RECLAMATION
Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

2013 Warren Act Contract and License for Delta Lands Reclamation District No. 770

FONSI-12-100

Recommended by:

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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 Bureau of Reclamation (Reclamation), has determined that an environmental impact statement is not required for the approval of a one-year (January 1, 2013 through December 31, 2013) Warren Act contract and license with Delta Lands Reclamation District No. 770 (RD770). This Finding of No Significant Impact (FONSI) is supported by Reclamation's Final Environmental Assessment (EA) Number EA-12-100, *2013 Warren Act Contract and License for Delta Lands Reclamation District No. 770*, and is hereby incorporated by reference.

Background

RD770 has requested a 25-year Warren Act contract for conveyance of Non-Central Valley Project (Non-CVP) floodwater within federal facilities and a 25-year license for RD770 pump stations located within Reclamation right-of-way (ROW). The draft EA has not been finalized as informal consultation with the U.S. Fish and Wildlife Service (Service) pursuant to Section 7 of the Endangered Species Act (ESA) is still pending.

Since the finalization and approval of the 25-year Warren Act contract and license is not expected to be completed and executed until after the 2012/2013 rainy season, RD770 has requested a one-year license and a one-year Warren Act contract in case damaging floodwater should threaten RD770 pending completion of the long-term actions.

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.

Proposed Action

Reclamation will enter into a one-year Warren Act contract and license with RD770 to utilize otherwise unused capacity in the Friant-Kern Canal (FKC) to convey Non-CVP floodwater pumped from the Kings, St John's and Tule Rivers from January 1, 2013 through December 31, 2013 for diversion by Friant Division contractors and/or for discharge into the Kern River. The Non-CVP floodwater is pre-1914 appropriative water rights water from each of the respective rivers and will be introduced into the FKC from 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 maximum amount of Non-CVP floodwater from the three rivers to be conveyed in the FKC from January 1, 2013 through December 31, 2013 is 250,000 acre-feet. The one-year license will permit RD770's existing infrastructure to remain in place as well as allow RD770 to install pumps at the three MPs.

Non-CVP water will be introduced only when: 1) there is excess capacity in the FKC, as determined by Reclamation in coordination with the Friant Water Authority (FWA); 2) it meets the applicable water quality standards (see Appendix A in EA-12-100); 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. Non-CVP water will be introduced to the FKC through existing turnouts without modification to the FKC.

Once introduced into the FKC, the Non-CVP water will 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 in EA-12-100) and/or the remainder will be conveyed to an existing gate at the terminus of the FKC for discharge into the Kern River.

RD770 will 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 Warren Act contract. The Floodwater Report will be due by February 28, 2014.

Environmental Commitments

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

- RD770 will 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 Warren Act contract (see Appendix A in EA-12-100 for the water quality monitoring requirements and sampling locations). RD770 will conduct water quality analyses using a Reclamation-approved laboratory. If the quality of the Non-CVP water from one or more of the rivers will significantly degrade the quality of water in or introduced into the FKC, RD770 will be required to immediately terminate pumping into the canal from the source that will cause the degradation.

- Friant Division contractors will 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 will be similarly required for the use of any of the Non-CVP floodwater within the Friant Division service area.

- RD770 will remove silt accumulation as directed by Reclamation and take steps to screen debris from water prior to pumping.

- RD770 will 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 will not allow contamination or pollution of Federal lands, waters or facilities related to the project.

- RD770 will not use any pesticides on Federal lands without prior written approval by Reclamation. All pesticides used will be in accordance with the current registration, label direction, or other directives regulating their use.

- RD770 will immediately notify Reclamation of the discovery of any and all antiquities or other objects of cultural, historic, or scientific interest on Reclamation lands.

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 findings:

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. The Proposed Action is consistent with the County of Tulare's General Plan 2025 flood protection goal and with Executive Order (EO) 11988 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 one-year Warren Act 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. If the quality of the Non-CVP water from one or more of the rivers will significantly degrade the quality of water in or introduced into the FKC, RD770 will be required to immediately terminate pumping into the canal from the source that will cause the degradation. 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 FKC introduction points in pump-in years remaining greater than 138 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 Lake bed. RD770 will continue to coordinate and provide water to wetland areas in the vicinity of the Tulare Lake bed as in the past, including providing water to restored wetlands.

There will 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 will continue as in the past with or without the Proposed Action.

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 as water diverted will only be done during flood flows and under the permission of the respective Water Masters.

In the past, RD770 introductions of Non-CVP water into the FKC indicated water quality impacts due to slight increases in concentrations of turbidity, total dissolved solids, 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 Warren Act contract obligates RD770 to comply with Reclamation's water quality monitoring requirements and standards (see Appendix A in EA-12-100). Water quality monitoring will be done by RD770, FWA, Friant Division municipal and industrial (M&I) water uses, and Reclamation. If the quality of the Non-CVP water from one or more of the rivers will significantly degrade the quality of water in or introduced into the FKC, RD770 will be required to immediately terminate pumping into the canal from the source that will cause the degradation. 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.

The discharge of the Non-CVP water into the Kern River will also 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 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.

The Kings River is hydrologically linked to the San Joaquin River via the James Bypass and the Fresno Slough. During flood events, water may be diverted from the Kings River to the San Joaquin River via the James Bypass as floodwater is directed down the South Fork of the Kings River when the North Fork is flowing at capacity. As floodwaters are only released to the South Fork when the North Fork is flowing at capacity, the James Bypass and Fresno Slough will not experience a decrease in flood flows. Consequently, flows in the North Fork (and James Bypass) will be unaffected by the Proposed Action. Because flows in the James Bypass will not be affected, the Proposed Action will have no effect on San Joaquin River Restoration flows.

Flows from the Kaweah/St. Johns and Tule rivers drain directly into the Tulare Lakebed, which historically (in 1870) was hydrologically connected to the San Joaquin River. At present, there

is only rare hydrologic connection; therefore, introduction of floodwater from the Kaweah/St. Johns and Tule rivers will have no effect on San Joaquin River Restoration flows.

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 will 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 will be available during wetter periods, the water will 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 will improve flood management, groundwater supplies and will not impact CVP operations, facilities, water right holders' surface water supplies or water rights, water quality, or wetlands.

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 likely continue as it has in the past. Conveyance of the Non-CVP water will be infrequent, intermittent, unpredictable and small in quantity, 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 adverse 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 ROW without prior written permission of Reclamation. Pumps will be installed at MP 95.67 on the Tule River and at MP 69.45 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 MP 29.10 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 Service on December 20, 2012 for concurrence on their determination that the Proposed Action may affect but is not likely to adversely affect federally listed threatened or endangered species or their designated habitats. On December 31, 2012, the Service concurred with Reclamation's determination that the Proposed Action is not likely to adversely affect Hoover's spurge, San Joaquin Valley Orcutt grass, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn, California tiger salamander, Buena Vista Lake shrew, Fresno kangaroo rat, or critical habitat designated for these species.

Cultural Resources

The Proposed Action is the type of activity that has no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). 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 the Proposed Action.

Indian Sacred Sites

There will be no modification of water conveyance facilities and no activities that will result in ground disturbance under the Proposed Action; therefore, neither restriction of access to nor adverse effects to the physical integrity of any sacred sites will occur.

Indian Trust Assets

No impact to Indian Trust Assets will occur under the Proposed Action as there are none in the Proposed Action area.

Environmental Justice

The Proposed Action will provide an option for some amount of flood protection within the Tulare Lake bed and reduce adverse impacts to minority or low-income farm laborers. In addition, use of this water within the Friant Division service area could provide additional beneficial impacts to minority or low-income populations as supplemental water will be used to maintain agricultural production within these areas as well as M&I.

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 previously described are expected to continue with or without implementing the Proposed Action. The Non-CVP water introduced under the Proposed Action will be intermittent, unpredictable and of small quantity 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 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.

Air Quality

No construction or modification of facilities will be needed under the Proposed Action to pump RD770's non-CVP water into the FKC. In addition, the Non-CVP water will be moved through the FKC via gravity. Therefore, the Proposed Action will not produce emissions that impact air quality and a conformity analysis is not required pursuant to the Clean Air Act.

Global Climate

The Proposed Action will not involve physical changes to the environment or construction activities and, therefore, will not impact global climate change. However, the introduction of Non-CVP floodwater into the FKC will require the use of electric pumps as RD770 has recently converted their remaining diesel pumps to electric. Calculated carbon dioxide emissions are well below the Environmental Protection Agency's threshold for annually reporting greenhouse gas (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 to global climate change.

Noise

The electric powered pumps used to pump Non-CVP water into the FKC will generate infrequent, periodic noise; however, noise receptors are relatively far away from the pumps. RD770 is required by Reclamation's license to comply with the Fresno and Tulare County Noise Ordinance regulations. 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. 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 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 adverse impacts to noise levels as a result of the Proposed Action.

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 Warren Act contract and the 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 as outlined in Appendix A in EA-12-100, 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. In addition, the Proposed Action will not result in a cumulative decrease in the generation of electrical power as the water to be pumped will be pumped after it has been released from dams and power producing facilities.

Reclamation’s action is the conveyance of the Non-CVP water within the FKC where it will either be diverted by Friant Division contractors downstream of RD770’s pump-in locations or discharged into the Kern River. Subsequent actions on the Kern River are beyond Reclamation’s authority and approvals. Due to the amount of precipitation during flood years, floodwater will not likely be pumped to maintain or grow crops in the same year. Diverted or discharged

floodwater could be used to recharge the groundwater locally for later extraction during dry periods to meet a small fraction of future demands. The use of this stored floodwater in dry seasons will be used to maintain and grow crops on existing agricultural lands. No native or previously untilled lands will be put into production. Therefore, there will be no long-term cumulative effects as a result of the Proposed Action.

