquatic and riparian habitats have continued since the original contracts in 1978 with water below introduction points in pump-in years remaining greater than 130 percent in all three rivers. In addition, the Proposed Action will not impact water quality in the Kings, St. John's and Tule rivers as water quality is not affected by diversion of a portion of the river's flow. Further, the Proposed Action will not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed. RD770 will continue to coordinate and provide water to wetland areas in the vicinity of the Tulare Lakebed as in the past, including providing water to restored wetlands.

Introduction of this Non-CVP water into the FKC will not alter water rights held by the United States to pump water from the San Joaquin River nor will it alter the water rights of water right holders on the Kings, St. John's (Kaweah), or Tule rivers.

In the past, RD770 introductions of Non-CVP water into the FKC indicated water quality impacts due to slight increases in concentrations of turbidity, TDS, alkalinity, bicarbonate conductivity and coliform. The License issued to RD770 specifies that RD770 shall comply with all applicable water pollution laws and regulations of the United States, the State of

California and local authorities. The Contract obligates RD770 to comply with Reclamation's water quality monitoring requirements and standards. In addition, RD770 will be required to meet the Food and Agricultural Organization of the United Nations guidelines for suitability of irrigation standards. Water quality monitoring will be done by RD770, the Friant Water Authority (FWA), Friant Division municipal and industrial (M&I) water uses, and Reclamation. If Reclamation determines that the water quality in the canal is negatively affected by the pumps sufficiently to cause harm to the CVP or Friant Division contractors, the contract will be terminated. Additionally, should silt accumulate in the FKC or channels as a result of the introduction of Non-CVP water, RD770 will remove the silt accumulation as directed by Reclamation and the FWA, or reimburse Reclamation and the FWA for costs associated with its removal. RD770 will also be required to take steps to screen debris from the Non-CVP water prior to pumping and to ensure that there are no impacts to Friant Division contractors or their facilities from silt accumulation.

The discharge of the Non-CVP water into the Kern River will not affect water quality in that river as the oversight of the Rivermaster and the typically small quantity (proportionally) of water discharged will minimize impacts to the Kern River. Due to the established monitoring and reporting requirements included as part of the Proposed Action, the diversion of Non-CVP water from the Kings, St. John's and Tule rivers will have no significant effect on water quality within these drainages. Water quality within the rivers downstream of the pumping plants is unlikely to change, but if introductions decreased flows and soil erosion, a minor improvement in downstream water quality may result.

Noise

The diesel and electric powered pumps used to pump Non-CVP water into the FKC will generate infrequent, periodic noise. RD770 is required by Reclamation's license to comply with the Fresno and Tulare County Noise Ordinance regulations. Additionally, RD770 will comply with all federal and state noise standards and ordinances. RD770 has, and will continue to work with the few residents near the pumping plants, to reduce the noise levels when the pumps are in operation. RD770 has implemented noise reduction strategies based on the recommendations of a noise consultant and contacts persons residing near the pumping facilities prior to pumping, to address issues. Based on historic frequency, such Non-CVP water introductions will occur, on average, every three to four years. RD770 will provide Reclamation and the FWA with the project specific data as required to determine compliance with the criteria contained within the applicable Fresno and Tulare County Noise Ordinance regulations. The license also requires RD770 to respond to any complaints from adjoining landowners regarding noise and take appropriate actions or cease pumping operations. Therefore, there will be no significant impacts to noise levels as a result of the Proposed Action.

Land Use

The Proposed Action will not conflict with existing zoning for agricultural use or promote the conversion of farmland to non-agricultural use. The existing trend of land use conversion within the San Joaquin Valley from farmland to urban land uses will continue as it has in the past. Conveyance of the Non-CVP water will be infrequent, intermittent, unpredictable and small, relative to existing water needs and operations. Further, the prevention of inundation of farmlands will not change rates of land conversion but will allow existing farmland to remain

productive in years when flooding will have impacted productivity. Conveyance of this Non-CVP water is contingent upon available capacity in the FKC and conditions in the Kern River. As a consequence, the Proposed Action is unlikely to lead to any long-term land use decisions. Any available water will be used to maintain existing land uses and will not contribute to impacts to land uses or planning. Consequently, there will be no significant impacts to land use as a result of the Proposed Action.

Biological Resources

The infrastructure required for RD770 to pump Non-CVP water from the Kings, St. John's and Tule River systems is complete and operational, requiring no further construction that might affect biological resources. No ground disturbing activities will be associated with the operation and maintenance of the three pumping facilities. The license precludes the use of pesticides on the FKC right-of-way without prior written permission of Reclamation. Pumps will be installed at MP95.67 on the Tule River and at MP69.45 on the St. John's River, where elderberry plants are either not present, or are no closer than 130 feet distant, respectively. Consequently, disturbance will be avoided at these two stations. A third set of pumps will be installed at MP29.10 on the Kings River which is 60 feet away from one elderberry bush. Access to this pump station will be done via an existing roadway; therefore, any disturbance to the bush will be insignificant. Additionally, removal of all pumps will occur outside the Valley Elderberry longhorn beetles (VELB) period of activity (after June). Through the use of these measures, effects to VELB are considered insignificant and not likely to adversely affect this species.

The Proposed Action does not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed. The Proposed Action will only pump water from the Kings River when 3,200 cubic-feet per second of water is being pumped south to Tulare Lakebed and flood flows north to the San Joaquin River have been maximized. No direct connections occur between existing wetlands and the St. John's and Tule rivers downstream from the FKC.

The *Delta Lands Reclamation District No. 770 Warren Act Contract Biological Evaluation* dated April 17, 2006 and the analysis of direct, indirect and induced and interrelated effects indicate that the intensity of the effects from the Proposed Action will be low. In addition, Friant contractors are required to comply with the Biological Opinions issued during the long-term contract renewal process which require water delivered into their districts to be used in ways that do not harm endangered or threatened species. Adherence to these Biological Opinions will ensure that the delivery of this Non-CVP water does not adversely impact species. Also, in compliance with EO 13112 on Invasive Species, Reclamation will continue to implement feasible and prudent measures to minimize risk of harm from the spread of invasive species.

While the Proposed Action may affect threatened and endangered species it is not likely to adversely affect listed species or designated critical habitat. Reclamation initiated consultation with the U.S. Fish and Wildlife Service (USFWS) on April 14, 2010 for concurrence on this determination. On June 18, 2010, the USFWS concurred with Reclamation's determination. Therefore, there will be no significant impact to biological resources as a result of the Proposed Action.

Cultural Resources

The Proposed Action is the type of activity that will have no impact to cultural resources as there will be no modification of water conveyance facilities and no activities that will result in ground disturbance. Because there is no potential to affect historic properties, no cultural resources will be impacted as a result of implementing proposed action.

Indian Trust Assets

Since the Proposed Action will not cause any land disturbing activities or change historical water use patterns, the Proposed Action will not interfere with Indian water rights and will not affect Indian Trust Assets.

Environmental Justice

The Proposed Action will provide an option for some amount of flood protection within the Tulare Lakebed and reduce potential adverse impacts to minority or low-income farm laborers. Therefore, the Proposed Action has a slight beneficial impact to environmental justice.

Socioeconomic Resources

All required pumping and conveyance facilities have been constructed and will not be modified under the Proposed Action. All introduced Non-CVP water will be disposed of within existing facilities and requires no new construction. The population and land conversion trends are expected to continue with or without implementing the Proposed Action. Pumped Non-CVP water may be discharged into the Kern River. This water could recharge the groundwater locally and be extracted during dry periods to meet a small fraction of future demands. Uses of this Non-CVP water could include irrigation, groundwater banking, wetland enhancement and restoration, or M&I uses. However, Reclamation does not have approval authority for subsequent diversions or uses of this Non-CVP water once diverted or discharged from the FKC. Pumping the flood flows will provide an economic benefit to landowners in the Tulare Lake Basin. Reductions in costs for repairing public facilities, public services and emergency resources will also occur on a small local scale. Therefore, there will be no significant impacts to socioeconomic resources.

Air Quality

The portable diesel pumps are registered at the local and/or state level, have emission standards established within the registration requirement and the emissions are accounted for in the current emission inventory. The federal Title V Program does not apply to these pumps because the diesel engines are classified as non-road portable and will only operate for up to four to five months during years when Non-CVP water is pumped. The license issued by Reclamation stipulates that RD770 shall comply with all applicable air pollution laws and regulations of the United States, the State of California and local authorities. Electric and diesel-powered pumps will be used to pump water from the Kings, St. John's and Tule Rivers. Estimated emissions are well below the *de minimis* standards of the San Joaquin Valley Air Pollution Control District; therefore, a conformity analysis is not required and there will be no significant impacts to air quality.

Global Climate Change

The introduction of Non-CVP water into the FKC will require the use of diesel and electric pumps. These pumps will produce Carbon dioxide (CO₂) emissions which will contribute to Greenhouse Gas (GHG) emissions within the San Joaquin Valley. However, pump-in events will be infrequent and for short periods of time. Estimated CO₂ emissions from the 21 pumps run constantly over a five month period are well below the Environmental Protection Agency's threshold for annually reporting GHG emissions (25,000 metric tons/year), which is a surrogate for a threshold of significance. Accordingly, the Proposed Action will result in below *de minimis* impacts respecting global climate change.

Cumulative Impacts

The conveyance of this Non-CVP water is contingent upon hydrological conditions and capacity in the FKC and acceptable conditions in the Kern River. Pump-ins of this Non-CVP water will not impact existing water rights nor will it create new water rights on any of the rivers. Water quality impacts will be monitored as required in the contract and license. The slight increases in turbidity, Total Dissolved Solids, alkalinity, bicarbonate conductivity and coliform during pump-in events may initially impact water quality in the FKC and Kern River; however, these events are short-term, intermittent, and infrequent. Should Reclamation determine that the Non-CVP water does not meet their standards, pump-ins will be terminated. Discharges to the Kern River could result in limited groundwater recharge on a local and short-term basis. This water could be extracted during dry seasons to meet current demands. The conjunctive use of surface and groundwater supplies to meet existing demands within fluctuating hydrological conditions has occurred historically. The Proposed Action may offset the water lost by the Friant Division due to river restoration intermittently and only for those that have the facilities and capacity to make use of the opportunity. Consequently, the Proposed Action, when added to other related actions, does not result in long-term cumulative effects to water supplies, water rights, or water quality.

The Proposed Action will provide flood protection for the Tulare Lake Basin in addition to that provided by the enlargement of Terminus Dam. The enlargement and raising of Terminus Dam and the Proposed Action will have a somewhat greater flood protection result than either project alone. Depending on the hydrology this coordinated effect will have a greater or lesser flood protection result. At times of peak flood flows, the cumulative flood protection is still a small percentage of the stream flows; however, during small flood events, the coordinated projects will result in no flooding. The enlargement of Terminus Dam and Proposed Action do not contribute to increases in water supplies, changes in land use or increases in the need for floodplain insurance.

No construction will be required by the action, nor will the number of pump stations or engines increase. The existing portable diesel pumps are already accounted for in the current emission inventory. Therefore, the Proposed Action will not cumulatively affect air quality.

GHG emissions are considered cumulatively significant; however, the estimated CO₂ emissions for the Proposed Action is roughly 916.6 metric tons per year, which is well below the 25,000 metric tons per year threshold for reporting GHG emissions. As a result, the Proposed Action is not expected to contribute to cumulative adverse impacts to global climate change.

Since there are no impacts to noise, land use, cultural resources, ITA, and Environmental Justice from the Proposed Action when examined with other past, present, and future project impacts there will be no contribution to cumulative impacts on these resources areas. Slight beneficial impacts to socioeconomics from the increase in flood protection are within historical variations and will not contribute to cumulative impacts. Overall there will be no significant cumulative impacts caused by the Proposed Action.

RECLAMATION

Managing Water in the West

Final Environmental Assessment

2010 Warren Act Contract and License for Delta Lands Reclamation District 770

EA-09-177



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

June 2010

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.

Table of Contents

Section 1	Purpose and Need for Action	1
1.1	Background	1
1.2	Purpose and Need	2
1.3	Scope	2
1.4	Applicable Regulatory Requirements and Required Coordination	3
1.4.1	Warren Act	3
1.4.2	Reclamation States Emergency Drought Relief Act	3
1.4.3	Central Valley Project Improvement Act	3
1.4.4	Water Quality Standards	3
1.5	Potential Issues	3
Section 2	Alternatives Including the Proposed Action	6
2.1	No Action Alternative	6
2.2	Proposed Action	6
2.2.1	Issuance of a Conveyance Warren Act Contract	6
2.2.1.1	Floodwater Report and Delivery Plan	7
2.2.2	Issuance of a License	7
2.2.3	Environmental Commitments	8
Section 3	Affected Environment and Environmental Consequences	12
3.1	Water Resources	12
3.1.1	Affected Environment	12
3.1.1.1	Floodwater Volumes Introduced Under Previous Contracts	14
3.1.1.2	District Flood Management	15
3.1.1.3	Friant Division	15
3.1.1.4	Kern River	15
3.1.1.5	Water Quality	18
3.1.1.6	Groundwater Recharge	19
3.1.1.7	Tulare County General Plans and Floodwater	20
3.1.2	Environmental Consequences	20
3.1.2.1	No Action	20
3.1.2.2	Proposed Action	21
3.1.2.3	Cumulative Impacts	22
3.2	Noise	23
3.2.1	Affected Environment	23
3.2.2	Environmental Consequences	23
3.2.2.1	No Action	23
3.2.2.2	Proposed Action	23
3.2.2.3	Cumulative Impacts	24
3.3	Land Use	24
3.3.1	Affected Environment	24
3.3.1.1	Land Use Conversion	24
3.3.2	Environmental Consequences	25
3.3.2.1	No Action	25
3.3.2.2	Proposed Action	25
3.3.2.3	Cumulative Impacts	26

3.4	Biological Resources	26
3.4.1	Affected Environment	26
3.4.2	Environmental Consequences	29
3.4.2.1	No Action	29
3.4.2.2	Proposed Action	29
3.4.2.3	Cumulative Impacts	32
3.5	Cultural Resources	33
3.5.1	Affected Environment	34
3.5.2	Environmental Consequences	34
3.5.2.1	No Action	34
3.5.2.2	Proposed Action	34
3.5.2.3	Cumulative Impacts	34
3.6	Indian Trust Assets	35
3.6.1	Affected Environment	35
3.6.2	Environmental Consequences	35
3.6.2.1	No Action	35
3.6.2.2	Proposed Action	35
3.6.2.3	Cumulative Impacts	35
3.7	Environmental Justice	35
3.7.1	Affected Environment	35
3.7.2	Environmental Consequences	36
3.7.2.1	No Action	36
3.7.2.2	Proposed Action	36
3.7.2.3	Cumulative Impacts	36
3.8	Socioeconomic Resources	36
3.8.1	Affected Environment	36
3.8.2	Environmental Consequences	37
3.8.2.1	No Action	37
3.8.2.2	Proposed Action	37
3.8.2.3	Cumulative Impacts	37
3.9	Air Quality	38
3.9.1	Affected Environment	38
3.9.2	Environmental Consequences	39
3.9.2.1	No Action	39
3.9.2.2	Proposed Action	39
3.9.2.3	Cumulative Impacts	40
3.10	Global Climate Change	40
3.10.1	Affected Environment	40
3.10.2	Environmental Consequences	41
3.10.2.1	No Action	41
3.10.2.2	Proposed Action	41
3.10.2.3	Cumulative Impacts	41
Section 4	Consultation and Coordination	42
4.1	Fish and Wildlife Coordination Act (16 USC § 661 et seq.)	42
4.2	Endangered Species Act (16 USC § 1531 et seq.)	42
4.3	National Historic Preservation Act (16 USC § 470 et seq.)	42

4.4	Migratory Bird Treaty Act (16 USC § 703 et seq.)	42
4.5	Executive Order 11988 – Floodplain Management and Executive Order 11990- Protection of Wetlands.....	43
Section 5	Response to Comments Received	43
Section 6	List of Preparers and Reviewers	44
Section 7	References.....	45

