

RECLAMATION

Managing Water in the West

FINDING OF NO SIGNIFICANT IMPACT

Fresno Irrigation District Oleander Basin Banking Project

FONSI-09-076

Recommended by:


Rain Healer
Natural Resources Specialist
South-Central California Area Office

Date: 02/11/2011

Concurred by:


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

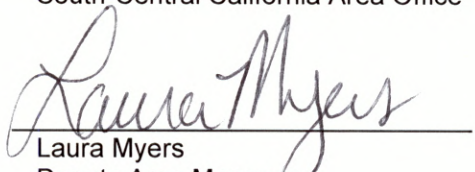
Date: 2/22/11

Concurred by:


Dave Woolley
Acting Chief, Resources Management Division
South-Central California Area Office

Date: 2/23/11

Approved by:


Laura Myers
Deputy Area Manager
South-Central California Area Office

Date: 2/28/11



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 2009 Water Conservation Challenge Grant (Challenge 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-09-076, *Fresno Irrigation District Oleander Basin Banking Project*, and is hereby incorporated by reference.

Reclamation provided the public with an opportunity to comment on the draft FONSI and draft EA during a public review period between January 10, 2010 and February 8, 2010. No comments were received. FID also released the draft EA/IS for a public review period which ended on February 7, 2011. FID received no comments.

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 Briggs Canal and Fancher Canal systems to evaluate possible groundwater banking facilities and needed system improvements. The study recommended several projects, including groundwater banking facilities along the Fancher Canal system. Consequently, FID has applied for a \$300,000 2009 Challenge Grant for the construction of an approximately 23-acre groundwater banking facility located northeast of the intersection of Lincoln and Chestnut Avenues in Fresno County. Water to be used for groundwater banking will come from FID's Kings River Entitlement and their Class 2 Friant Division Central Valley Project (CVP) water.

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 the biological resource survey report and cultural resource monitoring report shall be submitted to Reclamation.

Resource	Protection Measure
Biological Resources	Preconstruction surveys and implementation of avoidance and minimization measures for San Joaquin kit fox (USFWS 1999).
Cultural Resources	FID shall have a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology conduct archaeological monitoring of construction activities during Proposed Action implementation. If cultural resources are identified during construction monitoring, the Proposed Action shall be stopped within a 200 foot radius of the discovery and Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.

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

The Proposed Action will not generate a new supply of water; rather, it will improve the reliability of FID water supplies by using available surplus surface water to recharge the underlying groundwater subbasin for later use consistent with conjunctive use policies. In addition, the availability of up to 10 percent of the banked water for recharge may have a slight beneficial impact on groundwater levels. Therefore, the Proposed Action will not contribute to the existing overdraft nor create additional subsidence within the Proposed Action area. Water delivery to the Proposed Action area will be accomplished through existing CVP and FID infrastructure. No modifications of the Friant-Kern Canal or FID's Kings River diversion points will be needed for the Proposed Action. There will be no water quality impacts to ground water or surface water supplies as Friant CVP water and Kings River water quality is generally very good. Kings River water will be banked outside of flood events; therefore, water quality should be the same as it has been in the past. Therefore, there will be no significant impacts to water resources as a result of the Proposed Action.

Land Use

Under the Proposed Action, construction of the Oleander banking facilities will not change existing land uses. Construction of the facilities will require the removal of the existing vineyard. Although this agricultural area is listed under the Williamson Act and is classified as either Prime Farmland or Farmland of Statewide Importance, the construction of irrigation facilities is considered to be a compatible agricultural use and will not change its land use designation. The Proposed Action will provide a mechanism for FID to store and later recover a portion of their water supply for use in dry years when their water supplies are inadequate, or later in the same season when there is demand. The Proposed Action will also provide facilities that will recharge groundwater to help reduce groundwater overdraft in the region. Consequently, the Proposed Action will maintain current land uses and will have no impacts to land use.