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. The Corps determined that small flood events (less than 3.2-year events) will no longer flood the lakebed and larger events will be decreased in magnitude. The effects of these reductions were quantified by the Corps and the Service, 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 will be provided for water birds.

Non-CVP water introductions by RD770 will 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 will 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 will 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.

Reclamation and the Service have jointly developed an ESA compliance strategy intended to minimize further losses within the CVP service areas and to offset impacts from ongoing CVP operations. Reclamation and the Service 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. Service stated in that BO that Reclamation's ESA 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 will not be expected to differ significantly, with or without the Proposed Action.

The Non-CVP water introduced under the Proposed Action will remain intermittent, unpredictable and small in quantity in comparison to the operation of the FKC. In accordance with the license, the Non-CVP water impounded, stored or carried will not be used otherwise than as prescribed by law. The Floodwater Report will 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.

The availability of this Non-CVP water is infrequent, unreliable and small compared to the existing water demand. The Proposed Action will not provide long-term or reliable water supplies that will support growth nor contribute to cumulative impacts on population or housing. 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 will not result in significant impacts to socioeconomic resources. This Non-CVP water will provide local recharge to the groundwater within the Proposed Action area providing a slight socioeconomic benefit to groundwater users.

The cost for emergency services will likely increase under the No Action Alternative due to damage from flooding; however, costs will likely be reduced under the Proposed Action. This benefit will be on a small scale and is contingent upon available capacity in the FKC and the ability to dispose of Non-CVP water. Overall, the Proposed Action will not contribute to adverse cumulative impacts to socioeconomic resources within the Proposed Action area.

GHG emissions are considered to have cumulative impacts; however, the estimated carbon dioxide emissions for the Proposed Action are less than 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. Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change will be addressed within Reclamation's operation flexibility and therefore surface water resource changes due to climate change will be the same with or without either alternative.

Since there are no impacts to noise, land use, cultural resources, Indian Sacred Sites, and Indian Trust Assets 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.

Overall there will be no significant cumulative impacts caused by the Proposed Action.

RECLAMATION

Managing Water in the West

Final Environmental Assessment

2013 Warren Act Contract and License for Delta Lands Reclamation District No. 770

EA-12-100

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

January 2013

Mission Statements

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

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

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Section 1 Introduction

1.1 Background

Delta Lands Reclamation District Number 770 (RD770) has requested a 25-year Warren Act contract for conveyance of Non-Central Valley Project (Non-CVP) floodwater within federal facilities and a 25-year license for RD770 pump stations located within the Bureau of Reclamation (Reclamation) right-of-way (ROW). The negotiated draft 25-year Warren Act contract (11-WC-20-0157) was posted for a 60-day public review on October 26, 2012 and is available at the following website: http://www.usbr.gov/mp/warren_act/. Reclamation prepared a draft Environmental Assessment (EA)-07-103 *Long-term Warren Act Contract and License for Delta Lands Reclamation District No. 770* and released the draft EA for public comment during a 30-day public comment period on January 13, 2012. The draft EA is available at the following website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=8881. The draft EA has not been finalized as informal consultation with the U.S. Fish and Wildlife Service (Service) pursuant to Section 7 of the Endangered Species Act (ESA) is still pending.

Since the finalization and approval of the 25-year Warren Act contract and license is not expected to be completed and executed until after the 2012/2013 rainy season, RD770 has requested a one-year license and a one-year Warren Act contract in case damaging floodwater should threaten RD770 pending completion of the long-term actions.

1.2 Purpose and Need

The purpose of the Proposed Action is to pump flood flows into the Friant-Kern Canal (FKC), thereby protecting RD770 lands which are situated in the natural flood plain from Non-CVP floodwater 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. The time period covered in this analysis is January 2013 through December 2013.

1.3 Relevant Legal and Statutory Authorities

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 as amended, updated, and/or superseded (all of which are incorporated by reference):

Reclamation Project Act

Section 14 of the Reclamation Project Act of 1939 (53 Stat. 1197; 43 U.S.C., subsection 389) authorizes the Secretary, for the purpose of orderly and economical construction or operation and maintenance of any project, to enter into such contracts for exchange or replacement of water,

water rights, or electric energy or for the adjustment of water rights, as in his judgment are necessary and in the interests of the United States and the project.

Warren Act

The Warren Act (Act of February 21, 1911; Chapter 141 (36 Stat. 925)) authorizes Reclamation to enter into contracts to impound, store, and/or convey non-project water when excess capacity is available in federal facilities.

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 reviewed 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. Monitoring standards also include measuring depth to groundwater to avoid localized impacts due to well drawdown. Water quality criteria for introduction of RD770's non-CVP water into the FKC are included in Appendix A.

1.4 Scope

This EA evaluates the execution of a one-year license and one-year Warren Act contract for the time period January 1, 2013 through December 31, 2013. In the event the long-term Warren Act contract and license are executed, the one-year contract and license would be superseded. The EA 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.

1.5 Resources of Potential Concern

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

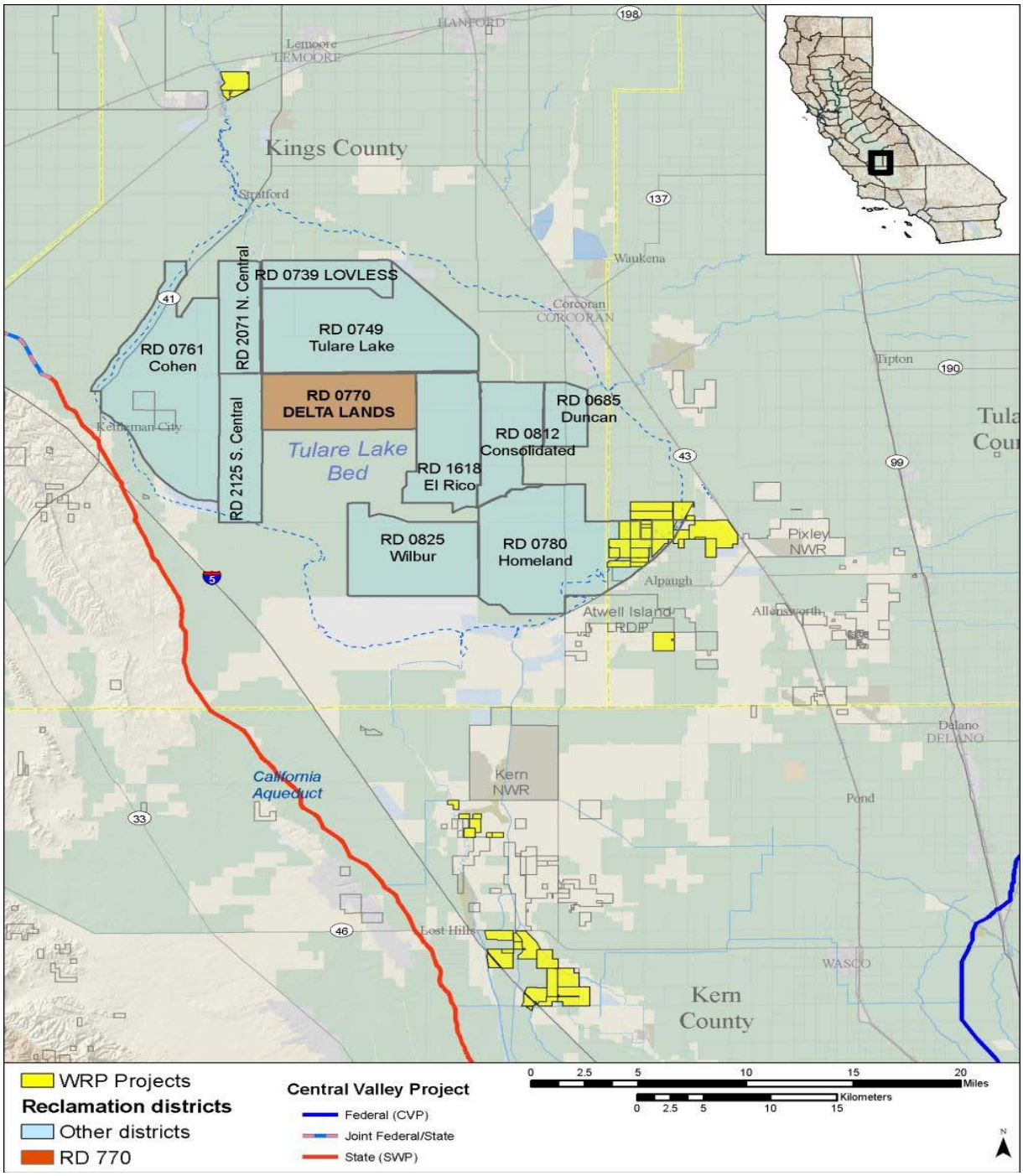

Figure 1-1 Location of Reclamation Districts and Wetland Reserve Programs (WRP) near RD770