List of Tables and Figures

Table 1-1	Introductions of Non-CVP Water into the FKC by RD770	1
Table 2-1	Friant Division Contractors	7
Table 2-2	Facilities Operated by RD770 for Pumping Water into the FKC	7
Table 3-1	Amount of Flow Diverted from the Kings, St. John's, and Tule Rivers	13
Table 3-2	RD770 and Kern River Diversions into the California Aqueduct.....	17
Table 3-3	Kings River Water Quality on 2006 Pump-in Dates	18
Table 3-4	Kaweah River Water Quality on 2006 Pump-in Dates	18
Table 3-5	Tule River Water Quality on 2006 Pump-in Dates	19
Table 3-6	Amount of Pump-in Quantities Delivered to the Kern River.....	20
Table 3-7	Summary of Reported Land Use Changes in Tulare Basin Counties	25
Table 3-8	Federal-status Wildlife and Plant Species List.....	27
Table 3-9	Species Occurrences identified in CNDDDB but not on USFWS Species List	28
Table 3-10	County-level Socioeconomic Data	37
Table 3-11	San Joaquin Valley Attainment Status	39
Table 3-12	Calculated Pump Emissions	40
Table 3-13	Calculated CO ₂ Emissions.....	41
Table 5-1	Water Quality Criteria for Irrigation	44
Figure 1-1	Location of Reclamation Districts and WRP in the vicinity of RD770.....	4
Figure 1-2	Proposed Action Location.....	5
Figure 2-1	Kings River Pumping Station (MP 29.10)	9
Figure 2-2	Kaweah/St. John River Pumping Station (MP 69.45)	10
Figure 2-3	Tule River Pumping Station (MP 95.67)	11
Figure 3-1	Average River Flows Upstream of the Friant-Kern Canal 1978-2006	12

Appendices

Appendix A	Draft Contract
Appendix B	Water Quality Requirements for use of the FKC
Appendix C	Draft License
Appendix D	Friant Division Contractors
Appendix E	Environmental Documents
Appendix F	Concurrence Letter from the U.S. Fish and Wildlife Service
Appendix G	Comment Letter from Arvin-Edison Water Storage District

List of Acronyms and Abbreviations

AF	acre-foot
APE	Area of Potential Effect
Aqueduct	California Aqueduct
BO	Biological Opinion
CAA	Clean Air Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Data Base
CO	Carbon monoxide
CO ₂	Carbon dioxide
Contract	Warren Act Contract to RD770
Corps	U.S. Army Corps of Engineers
DWR	California Department of Water Resources
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
FKC	Friant-Kern Canal
FONSI	Finding of No Significant Impact
FWA	Friant Water Authority
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
ITA	Indian Trust Asset
License	License to RD770 to access Reclamation ROW
M&I	Municipal and Industrial
mg/L	Milligram per liter
MP	Milepost
NAAQS	National Ambient Air Quality Standards
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
Non-CVP	Non-Central Valley Project

NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
O ₃	Ozone
PM ₁₀	Inhalable particulate matter less than 10 microns in diameter
PM _{2.5}	Inhalable particulate matter less than 2.5 microns in diameter
RD770	Delta Lands Reclamation District 770
Reclamation	Bureau of Reclamation
ROG	Reactive organic gases
ROW	Right-of-way
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SWP	State Water Project
TDS	Total Dissolved Solids
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compounds

Section 1 Purpose and Need for Action

1.1 Background

The Kings, Kaweah, Tule and Kern rivers drain from the Sierra Nevada Mountains into the landlocked Tulare Lake Basin and are the primary sources of surface water to the southern San Joaquin Valley. Historically, the flow from these rivers converged in the basin forming Tulare Lake; however, these lands were converted from lakebed to agricultural land in the 1940s. At present, there is no natural outlet for water flowing into the Tulare Lake Basin. There are 11 reclamation districts present within the Tulare Lake bed (see Figure 1-1). Ten of these districts lie within higher ground in the Lake bed and maintain a levee system that protects them from flood damage. However, Delta Lands Reclamation District 770 (RD770) lies within the bottom of this basin and has a smaller levee system which makes it more vulnerable to flooding from the Kings, St. John's (a channel of the Kaweah), and Tule rivers (see Figure 1-2). Surface water from these rivers is pre-1914 appropriative water rights and considered Non-Central Valley Project (Non-CVP) water.

Beginning in 1978, the Bureau of Reclamation (Reclamation) has periodically entered into Warren Act contracts (both long-term and temporary) with RD770 to allow for the introduction and disposition of Non-CVP floodwaters through the Friant-Kern Canal (FKC) in order to help alleviate damage to farm land, property, and crops within RD770's boundaries. In addition, licenses have been issued in the past to allow access and installation of portable pumping equipment on Reclamation lands to pump the Non-CVP water from the rivers into the FKC (License). See Table 1-1 for previous introductions of floodwaters and their amounts into the FKC.

Table 1-1 Introductions of Non-CVP Water into the FKC by RD770

Year of Introduction	Source of Water	Total Amount Pumped (Acre-feet)
1978	St. John's River	9,100
1980	Tule River	5,100
1982	Kings, St. John's, and Tule Rivers	32,500
1983	St. John's and Tule Rivers	248,100
1986	St. John's River	93,985
1995	Kings River	12,700
1997	St. John's and Tule Rivers	87,346
1998	Kings, St. John's, and Tule Rivers	202,633
2006	Kings and St. John's Rivers	29,205

The most recent Environmental Assessment, (EA), *EA-09-18 2009 Warren Act Contract and License for Delta Lands Reclamation District 770*, was prepared by Reclamation which analyzed the execution of a one-year conveyance Warren Act contract (Contract) and License with RD770 for the 2009 contract year (March 1, 2009 through February 28, 2010). A Finding of No Significant Impact (FONSI) was signed on August 2, 2009 and both EA and FONSI are hereby

incorporated by reference. Although, the Contract and License was drafted, neither was executed due to unresolved issues related to the deposition of the flood waters.

Based on past hydrology, Reclamation anticipates RD770 would conduct pump-ins intermittently and for short periods of time during a particular water year. However, floodwaters could occur during any future water year. Therefore, Reclamation and RD770 are pursuing negotiations for a long-term Contract and License.

The finalization and approval of a long-term Contract and License is not expected to be completed and executed until after June 1, 2011. Therefore, another 12-month License and a temporary Contract is needed in case damaging floodwater threatens RD770 while the long-term actions are under development. A separate environmental document will be prepared and completed for a long-term Contract and License.

1.2 Purpose and Need

The purpose of the Proposed Action is to pump flood flows into the FKC, thereby protecting the RD770 lands which are situated in the natural flood plain from Non-CVP water originating in the Kings, St. John's and Tule rivers and either, on behalf of RD770, divert the Non-CVP water to Friant Division contractors and/or discharge it into the Kern River. The underlying need is to reduce or avoid flood-related damage to prime farmland, buildings, roads, bridges, and other improvements in the Tulare Lakebed and other downstream lands.

1.3 Scope

This EA evaluates the execution of a 12-month License and temporary Contract for the time period June 1, 2010 through May 31, 2011, or until the long-term Contract and License is negotiated and executed. It also evaluates the No Action Alternative.

The geographic extent of the Proposed Action includes (1) the riparian areas and floodplains of the Kings, St. John's and Tule rivers downstream from the FKC, (2) wetland areas in the vicinity of the Tulare Lakebed, and (3) the FKC (see Figures 1-1 and 1-2).

No long term or reliable water supply can or would be developed through this action, which is intended solely to reduce risks of property damage and threats to public safety caused by unusually large flood flows.

Reclamation has no federal jurisdiction or control of the Non-CVP water once it is either released into the Kern River and/or diverted by the Friant Division contractors. Management of the water diverted to Friant Division contractors is via an agreement between Friant Water Authority (FWA) and RD770. Management of the water discharged into the Kern River becomes the responsibility of the Kern River Watermaster whose approval is required for the release of the water from the FKC into the Kern River. Reclamation's action ends once the Non-CVP water is diverted or discharged. The ultimate use of the Non-CVP water is outside of Reclamation's control and therefore will be discussed in general terms rather than specifically analyzed as part of this EA.

1.4 Applicable Regulatory Requirements and Required Coordination

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the National Environmental Policy Act (NEPA) analysis and decision-making process of this EA and include the following:

1.4.1 Warren Act

The Warren Act (Act as of February 21, 1911; CH. 141, [36 STAT.925]) authorizes Reclamation to enter into contracts to impound, store, and/or convey Non-CVP water when excess capacity is available in federal facilities.

1.4.2 Reclamation States Emergency Drought Relief Act

Section 102 of the Reclamation States Emergency Drought Relief Act of 1991 provides for use of Federal facilities and contracts for temporary water supplies, storage and conveyance of non-CVP water inside and outside project service areas for municipal and industrial (M&I), fish and wildlife, and agricultural uses. Section 305, enacted March 5, 1992 (106 Stat. 59), also authorizes Reclamation to utilize excess capacity to convey Non-CVP water.

1.4.3 Central Valley Project Improvement Act

The Central Valley Project Improvement Act of 1992, Title 34 (of Public Law 102-575), Section 3408, Additional Authorities (c) authorizes the Secretary of the Interior to enter into contracts pursuant to Reclamation law and this title with any Federal agency, California water user or water agency, State agency, or private nonprofit organization for the exchange, impoundment, storage, carriage, and delivery of CVP and Non-CVP water for domestic, municipal, industrial, fish and wildlife, and any other beneficial purpose, except that nothing in this subsection shall be deemed to supersede the provisions of section 103 of Public Law 99-546 (100 Stat. 3051).

1.4.4 Water Quality Standards

Reclamation requires that the operation and maintenance of CVP facilities shall be performed in such a manner as is practical to maintain the quality of raw water at the highest level that is reasonably attainable. Water quality and monitoring requirements are established annually by Reclamation and are instituted to protect water quality in federal facilities by ensuring that imported Non-CVP water does not impair existing uses or negatively impact existing water quality conditions. These standards are updated periodically. The water quality standards are the maximum concentration of certain contaminants that may occur in each source of Non-CVP water. The water quality standards for Non-CVP water to be stored and conveyed in federal facilities are currently those set out in Title 22 of the California Code of Regulations.

1.5 Potential Issues

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following resources: Water Resources, Noise, Land Use, Biological Resources, Cultural Resources, Indian Trusts Assets (ITA), Environmental Justice, Socioeconomic Resources, Air Quality, and Global Climate Change.

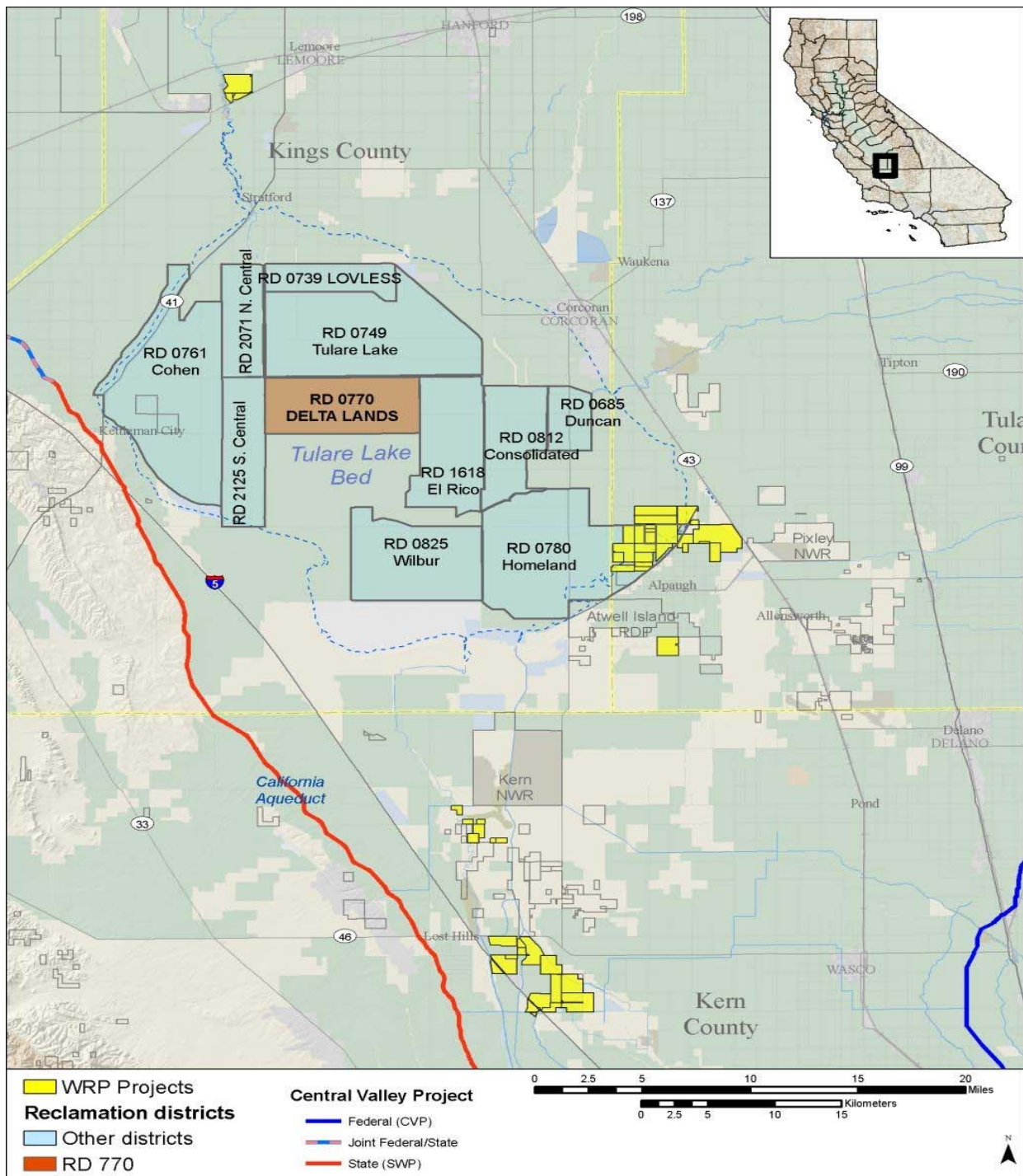


Figure 1-1 Location of Reclamation Districts and Wetland Reserve Programs (WRP) in the vicinity of RD770

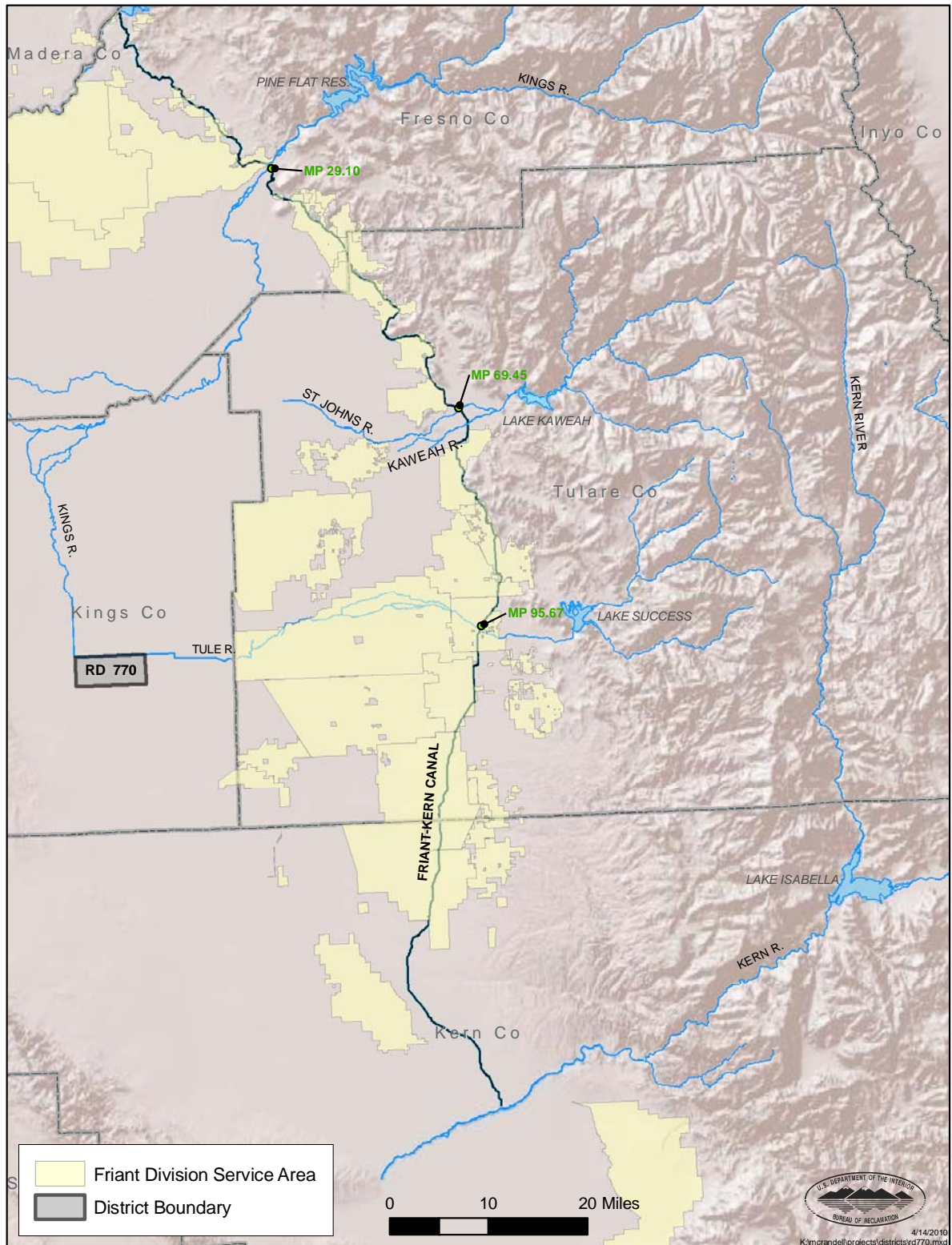


Figure 1-2 Proposed Action Location

Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not execute a Contract in 2010 with RD770 to divert and/or discharge Non-CVP water nor would Reclamation issue a License to RD770 to place pumps on Reclamation land. Under the No Action Alternative, Non-CVP water that otherwise could be introduced into the excess capacity of the FKC and/or discharged into the Kern River, would continue downstream into the former Tulare Lake bed in the Tulare Lake Basin and pool on otherwise productive farmland as well as flood infrastructure in the area.

