

RECLAMATION

Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Fresno Irrigation District's Briggs Canal Improvement Project

FONSI-10-058

Recommended by:



Rain Healer
Natural Resources Specialist
South-Central California Area Office

Date: 10/31/2011

Concurred by:



Chuck Siek
Supervisory Natural Resources Specialist
South-Central California Area Office

Date: 11/2/11

Concurred by:



Randy English
Chief, Resources Management Division
South-Central California Area Office

Date: 11/21/11

Approved by:



Doug Deflitch
Acting Deputy Area Manager
South-Central California Area Office

Date: 11/21/11



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 the awarding of a \$300,000 WaterSMART: Water and Energy Efficiency grant (WaterSMART Grant) to Fresno Irrigation District (FID) will not significantly affect the quality of the human environment and an Environmental Impact Statement is not required. This draft Finding of No Significant Impact (FONSI) is supported by Reclamation's draft Environmental Assessment (EA) Number EA-10-058, *Fresno Irrigation District's Briggs Canal Improvement Project*, and is hereby incorporated by reference.

Reclamation provided the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft EA/IS between October 7, 2011 and October 24, 2011. No comments were received.

Background

FID, formed in 1920, comprises some 245,000 acres which lie entirely within Fresno County, California and includes the rapidly growing Fresno-Clovis metropolitan area. In 2006, FID conducted a System Optimization Review on its Fancher Creek Canal System to evaluate possible groundwater banking facilities and needed system improvements. The study recommended several projects, including system improvements along the Briggs Canal.

Proposed Action

Reclamation proposes to award a \$300,000 2010 WaterSMART grant to FID to partially fund system improvements to the Briggs Canal system which includes upgrading existing facilities, re-lining a concrete-lined portion of the canal, and installation of new pipelines, turnouts, control gates and measuring equipment as described in EA-10-058.

Environmental Commitments

FID shall implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action. Environmental consequences for resource areas assume the measures specified will be fully implemented. Copies of reports shall be submitted to Reclamation.

Resource	Protection Measure
Biological Resources	<ul style="list-style-type: none"> Vehicles will use slow speeds (<15 miles per hour), especially at night, when driving through or around the project site to minimize potential for striking or disturbing animals. All excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar material to prevent inadvertent entrapment of wildlife during construction activities. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. Open pipes and culverts will be inspected before being moved or altered to

	<p>prevent wildlife from being injured or trapped.</p> <ul style="list-style-type: none"> If special-status species are encountered during an inspection, they will be left alone to passively exit the area unless otherwise authorized by California Department of Fish and Game (916-445-0045) or United States Fish and Wildlife Service (916-414-6620).
Biological Resources* (BIO-2)	If any tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity shall be conducted by a qualified biologist no more than 15 days before tree removal. If active nests are located within the construction site, nests shall be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance shall occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity shall include the trees on-site, burrows and open buildings (house/garage and shed).
Biological Resources* (BIO-3)	If construction activities must take place during the flowering season (July-September) for Sanford's arrowhead, a pre-disturbance survey for presence shall be conducted by a qualified biologist no more than 15 days before construction. If Sanford's arrowhead is found during survey, FID shall develop a salvage and relocation plan for all affected plants to a suitable protected area. The relocation shall occur prior the initiation of any Project activities that may impact Sanford's arrowhead. Monitoring shall be required during the relocation process until deemed complete by a qualified biologist.
Cultural Resources*	If, in the course of Project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within fifty feet of the find shall be ceased. A qualified archaeologist shall be contacted and advise the County of the site's significance. If the findings are deemed significant by the Fresno County Resources Management Agency, appropriate mitigation measures shall be required prior to any resumption of work in the affected area of the Project.
*These measures are included pursuant to FID's compliance with CEQA and the California Endangered Species Act.	

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

FINDINGS

Water Resources

Implementation of the Proposed Action will increase conveyance capacity within the Briggs Canal by updating and improving existing facilities within the Canal. This will not generate a new supply of water; rather, it will improve the reliability of FID's existing water supplies by increasing the conveyance capacity within the Briggs Canal in order to use its available surplus surface water to recharge the underlying groundwater aquifer for later use consistent with FID's conjunctive use policies. In addition, up to 10 percent of water used for recharge or groundwater banking in FID is left within the basin which has a beneficial impact on groundwater levels. No impacts from subsidence are expected as the Proposed Action area is not within an area of known subsidence.

Land Use

The Proposed Action includes improvements to existing canals, ponds, and associated infrastructure. There will be no conversion of agricultural lands associated with the Proposed Action and the Proposed Action will be in compliance with its current zoning, Agriculture

Exclusive-20 acres. The Proposed Action will maintain current land uses and will have no impacts to land use.

Biological Resources

Habitat and conditions for biological resources protected under Section 7, of the Endangered Species Act, will not undergo changes. Precautionary avoidance and mitigation measures have been added to avoid the potential for wildlife to be harmed during construction activities. The Proposed Action will have no effect on wildlife or protected biological resources.

There is avian nesting habitat in and directly adjacent to the Proposed Action area. Construction activities are expected to occur outside the bird nesting season; however, should the construction window overlap the nesting season (February 1 – August 31), preconstruction/preactivity surveys and avoidance measures for nesting birds will be implemented by FID. Therefore, the Proposed Action will have no effect to migratory birds protected under the Migratory Bird Treaty Act.

Cultural Resources

Under the Proposed Action alternative, there will be no effects to historic properties since no historic properties were identified as part of the project. Similar to the No Action alternative, conditions related to historic properties will remain the same as existing conditions. With no historic properties within the project area, Reclamation determined that the Proposed Action will result in no historic properties affected pursuant to 36 CFR Part 800.4(d)(1). Reclamation entered into consultation with the SHPO as outlined in the 36 CFR Part 800 regulations describing the Section 106 process. The consultation package was hand delivered to SHPO on September 23, 2011. No response to date has been received by SHPO. Due to the passage of more than 30 days for the SHPO review period, Reclamation has concluded the Section 106 process for this undertaking.

Indian Sacred Sites

At this time, no Indian sacred sites have been identified. In addition, the Proposed Action will not impede access to or ceremonial use of Indian sacred sites. If sites are identified in the future, Reclamation will comply with Executive Order 13007.

Indian Trust Assets

Reclamation has determined that there will be no impacts to ITA as there are none in the Proposed Action area.

Environmental Justice

The Proposed Action will not cause dislocation, changes in employment, or increase flood, drought, or disease nor will it disproportionately impact economically disadvantaged or minority populations. The Proposed Action may support and maintain jobs that low-income and disadvantaged populations rely upon through increased irrigation water supply reliability. Therefore, there may be a slight beneficial impact to minority or disadvantaged populations as a result of the Proposed Action.

Socioeconomic Resources

Implementation of the Proposed Action will increase conveyance capacity within the Briggs canal enabling additional groundwater banking and recharge within this area. The ability to bank or recharge any groundwater within this area from surplus surface water supplies will increase water supply reliability which could be used to help meet summertime peak demands, therefore, improving the viability of farm labor jobs. Construction activities will also have a slight beneficial impact as additional, but temporary, jobs are created.

Air Quality

Operation of FID's proposed Briggs Canal Improvements will not obstruct implementation of any air quality plan. Operation of the Proposed Action facilities will not create objectionable odors and FID will comply with San Joaquin Valley Air Pollution Control District's Regulation VIII to reduce air quality impacts. Air quality emissions for construction activities associated with the Proposed Action as well as operation of the facilities were estimated by using the URBEMIS Model, Version 9.2.4, for the non-linear sections of construction, and the Road Construction Emissions Model, Version 6.3.2, for the linear sections of construction. Calculated emissions are well below the *de minimus* thresholds for the San Joaquin Valley Air Pollution Control District; therefore, there will be no significant air quality impacts associated with the Proposed Action and a conformity analysis is not required.

Global Climate Change

Construction emissions of carbon dioxide (CO₂) are estimated to be 197.06 tons (178.8 metric tons). Operation of the facilities will involve annual generation of electrical energy to power the control boxes, electric actuator, and SCADA equipment. Annual emissions from operation of the Briggs system would vary, but have been estimated using the EPA's GHG Equivalencies Calculator as approximately 2 metric tons per year of CO_{2e}. Total CO_{2e} emissions during construction have been estimated to be 199.3 tons (180.8 metric tons). Both construction and annual operational emissions are negligible compared to the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions (EPA 2009). Accordingly, construction and operations under the Proposed Action will result in below *de minimis* impacts to global climate change.

Cumulative Impacts

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies and this drives requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. The Briggs Canal improvements will provide a means for FID to store excess water for later use during water shortage time periods or high demand periods. The Proposed Action, when taken into consideration with other similar existing and proposed projects, will ultimately improve water resources management in FID. There will be a cumulative positive impact on groundwater levels and quality, owing to the long-term, increased groundwater recharge capability during times of excess surface water supply availability. Long-term water banking provides an avenue to maximize the beneficial use of FID's surface water supplies, improves their long-term water supply stability, and reduces dependence upon groundwater resources during critically dry years.

In recent years, land use changes within the San Joaquin Valley have involved the urbanization of agricultural lands. These types of changes are typically driven by economic pressures and are as likely to occur with or without the Proposed Action. Accordingly, as neither alternative will have impacts to land use, no cumulative impacts to land use are anticipated.

The Proposed Action, when taken into consideration with other similar existing and proposed projects, will improve water resources management in FID but have no cumulative impact to special-status species. This determination is based on the absence of suitable habitat for wildlife within the Proposed Action area and the implementation of avoidance and minimization measures that will reduce any potentially cumulative impacts.

Should any sacred sites be identified in the future, Reclamation will comply with Executive Order 13007. This will ensure that no cumulative impacts will occur that could impede access to or ceremonial use of Indian sacred sites due to the Proposed Action.

There will be no cumulative impacts to Cultural Resources or ITA as a result of the No Action or Proposed Action alternatives as there are none within the action area.