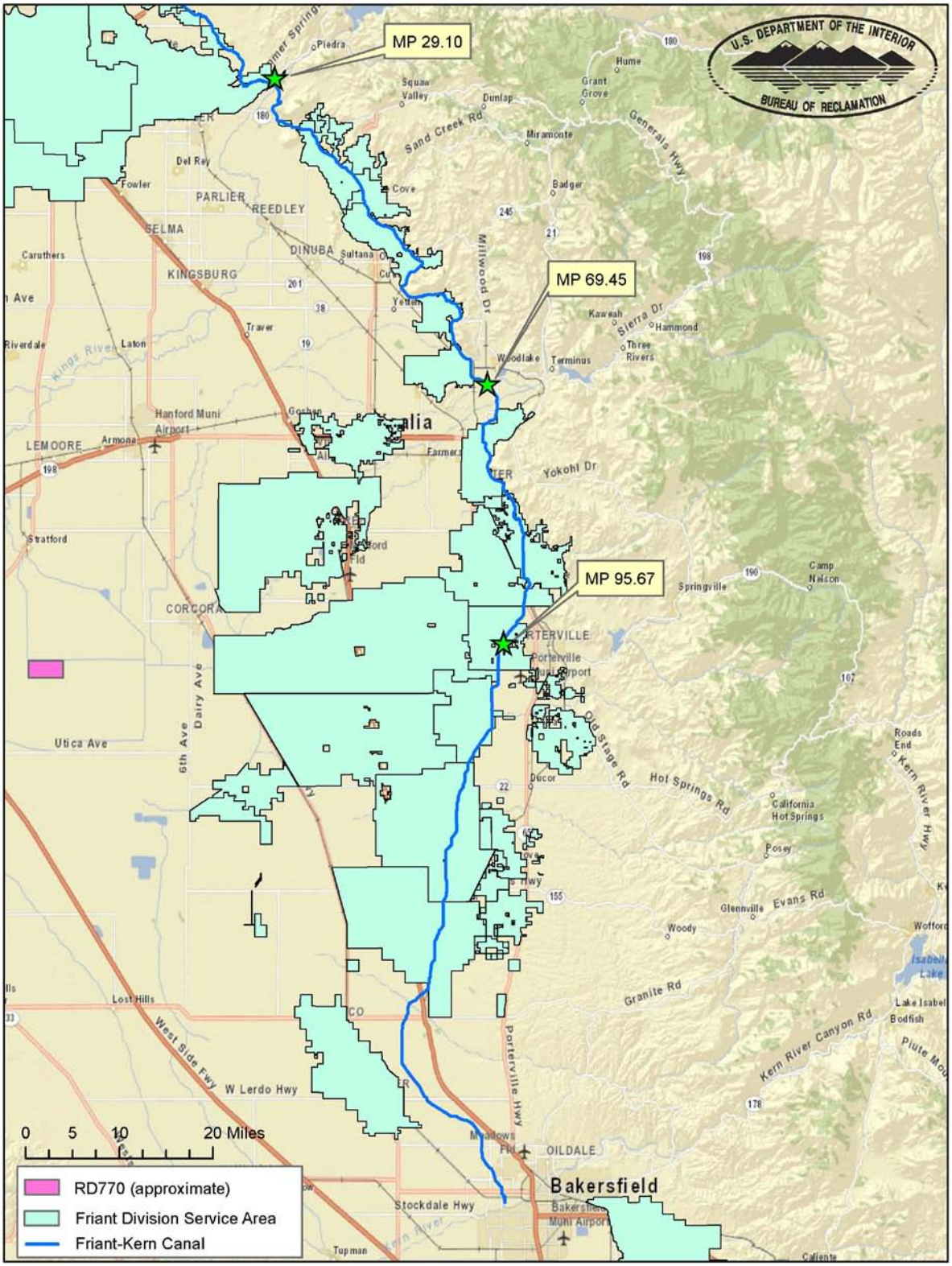

Figure 1-2 Proposed Action Locations

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 temporary Warren Act contract in 2013 with RD770 to divert and/or discharge Non-CVP water nor would Reclamation issue a one-year 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 Warren Act 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 one-year Warren Act contract with RD770 to utilize otherwise unused capacity in the FKC to convey Non-CVP floodwater pumped from the Kings, St John's and Tule Rivers from January 1, 2013 through December 31, 2013 for diversion by Friant Division contractors and/or for discharge into the Kern River. The Non-CVP floodwater 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, MP 69.45 for the St. John's River, and MP 95.67 for the Tule River. The maximum amount of Non-CVP floodwater from the three rivers to be conveyed in the FKC from January 1, 2013 through December 31, 2013 is 250,000 acre-feet (AF).

Non-CVP floodwater 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 A); 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. Non-CVP floodwater would be introduced to the FKC through existing turnouts without modification to the FKC.

Once introduced into the FKC, the Non-CVP floodwater 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	Madera Irrigation District
Chowchilla Water District	Gravelly Ford Water District	Orange Cove Irrigation District
City of Fresno	International Water District	Porterville Irrigation District
City of Lindsay	Ivanhoe Irrigation District	Saucelito Irrigation District
City of Orange Cove	Kaweah Delta-Water Conservation District	Shafter-Wasco Irrigation District
County of Madera	Kern-Tulare Water District	Southern San Joaquin Municipal Utility District
Delano-Earlimart Irrigation District	Lewis Creek Irrigation District	Stone Corral Irrigation District
Exeter Irrigation District	Lindmore Irrigation District	Tea Pot Dome Water District
Fresno County Waterworks #18	Lindsay-Strathmore Irrigation District	Terra Bella Irrigation District
Fresno Irrigation District	Lower Tule River Irrigation District	Tulare Irrigation District

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 Warren Act contract. The Floodwater Report would be due by February 28, 2014.

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 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. 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 Warren Act contract (see Appendix A 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 floodwater 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.

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Section 3 Affected Environment and Environmental Consequences

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

3.1 Water Resources

3.1.1 Affected Environment

The affected environment for the introduction of Non-CVP floodwater from the Kings, St. Johns, and Tule rivers to the FKC for diversion by Friant Division contractors or discharge to the Kern River is the same as previously identified in EA-07-103 and is not repeated here. The affected environment in this EA will focus on updates to the previous affected environment as well as areas that were not previously covered.

Floodwater Volumes Introduced Under Previous Contracts

Between Water Years 1978 and 2011, RD770 held temporary or long-term Warren Act contracts for introduction of Non-CVP water into the FKC. During this 33 year period, Non-CVP water was only introduced 10 times for a total volume of approximately 753,408 AF (Table 1-1 in EA-07-103). The Non-CVP water was introduced, on average, every three years. In five of the nine years, Non-CVP water was pumped from only a single river in any given year (Tables 1-1 and 3-1 in EA-07-103). 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 (Tables 1-1 and 3-1 in EA-07-103). Maximum introductions of 248,100 AF in 1983 and 202,583 AF in 1998 into the FKC by RD770 were in response to record setting wet seasons (Table 3-1 in EA-07-103). However, total volumes pumped in a single year averaged 63,946 AF. Percentages of Non-CVP floodwater conveyed in the FKC during pump-in contract years ranged from less than 1 percent to approximately 19 percent of total water conveyed (Table 3-1 below).

Table 3-1 Percentage of Non-CVP Floodwater Conveyed in FKC

Water Year of Introduction	CVP Water Conveyed in the FKC from Millerton Lake (AF)	Non-CVP Floodwater Introduced into the FKC (AF)*	Total Water Conveyed in the FKC (AF)	Percent of Non-CVP Floodwater Conveyed in the FKC
1978	**1,661,475	9,100	1,670,575	0.5%
1980	**1,661,475	5,100	1,666,575	0.3%
1982	**1,661,475	32,500	1,693,975	2%
1983	**1,661,475	248,100	1,909,575	13%
1986	1,484,979	93,853	1,578,832	6%
1995	1,636,020	12,700	1,648,720	0.8%
1997	1,204,632	109,574	1,314,206	9%
1998	889,165	202,583	1,091,748	18.5%
2006	1,440,078	29,206	1,469,284	2%
2010	1,129,975	16,204	1,146,17	0.9%
2011	1,050,771	621	1,051,392	0.1%
2012	***419,647	7,807	427,454	1.8%

*Volumes introduced were provided by FWA and are based on Contract Years (March 1 through February 28/29 of the following year.

**Amounts are approximate.
***Amount conveyed from March 2012 through November 2012.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, Reclamation would not approve the one-year Warren Act 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.

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 in EA-07-103). 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 one-year Warren Act 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. If the quality of the Non-CVP water from one or more of the rivers will significantly degrade the quality of water in or introduced into the FKC, RD770 will be required to immediately terminate pumping into the canal from the source that will cause the degradation. 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 138 percent in all three rivers (Table 3-1 and Figures 3-2, 3-3, 3-4 in EA-07-103). 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 Lake bed. RD770 would continue to coordinate and provide water to wetland areas in the vicinity of the Tulare Lake bed as in the past, including providing water to restored wetlands.

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 with or without the Proposed Action.

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 as water diverted would only be done during flood flows and under the permission of the respective Water Masters.

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, total dissolved solids (TDS), alkalinity, bicarbonate conductivity and coliform (see Tables 3-3 to 3-5 in EA-07-103). 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 Warren Act contract obligates RD770 to comply with Reclamation's water quality monitoring requirements and standards (see Appendix A). Water quality monitoring would be done by RD770, FWA, Friant Division municipal and industrial (M&I) water uses, and Reclamation. 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. 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.

San Joaquin River Restoration The Kings River is hydrologically linked to the San Joaquin River via the James Bypass and the Fresno Slough. During flood events, water may be diverted from the Kings River to the San Joaquin River via the James Bypass as floodwater is directed down the South Fork of the Kings River when the North Fork is flowing at capacity. As floodwaters are only released to the South Fork when the North Fork is flowing at capacity, the James Bypass and Fresno Slough would not experience a decrease in flood flows. Consequently, flows in the North Fork (and James Bypass) would be unaffected by the Proposed Action. Because flows in the James Bypass would not be affected, the Proposed Action would have no effect on San Joaquin River Restoration flows.

Flows from the Kaweah/St. Johns and Tule rivers drain directly into the Tulare Lakebed, which historically (in 1870) was hydrologically connected to the San Joaquin River. At present, there is only rare hydrologic connection; therefore, introduction of floodwater from the Kaweah/St. Johns and Tule rivers would have no effect on San Joaquin River Restoration flows.

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 holders' surface water supplies or water rights, water quality, or wetlands.

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 the Warren Act 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 A, 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 Land Use

3.2.1 Affected Environment

The affected environment is the same as previously identified in EA-07-103 and is not repeated here.