2.2 Proposed Action

The Proposed Action has two components: (1) the issuance of a one-year Contract and (2) the issuance of a one-year License.

2.2.1 Issuance of a Conveyance Warren Act Contract

Reclamation proposes to enter into a 12-month Contract with RD770 to utilize otherwise unused capacity in the FKC to convey Non-CVP water pumped from the Kings, St John's and Tule Rivers from June 1, 2010 through May 31, 2011 for diversion by Friant Division contractors and/or for discharge into the Kern River (see Appendix A for a draft Contract). The Non-CVP water is pre-1914 appropriative water rights water from each of the respective rivers and would be introduced into the FKC from Milepost (MP) 29.10 for the Kings River (see Figure 2-1), MP 69.45 for the St. John's River (see Figure 2-2), and MP 95.67 for the Tule River (see Figure 2-3). The maximum amount of Non-CVP water from the three rivers to be conveyed in the FKC between June 1, 2010 and May 31, 2011 is 250,000 acre-feet (AF).

Non-CVP water would be introduced only when: 1) there is excess capacity in the FKC, as determined by Reclamation in coordination with the FWA; 2) it meets the applicable water quality standards (see Appendix B); 3) it meets the U.S. Army Corps of Engineers (Corps) flood control criteria; and 4) the discharge of water into the Kern River is coordinated with Kings, St. John's (Kaweah), Tule and Kern River Watermasters as applicable (see Exhibit C of Appendix A for letters from the respective Watermasters included as attachments to the draft Contract). Non-CVP water would be introduced to the FKC through existing turnouts without modification to the FKC.

Once introduced into the FKC, the Non-CVP water would be conveyed for diversion on behalf of RD770 to Friant Division contractors possessing repayment, long-term water service, or

assignment contract(s) with Reclamation (see Table 2-1) and/or the remainder would be conveyed to an existing gate at the terminus of the FKC for discharge into the Kern River.

Table 2-1 Friant Division Contractors

Arvin-Edison Water Storage District	Garfield Water District	Orange Cove Irrigation District
Chowchilla Water District	Gravelly Ford Water District	Porterville Irrigation District
City of Fresno	International Water District	Saucelito Irrigation District
City of Lindsay	Ivanhoe Irrigation District	Shafter-Wasco Irrigation District
City of Orange Cove	Kaweah Delta-Water Conservation District	Southern San Joaquin Municipal Utility District
County of Madera	Lewis Creek Irrigation District	Stone Corral Irrigation District
Delano-Earlimart Irrigation District	Lindmore Irrigation District	Tea Pot Dome Water District
Exeter Irrigation District	Lindsay-Strathmore Irrigation District	Terra Bella Irrigation District
Fresno County Waterworks #18	Lower Tule River Irrigation District	Tulare Irrigation District
Fresno Irrigation District	Madera Irrigation District	

2.2.1.1 Floodwater Report and Delivery Plan

RD770 would prepare a Floodwater Report and Delivery Plan to account for the water introduced into the FKC and/or discharged into the Kern River as a condition of the Contract. The Floodwater Report would be due by July 31, 2011.

2.2.2 Issuance of a License

Reclamation has historically executed licenses with RD770 to erect and maintain temporary pumps and related equipment within the rights-of-way (ROW) of the FKC. Under previous licenses, RD770 constructed semi-permanent pumping plants to pump water into the FKC from the Kings, St. John's and Tule Rivers. When pumping is to occur within a given year, pumps are installed on the existing infrastructure and existing piping is used to move water from the respective river to the FKC. After pumping is over, the pumps are removed and stored offsite. This protects the pumps from degradation due to the weather and other environmental factors. Only mobilization and demobilization of equipment, and routine operation and maintenance of the pump stations are expected during the period of the License.

The License would allow RD770 to access federal land and erect, operate and maintain the pumps when they determine there is a need to pump. It also allows for the continued existence of the pump footings and other permanent infrastructure on Federal lands (see Appendix C for a draft License). The pumping facilities are owned and operated by RD770. The size and number of the pumps to be installed on the existing infrastructure and total pumping capacity at each station are listed in Table 2-2 below.

Table 2-2 Facilities Operated by RD770 for Pumping Water into the FKC

River System	Discharge Pumps	Total Capacity (cubic feet per second)
Kings River	6	600
St. Johns River	8	800
Tule River	7	700
Total	21	2,100

2.2.3 Environmental Commitments

RD770 would implement the following environmental commitments to reduce environmental consequences associated with the Proposed Action. Environmental consequences for resource areas assume the commitments specified would be fully implemented.

- RD770 would comply with all applicable water and air pollution laws and regulations of the United States and the State of California.
- RD770 is required to comply with the water quality monitoring program either described in or incorporated by reference within the Contract (see Appendix B for the water quality monitoring requirements and sampling locations). RD770 would conduct water quality analyses using a Reclamation-approved laboratory. If the quality of the Non-CVP water from one or more of the rivers would significantly degrade the quality of water in or introduced into the FKC, RD770 would be required to immediately terminate pumping into the canal from the source that would cause the degradation.
- Friant Division contractors would adhere to the commitments made within and the terms and conditions required in the 2001 Friant and Cross Valley Long-term Contract Renewal Biological Opinion (BO) in relation to the use of the flood water within their service areas. BO requirements made for the use of CVP water would be similarly required for the use of any of the Non-CVP flood water within the Friant Division service area.
- RD770 would remove silt accumulation as directed by Reclamation and take steps to screen debris from water prior to pumping.
- RD770 would comply with Fresno and Tulare County Noise Ordinance regulations as well as respond to any complaints from adjoining landowners and/or their attorneys regarding noise and take appropriate actions or cease pumping operations.
- RD770 would not allow contamination or pollution of Federal lands, waters or facilities related to the project.
- RD770 would not use any pesticides on Federal lands without prior written approval by Reclamation. All pesticides used would be in accordance with the current registration, label direction, or other directives regulating their use.
- RD770 would immediately notify Reclamation of the discovery of any and all antiquities or other objects of cultural, historic, or scientific interest on Reclamation lands.

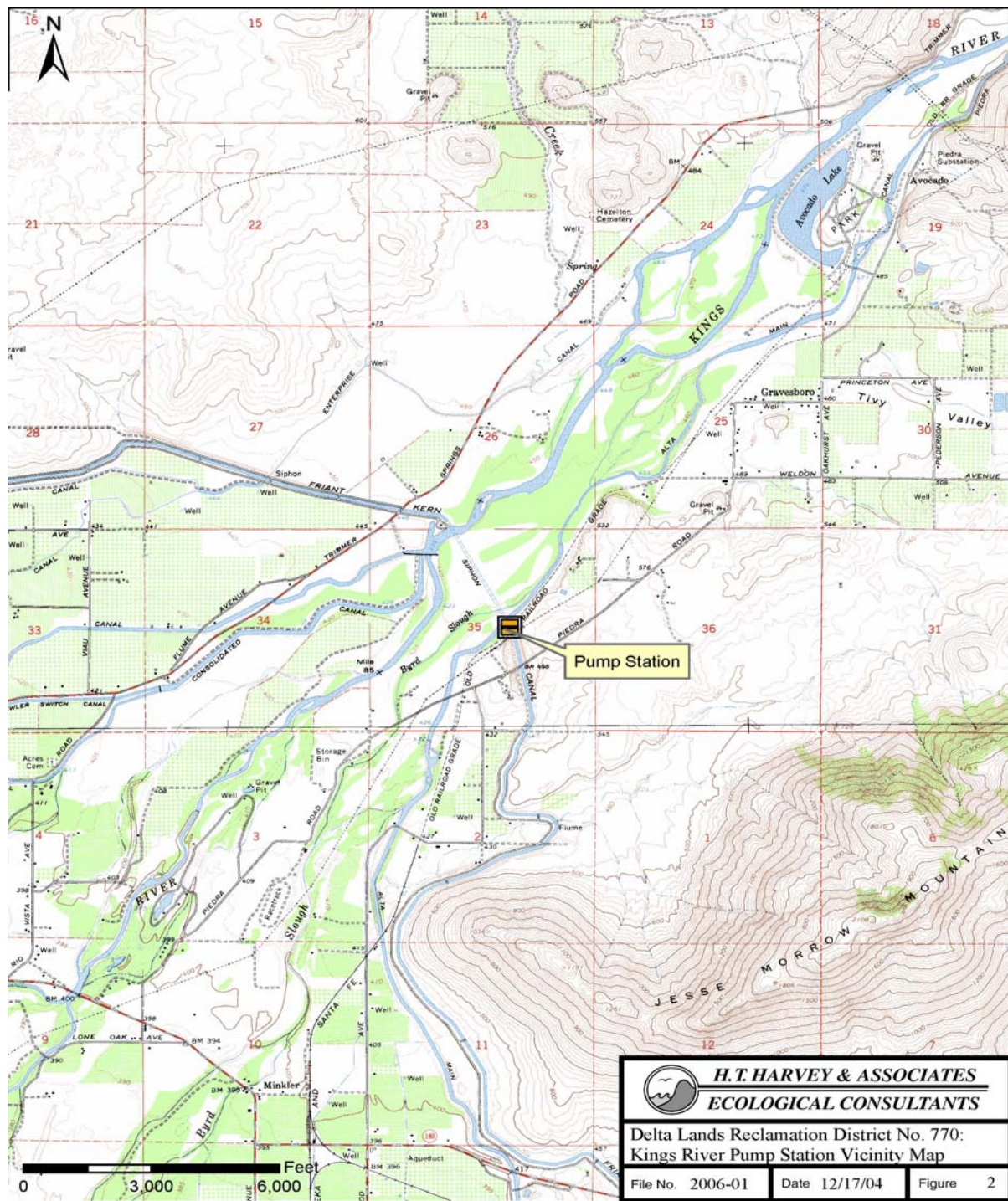


Figure 2-1 Kings River Pumping Station (MP 29.10)

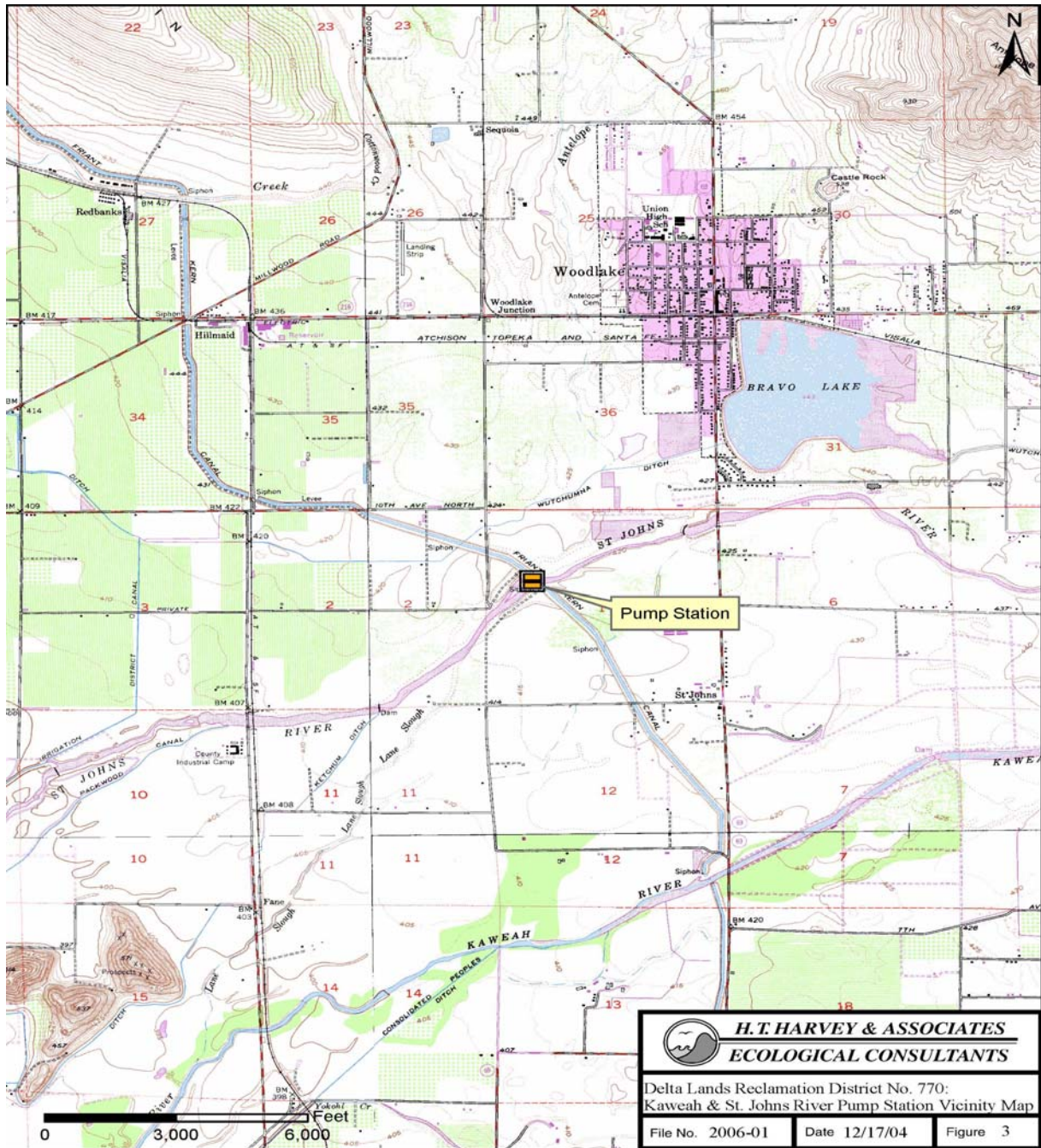


Figure 2-2 Kaweah/St. John River Pumping Station (MP 69.45)