The Proposed Action, when added to other existing and proposed actions, will have a slight beneficial contribution to cumulative impacts for minority or disadvantaged populations as it will help support and maintain jobs that low-income and disadvantaged populations rely upon due to increased irrigation water supply reliability.

Over the long term, the Proposed Action will facilitate an increase in the reliability of FID's surface water supply. This will subsequently help to maintain the economic viability of irrigated agriculture within the district, which presently includes a significant percentage of permanent crops. There is greater economic output associated with permanent crops, which includes a year-round demand for farm labor (as compared to annual crops). When added to other similar existing and proposed actions, the Proposed Action will contribute to beneficial cumulative impacts to socioeconomic resources within FID.

The Proposed Action will not contribute to cumulative impacts to air quality since construction activities are short-term and well below *de minimis* thresholds. In addition, FID will comply with the San Joaquin Valley Air Pollution Control District's Regulation VIII in order to reduce any potential cumulative air quality impacts associated with operation of the Proposed Action.

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 water resource changes due to climate change will be the same with or without the Proposed Action. Greenhouse gas (GHG) emissions impacts are considered cumulative impacts; however, the estimated annual CO_{2e} emissions required to construct and operate the facility improvements for the Proposed Action is 199.3 tons (180.8 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 cumulative adverse impacts to global climate change.

RECLAMATION

Managing Water in the West

Final Environmental Assessment/Initial Study

Fresno Irrigation District's Briggs Canal Improvement Project

EA-10-058



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



**Fresno Irrigation District
2907 South Maple Avenue
Fresno, California 93725**

November 2011

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.

The mission of Fresno Irrigation District is to provide the landowners and water users of its Service Area with a reliable, affordable, and usable water supply, while facilitating programs that protect and benefit the groundwater basin and better utilize water supply resources.

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List of Acronyms and Abbreviations

AF	Acre-feet
AFY	Acre-feet per year
APE	Area of Potential Effect
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Control Board
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH ₄	Methane
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
CVP	Central Valley Project
CWA	Clean Water Act
dBA	Decibels adjusted
EA	Environmental Assessment
EPA	Environmental Protection Agency
FWCA	Fish and Wildlife Coordination Act
FID	Fresno Irrigation District
GHG	Greenhouse gases
IS	Initial Study
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
mg/m ³	Milligram per cubic meter
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
O ₃	Ozone

PM ₁₀	Particulate matter between 2.5 and 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
ppm	Parts per million
Project	Briggs Canal Improvement Project
PVC	Polyvinyl chloride
Reclamation	Bureau of Reclamation
ROG	Reactive Organic Gases
SCADA	Systematic Control and Data Acquisition
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO ₂	Sulfur dioxide
SO _x	Sulfur oxides
SWP	State Water Project
µg/m ³	Microgram per cubic meter
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
WaterSMART grant	WaterSMART: Water and Energy Efficiency grant
Williamson Act	Land Conservation Act of 1965

Section 1 Purpose and Need/Introduction

This Environmental Assessment (EA) / Initial Study (IS) was jointly prepared by the Bureau of Reclamation (Reclamation) as the lead federal agency and Fresno Irrigation District (FID) as the lead State agency to satisfy the requirements of both the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA).

1.1 Background/Project Description

FID, formed in 1920, comprises some 245,000 acres which lie entirely within Fresno County, California and includes the rapidly growing Fresno-Clovis metropolitan area (Figure 1-1). FID operates approximately 700 miles of canals and pipelines, serving a total irrigated area of over 150,000 acres. The surface water supply for FID is drawn from its Kings River Entitlement and from the Friant Division of the Central Valley Project (CVP).

In 2006, FID conducted a System Optimization Review on its Fancher Creek Canal System to evaluate possible groundwater banking facilities and needed system improvements (Provost and Pritchard Engineering Group, Inc. 2006). The study recommended several projects, including system improvements along the Briggs Canal.

In 2010, FID applied to Reclamation for a \$300,000 WaterSMART: Water and Energy Efficiency grant (WaterSMART Grant) for the Briggs Canal Improvement Project (Project). The WaterSMART Grant provides cost-shared funding for the following types of projects: (1) water and energy efficiency projects that save water, improve energy efficiency, address endangered species and other environmental issues, and facilitate transfers to new uses; (2) system optimization reviews focused on improving efficiency and operations of a water delivery system, water district, or water basin; (3) advanced water treatment and pilot/demonstration projects that address the technical, economic, and environmental viability of treating and using brackish groundwater, seawater, impaired waters, or otherwise creating new water supplies within a specific locale; and (4) research projects focused on climate change information gaps and that support the ongoing efforts under 9503(b) of the SECURE Water Act that may help narrow uncertainties, provide information in more usable forms, or develop more robust strategies for incorporating uncertainty into water management decision-making.

1.2 Purpose and Need/Project Objectives

Historically, excess water applied by farmers has percolated beyond the root zone and recharged the extensive aquifer underlying FID. Between 85 and 90 percent of the available groundwater supply can be attributed to water imported and distributed by FID; however, conversion of agricultural lands to high-density urban uses in the expanding Fresno-Clovis metropolitan area has reduced the amount of available surface area for recharge of the aquifer (Reclamation 2006). In addition, municipal and industrial water has historically been obtained solely through the pumping of groundwater. This has created a local overdraft of the groundwater basin in and around the urban area. In recent years, the City of Clovis and

City of Fresno have constructed surface water treatment facilities to supplement their groundwater supply; however, they continue to rely on groundwater as their primary source of water.

The Fancher Creek Canal System Optimization Review identified portions of the Briggs Canal with limited conveyance capacity. From this report, FID has identified projects that would improve conveyance capacity, operation and management of their water supply, and increase recharge abilities. The purpose of the Proposed Action is to provide partial funding for system improvements that provide improved operational control, water management, and increased conveyance capacity for its existing surface water supply to existing recharge facilities along the Briggs Canal.

1.3 Scope/Project Location and Setting

This EA/IS has been prepared to examine the potential for impacts on environmental resources as a result of constructing system improvements to the Briggs Canal system. It has also been prepared to examine the impacts of the No Action Alternative.

The Proposed Action area falls within Sections 4 and 5 of Township 15 South, Range 21 East and between Section 3 of Township 15 South, Range 21 East and Section 34 of Township 14 South, Range 21 East in Fresno County, California (Figure 1-1).

1.4 Potential Environmental Issues

This EA/IS will analyze the affected environment of the Proposed Action/Project and the 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 Trust Assets (ITA), Environmental Justice, Socioeconomic Resources, Air Quality, Global Climate, Aesthetics, Agricultural Resources, Geology and Soils, Hazards and Hazardous Materials, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

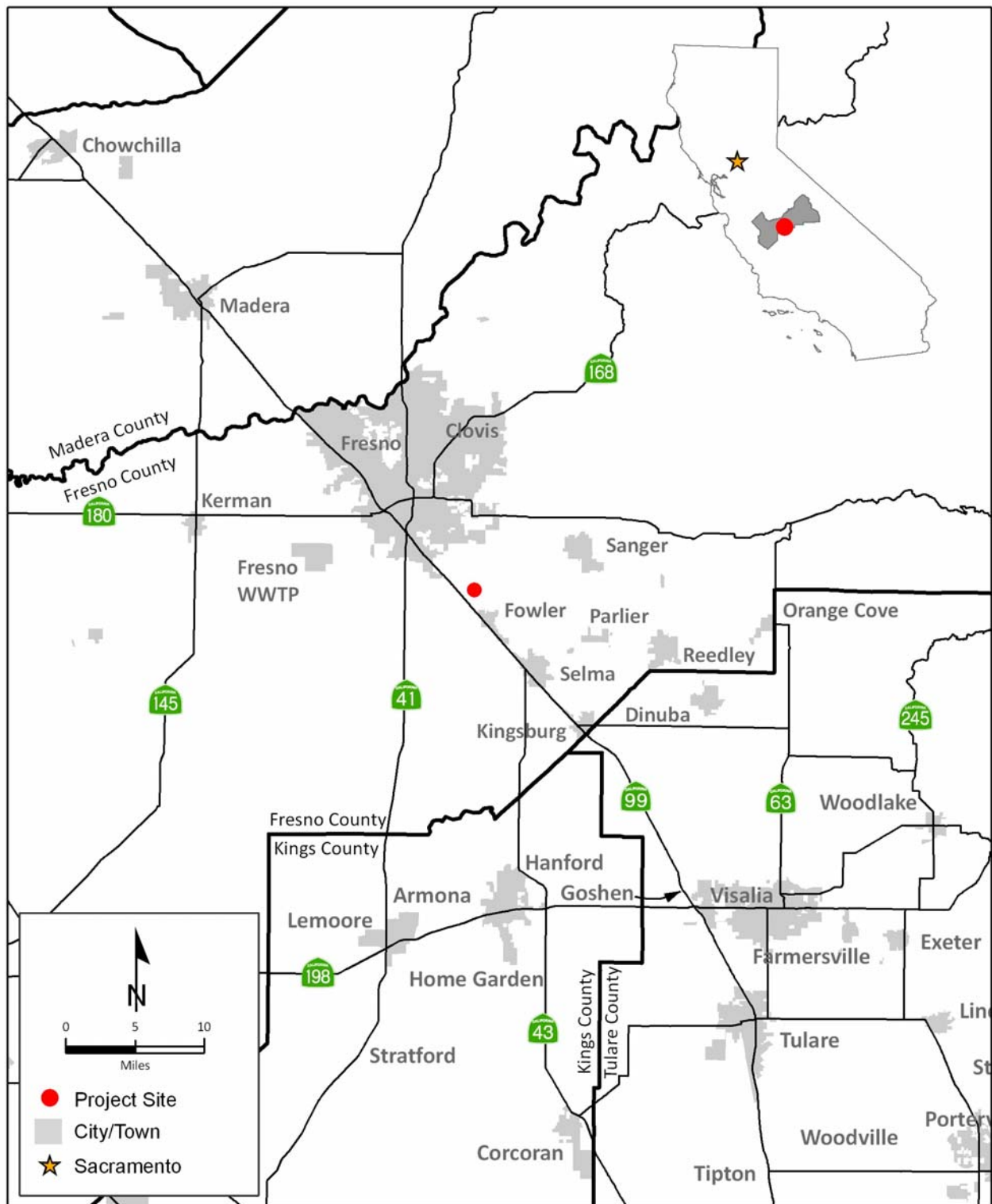


Figure 1-1 Project Location

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Section 2 Alternatives Including the Proposed Action

This EA/IS considers two possible actions: the No Action Alternative and the Proposed Action/Project. 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. For the purposes of this EA/IS, the term “project” refers to the physical project (i.e. construction and operation), while the term “Proposed Action” refers to the federal action (i.e. carrying out partial funding of FID’s proposed Project).