3.2.2 Environmental Consequences

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.

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 likely continue as it has in the past. Conveyance of the Non-CVP water would be infrequent, intermittent, unpredictable and

small in quantity, 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.

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 Non-CVP water within the FKC where it would either be diverted by Friant Division contractors downstream of RD770's pump-in locations or discharged into the Kern River. Subsequent actions on the Kern River 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. Diverted or discharged floodwater could be used to recharge the groundwater locally for later extraction during dry periods to meet a small fraction of future demands. 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.

3.3 Biological Resources

3.3.1 Affected Environment

This section analyzes the potential impacts to federal ESA 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 3-2) was obtained on December 21, 2012, by accessing the Service's Database: http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists_auto-

letter.cfm The list is for the following U.S. Geological Survey 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 (Service 2012).

Table 3-2 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 *Branchinecta lynchi*	FT & CH	Kings, St. John's, Tule	Kings, St. John's/Kaweah, Tule
Vernal pool tadpole shrimp *Lepidurus packardi*	FE & CH		Kings
Conservancy fairy shrimp *Branchinecta conservatioi*	FE		
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	St. John's	Kings, St. John's/Kaweah
Fish			
Delta smelt *Hypomesus transpacificus*	FT		
Amphibians and Reptiles			
California tiger salamander (*Ambystoma californiense*)	FT & CH	Kings, St. John's	Kings, St. John's/Kaweah
Blunt-nosed leopard lizard *Gambelia sila*	FE		Tule
California red-legged frog *Rana aurora draytonii*	FT		
Giant garter snake *Thamnophis gigas*	FT		Kings
Mountain yellow-legged frog *Rana muscosa*	FCS		
Birds			
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT		Kings, St. John's/Kaweah, Tule
California Condor *Gymnogyps californianus*	FE		
Mammals			
Buena Vista Lake shrew (*Sorex ornatus* ssp. *relictus*)	FE & CH		Kings, St. John's/Kaweah, Tule
Fresno kangaroo rat *Dipodomys nitratoides exilis*	FE		Kings
Giant kangaroo rat *Dipodomys ingens*	FE		
Tipton kangaroo rat *Dipodomys nitratoides nitratoides*	FE	Tule	Kings, Tule
San Joaquin kit fox *Vulpes macrotis mutica*	FE	St. John's, Tule	Kings, St. John's/Kaweah, Tule
PLANTS			
California jewelflower (*Caulanthus californicus*)	FE		Kings, St. John's/Kaweah, Tule
Greene's tuctoria (*Tuctoria greenei*)	FE		Kings, St. John's/Kaweah, Tule

San Joaquin adobe sunburst *Pseudobahia peirsonii*	FT	Kings, St. John's, Tule	Kings, St. John's/Kaweah, Tule
Keck's checkerbmallow *Sidalcea keckii*	FE & CH		
San Joaquin Valley orcutt grass *Orcuttia inaequalis*	FT & CH		
Hoover's spurge *Chamaesyce hooveri*	FT & CH		St. John's /Kaweah
Common Name and Scientific Nomenclature	**Listed Status**	**CNDDB Occurrences Within Quadrangles Covering:**	
		Pumping Facility(s)	**Drainage(s)**
Springville clarkia *Clarkia inaequalis*	FT		
FE = Federally Endangered		CH=Critical Habitat	
FT = Federally Threatened		FCS= Federal Candidate Species	

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

Table 3-3 Species Occurrences identified in CNDDB but not on Service Species List

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

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 Buena Vista Lake shrew, 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 NEPA (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 Wetland Reserve Program (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).

3.3.2 Environmental Consequences

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.

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 CNDDB 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 3-2 and 3-3). 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. Diversion of water during flood events would not measurably affect the likelihood of a flood event which could affect habitat for Fresno kangaroo rat. In July 2012, designated critical habitat was proposed for Buena Vista Lake shrew (*Sorex ornatus* ssp. *relictus*). The Lemoore Wetland Unit (Unit 7) lies just east of the Kings River. Flooding on the Kings River could flood critical habitat. Buena Vista Lake shrew (BVLS) is adapted to riparian habitat and edges of wetland areas (Service 2012) and the water-edge interface likely creates habitat for them. A reduction in flows to Kings River during flood events from the proposed action is expected to occur infrequently and based on past hydrology, the need to convey the Non-Project water would occur about only one out of four or five years on average. Because the reduction in flows to the Kings River from the proposed action tends to occur infrequently, but also because little flow during flood periods are diverted, the effect of the proposed action on BVLS and the designated BVLS critical habitat, if any, would be minor. Other areas of BVLS critical habitat would not be affected by Reclamation's action.

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 in EA-07-103). 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 in EA-07-103). 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 in EA-07-103). 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 in EA-07-103). 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 Warren Act 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.

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 Service, 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 Service have jointly developed an ESA compliance strategy intended to minimize further losses within the CVP service areas and to offset impacts from ongoing CVP operations. Reclamation and the Service 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. Service stated in that BO that Reclamation's ESA 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 quantity 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.

3.4 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.

3.4.1 Affected Environment

The affected environment is the same as previously identified in EA-07-103 and is not repeated here.

3.4.2 Environmental Consequences

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. Consequently, there could be adverse impacts to minority and disadvantaged populations which would be inconsistent with EO 12898.

Proposed Action

The Proposed Action would provide an option for some amount of flood protection within the Tulare Lake bed and reduce adverse impacts to minority or low-income farm laborers. In addition, use of this water within the Friant Division service area could provide additional beneficial impacts to minority or low-income populations as supplemental water would be used to maintain agricultural production within these areas as well as M&I.

Cumulative Impacts

Under the No Action alternative, there could be cumulatively adverse impacts to disadvantaged populations due to potential flooding damage. 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.

3.5 Socioeconomic Resources

3.5.1 Affected Environment

The affected environment is the same as previously identified in EA-07-103 and is not repeated here.

3.5.2 Environmental Consequences

No Action

Under the No Action alternative, 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.

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 of small quantity 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.

Cumulative Impacts

The availability of this Non-CVP water is infrequent, unreliable and small in quantity 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 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. This Non-CVP water would provide local recharge to the groundwater within the Proposed Action area providing a slight socioeconomic benefit to groundwater users.

The cost for emergency services would likely increase under the No Action Alternative due to damage from flooding; however, costs would likely be reduced under the Proposed Action. This benefit would be on a small scale and is contingent upon available capacity in the FKC and the ability to dispose of Non-CVP water. Overall, the Proposed Action would not contribute to adverse cumulative impacts to socioeconomic resources within the Proposed Action area.

3.6 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 2012a).

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO_2), 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: CO_2, methane (CH_4), nitrous oxide, and fluorinated gasses (EPA 2012a).

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 CO_2 and CH_4, 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 2012b).

Climate change has only recently been widely recognized as an imminent threat to the global climate, economy, and population. As a result, the national, state, and local climate change regulatory setting is complex and evolving.

In 2006, the State of California issued the California Global Warming Solutions Act of 2006, widely known as Assembly Bill 32, which requires California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is further directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020.

In addition, the EPA has issued regulatory actions under the CAA as well as other statutory authorities to address climate change issues (EPA 2011c). In 2009, the EPA issued a rule (40 CFR Part 98) for mandatory reporting of GHG by large source emitters and suppliers that emit 25,000 metric tons or more of GHG [as CO_2 equivalents per year] (EPA 2009). The rule is intended to collect accurate and timely emissions data to guide future policy decisions on climate change and has undergone and is still undergoing revisions (EPA 2012c).

3.6.1 Affected Environment

The affected environment is the same as previously identified in EA-07-103 and is not repeated here.

3.6.2 Environmental Consequences

No Action

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

Proposed Action

Neither the Proposed Action nor the No Action alternative would involve physical changes to the environment or construction activities and, therefore, would not impact global climate change. However, the introduction of Non-CVP floodwater into the FKC would require the use of electric pumps as RD770 has recently converted their remaining diesel pumps to electric. These pumps would produce CO_2 emissions which would contribute to GHG emissions within the San Joaquin Valley. However, pump-in events would be intermittent over a one-year period. Estimated CO_2 emissions from the 21 pumps run constantly over a five month are included in Table 3-12.

Table 3-4 Calculated CO_2 Emissions

Pumping Station	Number of Pumps	Annual Kilowatt Hours	CO_2 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 CO_2 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 to global climate change.

Cumulative Impacts

GHG emissions are considered to have cumulative impacts; however, the estimated CO_2 emissions for the Proposed Action are less than 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.

Global climate change is expected to have some effect on the snow pack of the Sierra Nevada and the runoff regime. Current data are not yet clear on the hydrologic changes and how they will affect the San Joaquin Valley. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility and therefore surface water resource changes due to climate change would be the same with or without either alternative.

3.7 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there is no potential for direct, indirect, or cumulative effects to the following resources:

Noise

No noise impacts would occur under the No Action Alternative as conditions would remain the same as existing conditions. The electric powered pumps used to pump Non-CVP water into the FKC would generate infrequent, periodic noise; however, noise receptors are relatively far away

from the pumps. RD770 is required by Reclamation's license to comply with the Fresno and Tulare County Noise Ordinance regulations. 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. 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 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.

Cultural Resources

No impact to cultural resources would occur under the No Action Alternative as conditions would remain the same as existing conditions. The Proposed Action is the type of activity that has no potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1). 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.

Indian Sacred Sites

There would be no modification of water conveyance facilities and no activities that would result in ground disturbance under the No Action and Proposed Action alternatives; therefore, neither restriction of access to nor adverse effects to the physical integrity of any sacred sites would occur.

Indian Trust Assets

No impact to Indian Trust Assets would occur under the No Action Alternative or the Proposed Action as there are none in the Proposed Action area.