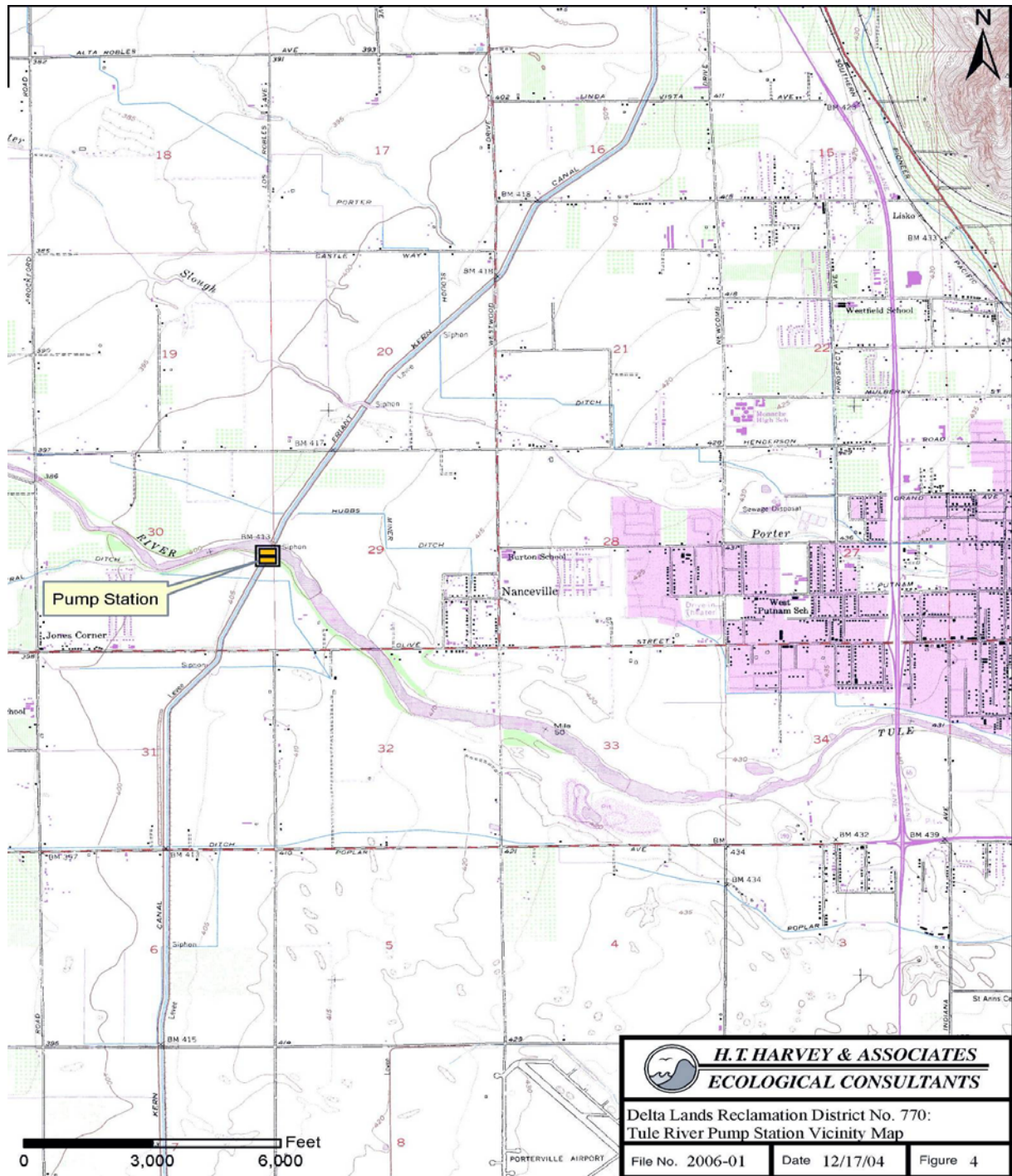


Figure 2-3 Tule River Pumping Station (MP 95.67)

Section 3 Affected Environment and Environmental Consequences

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

3.1 Water Resources

3.1.1 Affected Environment

The landlocked Tulare Basin is fed by the Kings, St. John's (Kaweah), Tule and Kern Rivers whose watersheds extend high into the Sierra Nevada Mountain range on the east side of the San Joaquin Valley. These rivers all drain into the Tulare Lakebed which formerly was the site of Tulare Lake. RD770 lies completely within the Tulare Lakebed and is vulnerable to flooding from the Kings, St. Johns and Tule Rivers (see Figure 1-2).

Historically, January through July flow volumes in the Kings, St. John's and Tule rivers have been quite variable ranging from 615,764 AF to 3,220,284 AF for the Kings River, 33,683 AF to 620,625 AF for the St. John's River, and 0 AF to 358,680 AF for the Tule River (see Figure 3-1 and Table 3-1).

Figure 3-1 Average River Flows Upstream of the Friant-Kern Canal 1978-2006

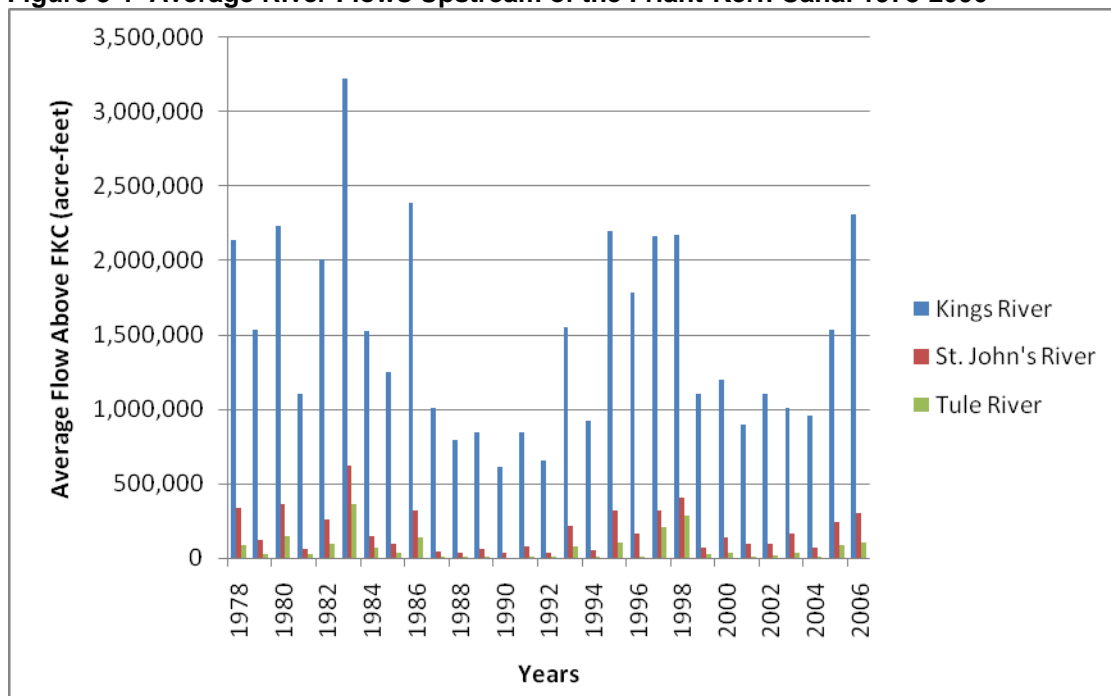


Table 3-1 Amount of Flow Diverted from the Kings, St. John’s, and Tule Rivers by RD770 during Contract Years

Year	Kings River						Kaweah (St. Johns) River						Tule River						Total Flow Diverted (AF)
	Percent of Average Flow	Flow Diverted (AF)	Percent of Flow Diverted	Flow Above Friant-Kern Canal (AF)	Flow Below Friant-Kern Canal (AF)	Percent of Average Flow Below Friant-Kern Canal	Percent of Average Flow	Flow Diverted (AF)	Percent of Flow Diverted	Flow Above Friant-Kern Canal (AF)	Flow Below Friant-Kern Canal (AF)	Percent of Average Flow Below Friant-Kern Canal	Percent of Average Flow	Flow Diverted (AF)	Percent of Flow Diverted	Flow Above Friant-Kern Canal (AF)	Flow Below Friant-Kern Canal (AF)	Percent of Average Flow Below Friant-Kern Canal	
1978	149	0	0	2,140,081	2,140,081		191	9,100	2.70	336,674	327,574	188.30	132	0	0	91,296	91,296		9,100
1979	107	0	0	1,535,935	1,535,935		71	0	0	124,484	124,484		44	0	0	30,664	30,664		0
1980	155	0	0	2,232,880	2,232,880		197	0	0	361,952	361,952		216	5,100	3.42	148,948	143,748	212.58	5,100
1981	77	0	0	1,106,439	1,106,439		36	0	0	62,889	62,889		36	0	0	25,148	25,148		0
1982	140	3,200	0.16	2,009,059	2,005,859	139.84	149	29,300	10.74	262,700	233,400	138.26	137	0	0	94,663	94,663		32,500
1983	224	0	0	3,220,284	3,220,284		353	148,300	23.90	620,625	475,425	329.10	520	99,800	27.82	358,680	258880	492.18	248,100
1984	106	0	0	1,527,535	1,527,535		85	0	0	149,094	149,094		96	0	0	66,173	66,173		0
1985	87	0	0	1,250,175	1,250,175		55	0	0	97,431	97,431		54	0	0	37,501	37,501		0
1986	166	0	0	2,383,604	2,383,604		174	93,985	29.54	318,207	224,222	144.46	206	0	0	142,050	142,050		93,985
1987	70	0	0	1,006,301	1,006,301		24	0	0	41,616	41,616		17	0	0	11,999	11,999		0
1988	55	0	0	790,207	790,207		22	0	0	39,168	39,168		10	0	0	7,174	7,174		0
1989	58	0	0	841,715	841,715		34	0	0	59,412	59,412		10	0	0	6,920	6,920		0
1990	43	0	0	615,764	615,764		19	0	0	33,683	33,683		0	0	0	0	0		0
1991	59	0	0	846,835	846,835		44	0	0	77,438	77,438		11	0	0	7,690	7,690		0
1992	46	0	0	658,591	658,591		21	0	0	36,241	36,241		0	0	0	329	329		0
1993	108	0	0	1,549,026	1,549,026		124	0	0	218,262	218,262		112	0	0	77,041	77,041		0
1994	64	0	0	926,438	926,438		29	0	0	50,681	50,681		12	0	0	8,159	8,159		0
1995	153	12,700	0.58	2,196,656	2,183,956	152.42	183	0	0	322,118	322,118		152	0	0	104,938	104,938		12,700
1996	124	0	0	1,782,392	1,782,392		96	0	0	168,865	168,865		10	0	0	6,866	6,866		0
1997	150	0	0	2,165,810	2,165,810		183	50,903	15.78	322,585	271,682	167.22	300	36,443	17.58	207,258	170,815	282.42	87,346
1998	151	1,026	0.05	2,171,973	2,170,947	150.95	229	106,488	26.39	403,535	297,047	202.61	408	95,119	33.73	281,963	186,844	374.27	204,092
1999	77	0	0	1,101,328	1,101,328		41	0	0	71,275	71,275		37	0	0	25,673	25,673		0
2000	84	0	0	1,202,470	1,202,470		81	0	0	142,602	142,602		51	0	0	35,302	35,302		0
2001	62	0	0	893,866	893,866		55	0	0	96,917	96,917		19	0	0	12,961	12,961		0
2002	77	0	0	1,103,425	1,103,425		56	0	0	98,953	98,953		26	0	0	17,773	17,773		0
2003	70	0	0	1,010,073	1,010,073		95	0	0	167,025	167,025		57	0	0	39,114	39,114		0
2004	66	0	0	955,411	955,411		39	0	0	68,334	68,334		20	0	0	13,825	13,825		0
2005	107	0	0	1,538,635	1,538,635		136	0	0	239,048	239,048		122	0	0	84,328	84,328		0
2006	161	9,802	0.42	2,312,862	2,303,060	160.58	170	19,494	6.47	299,831	280,428	163.53	151	0	0	104,033	104,033		29,296

Source: January through July flow data derived from annual reports published by the watermaster’s office on each river. Volumes diverted provided by RD770.

3.1.1.1 Floodwater Volumes Introduced Under Previous Contracts

Between the years 1978 and 2006, RD770 held temporary or long-term contracts for introduction of Non-CVP water into the FKC. Non-CVP water was only introduced nine times during that time period for a total volume of approximately 720,619 AF (see Table 3-1). The Non-CVP water was introduced, on average, every three years. In four of the nine years, Non-CVP water was pumped from only a single river in any given year. In the remaining five years Non-CVP water was pumped from two rivers within the same year in four years, and from all three rivers only once within a single year (Table 3-1). Maximum introductions of 248,100 AF in 1983 and 204,092 AF in 1998 into the FKC by RD770 were in response to record setting wet seasons (Table 3-1). However, total volumes pumped in a single year averaged 80,236 AF.

Kings River Introductions of Kings River water into the FKC have occurred only four times between 1978 and 2006 under previous Contracts. These flows were introduced in 1982, 1995, 1998, and 2006 (see Table 3-1). River diversions into the canal ranged from 1,026 AF to 12,700 AF, when flows were between 135 percent and 148 percent of normal. The diversion of Non-CVP water decreased the volume flowing below the diversion point by a maximum of 0.58 percent. Flows below the FKC in the Kings River during diversion years averaged between 140 to 161 percent of average flows (see Table 3-1).

St. John's River Non-CVP water has been pumped from the St. John's River into the FKC in seven different years between 1978 and 2006: 1978, 1982, 1983, 1986, 1997, 1998 and 2006 (see Table 3-1). River diversions into the canal ranged from 9,100 AF to 148,300 AF, when flows were between 191 percent and 353 percent of normal. The diversion of Non-CVP water decreased the volume flowing below the diversion point by a maximum of 29.54 percent. Flows below the FKC in the St. John's River during diversion years averaged between 138 to 329 percent of average flows (see Table 3-1).

Tule River Between 1978 and 2006, Non-CVP water was pumped from the Tule River in four years: 1980, 1983, 1997 and 1998 (see Table 3-1). River diversions into the canal ranged from 5,100 AF to 99,800 AF, when flows were between 216 percent and 520 percent of normal. The diversion of Non-CVP water decreased the volume flowing below the diversion point by a maximum of 33.73 percent. Flows below the FKC in the Tule River during diversion years averaged between 213 to 492 percent of average flows (see Table 3-1).

In summary, introductions from the Kings, St. John's, and Tule Rivers under previous Contracts were intermittent, infrequent and small relative to average annual flows. Future introductions, if approved, are expected to be similar in all aspects.

The volume of Non-CVP water that can be conveyed is limited by five factors:

1. the amount of floodwater in the river systems under Corps's flood control criteria for operations of Pine Flat, Terminus and Success dams;
2. coordination with Kings, St. John's (Kaweah) and Tule River basin water users;
3. the capacity of RD770's pumping facilities;
4. the unfilled volume, up to capacity, that Reclamation has available in the FKC; and
5. the capacity in the Kern River to take additional flows.

3.1.1.2 District Flood Management

Damaging flows into the Tulare Lakebed can occur anytime releases are required, (primarily from Success and Terminus dams), that exceed irrigation and spreading demands in the Tulare Lake Basin. The entities that farm the Tulare Lakebed have an extensive levee, distribution and storage system designed to manage flood flows from the four projects and the surrounding uncontrolled drainage areas when necessary. However, when inflows into the lakebed exceed the capacity of the distribution system or storage facilities, productive agricultural lands, businesses and infrastructure such as roads can be flooded (Corps 1996).

When RD770 makes the decision to pump Non-CVP water into the FKC, it is done based on projections of reservoir operations and the dynamics of the watershed and river systems. RD770 analyzes the data available and tries to determine what water volume will be flowing down the rivers into the lakebed in the near future. The snow pack and the rainfall are evaluated to estimate when the upstream reservoirs will fill up in order to determine when it will be optimal for diversion into the FKC. RD770 also estimates when the Corps will require releases to meet reservoir flood control requirements. RD770 is aware that due to flood control requirements, releases, even when there hasn't been a recent rainfall event, are required to make room in the reservoir for future potential rain flood or snowmelt runoff. These reservoir releases also potentially could cause flooding in the Tulare Lakebed if they are significant enough in volume and duration.