Without federal funding assistance (Proposed Action), construction of system improvements to the Briggs Canal (proposed Project) would, at a minimum, be delayed. It is FID’s intent to eventually complete system improvements on the Briggs Canal; however, without funding assistance timing is speculative for these improvements and it is possible that they may never be implemented. Consequently, the No Action Alternative could have two possible scenarios: A) no change from existing conditions as system improvements would not be implemented; or B) no change from existing conditions for at least a period of time, where the length of time is unknown, after which system improvements would be implemented as described in Section 2.2 below and the impacts analyzed in Section 3 and 4 of this EA/IS would be realized. Any other subsequent actions caused by scenario B of the No Action Alternative not already covered under Section 2.2 of this EA/IS is speculative at best, is outside the scope of this EA/IS, and may require additional environmental analysis. As a result, scenario A of the No Action Alternative will be analyzed from this point forward in order to reduce repeating information since scenario B mirrors the Proposed Action/Project (but at a later date).

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award a \$300,000 WaterSMART Grant to FID to partially fund system improvements to the Briggs Canal. Surface water supplies and groundwater levels would continue as they have in the past. FID would continue to pursue additional means to conserve water supplies and/or recharge the aquifer.

2.2 Proposed Action/Project

Reclamation proposes to award a \$300,000 WaterSMART grant to FID to partially fund system improvements to the Briggs Canal system which includes upgrading existing facilities, re-lining a concrete-lined portion of the canal, and installation of new pipelines, turnouts, control gates and measuring equipment. See Figure 2-1 for an overview of system improvements.

Construction equipment would include an excavator or backhoe, compaction wheel, and compaction whacker. Staging would occur along the existing canal banks or within FID

property at the Jefferson and Cornell ponds. Construction would occur during FID's regular maintenance period (mid to late October to April 1st).

2.2.1 Briggs Canal Improvements

Approximately 1,400 linear feet of an existing concrete lined section of the Briggs Canal, located between Cornell Pond and the existing culvert pipeline crossing under the railroad track near Jefferson Pond, would be re-lined with concrete (Figure 2-1). An existing check structure at Jefferson Pond, located within the current concrete lining, would either remain and be reformed within the new canal lining at its current location, or be placed within a new location within the re-lined portion of the canal.

Upgrades to Existing Control Boxes

FID would upgrade the existing electrically actuated control gates at the Cunha and Sunnyside concrete control boxes (Figure 2-1). Upgrades would include installation of an electric actuator as well as Supervisory Control and Data Acquisition (SCADA) telemetry equipment and water level sensors at each control box in order to monitor water level in the Briggs pipeline. The upgraded gates would use power already existing at their respective sites and would not need additional electrical installation for operation.

Jefferson Pond Upgrades

FID would install approximately 600 linear feet of 18-inch diameter polyvinyl chloride (PVC) or concrete pipeline within Jefferson Pond. The proposed pipeline would connect to a new turnout and depending in capacity requirements either to the existing standpipe (outfall structure) located at the bottom of the pond or to a new 48-inch diameter standpipe (outfall structure) located adjacent to the existing standpipe. Excavation for the turnout would be approximately 15-feet by 15-feet by 8-feet deep. Trenching for the 18-inch diameter pipeline, including shoring, would be up to 4.5 feet deep and approximately 3-feet wide. The trench would be backfilled with excavated materials. If a new standpipe is needed, excavation would be 15-feet by 15-feet by 6-feet deep.

Relocation of Briggs South Branch Headgate

FID would relocate the Briggs South Branch Headgate north of an existing long-crested weir on Fowler Avenue south of American (Figure 2-1). The new location would require installing approximately 600 linear feet of 24-inch to 36-inch diameter PVC or concrete pipeline within the existing open canal bank. Trenching for the pipeline would be up to 10-feet deep and approximately 4-feet wide. The trench would be backfilled with excavated materials. A new concrete turnout would be installed where the pipeline connects to the canal upstream of the weir. Excavation for the turnout would be 15-feet by 15-feet by 6-feet deep.

2.2.2 Malaga Canal Improvements

FID would install two new automated canal control gates. One gate would be located east of Armstrong Avenue within the section of the Malaga Canal that connects into the Briggs Canal (Figure 2-1). A second control gate would be placed further upstream between Armstrong Avenue and Temperance Avenue (Figure 2-1).

At both locations, the control gates would be placed within a 5-foot by 5-foot concrete control box. New pole-mounted electrical panel box with SCADA telemetry equipment and water level sensors would be placed within the canal bank adjacent to each proposed control box.

Placement of the poles would require drilling a 12-inch diameter hole, 5-feet deep, within the canal banks. Overhead electrical power lines would be connected to the electrical panel box.

2.2.3 Environmental Protection Measures

FID shall implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action/Project (Table 2-1). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of reports shall be submitted to Reclamation.

Table 2-1 Environmental Protection Measures and Commitments

Resource	Protection Measure
Biological Resources	<ul style="list-style-type: none"> • Vehicles would use slow speeds (<15 miles per hour), especially at night, when driving through or around the project site to minimize potential for striking or disturbing animals. • All excavated, steep-walled holes or trenches more than 2-feet deep would be covered at the close of each working day by plywood or similar material to prevent inadvertent entrapment of wildlife during construction activities. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals. • Open pipes and culverts would be inspected before being moved or altered to prevent wildlife from being injured or trapped. • If special-status species are encountered during an inspection, they would be left alone to passively exit the area unless otherwise authorized by California Department of Fish and Game (916-445-0045) or United States Fish and Wildlife Service (916-414-6620).
Biological Resources* (BIO-2)	If any tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity shall be conducted by a qualified biologist no more than 15 days before tree removal. If active nests are located within the construction site, nests shall be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance shall occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity shall include the trees on-site, burrows and open buildings (house/garage and shed).
Biological Resources* (BIO-3)	If construction activities must take place during the flowering season (July-September) for Sanford's arrowhead, a pre-disturbance survey for presence shall be conducted by a qualified biologist no more than 15 days before construction. If Sanford's arrowhead is found during survey, FID shall develop a salvage and relocation plan for all affected plants to a suitable protected area. The relocation shall occur prior the initiation of any Project activities that may impact Sanford's arrowhead. Monitoring shall be required during the relocation process until deemed complete by a qualified biologist.
Cultural Resources*	If, in the course of Project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within fifty feet of the find shall be ceased. A qualified archaeologist shall be contacted and advise the County of the site's significance. If the findings are deemed significant by the Fresno County Resources Management Agency, appropriate mitigation measures shall be required prior to any resumption of work in the affected area of the Project.
*These measures are included pursuant to FID's compliance with CEQA and the California Endangered Species Act.	



Section 3 NEPA Affected Environment and Environmental Consequences

This section of the EA/IS includes the NEPA analysis portion of the potentially affected environment and the environmental consequences involved with the Proposed Action/Project and the No Action Alternative.

3.1 Water Resources

3.1.1 Affected Environment

FID is located entirely within Fresno County and has contracts for approximately 26 percent of the average runoff of the Kings River (its main supply). In a normal year, FID diverts approximately 500,000 acre-feet (AF) of Kings River water and delivers most of that to agricultural users through 700 miles of canals and pipelines. FID also has a 9(d) Repayment Contract¹ with Reclamation for 75,000 AF per year (AFY) of Class 2 water² (FID does not have a Class 1 CVP contract). An increasing share of FID's water supply is used for groundwater recharge for conjunctive use through approximately 2,950 acres of recharge and regulating basins.

FID's Briggs Canal serves the southeastern-most portions of FID and also serves some land within Consolidated Irrigation District. The Briggs canal is part of FID's Fancher Creek Canal System which receives water from FID's Fresno Canal, one of two diversion canals off the Kings River (Provost and Pritchard Engineering Group, Inc. 2006). Water supplies available for groundwater recharge within this system include: FID's Kings River water supplies, Class 2 CVP supplies, Section 215 CVP water (uncontrollable flood flows from the San Joaquin River) when available, Fresno Eastside stream water (from Mud Creek and Fancher Creek), and flows diverted from the Fresno Canal.

Groundwater

FID is located within the Kings Subbasin of the San Joaquin Valley Groundwater Basin which was identified as being in critical overdraft by the California Department of Water Resources (DWR) in 1980 (DWR 2003). Historically, excess water applied by farmers has percolated beyond the root zone and recharged the extensive aquifer underlying FID. Between 85 and 90 percent of the groundwater supply can be attributed to surface water imported and distributed by FID. Nevertheless, the conversion of agricultural lands to high-

¹ A 9(d) Repayment Contract provides for CVP water service as well as repayment of facilities.

² Class 1 water is considered as the first 800,000 AF supply of CVP water stored in Millerton Lake, which would be available for delivery from the Friant-Kern Canal and/or Madera Canals as a dependable water supply during each Contract Year (March 1 of a given year through February 28/29 of the following year). Class 2 water is considered as the next 1,400,000 AF supply of non-storable CVP water which becomes available in addition to the Class 1 supply. Class 2 water, due to the uncertainty of its availability, is not considered dependable and is only furnished if and when available as determined by Reclamation per Contract Year. Class 1 and 2 waters are not inclusive of waters released by Reclamation from Friant Dam for environmental and/or other obligations.

density urban uses in the expanding Fresno-Clovis metropolitan area has reduced the ability to recharge on these lands and has increased groundwater overdraft since the primary source of municipal and industrial water is groundwater pumping.