Air Quality

There would be no impacts to air quality under the No Action alternative as conditions would remain the same as existing conditions. No construction or modification of facilities would be needed under the Proposed Action to pump RD770's non-CVP water into the FKC. In addition, the Non-CVP water would be moved through the FKC via gravity. Therefore, the Proposed Action would not produce emissions that impact air quality and a conformity analysis is not required pursuant to the Clean Air Act.

Section 4 Consultation and Coordination

4.1 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the ESA 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.

Reclamation initiated consultation with the Service on December 20, 2012 for concurrence on their determination that the Proposed Action may affect but is not likely to adversely affect federally listed threatened or endangered species or their designated habitats. On December 31, 2012, the Service concurred with Reclamation's determination that the Proposed Action is not likely to adversely affect Hoover's spurge, San Joaquin Valley Orcutt grass, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn, California tiger salamander, Buena Vista Lake shrew, Fresno kangaroo rat, or critical habitat designated for these species (see Appendix B).

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Section 6 Acronyms and Abbreviations

AF	Acre-foot
BO	Biological Opinion
BVLS	Buena Vista Lake shrew
CARB	California Air Resources Board
CH_4	Methane
CNDDB	California Natural Diversity Data Base
CO_2	Carbon dioxide
Corps	U.S. Army Corps of Engineers
EA	Environmental Assessment
EO	Executive Order
ESA	Endangered Species Act
FKC	Friant-Kern Canal

FWA	Friant Water Authority
GHG	Greenhouse gases
M&I	Municipal and Industrial
MP	Milepost
NEPA	National Environmental Policy Act
Non-CVP	Non-Central Valley Project
RD770	Delta Lands Reclamation District No. 770
Reclamation	Bureau of Reclamation
ROW	Rights-of-way
Service	U.S. Fish and Wildlife Service
TDS	Total Dissolved Solids
VELB	Valley elderberry longhorn beetle
WRP	Wetland Reserve Program

Section 7 References

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FINAL ENVIRONMENTAL ASSESSMENT (12-100)

2013 WARREN ACT CONTRACT AND LICENSE FOR DELTA LANDS RECLAMATION DISTRICT No. 770

Appendix A
Water quality requirements for the Friant-Kern Canal

January 2013

RECLAMATION

Managing Water in the West

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals

Water Quality Monitoring Requirements

Friant-Kern Canal in Tulare County (Credit: Ted Holzem, Mintier & Associates)

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region

March 7, 2008

United States Bureau of Reclamation
South-Central California Area Office
and
Friant Water Authority

Policy for Accepting Non-Project Water into the Friant-Kern and Madera Canals Water Quality Monitoring Requirements

This Policy describes the approval process, implementation procedures, and responsibilities of a Contractor requesting permission from the U.S. Bureau of Reclamation (Reclamation) to introduce non-project water into the Friant-Kern and Madera Canals, features of the Friant Division of the Central Valley Project (CVP). The monitoring requirements contained herein are intended to ensure that water quality is protected and that domestic and agricultural water users are not adversely impacted by the introduction of non-project water. The discharge of non-project water shall not in any way limit the ability of either Reclamation or the Friant Water Authority (Authority) to operate and maintain the Canals for their intended purposes nor shall it adversely impact existing contracts or any other agreements. The discharge of non-project water into the Canals will be permissible only when there is excess capacity in the system as determined by the Authority and or Reclamation.

The Contractor shall be responsible for securing other requisite Federal, State or local permits.

Reclamation, in cooperation with the Authority, will consider all proposals to convey non-project water based upon this Policy's water quality criteria and implementation procedures established in this document. Table 1 provides a summary of the Policy's water quality monitoring requirements.

This policy is subject to review and modification by Reclamation and the Authority. Reclamation and the Authority reserve the right to change the water quality monitoring requirements for any non-project water to be conveyed in the Friant-Kern and Madera Canals.

A. Types of Non-Project Water

This policy recognizes three types of non-project water with distinct requirements for water quality monitoring.

1. "***Type A***" Non-Project Water

Water for which analytical testing demonstrates complete compliance with California drinking water standards (Title 22)[1], plus other constituents of concern recommended by the California Department of Health Services. Type A water must be tested every year for the full list of

1. Title 22. The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

constituents listed in Table 2. No in-prism (within the Canal) monitoring is required to convey Type A water.

2. "***Type B***" Non-Project Water

Water that generally complies with Title 22, but may exceed the Maximum Contaminant Level (MCL) for certain inorganic constituents of concern to be determined by Reclamation and the Authority on a case-by-case basis. This water may be discharged into the Canal over short-intervals. Type B water shall be tested every year for the full list of constituents in Table 2, and more frequently for the identified constituents of concern. Flood Water and Ground Water are Type B non-project water.

Type B water may not be pumped into the Friant-Kern Canal within a half-mile upstream of a delivery point to a CVP Municipal and Industrial contractor. At this time, there are no M & I Contractors served from the Madera Canal.

The introduction of Type B water into the Friant-Kern and Madera Canals will require regular in-prism monitoring to confirm that the CVP water delivered to downstream customers is suitable in quality for their needs. The location, frequency, and parameters of in-prism monitoring will be determined by Reclamation and the Authority on a case-by-case basis.

3. "***Type C***" Non-Project Water

Type C Water is non-project water that originates in the same source as CVP water but that has not been appropriated by the United States. For example, non-project water from a tributary within the upper San Joaquin River watershed, such as the Soquel Diversion from Willow Creek above Bass Lake, is Type C water. Another example is State Water Project water pumped from the California Aqueduct and Cross Valley Canal into the lower Friant-Kern Canal. No water quality analyses are required to convey Type C water through the Friant-Kern or Madera Canals because it is physically the same as Project water.

B. Authorization

The Warren Act (Act of February 21, 1911, ch. 141, 36 Stat. 925), as supplemented by Section 305 of Public Law 102-250, authorizes Reclamation to contract for the carriage and storage of non-project water when excess capacity is available in Federal water facilities. The terms of this Policy are also based on the requirements of the Clean Water Act (33 U.S.C. 1251 et seq.), the Endangered Species Act of 1973 (P.L. 93-205), the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. 4321 et seq.), the Reclamation Act of 1902 (June 17, 1902 as amended), and the Safe Drinking Water Act of 1974 (P.L. 93-523, amended 1986) and Title XXIV of the Reclamation Projects Authorization and Adjustments Act of 1992 (P.L. 102-575, 106 Stat 4600).

C. General Requirements for Discharge of Non-Project Water

1. Contract Requirements

A Contractor wishing to discharge non-project water into the Friant-Kern or Madera Canals must first execute a contract with Reclamation. The contract may be negotiated with Reclamation's South Central California Area Office (SCCAO) in Fresno.

2. Facility Licensing

Each non-project water discharge facility must be licensed by Reclamation and the Authority. The license for erection and maintenance of structures may be negotiated with the SCCAO.

3. Prohibition When the Canal is Empty

Non-project shall not be conveyed in the Friant-Kern or Madera Canals during periods when the canal is de-watered for maintenance.

D. Non-Project Discharge, Water Quality, and Monitoring Program Requirements

1. General Discharge Approval Requirements

Each source of non-project water must be correctly sampled, completely analyzed, and be approved by Reclamation prior to introduction into the Friant-Kern or Madera Canals. The Contractor shall pay the cost of collection and analyses of the non-project water required under this policy[2].

2. Water Quality Sampling and Analyses

Each source of Type A and B non-project water must be tested every year for the complete list of constituents of concern and bacterial organisms listed in Table 2. The analytical laboratory must be approved by Reclamation (Table 3).

3. Water Quality Reporting Requirements

Water quality analytical results must be reported to the Contracting Officer for review.

4. Type B Water Quality Monitoring

Reclamation will provide a Quality Assurance Project Plan (QAPP) that will describe the protocols and methods for sampling and analysis of Type B non-project water.

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2. Reclamation will pay for the collection and analyses of quarterly baseline samples collected at Friant Dam and Lake Woolomes.

The program may include sampling of canal water upstream and downstream of the Contractor's discharge point into the Friant-Kern or Madera Canal. The location of samples, and the duration and frequency of sampling, and the list of constituents to be analyzed, may be changed upon review of measured trends in concentration of those constituents of concern.

E. Control of Water Quality in the Friant Division

The quality of CVP water will be considered impaired if the conveyance of the Contractor's non-project water is causing the quality of CVP water to exceed a maximum contaminant level specified in Title 22 (Table 2).

Reclamation, in consultation with the Authority, will direct the Contractor to stop the discharge of non-project water from this source into the Friant-Kern or Madera Canal.

F. Baseline Water Quality Analysis

Every four months, Reclamation will collect samples of water from the Friant-Kern Canal near Friant Dam and near Lake Woolomes. These samples will be analyzed for Title 22 and many other constituents. The purpose of theses samples is to identify the baseline quality of water in the canal. No direct analysis within the Madera Canal will be conducted at this time.

The cost of this analysis will be borne by Reclamation under the CVP Baseline water quality monitoring program.

G. Water Quality Data Review and Management

All water quality data must be sent to Reclamation for review, verification, and approval. All water quality data will be entered into a database to be maintained by Reclamation. All field notes and laboratory water quality analytical reports will be kept by the Authority. All water quality data will be available upon request to the Contractor and other interested parties.

Definitions

CVP or Project water
Water that has been appropriated by the United States for the Friant Division of the CVP. The source of Project water in the Friant Division is the San Joaquin River watershed.

Non-project water
Water that has not been appropriated by the United States for the Friant Division of the CVP. This includes groundwater, and surface water from other streams and rivers that cross the Friant-Kern and Madera Canals, such as Wutchumna Ditch.

Maximum Contaminant Level
Usually reported in milligrams per liter (parts per million) or micrograms per liter (parts per billion).

Non-project discharge system
The pipe and pumps from which non-project water enters the Friant Division.