3.1.1.3 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 2010). Major facilities of the Friant Division include Friant Dam and Millerton Lake, the Madera Canal and the FKC. The FKC serves over 800,000 acres of farmland and communities in four counties. Water for the Friant Division is pumped from the San Joaquin River at Millerton Lake. From there, water is released from the reservoir to the 152-mile long FKC flowing south to the Kern River. The FKC is an earthen and concrete-lined structure operated by the FWA. Friant Division contractors that may divert Non-CVP water are listed in Table 2-1 under the Proposed Action. Descriptions for each of these contractors can be found in Appendix D.

3.1.1.4 Kern River

The Kern River is located at the southern terminus of the FKC and serves as the discharge point of any canal water not pumped from the canal (see Figure 1-2). The upper watershed of the Kern River includes the South Fork of the Kern River and the main stem of the Kern River. The Kern River watershed is smaller than the San Joaquin River's watershed and spans about 2 to 3 million acres. The main stem of the river flows south through the mountains and directly into Lake Isabella. Downstream from the lake, the river flows southwest toward Bakersfield, where it enters the valley floor and continues in a westerly direction. Isabella Dam is the main regulating facility on the Kern River and is used for flood management and water supply. Isabella Dam

provides flood protection to the City of Bakersfield, the developed agricultural areas downstream from the dam and the Tulare Lakebed.

Lake Isabella is located 70 miles upstream on the Kern River approximately 45 miles northeast of Bakersfield, California. The Corps has identified dam safety concerns and has consequently reduced storage in Lake Isabella which will remain in effect until dam safety concerns have been resolved (Corps 2010). This has impacted, and will continue to impact, the amount of water able to be stored behind Lake Isabella Dam which may increase potential flooding events from the Kern River since lower reservoir levels means less capacity to absorb flood flows from the watershed and therefore causes larger releases and flood volumes. On February 5, 2010, the U.S. Forest Service and the Corps issued a Notice of Intent to prepare a draft Environmental Impact Statement (EIS) for the *Lake Isabella Dam Safety Assurance Program* which would analyze the remediation of seismic, seepage, and hydrologic dam safety concerns (U.S. Forest Service 2010). The draft EIS is expected to be released at the beginning of 2011.

Local Wetlands In recent years there has been significant acreage in the south eastern portion of the historic Tulare Lakebed area that has been converted back to wetland habitat, primarily under the U.S. Department of Agriculture program known the Wetland Reserve Program (WRP). Under this program the federal government pays to place a long-term easement on a property to preserve it for its wetland values and also pays to have the property reformed (de-leveled) to optimize its habitat benefits. The property remains in private ownership. Much of this property has limited access to surface water for wetland purposes and persists in a wetland state using groundwater to the extent it is available (and affordable) and periodic access to floodwater. Availability of floodwater for these properties has, at times, been provided by the RD770 and/or landowners benefited by the district.

Use of Floodwater in the Kern River Basin Non-CVP water introduced into the FKC and discharged into the Kern River has historically been used by entities pumping from the Kern River or conveyed into the California Aqueduct (Aqueduct). Historically, most of the Non-CVP water that was introduced into the Kern River ended up being pumped into the Aqueduct since RD770 pumping generally occurred at the same time as Kern River flood releases. During flood operations, the Kern River water interests insist that Kern River water be used in the Kern River Basin. Use of Non-CVP water within the basin is prohibited until all available Kern River water has been used. This has resulted in the majority of Non-CVP water being conveyed to the Aqueduct. In 2006, essentially all of the Non-CVP water from the FKC abandoned into the Kern River was subsequently pumped into the Aqueduct (see Table 3-2).

Table 3-2 RD770 and Kern River Diversions into the California Aqueduct

	RD770 Floodwater Diversion into FKC	Releases from Isabella Reservoir	FKC Inflow to Kern River			Total Kern River Flow	Diversions into the California Aqueduct		
			Other	RD770	Total		RD770	Kern River	Total
1997									
Jan	37,449	63,352	49,739	37,449	87,188	150,540	21,236	0	21,236
Feb	46,241	142,831	0	37,608	37,608	180,439	26,222	1,793	28,015
Mar	3,656	158,678	0	0	0	158,678	0	0	0
Apr	0	95,933	0	0	0	95,933	0	0	0
May	0	120,789	0	0	0	120,789	0	0	0
Jun	0	133,315	0	0	0	133,315	0	0	0
Jul	0	133,724	0	0	0	133,724	0	0	0
Aug	0	108,452	0	0	0	108,452	0	0	0
Sep	0	55,240	0	0	0	55,240	0	0	0
Oct	0	42,278	0	0	0	42,278	0	0	0
Nov	0	46,977	0	0	0	46,977	0	0	0
Dec	0	31,894	0	0	0	31,894	0	0	0
Total	87,346	1,133,463	49,739	75,057	124,796	1,258,259	47,458	1,793	49,251
1998									
Jan	0	45,636	0	0	0	45,636	0	0	0
Feb	873	93,987	9,608	0	9,608	103,595	0	0	0
Mar	35,927	97,468	0	18,967	18,967	116,435	0	0	0
Apr	72,920	132,317	0	46,408	46,408	178,725	40,839	3,118	43,957
May	48,639	239,423	0	13,838	13,838	253,261	13,838	48,614	62,452
Jun	40,040	284,408	0	264	264	284,672	264	68,477	68,741
Jul	5,693	239,607	9,828	2,786	12,614	252,221	2,786	10,017	12,803
Aug	0	200,713	0	0	0	200,713	0	0	0
Sep	0	114,224	0	0	0	114,224	0	0	0
Oct	0	89,980	0	0	0	89,980	0	0	0
Nov	0	93,054	0	0	0	93,054	0	0	0
Dec	0	31,739	15,267	0	15,267	47,006	0	0	0
Total	204,092	1,662,556	34,703	82,263	116,966	1,779,522	57,727	130,226	187,953
2006									
Jan	0	55,783	24,927	0	24,927	80,710	0	0	0
Feb	0	32,313	0	0	0	32,313	0	0	0
Mar	0	24,899	6,691	0	6,691	31,590	0	0	0
Apr	0	49,966	68,296	0	68,296	118,262	0	0	0
May	25,326	273,669	0	24,135	24,135	297,804	24,135	60,932	85,067
Jun	3,970	258,061	1,296	3,969	5,265	263,326	3,969	12,479	16,448
Jul	0	157,823	0	0	0	157,823	0	0	0
Aug	0	86,747	0	0	0	86,747	0	0	0
Sep	0	45,725	0	0	0	45,725	0	0	0
Oct	0	22,006	0	0	0	22,006	0	0	0
Nov	0	20,484	0	0	0	20,484	0	0	0
Dec	0	18,660	0	0	0	18,660	0	0	0
Total	29,296	1,046,136	101,210	28,104	129,314	1,175,450	28,104	73,411	101,515

Flow in the river channel in excess of the Kern River Basin's irrigation and spreading demands triggers the operation of the Kern Intertie facility. Either Kern River flood release water or Non-CVP water can be the first water pumped into the Aqueduct. When there are excess flows in the river channel, the Kern River interests coordinate the operation of the Intertie facility with the California Department of Water Resources (DWR) (See Table 3-2). This coordination is necessary because DWR typically reduces the pumping at the Sacramento-San Joaquin River Delta by an amount that matches the Intertie flow. DWR then delivers the Intertie flow as project water to contractors in Kern County and Southern California.

3.1.1.5 Water Quality

Water quality in the FKC is pristine as it emanates from snow melt from the granitic Sierra Nevadas. Salinity measured as Total Dissolved Solids (TDS) typically averages about 50 milligrams per Liter (mg/L). No constituents in this water supply limit its use. See Tables 3-3 through 3-5 for FKC water quality data during 2006 RD770 pump-in events.

Water quality within the Kings, St. John's and Tule Rivers is also normally pristine as they also originate from the Sierra Nevadas. However, water quality during flood events can be degraded due to additional erosion from the scouring force of the flood events. Tables 3-3 to 3-5 provide water quality data from the three rivers during the 2006 pump-in events. Note that during these pump-in periods the turbidity, TDS, alkalinity, bicarbonate conductivity and coliform concentrations are all elevated above the values in the FKC at the time of the pump-in events.

Table 3-3 Kings River Water Quality on 2006 Pump-in Dates

Sample Date	Turbidity (NTU)	TDS (mg/L)	Alkalinity (mg/L)	Bicarbonate (mg/L)	Conductivity (µmhos/cm)	Aluminum (mg/L)	Iron (mg/L)
5/18/06	1.9	ND	20	30	--	0.08	0.11
5/25/06	1.7	30	20	20	39	--	--
Average	1.8	15	20	25	39	0.08	0.11
FKC	0.9	ND	10	20	25	--	--

Notes: FKC Data from immediately upstream of Kings River pump-in station.

NTU = Nephelometric Turbidity Unit

ND = Non-detect

µmhos/cm = micromhos per centimeter or microsiemens

Table 3-4 Kaweah River Water Quality on 2006 Pump-in Dates

Sample Date	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Total Coliform (MPN/100mL)	Fecal Coliform (MPN/100mL)
1/9/06	6.1	--	--	900	23
1/15/06	5.0	--	--	--	--
4/3/06	4.0	--	--	900	50
4/14/06	6.1	--	--	500	50
4/21/06	4.3	70	ND	500	30
4/28/06	4.7	70	ND	110	30
Average	5.0	70	ND	582	37
FKC	3.8	30	ND	110	13

Notes: FKC Data from immediately upstream of Kaweah River pump-in station.

TSS = Total Suspended Solids

NTU = Nephelometric Turbidity Unit

ND = Non-detect

MPN/mL = Most Probable Number per 100 milliliters

Table 3-5 Tule River Water Quality on 2006 Pump-in Dates

Sample Date	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Total Coliform (MPN/100mL)	Fecal Coliform (MPN/100mL)
1/9/06	6.9	--	--	1,600	30
1/15/06	7.1	--	--	--	--
4/3/06	5.8	--	--	900	300
4/14/06	12.4	--	--	900	130
4/21/06	7.2	110	ND	500	30
4/28/06	10.4	110	ND	300	50
Average	8.3	110	ND	840	108
FKC	4.0	30	10	167	22

Notes: FKC Data from immediately upstream of Tule River pump-in station.

NTU = Nephelometric Turbidity Unit

ND = Non-detect

MPN/mL = Most Probable Number per 100 milliliters

3.1.1.6 Groundwater Recharge

Groundwater overdraft and the potential resulting land subsidence are prevalent in the southern two-thirds of the Central Valley. Currently all basins in this region are in overdraft conditions (DWR 2003). During drought, as surface supplies dwindle and carryover storage in reservoirs is not replaced, groundwater pumping increases. Between 1970 and 1993, the total mean annual groundwater extraction within this area was 4.6 million AF (DWR 2003). An annual total average of 0.44 million AF (9.5 percent) was used to meet urban needs and 4.2 million AF (90.5 percent) was used for agriculture. The total mean annual overdraft during this period was nearly 0.8 million AF (DWR 2003).

RD770's Non-CVP water has been used for recharge and irrigation purposes in the Kern River water basin. Water banks have used RD770 Non-CVP water initially to meet their 10 percent aquifer recharge obligation to assuage third party impacts. In years when spreading facilities and RD770 Non-CVP water was still available after satisfying the 10 percent buffer supply, these water banks had the opportunity to use this water in lieu of banked groundwater to meet customer demands. Groundwater banking project participants have used their banked supplies mainly to firm up supplies for existing urban development and existing agricultural production.

In the past some of the flood flow in the canal has been marketed to CVP and other contractors to augment recharge efforts. Additionally, not all water pumped into the canal was discharged into the Kern River due to canal conveyance losses (Table 3-6). Over the last ten years the flood flows entering the canal were reduced an average of 42 percent before they were discharged into the Kern River. Discharges from the FKC into the Kern River typically made up about 14 percent of the river's flow downstream of the FKC during potential flood discharge events.

Table 3-6 Amount of Pump-in Quantities Delivered to the Kern River

Month and Year of Pump-in	Acre-Feet Reduced During Transport in FKC	Percent Reduction in FKC between pump-in volume and volume discharged into Kern River	RD770 Discharge into Kern River as a percentage of the Kern River Release Flows
01/97	0	0 %	59%
02/97	8,792	19 %	26%
03/97	3,656	100%	0%
02/98	873	100%	0%
03/98	16,960	47%	19%
04/98	26,512	36%	35%
05/98	34,801	72%	6%
06/98	39,776	99%	0.1%
07/98	2,907	51%	1%
05/06	1,191	5%	9%
06/06	1	0%	2%
Average	12,315	42%	14%

Note: 2006 was the last year RD770 pumped in water to the FKC

3.1.1.7 Tulare County General Plans and Floodwater

The County of Tulare's General Plan 2025, which was most recently updated in 2006, has established a goal of minimizing the possibility for loss of life, injury, or damage to property as a result of flood hazards (County of Tulare 2007).

3.1.2 Environmental Consequences

3.1.2.1 No Action

Under the No Action Alternative, Reclamation would not approve the Contract and License to allow flood control operations and introductions into the FKC. Pumping facilities would not operate and Non-CVP water from the Kings, St. John's and Tule rivers could flow into the Tulare Lake Basin, jeopardizing human safety and property. The exposure of people and structures to significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee conflicts with the County of Tulare General Plan 2025 flood protection goal (County of Tulare 2007).

Water quality within Reclamation conveyance facilities would be unaffected since Non-CVP water would not be pumped into the FKC. Holders of water rights would either accept released floodwater that they have a right to or refuse to pump such floodwater. However, water quality in the Kings, St. John's and Tule rivers downstream of the FKC could contain additional suspended sediment if the Non-CVP water that could have been pumped increases soil erosion within or along these drainages.

There would be no change in the generation of electrical power on the Kings, Kaweah and Tule rivers as the pumping of Non-CVP water into the FKC is downstream of hydroelectric facilities on these rivers. The generation of electrical power would continue as in the past.

Reclamation is required by Executive Order (EO) 11988 to provide leadership and take action to reduce the risk of flood loss and to minimize the impact of floods on human safety, health and welfare. During its review and consideration of the Proposed Action, Reclamation must evaluate the potential impacts in flood plains. The No Action Alternative does not provide for risk reductions and is inconsistent with EO 11988.

3.1.2.2 Proposed Action

Past introductions and conveyances of Non-CVP water have occurred infrequently during large flood events in the Kings, St. John's and Tule Rivers (see Table 3-1). Future introductions of Non-CVP water would be infrequent, intermittent, unreliable and small relative to existing river flows, water needs and operations as it has been in the past. The Proposed Action is consistent with the County of Tulare's General Plan 2025 flood protection goal (County of Tulare 2007) and with EO 11988 since it would reduce the exposure of people, land and improvements to risk of damage as a result of flooding or levee failure. However, the level of flood protection would be contingent upon the amount of Non-CVP water that needed to be pumped and the available capacity in the FKC.

License terms and conditions explicitly address the pumping station operations and require compliance with water, ground and air pollution laws of Reclamation, and state and local authorities. In addition, the Contract includes terms and conditions that explicitly address the aspects of Non-CVP water introductions, capacity and coordination among various agencies including compliance with water, ground and air pollution laws of local, state and federal agencies. Failure to comply would result in the termination of the Contract and License. Requirements to comply with these laws and regulations provide additional safeguards to the water resources in the action area.

The Proposed Action would not substantially alter existing drainage patterns or the beneficial aspects periodic flood flows have on channel morphology. Variations in annual flows important to aquatic and riparian habitats have continued since the original contracts in 1978 with water below introduction points in pump-in years remaining greater than 150 percent or greater in all three rivers (see Table 3-1). In addition, the Proposed Action would not impact water quality in the Kings, St. John's and Tule rivers as water quality is not affected by diversion of a portion of the river's flow. Further, the Proposed Action would not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed. RD770 would continue to coordinate and provide water to wetland areas in the vicinity of the Tulare Lakebed as in the past, including providing water to restored wetlands.

Water Rights Introduction of this Non-CVP water into the FKC would not alter water rights held by the United States to pump water from the San Joaquin River nor would it alter the water rights of water right holders on the Kings, St. John's (Kaweah), or Tule rivers.