Subsidence

Land subsidence is caused by subsurface movement of earth materials. Principal causes of subsidence within the San Joaquin Valley include: aquifer compaction due to groundwater pumping; hydrocompaction of soils caused by application of water to dry soils; and, oil mining (Poland and Lofgren 1984). Large withdrawal of groundwater within the San Joaquin Valley between the 1920s and 1960s for agricultural irrigation caused significant overdraft within the central west side of the valley and most of the southern valley causing substantial land subsidence within those areas (Poland and Lofgren 1984). Importation of surface water from the CVP and the State Water Project (SWP) in the 1970s decreased the rate of groundwater withdrawal allowing aquifer levels to recover and subsequently reducing subsidence rates (Poland and Lofgren 1984). Recently, groundwater pumping rates have increased throughout the San Joaquin Valley due to a series of drought years and curtailments of water deliveries from the CVP and SWP due to implementation of environmental protection measures. Subsidence is prevalent west of FID; subsidence within FID is minimal.

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, FID would not be able to increase the conveyance capacity within portions of the Briggs Canal for groundwater banking and recharge within this area. Use of available surface water supplies would continue as it has in the past which would mean that farmers would continue to meet demand with additional groundwater pumping without increased recharge capabilities. Therefore, there would be an adverse impact to groundwater levels as a result of the No Action Alternative. There would be no impact on surface water supplies as they would be the same as previous conditions which are dependent on historic hydrologic conditions.

Proposed Action

Implementation of the Proposed Action would increase conveyance capacity within the Briggs Canal by updating and improving existing facilities within the Canal. This would not generate a new supply of water; rather, it would improve the reliability of FID's existing water supplies by increasing the conveyance capacity within the Briggs Canal in order to use its available surplus surface water to recharge the underlying groundwater aquifer for later use consistent with FID's conjunctive use policies. In addition, up to 10 percent of water used for recharge or groundwater banking in FID is left within the basin which has a beneficial impact on groundwater levels. No impacts from subsidence are expected as the Proposed Action area is not within an area of known subsidence.

Cumulative Impacts

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies and this drives requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, all while attempting to minimize costs. The proposed Project would provide a means for FID to store excess water for later use during water shortage time periods or high demand periods. The

Proposed Action, when taken into consideration with other similar existing and proposed projects, would ultimately improve water resources management in FID. There would be a cumulative positive impact on groundwater levels and quality, owing to the long-term, increased groundwater recharge capability during times of excess surface water supply availability.

Long-term water banking provides an avenue to maximize the beneficial use of FID's surface water supplies, improves their long-term water supply stability, and reduces dependence upon groundwater resources during critically dry years.

3.2 Land Use

3.2.1 Affected Environment

Water is delivered to approximately 190,000 acres including the metropolitan areas of Fresno and Clovis. The agricultural lands within the District are predominately permanent crops (about 68 percent). The predominant agricultural crop in the District has been and continues to be grapes; however, almonds and citrus have increased over the past 10 years. The conversion of agricultural lands to urban uses in the expanding Fresno-Clovis metropolitan area has significantly increased in recent years. Currently, about 150,000 acres (or 60 percent) of the District is farmed agricultural land while approximately 30 percent is urban and 10 percent is rural residential (CDC 2006).

The Proposed Action area does not have lands under a Land Conservation Act of 1965 (Williamson Act) contract (CDC 2006) nor is there a Habitat Conservation plan in effect. Additionally, as agricultural lands make up the surrounding land uses, there is no forest, nor established community in the Project vicinity.

3.2.2 Environmental Consequences

No Action

There would be no impact to land use as conditions would remain the same as existing conditions.

Proposed Action

The Proposed Action includes improvements to existing canals, ponds, and associated infrastructure. There would be no conversion of agricultural lands associated with the Proposed Action and the Proposed Action would be in compliance with its current zoning, Agriculture Exclusive- 20 acres. The Proposed Action would maintain current land uses and would have no impacts to land use.

Cumulative Impacts

In recent years, land use changes within the San Joaquin Valley have involved the urbanization of agricultural lands. These types of changes are typically driven by economic pressures and are as likely to occur with or without the Proposed Action. Accordingly, as neither alternative would have impacts to land use, no cumulative impacts to land use are anticipated.

3.3 Biological Resources

3.3.1 Affected Environment

The Project sites are on maintained canal and pipeline right of way alignments that have regular weed control. All of the project sites are bordered by paved county roads except for the relining area site which is bordered by a dirt canal embankment/maintenance road. There is no natural habitat remaining on the canal right of way or the immediately adjoining farmland and therefore, suitable habitat for special-status species is absent or uncommon.

Initial biological reconnaissance surveys were performed on May 19, 2011. See Appendix A for the reconnaissance report.

Special status species are plants and animals that are legally protected under the State and Federal Endangered Species Acts or other regulations, and other species that are considered rare by the scientific community. A federal species list (Table 3-1) was generated on April 25, 2011 (Document #110425023009), by accessing the U.S. Fish and Wildlife Service (USFWS) Database: http://www.fws.gov/sacramento/es/spp_list.htm. The list is for the following U.S. Geological Society 7½ minute quadrangles: Sanger, Malaga, Conejo, Selma, Fresno South, Caruthers, Clovis, Round Mountain, and Fresno North. Reclamation further queried the CDFG's California Natural Diversity Database (CNDDDB) for records of protected species within 10 miles of the Proposed Action location (CNDDDB 2011). A summary table (Table 3-1) was created from the reconnaissance report (Appendix A), the USFWS species list, the CNDDDB records and additional information within Reclamation's files for federally-listed special-status species. See Section 4.1.4 for discussion of State-listed special-status species.

Table 3-1 Federal Status Species on Quad Lists

<u>Species</u>	<u>Status</u> ¹	<u>Effects</u> ²	<u>Summary basis for ESA determination</u> ³
Amphibians			
California red-legged frog (<i>Rana aurora draytonii</i>)	T	NE	Absent. No CNDDDB ⁴ -recorded occurrences in vicinity of action area and suitable habitat not present.
California tiger salamander, central population (<i>Ambystoma californiense</i>)	T	NE	Absent. CNDDDB-recorded occurrence from vicinity of action area and suitable are habitat absent.
Fish			
Central Valley steelhead (<i>Oncorhynchus mykiss</i>)	T NMFS	NE	Absent. No natural waterways within the species' range would be affected by the proposed action.
delta smelt (<i>Hypomesus transpacificus</i>)	T	NE	Absent. No natural waterways within the species' range would be affected by the proposed action.
Invertebrates			
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E	NE	Absent. No species records or vernal pools in area of effect.
valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T	NE	Absent. No CNDDDB-recorded occurrence and elderberry bushes absent from action area.

<u>Species</u>	<u>Status¹</u>	<u>Effects²</u>	<u>Summary basis for ESA determination³</u>
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T	NE	Absent. No species records or vernal pools in area of effect.
vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E	NE	Absent. No species records or vernal pools in area of effect.
Mammals			
Fresno kangaroo rat (<i>Dipodomys nitratoideus exilis</i>)	E	NE	Absent. No CNDDDB-recorded occurrences in vicinity of action area and suitable habitat not present.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	NE	Unlikely. There is one CNDDDB-recorded occurrence in Sanger from the 1980s (approximately 7.2 miles northeast of the action area). Suitable denning habitat is absent.
Plants			
California jewelflower (<i>Caulanthus californicus</i>)	E	NE	Absent. No CNDDDB-recorded occurrences in action area and suitable habitat lacking.
Greene's tuctoria (=Orcutt grass) (<i>Tuctoria greenei</i>)	E	NE	Absent. No CNDDDB-recorded occurrence in action area and vernal pools not present.
succulent owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>)	T, X	NE	Absent. No CNDDDB-recorded occurrence in action area and vernal pools not present.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	T	NE	Absent. No CNDDDB-recorded occurrence in action area and suitable habitat not present.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	T	NE	Absent. No CNDDDB-recorded occurrence in action area and vernal pools not present.
Reptiles			
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	NE	Absent. No CNDDDB-recorded occurrence in action area and suitable habitat not present.
Giant garter snake (<i>Thamnophis gigas</i>)	T	NE	Absent. There are no CNDDDB-recorded occurrence in the vicinity of the action area and suitable habitat not present.
<p>1 Status= Status of federally protected species protected under the federal Endangered Species Act. E: Listed as Endangered under the federal Endangered Species Act. NFMS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. T: Listed as Threatened under the federal Endangered Species Act. X: Critical habitat designated under the federal Endangered Species Act.</p> <p>2 Effects = Endangered Species Act Effect determination NE: No Effect anticipated from the Proposed Action to federally listed species</p> <p>3 Definition Of Occurrence Indicators Unlikely: Species recorded in area but habitat requirements not met. Absent: Species not recorded in study area and/or habitat requirements not met</p> <p>4 CNDDDB = California Natural Diversity Database 2011</p>			

Critical Habitat

No critical habitat occurs within the area affected by the Proposed Action and so none of the primary constituent elements of any critical habitat would be affected.

San Joaquin Kit Fox

San Joaquin kit fox (*Vulpes macrotis mutica*) primarily inhabit grassland and scrubland communities. They also inhabit oak woodland, alkali sink scrubland, and vernal pool and alkali meadow communities. Foraging habitat includes grassland, woodland, and open scrub. Denning habitat includes an open, flat area with loose, generally sandy or loamy soils (Egoscue 1956, 1962). There is one CNDDDB record for San Joaquin kit fox within 10 miles of the Proposed Action area. The record is from the early 1980s and is approximately seven miles northeast of the control gates within the Sanger quad (occurrence number: 1115). The record states that one San Joaquin kit fox was sighted.