Title 22
The Domestic Water Quality and Monitoring Regulations specified by the State of California Health and Safety Code (Sections 4010-4037), and Administrative Code (Sections 64401 et seq.), as amended.

Type A water
This is non-project water that meets California drinking water standards. This water must be tested every year for the full list of Title 22 constituents. No in-stream monitoring is required to convey Type A water in the Friant Division.

Type B water
This is non-project water that has constituents that may exceed the California drinking water standards. This water must be tested every year for the full list of Title 22 constituents, plus annually for constituents of concern. Field monitoring is required of each source and of water upstream and downstream of the discharge point.

Type C water
This is non-project water from the same watershed as Project water that has not been appropriated by the United States for the Central Valley Project. Water from Soquel Creek diversion or the State Water Project are Type C water. No water quality analyses are required to convey this water in the Friant-Kern Canal.

Table 1. Water Quality Monitoring Requirements - Friant Division, Central Valley Project

Type of Water	Location	How often will a sample be collected?	What will be measured in the water?	Who will collect samples?
Project Water	Friant	January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
	Lake Woolomes	January, April, June, October	Title 22 and bacterial constituents (1) (2)	Reclamation, MP-157
Type A Non-Project Water		Every year	Title 22 and bacterial constituents (1) (2)	Contractor
Type B Non-Project Water		Every year	Title 22 and bacterial constituents (1) (2)	Contractor
		Every month (5)	Constituents of concern (5)	Contractor
		Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
Type C Non-Project Water		None required		
Project water	Upstream of each Type B discharge (4)	Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority
	Downstream of each Type B discharge (4)	Every week (5)	EC, turbidity, etc.(3) (5)	Friant Water Authority

Notes:
(1) California Department of Health Services, California Code of Regulations, Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring, *http://www.dhs.ca.gov/ps/ddwem/publications/Regulations/regulations_index.htm.*
(2) Cryptosporidium, Giardia, total coliform bacteria
(3) Field measurements.
(4) Location to be determined by the Contracting Officer
(5) To be determined by the Contracting Officer, if necessary.

This water quality monitoring program is subject to change at any time by the Contracting Officer.

Revised: 08/16/2007 SCC-107

U.S. Bureau of Reclamation
Friant Water Authority
Friant Division, California
Water Quality Monitoring Requirements

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
Primary Constituents (CCR § 64431)					
Aluminum	µg/L	EPA 200.7	1,000	1	7429-90-5
Antimony	µg/L	EPA 200.8	6	1	7440-36-0
Arsenic	µg/L	EPA 200.8	10	16	7440-38-2
Asbestos	MFL > 10µm	EPA 100.2	7	1	1332-21-4
Barium	µg/L	EPA 200.7	1,000	1	7440-39-3
Beryllium	µg/L	EPA 200.7	4	1	7440-41-7
Cadmium	µg/L	EPA 200.7	5	1	7440-43-9
Chromium	µg/L	EPA 200.7	50	1	7440-47-3
Cyanide	µg/L	EPA 335.4	150	1	57-12-5
Fluoride	mg/L	EPA 300.1	2	1	16984-48-8
Mercury (inorganic)	µg/L	EPA 245.1	2	1	7439-97-6
Nickel	µg/L	EPA 200.7	100	1	7440-02-0
Nitrate (as NO3)	mg/L	EPA 300.1	45	1	7727-37-9
Total Nitrate + Nitrite (as Nitrogen)	mg/L	EPA 353.2	10	1	
Nitrite (as Nitrogen)	mg/L	EPA 300.1	1	1	14797-65-0
Selenium	µg/L	EPA 200.8	50	1	7782-49-2
Thallium	µg/L	EPA 200.8	2	1	7440-28-0
Secondary Constituents (CCR § 64449)					
Aluminum	µg/L	EPA 200.7	200	6	7429-90-5
Chloride	mg/L	EPA 300.1	250/500/600	7	16887-00-6
Color	units	SM 2120 B	15	6	
Copper	µg/L	EPA 200.7	1,000	6	7440-50-8
Foaming agents (MBAS)	mg/L	SM 5540 C	0.5	6	
Iron	µg/L	EPA 200.7	300	6	7439-89-6
Manganese	µg/L	EPA 200.7	50	6	7439-96-5
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	5	6	1634-04-4
Odor - Threshold	threshold units	SM 2150 B	3	6	
Silver	µg/L	EPA 200.7	100	6	7440-22-4
Specific conductance (EC)	µS/cm	SM 2510 B	900/1600/2200	7	
Sulfate	mg/L	EPA 300.1	250/500/600	7	14808-79-8
Thiobencarb	µg/L	EPA 525.2	1	6	28249-77-6
Total dissolved solids (TDS)	mg/L	SM 2540 C	500/1000/1500	7	
Turbidity	NTU	EPA 180.1	5	6	
Zinc	mg/L	EPA 200.7	5	6	7440-66-6

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
Other required analyses (CCR § 64449 (b)(2); CCR § 64670)					
Bicarbonate	mg/L	SM 2320B		8	
Calcium	mg/L	SM3111B		8,12	7440-70-2
Carbonate	mg/L	SM 2320B		8	
Copper	mg/L	EPA 200.7	1.3	14	7440-50-8
Hardness	mg/L	SM 2340 B		8	
Hydroxide alkalinity	mg/L	SM 2320B		8,12	
Lead	mg/L	EPA 200.8	0.015	14	7439-92-1
Magnesium	mg/L	EPA 200.7		8	7439-95-4
Orthophosphate	mg/L	EPA 365.1		12	
pH	units	EPA 150.1		8,12	
Silica	mg/L	EPA 200.7		12	
Sodium	mg/L	EPA 200.7		8	7440-23-5
Temperature	degrees C	SM 2550		12	
Radiochemistry (CCR § 64442)					
Radioactivity, Gross Alpha	pCi/L	SM 7110C	15	3	
Microbiology					
Cryptosporidium	org/liter		No MCL, measure for presence (surface water only)		
Fecal Coliform	MPN/100ml		No MCL, measure for presence (surface water only)		
Giardia	org/liter		No MCL, measure for presence (surface water only)		
Total Coliform bacteria	MPN/100ml		No MCL, measure for presence (surface water only)		
Organic Constituents (CCR § 64444)					
EPA 504.1 method					
Dibromochloropropane (DBCP)	µg/L	EPA 504.1	0.2	4	96-12-8
Ethylene dibromide (EDB)	µg/L	EPA 504.1	0.05	4	206-93-4
EPA 505					
Chlordane	µg/L	EPA 505	0.1	4	57-74-9
Endrin	µg/L	EPA 505	2	4	72-20-8
Heptachlor	µg/L	EPA 505	0.01	4	76-44-8
Heptachlor epoxide	µg/L	EPA 505	0.01	4	1024-57-3
Hexachlorobenzene	µg/L	EPA 505	1	4	118-74-1
Hexachlorocyclopentadiene	µg/L	EPA 505	50	4	77-47-4
Lindane (gamma-BHC)	µg/L	EPA 505	0.2	4	58-89-9
Methoxychlor	µg/L	EPA 505	30	4	72-43-5
Polychlorinated biphenyls	µg/L	EPA 505	0.5	4	1336-36-3
Toxaphene	µg/L	EPA 505	3	4	8001-35-2
EPA 508 Method					
Alachlor	µg/L	EPA 508.1	2	4	15972-60-8
Atrazine	µg/L	EPA 508.1	1	4	1912-24-9
Simazine	µg/L	EPA 508.1	4	4	122-34-9

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 515.3 Method					
Bentazon	µg/L	EPA 515	18	4	25057-89-0
2,4-D	µg/L	EPA 515.1-4	70	4	94-75-7
Dalapon	µg/L	EPA 515.1-4	200	4	75-99-0
Dinoseb	µg/L	EPA 515.1-4	7	4	88-85-7
Pentachlorophenol	µg/L	EPA 515.1-4	1	4	87-86-5
Picloram	µg/L	EPA 515.1-4	500	4	1918-02-1
2,4,5-TP (Silvex)	µg/L	EPA 515.1-4	50	4	93-72-1
EPA 524.2 Method (Volatile Organic Chemicals)					
Benzene	µg/L	EPA 524.2	1	4	71-43-2
Carbon tetrachloride	µg/L	EPA 524.2	0.5	4	56-23-5
1,2-Dibromomethane	µg/L	EPA 524.2	0.05		106-93-4
1,2-Dichlorobenzene	µg/L	EPA 524.2	600	4	95-50-1
1,4-Dichlorobenzene	µg/L	EPA 524.2	5	4	106-46-7
1,1-Dichloroethane	µg/L	EPA 524.2	5	4	75-34-3
1,2-Dichloroethane	µg/L	EPA 524.2	0.5	4	107-06-2
1,1-Dichloroethylene	µg/L	EPA 524.2	6	4	75-35-4
cis-1,2-Dichloroethylene	µg/L	EPA 524.2	6	4	156-59-2
trans-1,2-Dichloroethylene	µg/L	EPA 524.2	10	4	156-60-5
Dichloromethane	µg/L	EPA 524.2	5	4	75-09-2
1,2-Dichloropropane	µg/L	EPA 524.2	5	4	78-87-5
1,3-Dichloropropene	µg/L	EPA 524.2	0.5	4	542-75-6
Ethylbenzene	µg/L	EPA 524.2	300	4	100-41-4
Methyl-tert-butyl ether (MtBE)	µg/L	EPA 524.2	13	4	1634-04-4
Monochlorobenzene	µg/L	EPA 524.2	70	4	108-90-7
Styrene	µg/L	EPA 524.2	100	4	100-42-5
1,1,2,2-Tetrachloroethane	µg/L	EPA 524.2	1	4	79-34-5
Tetrachloroethylene (PCE)	µg/L	EPA 524.2	5	4	127-18-4
Toluene	µg/L	EPA 524.2	150	4	108-88-3
1,2,4-Trichlorobenzene	µg/L	EPA 524.2	5	4	120-82-1
1,1,1-Trichloroethane	µg/L	EPA 524.2	200	4	71-55-6
1,1,2-Trichloroethane	µg/L	EPA 524.2	5	4	79-00-5
Trichloroethylene (TCE)	µg/L	EPA 524.2	5	4	79-01-6
Trichlorofluoromethane	µg/L	EPA 524.2	150	4	75-69-4
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/L	EPA 524.2	1,200	4	76-13-1
Total Trihalomethanes	ug/L	EPA 524.2	80	10	
Vinyl chloride	µg/L	EPA 524.2	0.5	4	75-01-4
Xylene(s)	µg/L	EPA 524.2	1,750	4	1330-20-7
EPA 525.2 Method					
Benzo(a)pyrene	µg/L	EPA 525.2	0.2	4	50-32-8
Di(2-ethylhexyl)adipate	µg/L	EPA 525.2	400	4	103-23-1
Di(2-ethylhexyl)phthalate	µg/L	EPA 525.2	4	4	117-81-7
Molinate	µg/L	EPA 525.2	20	4	2212-67-1
Thiobencarb	µg/L	EPA 525.2	70	4	28249-77-6
EPA 531.1 Method					
Carbofuran	µg/L	EPA 531.1-2	18	4	1563-66-2
Oxamyl	µg/L	EPA 531.1-2	50	4	23135-22-0