Water Quality In the past, RD770 introductions of Non-CVP water into the FKC indicated water quality impacts due to slight increases in concentrations of turbidity, TDS, alkalinity, bicarbonate conductivity and coliform (see Tables 3-3 to 3-5). The License issued to RD770 specifies that RD770 shall comply with all applicable water pollution laws and regulations of the United States, the State of California and local authorities (Appendix C). The Contract (Appendix A) obligates RD770 to comply with Reclamation's water quality monitoring

requirements and standards (see Appendix B). Water quality monitoring would be done by RD770, FWA, Friant Division M&I water uses, and Reclamation. If Reclamation determines that the water quality in the canal is negatively affected by the pump-ins sufficiently to cause harm to the CVP or Friant Division contractors, the Contract would be terminated. Additionally, should silt accumulate in the FKC or channels as a result of the introduction of Non-CVP water, RD770 would remove the silt accumulation as directed by Reclamation and the FWA, or reimburse Reclamation and the FWA for costs associated with its removal. RD770 would also be required to take steps to screen debris from the Non-CVP water prior to pumping.

The discharge of the Non-CVP water into the Kern River would also not affect water quality in that river as the oversight of the Rivermaster and the typically small quantity (proportionally) of water discharged would minimize impacts to the Kern River. Due to the established monitoring and reporting requirements included as part of the Proposed Action, the diversion of Non-CVP water from the Kings, St. John's and Tule rivers would have no adverse effect on water quality within these drainages. Water quality within the rivers downstream of the pumping plants is unlikely to change, but if introductions decreased flows and soil erosion, a minor improvement in downstream water quality may result.

Groundwater The amount of pumped flood flows is dependent upon rain events, snowmelt and available capacity in the FKC. Groundwater recharge facilities in locations with desirable conditions and facilities could receive floodwater and alleviate some of the groundwater overdraft conditions. Quite often the Kern River is in flood conditions at the same time as the pump-ins are occurring which fills the available spreading and recharge facilities in the Kern Fan area. Discharges into the Kern River at the terminus of the FKC are coordinated with the City of Bakersfield. This Non-CVP water would provide a slight and short-term benefit by recharging the groundwater as it flows down the Kern River. In addition, Friant Division contractors may have occasional access to additional water supplies to put to beneficial use. Since this water would be available during wetter periods the water would most likely be used for recharge. This recharge may help to ameliorate the continuing overdraft in the San Joaquin Valley and provide some additional conjunctive use water supply benefits.

Overall, the Proposed Action would improve flood management, groundwater supplies and would not impact CVP operations, facilities, water right holder's surface water supplies or water rights, water quality, or wetlands.

3.1.2.3 Cumulative Impacts

The conveyance of this Non-CVP water is contingent upon hydrological conditions and capacity in the FKC and acceptable conditions in the Kern River. Pump-ins of this Non-CVP water would not impact existing water rights nor would it create new water rights on any of the rivers. Water quality impacts would be monitored as required in Contract and the License. The slight increases in turbidity, TDS, alkalinity, bicarbonate conductivity and coliform during pump-in events may initially impact water quality in the FKC and Kern River; however, these events are short-term, intermittent, and infrequent. Should Reclamation determine that the Non-CVP water does not meet their standards as outlined in Appendix B, pump-ins would be terminated. Discharges to the Kern River could result in limited groundwater recharge on a local and short-term basis. This water could be extracted during dry seasons to meet current demands. The conjunctive use of surface and groundwater supplies to meet existing demands within fluctuating

hydrological conditions has occurred historically. The Proposed Action may offset the water lost by the Friant Division due to river restoration intermittently and only for those that have the facilities and capacity to make use of the opportunity. Consequently, the Proposed Action, when added to other related actions, does not result in long-term cumulative effects to water supplies, water rights, or water quality.

The Proposed Action would provide flood protection for the Tulare Lake Basin in addition to that provided by the enlargement of Terminus Dam. The enlargement and raising of Terminus Dam and the Proposed Action would have a somewhat greater flood protection result than either project alone. Depending on the hydrology this coordinated effect will have a greater or lesser flood protection result. At times of peak flood flows, the cumulative flood protection is still a small percentage of the stream flows; however, during small flood events, the coordinated projects would result in no flooding. The enlargement of Terminus Dam and Proposed Action do not contribute to increases in water supplies, changes in land use or increases in the need for floodplain insurance.

The Proposed Action would not result in a cumulative decrease in the generation of electrical power as the water to be pumped would be pumped after it has been released from dams and power producing facilities.

3.2 Noise

3.2.1 Affected Environment

The Non-CVP water pump-in points are in rural areas with low levels of noise. Noise receptors are relatively far away from the pumps which are the noise generation source.

3.2.2 Environmental Consequences

3.2.2.1 No Action

RD770 pumping facilities would not operate under the No Action Alternative, and therefore, there would be no impact on the level of noise.

3.2.2.2 Proposed Action

The diesel and electric powered pumps used to pump Non-CVP water into the FKC would generate infrequent, periodic noise. RD770 is required by Reclamation's License to comply with the Fresno and Tulare County Noise Ordinance regulations. Additionally, RD770 would comply with all federal and state noise standards and ordinances. RD770 has, and would continue to work with the few residents near the pumping plants, to reduce the noise levels when the pumps are in operation. RD770 has implemented noise reduction strategies based on the recommendations of a noise consultant and contacts persons residing near the pumping facilities prior to pumping, to address issues. Based on historic frequency, such Non-CVP water introductions would occur, on average, every three to four years. RD770 would provide Reclamation and the FWA with the project specific data as required to determine compliance with the criteria contained within the applicable Fresno and Tulare County Noise Ordinance regulations. The License also requires RD770 to respond to any complaints from adjoining landowners regarding noise and take appropriate actions or cease pumping operations. Therefore, there would be no adverse impacts to noise levels as a result of the Proposed Action.

3.2.2.3 Cumulative Impacts

The Proposed Action would be compliant with Fresno and Tulare County ordinances, regulated, intermittent and short-term and would not contribute to long-term or cumulative impacts from noise.

3.3 Land Use

3.3.1 Affected Environment

RD770 is a 13,400-acre district located in the heart of the Tulare Basin in the southern San Joaquin Valley (Figure 1-2). Once Non-CVP water inundates farmland in the Tulare Lakebed, the inundated section cannot be farmed in that same year. The soils in the area are heavy clay soils and the percolation, if there is any, is very slow. Dewatering occurs through evaporation, which is also slow, and the utilization of the water for the irrigation in fields that were not flooded (Moss pers. comm. 2007). RD770 can store approximately 100,000 AF in and around the lakebed without flooding farmland. When there is an imminent threat of flooding, areas of lower productivity are flooded first, while the more productive land, protected by levees, remains in production. As more Non-CVP water arrives, more productive land is inundated. Diversion of a relatively small amount of Non-CVP water into the FKC has made the difference as to whether it is necessary to flood a large “cell” consisting of thousands of acres. Pump-ins in previous years has also allowed flood flows to be pumped in order to allow harvest of existing crops or protection of newly planted crops by allowing inundation of unplanted fields rather than planted fields. Consequently, the diversion of these flood flows, even a small percentage of the total flood flows, has had a positive impact on production and economics (Moss pers. comm. 2007).

3.3.1.1 Land Use Conversion

The vast majority of the private land within the Tulare Lake Basin is used for irrigated agriculture. Three million acres of irrigated agriculture occur between the southern limit of the San Joaquin River watershed and the crest of the Tehachapi Mountains, versus 176,300 acres of urban areas (DWR 1998). Between 1996 and 1998, the counties of Fresno, Kern, Tulare and Kings were in the top seven urbanizing counties within California and the top eight with the most irrigated farmland converted to urban land during the same period (CDC 2000).

Land conversion continues within the Tulare Basin, but the majority of this conversion is now from irrigated farmland to other uses, primarily urban (CDC 2000). The net losses of irrigated farmland in Fresno, Kern, Kings and Tulare counties between 1996 and 1998 ranged from 4,532 acres in Tulare County to 7,410 acres in Fresno County (Table 3-7) (CDC 2000).

Table 3-7 Summary of Reported Land Use Changes from 1996-1998 in Tulare Basin Counties

	Shifts to Irrigated Farmland	Shifts to Urban & Built-Up from:	Irrigated Farmland Downgrades		County
	Grazing, Local, Other land & Urban to Prime, Statewide & Unique	Prime, Statewide & Unique	Prime, Statewide & Unique to Other Land	Prime, Statewide & Unique to Local & Grazing	
Fresno	+6,262	-3,557	-5,794	-4,321	-7,410
Kern ⁽¹⁾	+8,391	-1,579	-9,910	-4,008	-7,106
Kings	+8,409	-1,969	-3,897	-7,584	-5,041
Tulare ⁽¹⁾	+8,369	-2,060	-7,402	-3,439	-4,532

Notes: (1) Includes important and interim farmland areas as defined in California Department of Conservation 2000.

Source: California Department of Conservation 2000.

Definitions:

Prime Farmland: The best combination of physical and chemical features able to sustain long-term production of agricultural crops. The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.

Farmland of Statewide Importance: Similar to Prime Farmland but with minor shortcomings (*i.e.* greater slopes or lower moisture storage ability). The land must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.

Unique Farmland: Land of lesser quality soils used for the production of the state's leading agricultural crops. Usually irrigated, but may include non-irrigated orchards or vineyards. The land must have been cropped at some time during the two update cycles prior to the mapping date.

Farmland of Local Importance: Land of importance to the local agricultural economy, determined by each county's board of supervisors.

Grazing Land: Land, at least 40 acres in size, on which the existing vegetation is suited to the grazing of livestock, defined cooperatively by the California Cattlemen's Association, the University of California Cooperative Extension Service and others interested in grazing activities.

Urban and Built-Up Land: Land occupied by structures with a building density of at least 1 unit per 0.5 acre, or approximately 6 structures per 10-acre parcel.

Water: Water area with an extent of at least 40 acres.

Other Land: Land which does not meet the criteria of any other category.

3.3.2 Environmental Consequences

3.3.2.1 No Action

Under the No Action Alternative, land conversion would continue as it has in the past. Flooding in the Tulare Lake Basin under the No Action Alternative would not facilitate urbanization and may act as a deterrent to development in the Tulare Lake Basin in the environs of Tulare Lake. Additionally, farmland may be temporarily taken out of production if subjected to flooding.

3.3.2.2 Proposed Action

The Proposed Action would not conflict with existing zoning for agricultural use or promote the conversion of farmland to non-agricultural use. The existing trend of land use conversion within the San Joaquin Valley from farmland to urban land uses would continue as it has in the past.

Conveyance of the Non-CVP water would be infrequent, intermittent, unpredictable and small, relative to existing water needs and operations. Further, the prevention of inundation of farmlands would not change rates of land conversion but would allow existing farmland to remain productive in years when flooding would have impacted productivity. Conveyance of this Non-CVP water is contingent upon available capacity in the FKC and conditions in the Kern River. As a consequence, the Proposed Action is unlikely to lead to any long-term land use decisions. Any available water would be used to maintain existing land uses and would not contribute to impacts to land uses or planning. Consequently, there would be no adverse impacts to land use as a result of the Proposed Action.

3.3.2.3 Cumulative Impacts

The No Action Alternative could result in adverse cumulative effects to agricultural operations within the Tulare Lake Basin, the intensity of which would depend on the frequency and magnitude of future flood events. If Non-CVP water introductions were not authorized, the Tulare Lake Basin could experience additional flooding during winter and spring months. Agricultural lands could be temporarily taken out of production and services supporting agricultural operations could be adversely affected. The economics of farming land subject to occasional inundation may drive farmers to accelerate taking agricultural lands out of production.

Reclamation's action is the conveyance of the water to the terminus of the FKC where it would either be diverted by Friant Division contractors and/or discharged into the Kern River. Subsequent actions are beyond Reclamation's authority and approvals. Due to the amount of precipitation during flood years, floodwater would not likely be pumped to maintain or grow crops in the same year. It is possible for this water to be groundwater banked and extracted later during dry seasons. The use of this stored floodwater in dry seasons would be used to maintain and grow crops on existing agricultural lands. No native or previously untilled lands would be put into production. Therefore, there would be no long-term cumulative effects as a result of the Proposed Action.

3.4 Biological Resources

3.4.1 Affected Environment

This section analyzes the potential impacts to federal Endangered Species Act listed and non-listed species and habitats with the potential to occur in the study area. The study area is located in the San Joaquin Valley and includes those portions of Fresno, Kings, Tulare, and Kern counties. The study area is limited to the downstream drainages of the three potentially pumped rivers (Kings, St. John's and Tule) and the area surrounding the FKC. Areas upstream from the pumping plants were excluded from consideration since flows in the upper reaches are not affected by pumping this Non-CVP water. The Kern River and the service area of the Friant Division contractors that may divert this water from the FKC are not considered part of the study area as Reclamation has no action related to the Non-CVP water once it enters the Kern River system or the respective contractors' service area.

The following list (see Table 3-8) was obtained on April 30, 2010, by accessing the U.S. Fish and Wildlife Service (USFWS) Database:

http://www.fws.gov/pacific/sacramento/es/spp_lists/auto_list.cfm. The list is for the following USGS 7½ minute quadrangles: Piedra, Wahtoke, Sanger, Reedley, Selma, Burris Park, Laton, Riverdale, Lemoore, Burrel, Vanguard, Stratford, Stratford SE, Woodlake, Ivanhoe, Exeter, Visalia, Monson, Traver, Porterville, Woodville, Cairns Corner, Tulare, Tipton, Taylor Weir, Corcoran and El Rico Ranch (USFWS 2010).

Table 3-8 Federal-status Wildlife and Plant Species with the Potential to Occur within the Proposed Action areas

Common Name and Scientific Nomenclature	Listed Status	CNDDB Occurrences Within Quadrangles Covering:	
		Pumping Facility(s)	Drainage(s)
WILDLIFE			
Invertebrates			
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT & CH	Kings, St. John's, Tule	Kings, St. John's/Kaweah, Tule
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	FE & CH		Kings
Conservancy fairy shrimp <i>Branchinecta conservatioi</i>	FE		
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	St. John's	Kings, St. John's/Kaweah
Fish			
Delta smelt <i>Hypomesus transpacificus</i>	FT		
Amphibians and Reptiles			
California tiger salamander <i>(Ambystoma californiense)</i>	FT & CH	Kings, St. John's	Kings, St. John's/Kaweah
Blunt-nosed leopard lizard <i>Gambelia sila</i>	FE		Tule
California red-legged frog <i>Rana aurora draytonii</i>	FT		
Giant garter snake <i>Thamnophis gigas</i>	FT		Kings
Mountain yellow-legged frog <i>Rana muscosa</i>	FCS		
Birds			
California Condor <i>Gymnogyps californianus</i>	FE		
Mammals			
Fresno kangaroo rat <i>Dipodomys nitratoides exilis</i>	FE		Kings
Giant kangaroo rat <i>Dipodomys ingens</i>	FE		
Tipton kangaroo rat <i>Dipodomys nitratoides nitratoides</i>	FE	Tule	Kings, Tule
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE	St. John's, Tule	Kings, St. John's/Kaweah, Tule
PLANTS			
San Joaquin adobe sunburst <i>Pseudobahia peirsonii</i>	FT	Kings, St. John's, Tule	Kings, St. John's/Kaweah, Tule
Keck's checkerbloom <i>Sidalcea keckii</i>	FE & CH		
San Joaquin Valley orcutt grass <i>Orcuttia inaequalis</i>	FT & CH		
Hoover's spurge <i>Chamaesyce hooveri</i>	FT & CH		St. John's /Kaweah

Common Name and Scientific Nomenclature	Listed Status	CNDDDB Occurrences Within Quadrangles Covering:	
		Pumping Facility(s)	Drainage(s)
Springville clarkia <i>Clarkia inaequalis</i>	FT		
FE = Federally Endangered FT = Federally Threatened		CH=Critical Habitat FCS= Federal Candidate Species	

Although not on the USFWS's species list, the following species were listed on the California Department of Fish and Game's California Natural Diversity Data Base (CNDDDB) as being observed in the area (Table 3-9):

Table 3-9 Species Occurrences identified in CNDDDB but not on USFWS Species List

Common Name and Scientific Nomenclature	Listed Status	CNDDDB Occurrences Within Quadrangles Covering:	
		Pumping Facility(s)	Drainage(s)
PLANTS			
Greene's orcutt grass <i>Tuctoria greenei</i>	FE	St. John's	Kings, St. John's/Kaweah
California jewelflower <i>Caulanthus californicus</i>	FE	Tule	Tule
WILDLIFE			
Western Snowy Plover <i>Charadrius alexandrinus nivosus</i>	FT		Kings

Adjacent quadrangles were included in the query when the pumping facility was near the border of a quadrangle. The query results were based on the following quadrangles:

- Kings River Pumping Station: Piedra, Wahtoke
- St. John's Pumping Station: Woodlake, Ivanhoe, Exeter
- Tule River Pumping Station: Porterville, Woodville, Cairns Corner

Designated or proposed Critical habitat for the Fresno kangaroo rat, California Condor, vernal pool fairy shrimp, vernal pool tadpole shrimp, Hoover's spurge, San Joaquin Orcutt grass, and California tiger salamander occurs within the action area, but the pumping facilities on the Kings, St. John's and Tule rivers are outside of the critical habitat for these species. The California Condor, though extremely rare throughout its range, may occasionally forage over the action area. The Fresno kangaroo rat has not been recorded in Fresno County since 1992 and may be extirpated from critical habitat within the action area. Vernal pool fairy shrimp critical habitat within the action area is restricted to a few locations in Kings and Tulare counties. Critical habitat for vernal pool tadpole shrimp, Hoover's spurge and San Joaquin Valley orcutt grass within the action area is confined to a small number of areas in Tulare County. Six units of the proposed critical habitat for the California tiger salamander are located within or near the action area.