No San Joaquin kit foxes or San Joaquin kit fox dens were observed within the Proposed Action area or surrounding property during the reconnaissance biological survey (Appendix A). No burrows large enough to house kit fox dens were observed. It is likely that frequent disturbance from cultivation have been prohibitive to burrow creation on the Project site in the past.

Migratory Birds

Federal law also protects most birds under the Migratory Bird Treaty Act (MBTA: 16 United States Code [U.S.C.], sec. 703, Supp. I, 1989) by prohibiting killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. The study area and surrounding lands provide nesting habitat for migratory nesting birds during the nesting season (February 1 – August 31).

3.3.2 Environmental Consequences**No Action**

No changes in conditions or habitats would occur under the No Action Alternative. Operations and water management practices would not change. Therefore, the No Action Alternative would not result in changes to biological resources or habitats.

Proposed Action

Habitat and conditions for biological resources protected under Section 7, of the Endangered Species Act, would not undergo changes. Precautionary avoidance and mitigation measures have been added to avoid the potential for wildlife to be harmed during construction activities (Table 2-1). The Proposed Action would have no effect on wildlife or protected biological resources.

There is avian nesting habitat in and directly adjacent to the Proposed Action area. Construction activities are expected to occur outside the bird nesting season as described in Section 2.2; however, should the construction window overlap the nesting season (February 1 – August 31), preconstruction/preactivity surveys and avoidance measures for nesting birds would be implemented by FID. Therefore, the Proposed Action would have no effect to migratory birds protected under the MBTA. See Appendix B for Reclamation's determination.

Cumulative Impacts

The Proposed Action, when taken into consideration with other similar existing and proposed projects, would improve water resources management in FID but have no cumulative impact to special-status species. This determination is based on the absence of suitable habitat for wildlife within the Proposed Action area and the implementation of avoidance and minimization measures that would reduce any potentially cumulative impacts.

3.4 Cultural Resources

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

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

3.4.1 Affected Environment

The Fancher Creek Canal, previously known as Fresno Canal in the late 1800s, was completed in 1874 (Willison 1980). Several smaller ditches/canals drew water from Fancher Creek. One of the earliest was the Eisen Ditch, also constructed in the early 1870s, which irrigated considerable acreage for both Easterby and F. T. Eisen. A review of historic maps suggests that Eisen Ditch, along with numerous laterals extending from it, carried a substantial flow (Sierra Valley Cultural Planning 2011). The head of the ditch is located on the west side of Fancher Creek Canal in the southwest one-quarter of Section 35 of Township 13 South, Range 21 East (M.D.B. & M.). From there it carried water in a southwesterly direction to a point where it intersected Temperance and Belmont avenues (Belmont was originally known as Centerville and Fresno Road). The ditch continued on the south side of Belmont Avenue to its intersection with Fowler Avenue. The ditch turned southwest across Easterby land. Today, that section of the ditch on the south side of Belmont between Temperance and Fowler avenues is piped underground. A second ditch drawing water from Fancher Creek Canal is the Briggs Ditch (later identified as the Briggs Canal), which appears

to have been created sometime in the 1882-1885 period, as irrigation appropriations and canals were made to service the agricultural colonies northeast of present-day Fresno.

To identify historic properties FID hired cultural resource consultants to assist Reclamation in cultural resources identification. The cultural resource consultants conducted a records search at the Southern San Joaquin Valley Information Center of the California Historical Resources Information System (Sierra Valley Cultural Planning 2011). No previously recorded prehistoric or historic archaeological resources or historic properties were found within the project APE and no previous surveys have been conducted in the area. In addition, the cultural resource consultants conducted a cultural resources inventory of the project area that resulted in the identification of two cultural resources, the Briggs Canal and the Malaga Canal. The cultural resource consultants applied the National Register criteria located at 36 CFR Part 60.4 and evaluated portions of both canals for eligibility to the National Register. Both canals were determined to be ineligible for listing on the National Register. No other historic or potentially historic properties were identified within the APE.

3.4.2 Environmental Consequences

No Action

There would be no impact to cultural resources since there would be no ground disturbing activities and conditions would remain the same as existing conditions.

Proposed Action

Under the Proposed Action alternative, there would be no effects to historic properties since no historic properties were identified as part of the project. Similar to the No Action alternative, conditions related to historic properties would remain the same as existing conditions. Reclamation has determined that the Proposed Action would have no potential to affect historic properties and initiated consultation with SHPO on September 23, 2011.

With no historic properties within the project area, Reclamation determined that the Proposed Action would result in no historic properties affected pursuant to 36 CFR Part 800.4(d)(1). Reclamation entered into consultation with the SHPO as outlined in the 36 CFR Part 800 regulations describing the Section 106 process. The consultation package was hand delivered to SHPO on September 23, 2011. No response to date has been received by SHPO. Due to the passage of more than 30 days for the SHPO review period, Reclamation has concluded the Section 106 process for this undertaking. See Appendix B for Reclamation's determination.

Cumulative Impacts

There would be no cumulative impacts to cultural resources as a result of the No Action or Proposed Action alternatives as there are no historic properties within the action area.

3.5 Indian Sacred Sites

Executive Order 13007 requires Federal land managing agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. It also requires agencies to

develop procedures for reasonable notification of proposed actions or land management policies that may restrict access to or ceremonial use of, or adversely affect, sacred sites.

3.5.1 Affected Environment

Native American consultation activities consisted of a Sacred Lands File Search performed by the Native American Heritage Commission (NAHC); no resources were identified during this activity. Project notification letters and requests for consultation were sent to the designated Native American area contacts as identified by the NAHC. No responses were received from the Native American representatives regarding the Proposed Action.

3.5.2 Environmental Consequences

No Action

There would be no impacts to sacred sites as conditions would remain the same as existing conditions.

Proposed Action

At this time, no Indian sacred sites have been identified. In addition, the Proposed Action would not impede access to or ceremonial use of Indian sacred sites. If sites are identified in the future, Reclamation would comply with Executive Order 13007.

Cumulative Impacts

Should any sacred sites be identified in the future, Reclamation would comply with Executive Order 13007. This would ensure that no cumulative impacts would occur that could impede access to or ceremonial use of Indian sacred sites due to the Proposed Action.

3.6 Indian Trust Assets

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

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

3.6.1 Affected Environment

The nearest ITA is a Public Domain Allotment located approximately 22 miles north of the Proposed Action location.

3.6.2 Environmental Consequences

No Action

There would be no impact to ITA as conditions would remain the same as existing conditions.

Proposed Action

Reclamation has determined that there would be no impacts to ITA as there are none in the Proposed Action area. See Appendix B for Reclamation's determination.

Cumulative Impacts

There would be no cumulative impacts to ITA as a result of the No Action or Proposed Action alternatives as there are none within the action area.

3.7 Environmental Justice

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

3.7.1 Affected Environment

Fresno County relies, to a large extent, either directly or indirectly, on agriculture for employment. Median family income within Fresno County falls approximately \$20,000 below the state's (U.S. Census Bureau 2011). Approximately 49 percent of the population within Fresno County is of Hispanic or Latino origin, which compares to about one-fourth for the state as a whole (Table 3-2). The market for seasonal workers on local farms also draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, increasing populations within these small communities during peak harvest periods.

Table 3-2 Fresno County Demographics (2009 estimate)

Demographics	Fresno County		California	
	Estimate	Percentage	Estimate	Percentage
Total Population	915,267	--	36,961,664	--
White	--	34.6	--	42.7
Black or African American	--	5.8	--	6.6
American Indian	--	2.0	--	1.2
Asian	--	9.0	--	12.7
Native Hawaiian/Pacific Islander	--	0.2	--	0.4
Hispanic	--	49.3	--	37.0
Source: U.S. Census Bureau 2011				

3.7.2 Environmental Consequences

No Action

There would be no impact to economically disadvantaged or minority populations as conditions would remain the same as existing conditions.

Proposed Action

The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations. The Proposed Action may support and maintain jobs that low-income and disadvantaged populations rely upon through increased irrigation water supply reliability. Therefore, there may be a slight beneficial impact to minority or disadvantaged populations as a result of the Proposed Action.

Cumulative Impacts

The Proposed Action, when added to other existing and proposed actions, would have a slight beneficial contribution to cumulative impacts for minority or disadvantaged populations as it would help support and maintain jobs that low-income and disadvantaged populations rely upon due to increased irrigation water supply reliability.

3.8 Socioeconomic Resources

3.8.1 Affected Environment

The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. Agriculture and its related industries is the third largest industry within Fresno County (U.S. Census Bureau 2011). In 2010, Fresno County's unemployment rate of 15.7 percent exceeded the state average (California Employment Development Department 2010). The number of people below the poverty level was also greater than the state average (U.S. Census Bureau 2011). Additionally, the number of families in Fresno County below the poverty line was nearly double the state's average (U.S. Census Bureau 2011).

3.8.2 Environmental Consequences

No Action

There would be no impact to socioeconomics as conditions would remain the same as existing conditions.

Proposed Action

Implementation of the Proposed Action would increase conveyance capacity within the Briggs canal enabling additional groundwater banking and recharge within this area. The ability to bank or recharge any groundwater within this area from surplus surface water supplies would increase water supply reliability which could be used to help meet summertime peak demands, therefore, improving the viability of farm labor jobs. Construction activities would also have a slight beneficial impact as additional, but temporary, jobs are created.

Cumulative Impacts

Over the long term, the Proposed Action would facilitate an increase in the reliability of FID's surface water supply. This would subsequently help to maintain the economic viability of irrigated agriculture within the district, which presently includes a significant percentage of permanent crops. There is greater economic output associated with permanent crops, which includes a year-round demand for farm labor (as compared to annual crops). When added to other similar existing and proposed actions, the Proposed Action would contribute to beneficial cumulative impacts to socioeconomic resources.