Table 2a. Water Quality Constituents

CONSTITUENT OR PARAMETER	Units	Recommended Method	California DHS Maximum Contaminant Level		CAS Registry Number
EPA 547 Method					
Glyphosate	µg/L	EPA 547	700	4	1071-83-6
EPA 548.1 Method					
Endothal	µg/L	EPA 548.1	100	4	145-73-3
EPA 549.2 Method					
Diquat	µg/L	EPA 549.2	20	4	85-00-7
EPA 613 Method					
2,3,7,8-TCDD (Dioxin)	µg/L	EPA 1613	0.00003	4	1746-01-6

Source Data:
Adapted from Marshack, Jon B. August 2003. A Compilation of Water Quality Goals. Prepared for the California Environmental Protection Agency, Regional Water Quality Control Board.

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Table 2b. Unregulated Chemicals (CCR § 64450)

CONSTITUENT OR PARAMETER	Units	Recommended Method	California Department of Health Services Notification Level		Response Level	CAS Registry Number
Boron	mg/L	EPA 200.7	1	9, 17	10	7440-42-8
n-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	104-51-8
sec-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	135-98-8
tert-Butylbenzene	µg/L	EPA 524.2	260	17	2,600	98-06-6
Carbon disulfide	µg/L		160	17	1,600	
Chlorate	µg/L	EPA 300.1	0.8	17	8	
2-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	95-49-8
4-Chlorotoluene	µg/L	EPA 524.2	140	17	1,400	106-43-4
Dichlorofluoromethane (Freon 12)	µg/L	EPA 524.2	1,000	9,17	10,000	75-43-4
1,4-Dioxane	µg/L	SM 8270	3	17	300	123-91-1
Ethylene glycol	µg/L	SM 8015	1,400	17	14,000	107-21-1
Formaldehyde	µg/L	SM 6252	100	17	1,000	50-00-0
n-Propylbenzene	µg/L		260	17	2,600	
HMX	µg/L	SM 8330	350	17	3,500	2691-41-0
Isopropylbenzene	µg/L		770	17	7,700	
Manganese	mg/L		1	17	5	
Methyl isobutyl ketone	µg/L		120	17	1,200	
Napthalene	µg/L	EPA 524.2	17	17	170	91-20-3
n-nitrosodiethylamine (NDEA)	µg/L	1625	0.01	17	0.1	
n-nitrosodimethylamine (NDMA)	µg/L	1625	0.01	17	0.2	
n-nitroso-n-propylamine (NDPA)	µg/L	1625	0.01	17	0.5	
Perchlorate	µg/L	EPA 314	6	9, 17	60	13477-36-6
Propachlor	µg/L	EPA 507 or 525	90	17	900	1918-16-7
p-Isopropyltoluene	µg/L	EPA 524.2	770	17	7,700	99-87-6
RDX	µg/L	SM 8330	0.30	17	30	121-82-4
tert-Butyl alcohol (ethanol)	µg/L	EPA 524.2	12	9,17	1,200	75-65-0
1,2,3-Trichloropropane (TCP)	ug/L	EPA 524.2	0.005	9,17	0.5	96-18-4
1,2,4-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6
1,3,5-Trimethylbenzene	µg/L	EPA 524.2	330	17	3,300	95-63-6
2,4,6-Trinitrotoluene (TNT)	µg/L	SM 8330	1	17	100	
Vanadium	mg/L	EPA 286.1	0.05	9,17	0.5	7440-62-2

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Notes for Tables 2a and 2b

Title 22. California Code of Regulations, California Safe Drinking Water Act and Related Laws and Regulations. February 2007.
http://www.dhs.ca.gov/ps/ddwem/publications/lawbook/PDFs/dwregulations-02-06-07.pdf

[1] Table 64431-A. Maximum Contaminant Levels, Inorganic Chemicals
[2] Table 64432-A. Detection Limits for Purpose of Reporting (DLRs) for Regulated Inorganic Chemicals
[3] Table 644442. Radionuclide Maximum contaminant Levels (MCLs) and Detection Levels for Reporting (DLRs)
[4] Table 64444-A. Maximum Contaminant Levels Organic Chemicals
[5] Table 64445.1-A. Detection Limits for Reporting (DLRs) for Regulated Organic Chemicals
[6] Table 64449-A. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
[7] Table 64449-B. Secondary Maximum Contaminant Levels "Consumer Acceptance Levels"
[8] § 64449(b)(2)
[9] Table 64450. Unregulated Chemicals
[10] Appendix 64481-A. Typical Origins of Contaminants with Primary MCLs
[11] Table 64533-A. Maximum Contaminant Levels and Detection Limits for Reporting Disinfection Byproducts
[12] § 64670.(c)
[13] Table 64678-A. DLRs for Lead and Copper
[14] § 64678 (d)
[15] § 64678 (e)
[16] New Federal standard as of 1/23/2006
[17] Dept Health Services Drinkig Water Notification Levels (June 2006)

RECLAMATION
Managing Water in the West

Table 3. Approved Laboratory List for the Mid-Pacific Region Environmental Monitoring Branch (MP-157)

Basic Laboratory	**Address**	2218 Railroad Avenue Redding, CA 96001 USA
	Contact	Nathan Hawley, Melissa Hawley, Ricky Jensen
	P/F	(530) 243-7234 / (530) 243-7494
	Email	nhawley@basiclab.com (QAO), mhawley@basiclab.com (PM), jcady@basiclab.com (quotes),
		poilar@basiclab.com (sample custody), khawley@basiclab.com (sample custody)
	CC Info	nhawley@basiclab.com, jcady@basiclab.com (sample custody)
	Methods	*Approved only for inorganic parameters (metals, general chemistry)*
BioVir Analytical Laboratories	**Address**	685 Stone Road Unit 6 Benicia, CA 94510 USA
	Contact	Rick Danielson, Lab Director
	P/F	(707) 747-5906 / (707) 747-1751
	Email	red@biovir.com, csj@biovir.com, lb@biovir.com, QAO Jim Truscott jrt@biovir.com
	Methods	*Approved for all biological and pathogenic parameters*
Block Environmental Services	**Address**	2451 Estand Way Pleasant Hill, CA 94523 USA
	Contact	David Block
	P/F	(925) 682-7200 / (925) 686-0399
	Email	dblock@blockenviron.com
	Methods	*Approved for Toxicity Testing.*
California Laboratory Services	**Address**	3249 Fitzgerald Road Rancho Cordova, CA 95742
	Contact	Raymond Oslowski
	P/F	(916) 638-7301 / (916) 638-4510
	Email	rayo@californialab.com
	Methods	*Approved for Chromium VI*
Caltest Analytical Laboratory	**Address**	1885 North Kelly Road Napa, CA 94558
	Contact	Bill Svoboda, Project Manager x29
	P/F	(707) 258-4000 / (707) 226-1001
	Email	bsvoboda@caltestlab.com
	Methods	*Approved for all inorganic parameters and bioligical parameters*
Columbia Environmental Resource Center	**Address**	4200 New Haven Road Columbia, MO 65201 USA
	Contact	Tom May, Research Chemist
	P/F	(573) 876-1858 / (573) 876-1896
	Email	tmay@usgs.gov
	Methods	*Approved for mercury in biological tissue*
Data Chem Laboratories	**Address**	960 West LeVoy Drive Salt Lake City, UT 84123-2547 USA
	Contact	Bob DiRienzo, Kevin Griffiths-Project Manager, Rand Potter - Project Manager, asbestos
	P/F	(801) 266-7700 / (801) 268-9992
	Email	griffiths@datachem.com, Potter@datachem.com Invoicing: (Justin) pate@datachem.com
	Methods	*Approved for asbestos, metals, organochlorine pesticides and PCBs in solids*
Dept. of Fish & Game - WPCL	**Address**	2005 Nimbus Road Rancho Cordova, CA 95670 USA
	Contact	David B. Crane
	P/F	(916) 358-2858 / (916) 985-4301
	Email	dcrane@ospr.dfg.ca.gov
	Methods	*Approved only for metals analysis in tissue.*
Frontier Geosciences	**Address**	414 Pontius North Seattle, WA 98109 USA
	Contact	Shelly Fank - QA Officer, Matt Gomes-Project Manager
	P/F	(206) 622-6960 / (206) 622-6870
	Email	shellyf@frontiergeosciences.com, mattg@frontiergeosciences.com
	Methods	*in low level metals analysis.*