Habitat loss and degradation affecting animals and plants occurs within the action area and is projected to continue to affect special-status species in the southern San Joaquin Valley.

However, actions taken by Reclamation, in concert with protections afforded by regional conservation plans such as the Metropolitan Bakersfield Habitat Conservation Plan and the Kern Water Bank Habitat Conservation Plan/Natural Community Conservation Plan, ameliorate such adverse effects and play a key role in achieving the goal of maintaining and preserving special-status species and their native habitats.

EO 11990-Protection of Wetlands was issued on May 24, 1977 in furtherance of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) in order to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. EO 11990 does not apply to the issuance by federal agencies of permits, licenses, or allocations to private parties for activities involving wetlands on non-federal property. The Tulare Lake Basin has been recognized historically as one of the primary components of the Central Valley's once vast wetland/upland ecosystem complex and continues to support remnant and restored wetlands. Restored wetlands within the basin, including those in the federal WRP, provide highly productive wildlife habitats for water birds as well as other groups of avian and mammalian species (see Figure 1-1 for WRP sites).

3.4.2 Environmental Consequences

3.4.2.1 No Action

Upland and terrestrial riparian habitats for special-status species occur in isolated patches along the Kings, St. John's (Kaweah) and Tule river basins and could be adversely impacted by inundation caused by flooding. The flow regimes within the affected drainages would be tempered by the action alternative, but still remain at flood levels. Historically, diversions from the affected drainages have been infrequent and proportionately small for those made from the Kings River. Diversions from the St. John's and Tule Rivers have averaged about 20 percent of flows, but they too have been infrequent.

3.4.2.2 Proposed Action

In light of the uncertainty associated with flood events, the nature of past floods was used for the purpose of this analysis to predict and assess the potential effects.

Pump-in Operations The infrastructure required for RD770 to pump Non-CVP water from the Kings, St. John's and Tule River systems is complete and operational, requiring no further construction that might affect biological resources. No ground disturbing activities would be associated with the operation and maintenance of the three pumping facilities. The License precludes the use of pesticides on the FKC ROW without prior written permission of Reclamation. Pumps would be installed at MP95.67 on the Tule River and at MP69.45 on the St. John's River, where elderberry plants are either not present, or are no closer than 130 feet distant, respectively. Consequently, disturbance would be avoided at these two stations. A third set of pumps would be installed at MP29.10 on the Kings River which is 60 feet away from one elderberry bush. Access to this pump station would be done via an existing roadway; therefore, any disturbance to the bush would be insignificant. Additionally, removal of all pumps would occur outside the Valley Elderberry longhorn beetles (VELB) period of activity (after June). Through the use of these measures, effects to VELB are considered insignificant and not likely to adversely affect this species.

The CNDDDB query revealed records for California tiger salamander in the vicinity of the Kings and St. John's River pumping facilities; for VELB and Greene's orcutt grass in the vicinity of the St. Johns River pumping facilities; records for the San Joaquin kit fox in the vicinity of the St. John's and Tule River pumping facilities; records for the vernal pool fairy shrimp and the San Joaquin adobe sunburst in the vicinity of the Kings, St. John's, and Tule River pumping facilities; records for the Tipton kangaroo rat in the vicinity of the St. John's and Tule River pumping facilities; and records for the California jewelflower in the vicinity of the Tule River pumping facilities (Table 3-8 and 3-9). The operation and maintenance of the three pumping facilities would not involve ground disturbance or disturbance to vegetation, including the host plant of VELB, and therefore, no direct adverse effects to special-status species are expected from pump-in activities. Activities for operation and maintenance would require use of existing roadways only. These roadways are commonly traveled by FWA vehicles and the additional vehicle traffic would be minimal.

Critical Habitat The critical habitat for the California condor is outside the region directly affected by floodwater in the Tulare Lake Basin. Thus, pumping water from the rivers would have no adverse effect on critical habitat for the California condor. Diversions from the Kings River are an exceedingly small fraction of the flows (historically 0.58 percent or less) and these would either minimally decrease flood volumes or would not affect flows in Fresno Slough. The Proposed Action would, therefore, have no adverse effect on the critical habitat for the Fresno kangaroo rat or would have a minor positive effect through added flood protection. Critical habitat for the vernal pool fairy shrimp and the vernal pool tadpole shrimp within the Cross Creek Unit are connected to flows in the St. John's River; however, the majority of the critical habitat is upstream of the confluence of Cottonwood Creek and the St. John's River. Critical habitat upstream of this confluence would not be directly affected by changes in flood flows within the St. John's River. Critical habitat for Hoover's spurge and San Joaquin Orcutt grass occurs upstream of the confluence of Cottonwood Creek and the St. John's River, and would not be directly impacted by Non-CVP water introduced into the FKC. Any backwater flooding would be minimal and not be expected to meaningfully affect the extent or duration of inundation. Critical habitat for vernal pool fairy shrimp within the Pixley Unit occurs in two subunits: one southeast of Corcoran within the floodplain of the Tule River and another subunit that includes portions of the Pixley National Wildlife Refuge. The northern subunit could experience a minor level of flood protection. Portions of the critical habitat for the California tiger salamander within the final Cross Creek Unit are connected to flows in the St. John's River. Critical habitat in the basin upstream of the confluence with the St. John's River would not be directly affected by changes in flood flows within the St. John's River. Some upland habitat within a portion of Cross Creek Unit 5A may receive reduced flood flows, although Cross Creek typically carries high flows before pumping occurs and continues to transport high flows when the pumps are operating. California tiger salamanders breeding within vernal pools within the floodplain might benefit from a reduction in the volume of floodwater flowing across the floodplain of Cross Creek.

Changes to Flows Introductions from the Kings, St. John's and Tule rivers under previous contracts were intermittent and infrequent. Introductions from the Kings River always were small (0.58 percent or less) while those from the St. John's and Tule Rivers ranged to around 30

percent of flows (see Table 3-1). Future introductions to the FKC under the Proposed Action are expected to be similar or even smaller for all watersheds but the Tule River. For the Tule River, with reduced capacity in Lake Isabella from drawdown due to seismic concerns, there is less storage so the flood events would be expected to be greater than when the reservoir was operating within its design capacity. These introductions would not result in reduced river flows that contain less oxygen, higher temperatures or other changes that could detrimentally impact fish or other aquatic life. The average flow downstream of the pump stations on the Kings, St. John's and Tule rivers have always remained well above the average flow in years when pumping occurred (see Table 3-1). Under past actions on the Kings River, for instance, the maximum percent of flow diverted was 0.58 percent when the flow was 148 percent of average. The maximum percent of flow diverted over an annual basis was higher in the Kaweah and Tule Rivers, 30 and 34 percent, respectively; however, average annual flows below pump-in points within both rivers was much greater than 150 percent (see Table 3-1). The effects of diversions on a monthly basis when all years are included show that 20 percent of flows may be reduced, but if data are considered only in years when diversions are made, the proportion of monthly flow reductions would be greater.

The Corps manages water releases from the dams to maintain flows within the channel, thereby protecting adjacent uplands, if possible. Breached levees, rather than high flow volumes, are likely to be the cause of flooding in uplands along these rivers.

The Proposed Action does not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed. The Proposed Action would only pump water from the Kings River when 3,200 cubic-feet per second of water is being pumped south to Tulare Lakebed and flood flows north to the San Joaquin River have been maximized. No direct connections occur between existing wetlands and the St. John's and Tule rivers downstream from the FKC.

Non-CVP water would be discharged into the Kern River at the terminus of the FKC. The reach of the Kern River between the FKC and the Aqueduct-Kern River Intertie differs from the Kings, St. John's and Tule rivers in that the Kern River may be the recipient, rather than the donor, of pumped Non-CVP water. The Kern River, for short periods of time on an infrequent and intermittent basis, may experience increased flows as a result of the Proposed Action. The disposition of Non-CVP water that would be discharged at the terminus of the FKC into the Kern River would be coordinated with the City of Bakersfield. The volume of introduced Non-CVP water would be small in relation to the large recharge capacity in the region, and the deliveries represent a minor component of the operations. Discharges into the Kern River have averaged 14 percent of the Kern River flows at the time (see Table 3-6). Ensuring that the Kern River can adequately accommodate discharges from the FKC. The Proposed Action would not cause or attenuate flooding along the Kern River. Therefore, no adverse effects are anticipated.

The *Delta Lands Reclamation District No. 770 Warren Act Contract Biological Evaluation* dated April 17, 2006 and the analysis of direct, indirect and induced and interrelated effects indicate that the intensity of the effects from the Proposed Action would be low (HT Harvey & Associates 2006). While the Proposed Action may affect threatened and endangered species it is not likely to adversely affect listed species or designated critical habitat.

Invasive Species Control Reclamation recognizes the importance of limiting the spread of nuisance or invasive plant and animal species and shares the responsibility for controlling invasive species (EO 13112) that infest water systems, including reservoirs, rivers, distribution canals, etc. Reclamation's understanding is that hydrilla (*Hydrilla verticillata*) and dodder (*Cuscuta* spp.) are of greatest concern along the FKC because of hydrilla's potential to block canals, drains, and water control structures and dodder's potential to infest many crops, ornamentals, native plants, and weeds. Hydrilla and dodder entering the FKC would have to originate upstream of the canal in the watersheds of the rivers to be diverted for the Proposed Action to potentially contribute to the spread of these species. The California Department of Food and Agriculture's Hydrilla Eradication Program treated the Costa Ponds near Springville in 2001, but hydrilla has not been reported as a problem in the Tule River. Dodder is widespread in the San Joaquin Valley and a range of methods (seeds dispersed by people through the movement of soil, equipment, or in mud attached to shoes and tires) can spread seeds. Infestations contributing seed sources along the Kings, Kaweah or Tule River systems have not been documented. Reclamation requires that the submerged intakes of the District's pumps be screened, limiting debris and other objects from being drawn into the pumps. Should Non-CVP water pumped under the proposed Contract be identified as a significant source of invasive species in the future, Reclamation has the authority to terminate or limit the introduction of such Non-CVP water into the FKC. In compliance with EO 13112 on Invasive Species, Reclamation would continue to implement feasible and prudent measures to minimize risk of harm from the spread of invasive species.

Delivery to Friant Contractors Friant contractors are required to comply with the BOs issued during the long-term contract renewal process which require water delivered into their districts to be used in ways that do not harm endangered or threatened species. Adherence to these BOs would ensure that the delivery of this Non-CVP water does not adversely impact species.

3.4.2.3 Cumulative Impacts

The Corps has enlarged Terminus Dam located on the Kaweah River to provide increased flood protection to the City of Visalia and downstream agricultural lands, and increased water supply storage for irrigation. The Terminus Dam project reduces periodic flood flows from reaching the Tulare Lakebed (Corps 1996). The Corps determined that small flood events (less than 3.2-year events) would no longer flood the lakebed and larger events would be decreased in magnitude. The effects of these reductions were quantified by the Corps and the USFWS, and it was determined that primary project impacts resulted from reductions in the frequency, acreage and duration of the relatively frequent, smaller events occurring in the lakebed. Impacts stemming from enlarging Terminus Dam have been fully mitigated. In years when damaging flows threaten the Tulare Lakebed, more than a thousand acres of flooded mitigation habitat would be provided for water birds.

Non-CVP water introductions by RD770 would not contribute substantial cumulative impacts to water birds within the Tulare Lakebed. Introductions by RD770 have occurred since 1978 and represent the existing conditions within the Tulare Lakebed during infrequent major flood events. Flood flows into the Tulare Lakebed would still occur from the Tule and Kings rivers with an anticipated magnitude similar to past events when floodwater was pumped. The Proposed Action does not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed, including wetlands. Future Non-CVP water introductions from the St.

John's River by RD770 would continue to be conducted in coordination with the Corps, the FWA, and the local water users represented by the Kings River Water Association, the Kaweah and St. John's Rivers Association, and the Tule River Association.

As previously stated, Reclamation and the USFWS have jointly developed an Endangered Species Act compliance strategy intended to minimize further losses within the CVP service areas and to offset impacts from ongoing CVP operations. Reclamation and the USFWS continue to implement the commitments and conservation measures in the BOs issued for CVP operations and contract renewals. The January 19, 2001 BO on the continued operation of the CVP addressed CVP operational threats to special-status species. USFWS stated in that BO that Reclamation's Endangered Species Act compliance strategy is intended to minimize further losses within the CVP service areas and to offset effects from ongoing CVP operations. The contribution of the Proposed Action to these operations is anticipated to be negligible or non-existent, and future conditions for listed or proposed species would not be expected to differ significantly, with or without the Proposed Action.

The Non-CVP water introduced under the Proposed Action would remain intermittent, unpredictable and small in comparison to the operation of the FKC. In accordance with the License, the Non-CVP water impounded, stored or carried would not be used otherwise than as prescribed by law. The Floodwater Report would be used to track this water and to minimize the possibility of contributing to potential cumulative habitat modifications due to agricultural production and urban expansion.

Numerous activities continue to eliminate habitat for listed and proposed threatened and endangered species in the southern San Joaquin Valley. Habitat loss and degradation affecting both animals and plants continues as a result of urbanization, oil and gas development, road and utility ROW management, flood control projects, grazing by livestock and agricultural practices. Listed and proposed animal species are also affected by poisoning, shooting, increased predation associated with human development and reduction of food sources. All of these non-federal activities are expected to continue to adversely affect listed and proposed species in the southern San Joaquin Valley.

Actions taken by Reclamation, however, in concert with protections afforded by regional conservation plans such as the Metropolitan Bakersfield Habitat Conservation Plan and the Kern Water Bank Habitat Conservation Plan/Natural Community Conservation Plan, help to ameliorate such adverse effects and play a key role in achieving the goal of maintaining special-status species and their native habitats.

3.5 Cultural Resources

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

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

3.5.1 Affected Environment

The CVP, one of the Nation's major water conservation developments, extends from the Cascade Range in the north to the semi-arid but fertile plains along the Kern River in the south. The FKC is part of Reclamation's Friant Division of the CVP. 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. Construction of the canal began in 1945 and was completed in 1951. 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.

Reclamation is in the process of nominating the CVP to the National Register. As part of the CVP, the FKC has been found eligible for inclusion in the National Register under Criterion A for its association with the irrigation and agricultural development of California.

3.5.2 Environmental Consequences

3.5.2.1 No Action

Under the No Action Alternative, there are no impacts to cultural resources since there would be no change in operations and no ground disturbance. Conditions related to cultural resources would remain the same as existing conditions.

3.5.2.2 Proposed Action

The Proposed Action is the type of action that would have no impact on cultural resources as there would be no modification of water conveyance facilities and no activities that would result in ground disturbance. Because there is no potential to affect historic properties, no cultural resources would be impacted as a result of implementing the Proposed Action.