3.9 Air Quality

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

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

3.9.1 Affected Environment

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). NAAQS and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O₃), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), inhalable particulate matter between 2.5 and 10 microns in diameter (PM₁₀) and particulate matter less than 2.5 microns in diameter (PM_{2.5}), and lead. The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

The pollutants of greatest concern in the San Joaquin Valley are CO, O₃, O₃ precursors such as reactive organic gases (ROG) and nitrogen oxides (NO_x), as well as PM₁₀, and PM_{2.5}. The SJVAB has reached Federal and State attainment status for CO, NO₂, and SO₂. Federal attainment status has been reached for PM₁₀ but is in non-attainment for O₃ and PM_{2.5} (Table 3-3). State attainment status has also been reached for lead but is in non-attainment for both PM₁₀, and PM_{2.5}. There are no established standards for NO_x; however, NO_x does contribute to NO₂ standards and is an O₃ precursor (SJVAPCD 2011).

Table 3-3 San Joaquin Valley Attainment Status

Pollutant	Averaging Time	California Standards		National Standards	
		Concentration	Attainment Status	Concentration	Attainment Status
O ₃	8 Hour	0.070 ppm (137 µg/m ³)	Nonattainment	0.075 ppm	Nonattainment
	1 Hour	0.09 ppm (180 µg/m ³)	Nonattainment	--	--
CO	8 Hour	9.0 ppm (10 mg/m ³)	Attainment	9.0 ppm (10 mg/m ³)	Attainment
	1 Hour	20.0 ppm (23 mg/m ³)	Unclassified	35.0 ppm (40 mg/m ³)	Unclassified
NO ₂	Annual arithmetic mean	0.030 ppm (56 µg/m ³)	Attainment	0.053 ppm (100 µg/m ³)	Attainment
	1 Hour	0.18 ppm (338 µg/m ³)	Attainment	--	--
SO ₂	Annual average	--	--	0.03 ppm (80 µg/m ³)	Attainment
	24 Hour	0.04 ppm (105 µg/m ³)	Attainment	0.14 ppm (365 µg/m ³)	Attainment
	1 Hour	0.25 ppm (655 µg/m ³)	Attainment	--	--
PM ₁₀	Annual arithmetic mean	20 µg/m ³	Nonattainment	--	--
	24 Hour	50 µg/m ³	Nonattainment	150 µg/m ³	Attainment
PM _{2.5}	Annual Arithmetic mean	12 µg/m ³	Nonattainment	15 µg/m ³	Nonattainment
	24 Hour	--	--	35 µg/m ³	Attainment
Lead	30 day average	1.5 µg/m ³	Attainment	--	--
	Rolling-3 month average	--	--	0.15 µg/m ³	Unclassified
	Rolling-3 month average	--	--	0.15 µg/m ³	Unclassified
Source: CARB 2011; SJVAPCD 2011; 40 CFR 93.153 ppm = parts per million mg/m ³ = milligram per cubic meter µg/m ³ = microgram per cubic meter -- = No standard established					

3.9.2 Environmental Consequences

No Action

There would be no impact to air quality as conditions would remain the same as existing conditions.

Proposed Action

Operation of FID's proposed Briggs Canal Improvements would not obstruct implementation of any air quality plan. Operation of the Proposed Action facilities would not create objectionable odors and FID would comply with SJVAPCD's Regulation VIII to reduce air quality impacts. Air quality emissions for construction activities associated with the Proposed Action as well as operation of the facilities were estimated by using the URBEMIS Model, Version 9.2.4, for the non-linear sections of construction, and the Road Construction Emissions Model, Version 6.3.2, for the linear sections of construction (Appendix C). See Table 3-4 for a summary of estimated air quality emissions.

Table 3-4 Calculated Proposed Action Emissions

Source	Total Emission (Tons per Year)							
	CO	ROG*	NO _x *	SO _x	PM ₁₀	PM _{2.5}	CO ₂	CH ₄
Construction emissions	1.24	0.31	2.1	--	0.7	0.2	197.0	--
Operation emissions	0	0	0	--	0	0	0.06	--
Total Emissions	1.24	0.31	2.1	--	0.7	0.2	197.06	--
Conformity Thresholds (SJVAPCD)	100	50	50	NA	100	NA	NA	NA
Source: Rimpo & Associates, Inc. 2011; CARB 2011; SJVAPCD 2011; 40 CFR 93.153 NA = not applicable. SO _x = sulfur oxides. CO ₂ = carbon dioxide. CH ₄ = methane. -- = not calculated. *As ozone precursors.								

As calculated emissions are well below the *de minimus* thresholds for the SJVAPCD, there would be no adverse air quality impacts associated with the Proposed Action and a conformity analysis is not required.

Cumulative Impacts

The Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts to air quality since construction activities are short-term and well below *de minimis* thresholds. In addition, FID would comply with the SJVAPCD's Regulation VIII in order to reduce any potential cumulative air quality impacts associated with operation of the Proposed Action.

3.10 Global Climate Change

Climate change refers to significant change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes can contribute to climate change [changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.] (EPA 2011a)

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as CO₂, occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, CH₄, nitrous oxide, and fluorinated gasses (EPA 2011a).

During the past century humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil and gasoline to power our cars, factories, utilities and appliances. The added gases, primarily CO₂ and CH₄, 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 2011b).

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 CO₂ equivalents (CO_{2e}) 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 2011c).

3.10.1 Affected Environment

Global mean surface temperatures have increased nearly 1.8°F from 1890 to 2006 (Intergovernmental Panel on Climate Change 2007). Models indicate that average temperature changes are likely to be greater in the northern hemisphere. Northern latitudes (above 24°North) have exhibited temperature increases of nearly 2.1°F since 1900, with nearly a 1.8°F increase since 1970 alone (Intergovernmental Panel on Climate Change 2007). Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHG are likely to accelerate the rate of climate change.

More than 20 million Californians rely on the SWP and CVP. Increases in air temperature may lead to changes in precipitation patterns, runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed due to modified evapotranspiration rates. These changes may lead to impacts to California's water resources and project operations.

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

3.10.2 Environmental Consequences

No Action

There would be no impact to global climate change as conditions would remain the same as existing conditions.

Proposed Action

Construction emissions of CO₂ are estimated to be 197.06 tons (178.8 metric tons, Table 3-4). Operation of the facilities would involve annual generation of electrical energy to power the control boxes, electric actuator, and SCADA equipment. Annual emissions from operation of the Briggs system would vary, but have been estimated using the EPA's GHG Equivalencies Calculator (EPA 2011d) as approximately 2 metric tons per year of CO_{2e}. Total CO_{2e} emissions during construction have been estimated to be 199.3 tons (180.8 metric tons). Both construction and annual operational emissions are negligible compared to the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions (EPA 2009).

Accordingly, construction and operations under the Proposed Action would result in below *de minimis* impacts to global climate change.

Cumulative Impacts

GHG impacts are considered cumulative impacts; however, the estimated annual CO_{2e} emissions required to construct and operate the facility improvements for the Proposed Action is 199.3 tons (180.8 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 cumulative adverse impacts to global climate change.

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 water resource changes due to climate change would be the same with or without the Proposed Action.

Section 4 CEQA Environmental Factors and Mandatory Findings of Significance

This section of the EA/IS includes the CEQA analysis portion of potentially affected issues that may result from implementation of the proposed Project.

4.1 Discussion of Potentially Affected Environmental Factors

4.1.1 Aesthetics

The Project area is developed to production agriculture and groundwater recharge facilities, which dominates the aesthetics of the surrounding area. While the Project would modify the existing character of the project sites, it would not degrade the visual quality of the sites.

Temporary construction activities would be visible from adjacent roadsides; however, would not affect a scenic vista.

4.1.2 Agricultural Resources

Impacts have been discussed in Section 3.2.

4.1.3 Air Quality and Climate Change

Impacts have been discussed in Section 3.8 and 3.9.

4.1.4 Biological Resources

Analysis of federally listed species and birds protected under the MBTA can be found in Table 3-1. A list of State-listed and special status species of concern relevant to CEQA was generated on June 7, 2011 through CDFG's CNDDDB. The list includes species identified on the Malaga U.S. Geological Survey 7½ minute quadrangle and eight surrounding quadrangles. On May 19, 2011, biological consultants conducted a biological reconnaissance survey of the Project action area under clear conditions (Appendix C). Results of the survey for State-listed and special status species of concern have been summarized in Table 4-1.

Table 4-1 State and Other Special Status Species Lists

Taxa and Common Name	State	CNPS	Habitat	Occurrence Evaluation
Amphibians				
California tiger salamander, central population (<i>Ambystoma californiense</i>)	C		Found in annual grassland habitat and grassy understory of valley-foothill hardwood habitats	Out of expected geographic range. None observed during biological reconnaissance surveys.
Western spadefoot (<i>Spea hammondi</i>)	SC		Primarily in grasslands, but also found in orchard and vineyard habitat	Regional Potential. None observed during biological reconnaissance surveys.
Birds				
Burrowing owl (<i>Athene cunicularia</i>)	SC		Open, dry annual or perennial grasslands, deserts & scrublands w/ low-growing vegetation. Underground nester using mammal burrows (ground squirrel)	Regional potential. None observed during biological reconnaissance surveys.