Fruit Growers Laboratory	**Address**	853 Corporation Street Santa Paula, CA 93060 USA
	Contact	David Terz, QA Director
	P/F	(805) 392-2024 / (805) 525-4172
	Email	davidt@fglinc.com
	Methods	*Approved for all inorganic and organic parameters in drinking water.*
Montgomery Watson/Harza Laboratories	**Address**	750 Royal Oaks Drive Ste. 100 Monrovia, CA 91016 USA
	Contact	Allen Glover (project manager), Bradley Cahoon (quotes)
	P/F	(916) 374-8030, 916-996-5929 (AG-cell) / (916) 374-8061
	Email	Allen.Glover@us.mwhglobal.com, Bradley.Cahoon@us.mwhglobal.com
	CC Info	cc. Sam on all communications to Allen. Samer.Momani@us.mwhglobal.com
	Methods	*Approved for all inorganic and organic parameters in drinking water*
Olson Biochemistry Laboratories	**Address**	SDSU: Box 2170, ACS Rm. 133 Brookings, SD 57007 USA
	Contact	Nancy Thiex, Laboratory Director
	P/F	(605) 688-5466 / (605) 688-6295
	Email	Nancy.Thiex@sdstate.edu
	CC Info	For re-analysis: contact Zelda McGinnis-Schlobohm and Nancy Anderson
		Zelda.Schobohm@SDSTATE.EDU, Nancy.Anderson@SDSTATE.EDU
		For analysis questions only: just CC. Nancy Anderson
	Methods	*Approved only for low level selenium analysis.*
Severn Trent Laboratories	**Address**	880 Riverside Parkway West Sacramento, CA 95605 USA
	Contact	Jeremy Sadler
	P/F	(916) 374-4381 / (916) 372-1059
	Email	jsadler@stl-inc.com
	Methods	*Approved for all inorganic parameters and hazardous waste organics* ***except for Ammonia as Nitrogen*** *.* *Ag analysis in sediment, when known quantity is present, request 6010B*
Sierra Foothill Laboratory, Inc.	**Address**	255 Scottsville Blvd, Jackson, CA 95642
	Contact	Sandy Nurse (Owner) or Dale Gimble (QA Officer)
	P/F	(209) 223-2800 / (209) 223-2747
	Email	sandy@sierralab.com, CC: dale@sierralab.com
	Methods	*Approved for all inorganic parameters, microbiological parameters, acute and chronic toxicity.*
Twining Laboratories, Inc.	**Address**	2527 Fresno Street Fresno, CA 93721 USA
	Contact	Jim Brownfield (QA Officer), Sample Control (for Bottle Orders)
	P/F	(559) 268-7021 / (559) 268-0740
	Email	JimB@twining.com cc. to JosephU@twining.com
	Methods	*Approved only for general chemistry and boron analysis.*
U.S. Geological Survey - Denver	**Address**	Denver Federal Center Building 20, MS 973 Denver, CO 80225 USA
	Contact	Stephen A. Wilson
	P/F	(303) 236-2454 / (303) 236-3200
	Email	swilson@usgs.gov
	Methods	*Approved only for inorganic parameters in soil .*
USBR Technical Service Center Denver Soils	**Address**	Denver Federal Center Building 67, D-8750 Denver, CO 80225-0007 USA
	Contact	Juli Fahy or Stan Conway
	P/F	(303) 445-2188 / (303) 445-6351
	Email	jfahy@do.usbr.gov
	Methods	*Approved only for general physical analysis in soils.*
Western Environmental Testing Laboratories	**Address**	475 East Greg Street # 119 Sparks, NV 89431 USA
	Contact	Ginger Peppard (Customer Service Manager), Andy Smith (Lab Director), Michelle Kramer
	P/F	(775) 355-0202 / (775) 355-0817
	Email	ginger@WETLaboratory.com, andy@WETLaboratory.com, michelle@WETLaboratory.com
	Methods	*Approved only for inorganic parameters (metals, general chemistry).*

Revised: 04/16/2007 MP-157

FINAL ENVIRONMENTAL ASSESSMENT (12-100)

2013 WARREN ACT CONTRACT AND LICENSE FOR DELTA LANDS RECLAMATION DISTRICT No. 770

Appendix B
Concurrence Memo from U.S. Fish and Wildlife Service

January 2013

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
08ESMF00-2013-I-0153

DEC 3 1 2012

Memorandum

To: Chief, Resources Management Division, Bureau of Reclamation, South-Central California Area Office, Fresno, California

From: Chief, San Joaquin Valley Division, Endangered Species Program, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Warren Act Contract and License to Convey Non-Project Floodwater in the Friant-Kern Canal from January 1, 2013 through December 31, 2013

This memorandum (Memo) transmits the U.S. Fish and Wildlife Service's (Service) concurrence with the U.S. Bureau of Reclamation's (Reclamation) December 20, 2013, determination that the proposed renewal of a Warren Act Contract and License to Convey non-Project Floodwater into the Friant-Kern Canal for 1-year from January 1, 2013 to December 31, 2013 may affect, but is not likely to adversely affect the federally-listed Hoover's spurge *(Chamaesyce hooveri),* San Joaquin Valley Orcutt grass *(Orcuttia inaequalis),* vernal pool fairy shrimp *(Branchinecta lynchi),* vernal pool tadpole shrimp *(Lepidurus packardi),* valley elderberry longhorn beetle *(Desmocerus californicus dimorphus),* California tiger salamander *(Ambystoma californiense),* Buena Vista Lake shrew *(Sorex ornatus relictus),* Fresno kangaroo rat *(Dipodomys nitratoides exilis),* or critical habitat designated for these species. This response is provided pursuant to section 7(a)(2) of the Endangered Species Act of 1973 (Act) (16 U.S.C. 1531 *et seq)* and in accordance with the regulations governing interagency consultations (50 CFR §402). We received your request for concurrence memorandum for this Project via e-mail on December 21, 2012.

The Proposed Action includes issuance of a Warren Act (43 U.S.C § 523-525) contract and License permitting Delta Lands Reclamation District No.770 (RD 770) to, among other activities, install temporary pumps in the Friant-Kern Canal (FKC) right-of-way, pump up to 250,000 total combined acre feet of "Non-Project Water" into the FKC. The "Non-Project Water" to be conveyed would be pre-1914 appropriative water rights water pumped from the Kings, Kaweah (including St. John's River) and/or Tule Rivers. The water will be conveyed to a variety of potential recipients. Floodwater could threaten RD 770 lands during any water year, but based on past hydrology, flooding is likely to occur during one out of every four or five years on average. The pump stations are located in the FKC right of way, except at the Kings River, where the station is located adjacent to the FKC right of way, and on the Alta Main Canal, immediately downstream of the Alta

Irrigation District diversion on the Kings River. RD 770 will arrange with the water master from the Kings, Kaweah (including St. John's) and Tule Rivers for RD 770's water pumping from these rivers. RD 770 also will arrange with the Friant Water Authority for diversion of water to Friant Division Contractors through turnouts along the FKC and will arrange with the Friant Water Authority and Kern River water master for discharges to the Kern River. Because the Kern River is not a Reclamation facility, no provision is made under the Warren Act contract for the disposition of water discharged to the Kern River.

The Service has reviewed your memorandum, the draft Environmental Assessment and Biological Assessment for the proposed 25-Year renewal of RD 770's Warren Act contract dated January 2012, and additional sources of information in our office files. This information as well as the short duration of this project provided the biological basis sufficient for the Service to concur with Reclamation's determination that the proposed project is not likely to adversely affect any of the species listed above.

Reclamation consulted with the Service in 2008, 2009, 2010 and 2011 and received concurrence from the Service for 1-year renewals of the Warren Act Contract for RD 770 that federally listed species were not likely to be adversely affected and that designated critical habitat was not likely to be adversely modified by Reclamation's issuance of a License and a Warren Act contract with RD 770 covering conveyance of up to 250,000 acre-feet of water annually. Those consultations are incorporated by reference (Service File Nos. 08-I-1373, 08-I-1373-2, 08-I-1373-4, 08-I-1373-5). The Service also previously commented on long-term RD 770 flood contracts in 2004 (Service File No. 04-I-283), in 2002 (Service File No. 02-I-2813) and in 2000 (00-I-0061) and we incorporate those comments by reference.

It is anticipated that during 2013 Reclamation and the Service will complete a consultation on a 25-year renewal of RD 770's Warren Act Contract to convey floodwater into the FKC. The long term effects of reduced flood flows downstream of the FKC on federally listed species will be analyzed in this consultation.

Finally, the Service encourages Reclamation to pursue all feasible means to meet their obligations under section 7(a)(l) of the Act by helping us accomplish species recovery in the San Joaquin Valley. Specifically, Reclamation can meet their obligations by (a) reviewing applicable recovery unit criteria prior to approving water conveyance actions to, or from, recovery units, (b) incorporating recovery tasks into their actions, as appropriate; and (c) meeting in-basin fish and wildlife needs (e.g., Level 4 refuge water supplies and water supply needs for private wetlands in the Tulare Basin) prior to delivering water outside of the existing CVP service areas.

If you have questions or concerns about this consultation or the consultation process in general, please contact Thomas Leeman or Joy Winckel at the letterhead address or at (916) 414-6600.

cc:
Ned Gruenhagen, Bureau of Reclamation, South-Central California Area Office, Fresno California
Tim Rust, Bureau of Reclamation, Mid-Pacific Regional Office, Sacramento California
Julie Vance, California Department of Fish and Game, Fresno California
Scott Frazer, Fish and Wildlife Service, Kern National Wildlife Refuge, Delano California
Walter Bricker, Delta Lands Reclamation District #770, Corcoran California