3.5.2.3 Cumulative Impacts

The Proposed Action does not require new facilities or infrastructure, and would not contribute to cumulative impacts to archaeological or historical resources.

3.6 Indian Trust Assets

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

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

3.6.1 Affected Environment

The nearest ITA is the Santa Rosa Rancheria approximately 13 miles north of the Proposed Action location.

3.6.2 Environmental Consequences

3.6.2.1 No Action

Additional floodwater from the Kings, St. John’s and Tule rivers might flow into the Tulare Lake Basin. ITA would be unaffected by flooding in the Tulare Lake Basin.

3.6.2.2 Proposed Action

Since the Proposed Action would not cause any land disturbing activities or change historical water use patterns, the Proposed Action would not interfere with Indian water rights and would not affect ITA.

3.6.2.3 Cumulative Impacts

The Proposed Action would not affect ITA and, therefore, would not contribute to long-term or cumulative effects on ITA.

3.7 Environmental Justice

EO 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

Many agricultural jobs require unskilled labor and the pay tends to be low. For instance, agricultural jobs accounted for 20.5 percent of all employment in Kings County in 2001 (Umbach 2002). Average per capita income in 1999 for Kings County was the lowest in the

state at \$15,732, compared to a \$29,856 state average (Umbach 2002). According to 2000 Census data, 44 percent of the population in Kings County is Hispanic/Latino, compared to a statewide figure of 32 percent for that statistic (Umbach 2002).

3.7.2 Environmental Consequences

3.7.2.1 No Action

Additional floodwater from the Kings, St. John's and Tule rivers could flow into the Tulare Lake Basin causing damage to crops and reducing job opportunities for minority and low-income farm laborers.

3.7.2.2 Proposed Action

The Proposed Action would provide an option for some amount of flood protection within the Tulare Lakebed and reduce adverse impacts to minority or low-income farm laborers.

3.7.2.3 Cumulative Impacts

The Proposed Action is an intermittent action and would not contribute to long-term or cumulative effects on agricultural lands or employment opportunities for low-income or disadvantaged populations.

3.8 Socioeconomic Resources

3.8.1 Affected Environment

The human population in the southern San Joaquin Valley increased substantially in the 1980's, led by 50 to 60 percent growth in the Fresno, Bakersfield and Visalia-Tulare urban areas (DWR 1998). This trend is expected to continue and the region's population is projected to more than double over the next 30 years. Fresno's population, which had one of the highest growth rates among large metropolitan areas in the United States during the 1980's, grew by more than 60 percent from 217,000 in 1980 to 354,000 in 1990. This growth was attributed to a high birth rate and relatively low-cost housing that encouraged immigration from out-of-state as well as from the San Francisco Bay and Los Angeles areas (DWR 1998). This trend is expected to continue and the region's population is projected to more than double in the next 30 years. Continued future growth is expected in Fresno, the Visalia-Tulare area and Bakersfield (DWR 1998). Between 1996 and 1998, the counties of Fresno, Kern, Tulare and Kings were in the top seven urbanizing counties within California and the top eight with the most irrigated farmland converted to urban land during the same period (CDC 2000).

For the Tulare Lake Region, the unemployment rate is higher than in urban areas (Table 3-10), attributed to a large seasonal labor market and limited availability of employment in other industries. Unemployment for Fresno, Kern, and Tulare counties ranged from 12.1 to 15.6 percent in 1997 but decreased to 5.8 to 6.2 percent in 2008. Statewide unemployment was 6.3 percent in 1997 but dropped to 4.4 percent in 2008 (see Table 3-10).

Table 3-10 County-level Socioeconomic Data

County	2008 Population (estimate)	2008 Civilian Labor Force	2008 Employment	2008 Per Capita Income	2008 Unemployment Rate
Fresno	895,357	411,746	375,545	20,640	6.0%
Kern	785,953	342,836	310,200	20,410	5.7%
Kings	147,824	58,710	51,768	18,041	6.2%
Tulare	419,165	182,945	165,595	18,079	5.8%
California	36,418,499	18,084,737	16,834,866	29,405	4.4%

Sources: U.S. Census Bureau 2009

3.8.2 Environmental Consequences

3.8.2.1 No Action

All required pumping and conveyance facilities have been constructed and would not be modified under either the No Action or Proposed Action alternatives. Floodwater from the Kings, St. John's and Tule rivers could flow into the Tulare Lake Basin. Floodwater could cause temporary crop damage, affect agricultural operations, including the planting of crops, affect the seasonal demand for farm laborers and affect enterprises supporting agricultural production.

3.8.2.2 Proposed Action

All required pumping and conveyance facilities have been constructed and would not be modified under either the No Action or Proposed Action alternatives. All introduced Non-CVP water would be disposed of within existing facilities and requires no new construction. The population and land conversion trends previously described are expected to continue with or without implementing the Proposed Action. The Non-CVP water introduced under the Proposed Action would be intermittent, unpredictable and small in comparison to demand.

Pumped Non-CVP water may be discharged into the Kern River. This water could recharge the groundwater locally and be extracted during dry periods to meet a small fraction of future demands. Uses of this Non-CVP water could include irrigation, groundwater banking, wetland enhancement and restoration, or M&I uses. However, Reclamation does not have approval authority for subsequent diversions or uses of this Non-CVP water once diverted or discharged from the FKC. Pumping the flood flows would provide an economic benefit to landowners in the Tulare Lake Basin. Reductions in costs for repairing public facilities, public services and emergency resources would also occur on a small local scale.

The Contract issued by Reclamation would require that RD770 comply with EO 11246 of September 24, 1965, and the rules, regulations and relevant orders of the Secretary of Labor pertaining to equal employment opportunity. In the event of noncompliance with the nondiscrimination clauses of the Contract or with any of such rules, regulations or orders, the Contract may be canceled, terminated or suspended in whole, or in part, and RD770 may be declared ineligible for further government contracts.

3.8.2.3 Cumulative Impacts

The availability of this Non-CVP water is infrequent, unreliable and small compared to the existing water demand. The Proposed Action would not provide long-term or reliable water supplies that would support growth nor contribute to cumulative impacts on population or housing. The Proposed Action does not set a precedent for flood control operations and

introductions into the FKC. The Proposed Action has no negative effect on socioeconomic resources and has a small positive effect. The Proposed Action, when added to other local, state and federal actions would not result in significant impacts to socioeconomic resources. The introductions of flood flows are short-term and intermittent actions. This Non-CVP water would provide local recharge to the groundwater providing a slight benefit to groundwater users. The cost of pumping groundwater is high if adequate surface water supplies are available. In dry years when surface water is scarce, more groundwater is pumped to maintain existing conditions and agricultural crops. The Proposed Action would not encourage long-term land use changes or planning that would change economical conditions.

The cost for emergency services might be reduced. However, this benefit would be on a small scale and is contingent upon available capacity in the FKC and the ability to dispose of Non-Project Water. Therefore, the Proposed Action would not contribute to major cumulative effects to socio-economical conditions or resources.

3.9 Air Quality

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

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

3.9.1 Affected Environment

The Proposed Action area lies within the San Joaquin Valley Air Basin (SJVAB). The pollutants of greatest concern in the San Joaquin Valley are carbon monoxide (CO), ozone (O₃), O₃ precursors such as volatile organic compounds (VOC) or reactive organic gases (ROG), and inhalable particulate matter less than 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}). The SJVAB has reached Federal and State attainment status for CO, nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Federal attainment status has been reached for PM₁₀ but is in non-attainment for O₃, PM_{2.5}, and VOC/ROG (see Table 3-11). There are no established standards for nitrogen oxides (NO_x); however, NO_x does contribute to NO₂ standards (SJVAPCD 2010).

Table 3-11 San Joaquin Valley Attainment Status

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

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

ppm = parts per million

mg/m³ = milligram per cubic meter

µg/m³ = microgram per cubic meter

-- = No standard established

3.9.2 Environmental Consequences

3.9.2.1 No Action

Pumping facilities would not operate and air quality would not be affected.

3.9.2.2 Proposed Action

The 18 diesel pumps that RD770 might operate represent less than one percent of the 4,500 irrigation pumps used in the San Joaquin Valley (Maxwell 2003). The portable diesel pumps are registered at the local and/or state level, have emission standards established within the registration requirement and the emissions are accounted for in the current emission inventory. The federal Title V Program does not apply to these pumps because the diesel engines are classified as non-road portable and would only operate for up to four to five months during years when Non-CVP water is pumped. Friant Division contractor turnouts are gravity-fed and would not result in additional pumping.

The License issued by Reclamation stipulates that RD770 shall comply with all applicable air pollution laws and regulations of the United States, the State of California and local authorities.

Electric and diesel-powered pumps would be used to pump water from the Kings, St. John's and Tule Rivers. Emission calculations are based on the use of a 300 horsepower diesel engine running constantly over a five month period (see Table 3-12). Estimated emissions are well below the de minimis standards of the SJVAPCD; therefore, a conformity analysis is not required and there would be no adverse impacts to air quality. In addition, RD770's diversion pumps have never been used simultaneously during past pump-in events. Their use is infrequent occurs during weather conditions unfavorable for ozone production.

Table 3-12 Calculated Pump Emissions

Pollutant	Federal Status	<i>de minimis</i> (Tons/year)	Calculated project emissions (Tons/year)
VOC/ROG (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	0.8
NO _x (as an ozone precursor)	Nonattainment serious 8-hour standard	50	7.9
PM ₁₀	Attainment	100	Not calculated
CO	Attainment	100	Not calculated

Source: SJVAPCD 2010; 40 CFR 93.153

3.9.2.3 Cumulative Impacts

No construction would be required by the action, nor would the number of pump stations or engines increase. The existing portable diesel pumps are already accounted for in the current emission inventory. Therefore, the Proposed Action would not cumulatively affect air quality.

3.10 Global Climate Change

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (EPA 2010a)

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane, nitrous oxide, and fluorinated gasses (EPA 2010a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and methane, are enhancing the natural greenhouse effect, and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of climate change (EPA 2010b).

3.10.1 Affected Environment

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in

the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

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

California Assembly Bill 32, the Global Warming Solutions Act of 2006, mandates the reduction of GHG emissions in California to 1990 levels by the year 2020. Currently there are no established significance thresholds for GHG in the SJVAB or in California.

3.10.2 Environmental Consequences

3.10.2.1 No Action

Pumping facilities would not operate and there would be no contributions to global climate change due to GHG emissions.

3.10.2.2 Proposed Action

The introduction of Non-CVP water into the FKC would require the use of diesel and electric pumps. These pumps would produce CO₂ emissions which would contribute to GHG emissions within the San Joaquin Valley. However, pump-in events would be infrequent and for short periods of time. Estimated CO₂ emissions from the 21 pumps run constantly over a five month period can be found in Table 3-13.

Table 3-13 Calculated CO₂ Emissions

Pumping Station	Number of Pumps	Annual Kilowatt Hours	CO₂ emissions (metric tons)
Kings River	6	3,600	609
St. John's River	8	3,600	305
Tule River	7	3,600	2.6
Total	21	10,800	916.6

Calculated CO₂ emissions are well below the Environmental Protection Agency's threshold for annually reporting GHG emissions (25,000 metric tons/year), which is a surrogate for a threshold of significance (EPA 2009). Accordingly, the Proposed Action would result in below *de minimis* impacts respecting global climate change.

3.10.2.3 Cumulative Impacts

GHG emissions are considered cumulatively significant; however, the estimated CO₂ emissions for the Proposed Action is roughly 916.6 metric tons per year, which is well below the 25,000 metric tons per year threshold for reporting GHG emissions. As a result, the Proposed Action is not expected to contribute to cumulative adverse impacts to global climate change.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action does not involve federal water development projects. Therefore the FWCA does not apply.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

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

The Proposed Action would support existing uses and conditions. No native lands would be converted or cultivated with CVP water. The water would not be used for land conversion. The proposed project does not interfere with existing deliveries of water for environmental purposes in the Tulare Lakebed. Effects to listed species and critical habitat are not expected, or would be insignificant, or possibly slightly beneficial, and therefore, the Proposed Action may affect but is not likely to adversely affect federally listed threatened or endangered species or their designated habitats. Reclamation initiated consultation with the USFWS on April 14, 2010. The USFWS concurred with Reclamation's finding on June 18, 2010 (see Appendix F).

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

Section 106 of the NHPA requires federal agencies to evaluate the effects of federal undertakings on historical, archaeological and cultural resources. Due to the nature of the Proposed Action, there would be no effect on any historical, archaeological, or cultural resources and no further compliance actions are required.

4.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)

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

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

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

EO 11988 requires Federal agencies to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, and health and welfare among other activities. To accomplish these goals agencies are instructed to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, EO 11990 places similar requirements for actions in wetlands. Although the project does reduce potential flood flows which meets the goals of the EO, the project does not affect the flood plain itself and therefore the project does not require Reclamation to take the actions required in EO 11988. The project does not affect wetlands and therefore the project would not affect either EO.

Section 5 Response to Comments Received

EA-09-177 2010 Warren Act Contract and License for Delta Lands Reclamation District 770 was posted for a 22 day public comment period between May 10, 2010 and May 31, 2010. Reclamation received one comment letter from Arvin-Edison Water Storage District (AEWSD). Specific comments include (1) potential water quality impacts related to sedimentation; (2) the insufficiency of Reclamations' Water Quality Monitoring Policy for irrigation suitability; and (3) beneficial uses or limitations associated with the use of Non-CVP water (see Appendix G).

Sedimentation Water Quality Impacts

As described in Section 3.1 of this EA, should silt accumulate in the FKC or channels as a result of the introduction of Non-CVP water, RD770 would remove the silt accumulation as directed by Reclamation and the FWA, or reimburse Reclamation and the FWA for costs associated with its removal. RD770 would also be required to ensure that there are no impacts to Friant Division contractors or their facilities from silt accumulation via an agreement between RD770 and the FWA.

Reclamation's Water Quality Policy

As described in Section 3.1 of this EA, both the Contract and License require RD770 to comply with all applicable water pollution laws and regulations of the United States, the State of California and local authorities and to comply with Reclamation's water quality monitoring requirements and standards (see also Appendix A and C). Water quality monitoring, in accordance with Reclamation's *Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals: Water Quality Monitoring Requirements*, would be done by RD770, FWA, Friant Division M&I water uses, and Reclamation (see Appendix B). In addition, RD770 would be required to meet the Food and Agricultural Organization of the United Nations guidelines for suitability of irrigation standards (see Table 5-1 below). If Reclamation determines that the water quality in the canal is negatively affected by the pump-ins sufficiently to cause harm to the CVP or Friant Division contractors, the Contract would be terminated (see Appendix A).

Table 5-1 Water Quality Criteria for Irrigation

Parameter	Measurement	Degree of Restriction for Use		
		None	Slight to Moderate	Severe
Electrical Conductivity	µhos/cm at 25°C	<700	700 to 3000	>3000
Total Dissolved Solids	mg/L	<450	450 to 2000	>2000
Sodium Adsorption Ratio	SAR	<3	3 to 9	>9
Sodium	mg/L	<69	>69	-
Chloride (surface irrigation)	mg/L	<142	142 to 355	>355
Chloride (sprinkler irrigation)	mg/L	<107	>107	-
Boron	mg/L	<0.5	0.5 to 2.0	>2.0
Bicarbonate	mg/L	<92	92 to 519	>519
Nitrate/Nitrogen	mg/L	<22	22 to 132	>132
pH		6.5 to 8.4	<6.5 to >8.4	-

Modified from Ayers & Westcott (1985). Note: Boron criteria are for crops that are not tolerant to Boron.

Potential uses of Non-CVP Water

Reclamation has no federal jurisdiction or control of the Non-CVP water once it is either released into the Kern River and/or diverted by the Friant Division contractors (see Section 1.3). Management of the water diverted to Friant Division contractors is via an agreement between the FWA and RD770. Therefore, Non-CVP water is only discussed in general terms rather than specifically analyzed as part of this EA. Management of the water discharged into the Kern River becomes the responsibility of the Kern River Watermaster whose approval is required for the release of the water from the FKC into the Kern River. Reclamation's action ends once the Non-CVP water is diverted or discharged.

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