Taxa and Common Name	State	CNPS	Habitat	Occurrence Evaluation
Swainson's hawk (<i>Buteo swainsoni</i>)	T		Breeds in stands with few trees in riparian areas and oak savannah. Forages in adjacent grasslands or suitable grain, alfalfa, or livestock pasture.	Regional potential. None observed during biological reconnaissance surveys.
Tricolored blackbird (<i>Agelaius tricolor</i>)	SC		Breeds near fresh water, preferably in emergent wetland with tall, dense cattails or tules in stands large enough to support at least 50 nesting pairs	Habitat Absent. None observed during biological reconnaissance surveys.
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	E		Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Habitat Absent. None observed during biological reconnaissance surveys.
Fish				
Delta smelt (<i>Hypomesus transpacificus</i>)	T		California Delta aquatic habitat	Out of expected geographic range. None observed during biological reconnaissance surveys.
Invertebrates				
Antioch efferian robberfly (<i>Efferia antiochi</i>)	CN		Little information on species. Known from sand dunes at Antioch, Fresno and Scout Island, San Joaquin River	Habitat Absent. None observed during biological reconnaissance surveys.
Hurd's metapogon robberfly (<i>Metapogon hurdi</i>)	CN		Little habitat information is available. Known from sand dunes at Antioch and in Fresno	Habitat Absent. None observed during biological reconnaissance surveys.
Molestan blister beetle (<i>Lytta molesta</i>)	CN		Little habitat information is available. Possibly related to dried vernal pools.	Habitat Absent. None observed during biological reconnaissance surveys.
Mammals				
American badger (<i>Taxidea taxus</i>)	SC		Open, Uncultivated ground with burrowing rodents in open shrub, forest and herbaceous habitats.	Out of expected geographic range. None observed during biological reconnaissance surveys.
Fresno kangaroo rat (<i>Dipodomys nitratoides exilis</i>)	E		Alkali sink-open grassland habitats in Western Fresno County, bare alkaline clay soil. Burrows in slightly elevated ground above floodwater.	Habitat absent. None observed during biological reconnaissance surveys.
Hoary bat (<i>Lasiurus cinereus</i>)	SC		Generally roosts in dense foliage of medium to large trees.	Habitat Absent. None observed during biological reconnaissance surveys.
Pallid bat (<i>Antrozous pallidus</i>)	SC		Deserts, grasslands, shrublands, woodlands. Most common in open, dry habitats with rocky areas for roosting and protection from heat.	Habitat Absent. None observed during biological reconnaissance surveys.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	T		Annual grasslands, grassy open habitats dominated by scattered brush and shrubs, sometimes forage in agricultural areas	Regional potential. None observed during biological reconnaissance surveys.
San Joaquin pocket mouse (<i>Perognathus inornatus inornatus</i>)	SC		Alkali scrub and saltbush habitats in saline sand or clay soils. Burrows in slightly elevated mounds at shrub bases, road or canal	Habitat Absent. None observed during biological reconnaissance surveys.

Taxa and Common Name	State	CNPS	Habitat	Occurrence Evaluation
			embankments.	
Western mastiff bat (<i>Eumops perotis californicus</i>)	SC		Open semi-arid to arid habitats. Roosts in crevices in cliffs, high buildings, trees and tunnels.	No Potential Roosting Areas observed during biological reconnaissance surveys.
Natural Communities				
Northern Claypan Vernal Pool	CN		Old neutral to alkaline silicone-cemented hardpan soils, intergrades with marsh	Habitat Absent. None observed during biological reconnaissance surveys.
Plants				
California jewel-flower (<i>Caulanthus californicus</i>)	E	1B.1	Chenopod scrub, valley and foothill grassland	Out of expected geographic range. None observed during biological reconnaissance surveys.
California satintail (<i>Imperata brevifolia</i>)		2.1	Coastal scrub, chaparral, riparian scrub, mesic sites	Habitat Absent. None observed during biological reconnaissance surveys.
Caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>)		1B.1	Valley and foothill grassland chenopod scrub	Habitat Absent. None observed during biological reconnaissance surveys.
Green's tuctoria (<i>Tuctoria greenei</i>)	R	1B.1	Dry bottoms of vernal pools in open grassland	Habitat Absent. None observed during biological reconnaissance surveys.
Madera leptosiphon (<i>Leptosiphon serrulatus</i>)		1B.2	Cismontane woodland, lower montane coniferous forest	Habitat Absent. None observed during biological reconnaissance surveys.
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)		1B.2	Marshes and swamps	Regional potential. None observed during biological reconnaissance surveys.
San Joaquin Adobe Sunburst (<i>Psudeobahia peirsonii</i>)	E	1B.1	Cismontane woodland, valley and foothill grassland	Habitat Absent. None observed during biological reconnaissance surveys.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	E	1B.1	Vernal Pools	Habitat Absent. None observed during biological reconnaissance surveys.
Shevock's copper moss (<i>Schizymenium shevockii</i>)		1B.2	Moss on metamorphic rocks containing heavy metals, mesic sites.	Habitat Absent. None observed during biological reconnaissance surveys.
Spiny-sepaled button celery (<i>Eryngium spinosepalum</i>)		1B.2	Valley and foothill grassland, vernal pools	Habitat Absent. None observed during biological reconnaissance surveys.
Succulent owl's clover (<i>Casteilleja campestris</i> ssp. <i>succulent</i>)	E	1B.2	Vernal pools, valley and foothill grassland, moist places, often in acidic soils	Habitat Absent. None observed during biological reconnaissance surveys.
Reptiles				
Blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E		Sparsely vegetated alkali and desert scrub habitats	Habitat Absent. None observed during biological reconnaissance surveys.
Giant garter snake (<i>Thamnophis gigas</i>)	T		Marshes, sloughs and creeks	Out of expected geographic range. None observed during biological reconnaissance surveys.
<p>Source: Thomas and O'Leary 2011</p> <p><u>State Status (State)</u> E – Listed Endangered T – Listed Threatened R – Listed Rare C – Candidate for Listing SC – CDFG Species of Concern CN – Recorded in CNDDDB for conservation purposes</p> <p><u>California Native Plant Society List (CNPS)</u> 1A – Plant presumed extinct in CA 1B – Plants rare, threatened, or endangered in CA and elsewhere 2 – Plants rare, threatened, or endangered in CA but more common elsewhere</p>				

Swainson's Hawk

The Swainson's hawk is listed as a California Threatened species. Swainson's hawks migrate into the Central Valley in the spring, breed during the summer, and then migrate south in the fall. They typically breed in riparian areas and oak savannah, in stands with few trees. They use tall trees for nesting and build nests at a height of approximately 40 feet. Swainson's hawks forage in adjacent grasslands or suitable grain, alfalfa, or livestock pasture for prey. According to the CNDDDB search, there is one regional occurrence record for Swainson's hawk approximately 11 miles south of the Project site. Swainson's hawk could potentially use the area around the Project site for foraging but the Project site is not associated with the type of riparian habitat preferred as a nesting area for the Swainson's hawk. Project operation would not disturb Swainson's hawk foraging or nesting, however, Project construction could bring some disturbance.

Burrowing Owl

Burrowing owls can establish burrows near residential or farming operations. They are dependent on availability of both open areas (such as grazing land) to hunt prey, and burrow. Due to this burrow dependency, burrowing owls are closely associated with populations of California ground squirrels (*Spermophilus beecheyi*) which excavate appropriately sized burrows. A few ground squirrel burrows were noticed near the Project site on the western edge of Jefferson Pond. The nearest recorded CNDDDB occurrence of Burrowing owl is approximately 12 miles southeast of the Project site. No evidence of burrowing owl were observed at the Project site and as such, it is not likely that the proposed Project would impact burrowing owls.

Western Spadefoot Toad

Western spadefoot toad (*Spea hammondi*) requires rain pools/vernal pools or other water features free of predators (such as bullfrogs and fish) for breeding. The Project site does not have conditions amenable to vernal pool formation as it has sandy, well-drained soils, lots of adult and larval bullfrogs and largemouth bass. None of the vernal pool associated vegetation communities were observed at the Project site during the reconnaissance level biological survey. No evidence of vernal pool habitats was observed.

The canal on-site and the nearby ponds contain water for at least part of the year. However, they contain species (listed above) that could prey on toads or their eggs. Spadefoot toad can occur in a number of habitats including grassland, woodland and chaparral with open areas and sandy soils. Habitat loss due to conversion of land to agriculture is a major factor in decline of this species. They are very sensitive to low frequency noise and vibration. The regularly managed vineyard and orchard on the Project site would not provide suitable habitat for the spadefoot. If they were to burrow into the land on a vineyard for their dormant period, the activity of tractors on the land would cause them to break dormancy early which can be potentially fatal. While it is possible that spadefoot toad could occur in the area there does not appear to be requisite breeding habitat in the vicinity and the agricultural land onsite has not been a suitable dormant period habitat. It is unlikely that spadefoot toad would be impacted by the Project.

Sanford's Arrowhead

Sanford's arrowhead or valley arrowhead (*Sagittaria sanfordii*) is an uncommon plant found in the North Coast and Central Valley regions of California. Arrowheads are in the water plantain family and the Sanford's arrowhead has leaves of variable shape, and not necessarily

in an arrowhead configuration like other species within the genus. It has been previously observed growing in canals in Fresno according to a few CNDDDB records from the 1950s and 1980s. The stem and root are typically located below the waterline and the leaves and flower project above the water line. It has a CNPS (California Native Plant Society) listing of 1B.2 indicating it is fairly endangered or rare but it is not currently listed by the state or federal government as an endangered or threatened species. Because the water lines in irrigation canals are so variable, it is difficult to predict whether conditions would be suitable for this species on a specific site. Sanford's arrowhead was not observed during the survey. Efforts to locate this species on previously known sites in the Fresno area in 2005 were unsuccessful; however, there is still potential for the species to occur in the Project area and be negatively impacted by Project construction.

As the proposed Project would improve structures within easements that have been long established and regularly maintained as irrigation facilities, no habitats, wildlife corridors, wetlands, ordinances, or habitat conservation plans would be negatively impacted.

As described above, construction and operation of the proposed Project would not affect any state or CNPS special status species, with the exception of Swainson's hawk and Sanford's arrowhead. Although construction would not occur during bird nesting season or plant flowering season, the following mitigation measures would insure that any potential impacts to Swainson's hawk and Sanford's arrowhead would remain less than significant.

BIO-2 If any tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity shall be conducted by a qualified biologist no more than 15 days before tree removal. If active nests are located within the construction site, nests shall be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance shall occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity shall include the trees on-site, burrows and open buildings (house/garage and shed).

BIO-3 If construction activities must take place during the flowering season (July-September) for Sanford's arrowhead, a pre-disturbance survey for presence shall be conducted by a qualified biologist no more than 15 days before construction. If Sanford's arrowhead is found during survey, FID shall develop a salvage and relocation plan for all affected plants to a suitable protected area. The relocation shall occur prior the initiation of any Project activities that may impact Sanford's arrowhead. Monitoring shall be required during the relocation process until deemed complete by a qualified biologist.

4.1.5 Cultural Resources

Impacts have been discussed in Section 3.4.

4.1.6 Geology and Soils

No substantial faults are known to exist in Fresno County area according to the Alquist-Priolo Earthquake Fault Zoning Map (CDC 2007); thus the Project would have no impact regarding the danger associated with geologic instability. No subsidence-prone soils, oil or gas

production or overdraft exists at the Project site, and soil conditions on the site are not prone to soil instability due to their low shrink-swell behavior.

No habitable structures would be constructed on the site nor would substantial grading change the topography to the point where the project would expose people or structures to potential substantial adverse affects. In addition, there would be no substantial risk to life or property due to the project being located on expansive soils. No septic tanks or alternative waste water disposal systems are proposed as part of the Project. There would be no impact.

4.1.7 Hazards and Hazardous Materials

As the proposed Project includes improvements to Briggs Canal and other FID facilities, there would be no involvement or generation of any hazardous emissions or the transport, use, storage, or disposal of any hazardous materials. The proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

The Project does not involve land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control (California Department of Toxic Substances Control 2007). There would be no impact.

4.1.8 Hydrology and Water Quality

Water quality and quantity impacts have been discussed in Section 3.1.

According to the Federal Emergency Management Agency National Flood Insurance Program (U.S. Department of Homeland Security 2009), the Proposed Action area is located within Zone X, areas determined to be outside of the 0.2 percent annual chance floodplain. The nearest dam to the site is Pineflat Dam on the Kings River, approximately 25 miles to the northeast. Due to the distance between the Dam and the Project area, there would be no impact to the proposed Project sites if dam failure were to occur. Additionally, due to the lack of a significant water body near the Project area, there would be no potential for seiche or tsunami to occur, therefore, there would be no impact.

4.1.9 Land Use and Planning

Impacts have been discussed in Section 3.2.

4.1.10 Mineral Resources

There are no known mineral resources at the Project site and as such, the Project does not have the potential to impact the availability of any mineral resources or mineral resource recovery sites.

4.1.11 Noise

Project operation would not generate noise; however, Project construction activities would involve temporary noise sources and is anticipated to last between two and four months. Typical construction equipment would include small backhoes, small tractors and miscellaneous equipment (e.g. pneumatic tools, generators and portable air compressors). During the construction phases of the Project, noise from construction activities would contribute to the noise environment in the immediate Project vicinity. Activities involved in

construction would generate maximum noise levels, as indicated in Table 4-2, ranging from 79 to 91 decibels adjusted (dBA) at a distance of 50 feet, without feasible noise control (e.g., mufflers) and ranging from 75 to 80 dBA at a distance of 50 feet, with feasible noise control.

Table 4-2 Noise Levels

Construction Equipment Noise Source	dBA at 50 ft	dBA at 100 ft	dBA at 1.0 mile
Pneumatic tools	85	79	45
Truck (e.g. dump, water)	88	82	48
Concrete mixer (truck)	85	79	45
Scraper	88	82	48
Bulldozer	87	81	47
Backhoe	85	79	45
Generator	76	70	36
Portable air compressor	81	75	41
Source: BASELINE Consulting 1999			

The Fresno County General Plan Noise Element (2000) sets the standard noise threshold of 60 dBA at the exterior of nearby residences; however, it does not identify a short-term construction-noise-level threshold. The distinction between short-term construction noise and vibration impacts and long-term operational noise and vibration impacts is a typical one in both CEQA documents and local noise ordinances, which generally recognize the reality that short-term noise from construction is inevitable and cannot be mitigated beyond a certain level. Thus, local agencies frequently tolerate short-term noise and vibrations at levels that they would not accept for permanent noise sources. A more severe approach would be impractical and might preclude the kind of construction activities that are inevitable from time to time in urban and agricultural environments. Most residents of urban and agricultural areas recognize this reality and expect to hear construction activities on occasion. The impact would be less than significant.

4.1.12 Population and Housing

The Project does not include any features that would require the destruction or relocation of existing housing or the construction of replacement housing. In addition, the Project would not include destruction or construction of any housing, and would not increase or decrease the number of available dwelling units in the area. The Project would not displace any people. The Project would have no effect on population growth.

4.1.13 Public Services

The Project does not include any features or facilities that would require additional or unusual fire protection resources, enhanced levels of police protection, nor does it have the potential to increase or decrease the area's population, and would therefore not result in a greater or lesser demand for schools or parks.

4.1.14 Recreation

The Project does not have the potential to increase or decrease the area's population, and would therefore not result in increased or decreased use of parks or other recreational facilities. Additionally, the Project does not include recreational facilities and would not require the construction or expansion of any recreational facilities.

4.1.15 Transportation and Traffic

The Project is not anticipated to create any additional traffic. Any monitoring and maintenance activities that would occur at the proposed basin would be performed by the same crew that monitors various District sites, thereby trip-linking for any maintenance situations. There would be no increase in aircraft transportation as a result of the Project. Additionally, the Project would not conflict with any adopted transportation management plan. The Project would not result in any impacts to transportation or traffic.

4.1.16 Utilities and Service Systems

The Project involves improvements that would increase the local groundwater recharge capacity and would in turn increase the reliability of water supplies to agricultural users in the area. The Project would not generate wastewater so it would not result in a change to facilities or operations at existing wastewater treatment facilities or sewer systems, nor would it require additional water supplies. The amount of runoff at the Project site would not increase as a result of this Project nor would implementation of the Project generate any solid waste. Therefore, the Project would not result in any impacts to utilities or service systems.

4.2 Mandatory Findings of Significance

The analysis conducted in this EA/IS results in a determination that the Project would have a less than significant effect on the local environment. As described in sections above, the potential for impacts to biological and cultural resources from the construction of the canal improvements and continued operation would be less than significant with the incorporation of mitigation measures. Accordingly, the Project would involve no potential for significant impacts through the degradation of the quality of the environments, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory. The Project would not result in substantial adverse effects on human beings, either directly or indirectly. Any potential impacts would be less than significant. Refer to Appendix D for the CEQA Checklist and Appendix E for FID's mitigation monitoring and reporting plan.

Section 5 Consultation and Coordination

Several Federal laws, permits, licenses and policy requirements have directed, limited or guided the NEPA analysis and decision making process of this EA/IS.

5.1 Public Review Period

Reclamation provided the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft EA/IS between October 7, 2011 and October 24, 2011. No comments were received.

Under CEQA, FID released the Draft EA/IS for a public review period starting August 26, 2011. The public comment period closed September 26, 2011. FID received a form letter from the Native American Heritage Commission and a no comment letter from Fresno Metropolitan Flood Control District. Both letters can be found in F.

5.2 Construction General Permit

The Project would require coordination with the State of California to obtain the state Construction General Permit, which includes the preparation of a Storm Water Pollution Prevention Plan. This permit would also be coordinated with the corresponding Regional Water Quality Control Board. A Dust Control Plan would be required and would be prepared in coordination with the SJVAPCD.

5.3 Fresno County

No permits from the County of Fresno are required for the project.

5.4 Fish and Wildlife Coordination Act (16 U.S.C. § 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the U.S. Fish and Wildlife Service and State fish and wildlife agencies “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license”. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources”.

Reclamation's action is limited solely to the partial funding of the Proposed Action. As described in Section 2.1, FID would likely continue with the Proposed Action at a later date should they not receive federal funds. No federal permits or licenses would be issued for the Proposed Action; therefore, FWCA does not apply.

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

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

Reclamation has determined that no federally listed or proposed species or critical habitat would be affected as a result of the Proposed Action and consultation is therefore not required. This determination is based on the information presented previously in Section 3.3.2 and is reliant on the absence of listed species and suitable habitat from areas that would be affected by the Proposed Action. See Appendix B for Reclamation's determination.

5.6 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

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

Reclamation determined that the Proposed Action would result in no historic properties affected pursuant to 36 CFR Part 800.4(d)(1). Reclamation entered into consultation with the SHPO as outlined in the 36 CFR Part 800 regulations describing the Section 106 process. The consultation package was hand delivered to SHPO on September 23, 2011. No response to date has been received by SHPO. Due to the passage of more than 30 days for the SHPO review period, Reclamation has concluded the Section 106 process for this undertaking. See Appendix B for Reclamation's determination.

5.7 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

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

Construction activities are expected to occur outside the bird nesting season as described in Section 2.2; however, should the construction window overlap the nesting season (February 1 – August 31), preconstruction/preactivity surveys and appropriate avoidance measures for nesting birds would be implemented by FID. Therefore, the Proposed Action would have no effect to migratory birds protected under the MBTA.

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

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. Impacts to wetlands and/or floodplains would not occur as there are none present in the Proposed Action area.

5.9 Clean Water Act (16 U.S.C. § 703 et seq.)

Section 404 of the Clean Water Act [CWA] (33 U.S.C. § 1311) authorizes the U. S. Army Corps of Engineers to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 U.S.C. § 1344). Section 401 of the CWA prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 U.S.C. § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 also requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit (404 permit) to first obtain certification from the state that the activity associated with dredging or filling would comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA section 404 are not required. In addition, no pollutants would be discharged into any navigable waters under the Proposed Action so no permits under Section 401 of the CWA are required.

Section 6 List of Preparers and Reviewers

Bureau of Reclamation

Rain Healer, Natural Resources Specialist, SCCAO
Jennifer Lewis, PhD., Wildlife Biologist, SCCAO
BranDee Bruce, Architectural Historian, MP-153
Patricia Rivera, ITA, MP-400
Chuck Siek, Supervisory Natural Resources Specialist, SCCAO - reviewer
Michael Inthavong, Natural Resources Specialist, SCCAO - reviewer

Fresno Irrigation District

Felix Vaquilar, P.E., Engineer

Provost & Pritchard Consulting Group

Amy Wilson, Planning Assistant
Emily Magill Bowen, Senior Environmental Planner
Ronald Samuelian, P.E.

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