Biological Resources

The Proposed Action will be constructed on highly disturbed agricultural lands where agricultural operations have taken place for many years. The Proposed Action site provides only limited opportunities for special-status animal and plant species to inhabit the property. Many of the listed species are not expected to occur in the Proposed Action area because of the lack of suitable habitat. Additionally, there is no designated or proposed critical habitat for listed species within the Proposed Action area. The area is largely outside the current range and lacks required habitat for kit foxes. The San Joaquin kit fox is not expected to occur on-site, because of the fact that the area was recently cultivated, is surrounded by miles of active farm lands, potential dens with signs of kit fox use were not found during reconnaissance surveys, and prey base abundance is extremely low. However, because there is the potential for kit fox to move through the area, protocol-level pre-construction surveys and avoidance and minimization measures shall be implemented. Therefore, no effect to San Joaquin kit fox is anticipated.

There are no records of birds protected under the Migratory Bird Treaty Act (MBTA) occurring within a 10 mile radius of the Proposed Action Area. In addition, all work will be done outside of bird nesting periods. Therefore, there will be no impacts to birds protected under the MBTA.

Cultural Resources

Two cultural resources were recorded during identification efforts. These are the Oleander Canal and an Aermoter windmill, both historic era resources. Reclamation entered into consultation with SHPO seeking their consensus that the Oleander Canal is assumed and shall be treated as eligible for inclusion in the National Register of Historic Places (National Register) for this Proposed Action and this Proposed Action only, and that the Aermoter windmill is not eligible for inclusion in the National Register. Reclamation also sought SHPO's concurrence on a finding that the proposed undertaking will have no adverse effect to historic properties. The SHPO concurred with Reclamation's findings on December 20, 2010. Note that, any subsequent actions with a Federal nexus shall consider the Oleander Canal as an unevaluated cultural resource.

Upon receiving SHPO concurrence, Reclamation has completed the Section 106 process with the mitigation commitment that a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology shall monitor construction activities during Proposed Action implementation. This commitment is due in part to the moderate potential to yield buried archaeological deposits as described in Meyer, Young, and Rosenthal (2010) and because initial field identification efforts failed to consider vertical contexts in the identification efforts. If Cultural Resources are identified during construction monitoring, the Proposed Action shall be stopped within a 200 foot radius of the discovery and Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.

Implementing the above described mitigation commitment and the completion of the Section 106 consultation process, Reclamation concludes that the Proposed Action alternative will result in no impacts to cultural resources.

Indian Trust Assets

There will be no impacts to Indian Trust Assets as there are none in the Proposed Action area. The nearest Indian Trust Asset is Table Mountain Rancheria, approximately 24 miles north-northeast of the Proposed Action location.

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. 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 provide an additional water supply resource 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 Oleander Banking facility will not contribute to criteria pollutant emissions, as pumps used for water banking will be electrical. There will only be a negligible increase in emissions resulting from the generation of electricity to power the pumps. However, emissions will be associated with construction activities. Air quality emissions for construction activities associated with the Proposed Action were calculated with the URBEMIS Model, Version 9.2.4. As calculated emissions are well below the *de minimus* thresholds for the San Joaquin Valley Air Pollution Control District, there will be no significant air quality impacts associated with the Proposed Action and a conformity analysis is not required. In addition, FID will comply with San Joaquin Valley Air Pollution Control District's Regulation VIII which will reduce potential air quality impacts.

Global Climate Change

The Proposed Action will involve short-term impacts consisting of emissions during construction and long-term impacts attributable to project operations from the generation of electrical energy to power the two electric motor pump drivers. These emissions will vary annually, but have been estimated using the Environmental Protection Agency's (EPA) Greenhouse gases (GHG) Equivalencies Calculator. Estimated emissions for carbon dioxide (CO₂) equivalences for both electric pumps will be about 6 metric tons per year of CO₂, which is negligible compared to the EPA's 25,000 metric tons per year threshold for annually reporting GHG emissions.

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

Cumulative Impacts

In 2009, seven water banking projects within the San Joaquin Valley were approved by Reclamation with another six still undergoing environmental analysis. Since 2005, a total of 23 water banking projects have been approved by Reclamation. Water banking projects provide a means for water districts 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.

As the Proposed Action will not result in any direct or indirect impacts on land use, special-status species, cultural resources, Indian Trust Assets, it will not contribute cumulatively to impacts on these resources.

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). Therefore, the Proposed Action will have slight beneficial impacts on socioeconomics and for minority or disadvantaged populations as it will help support and maintain jobs that low-income and disadvantaged populations rely upon.

The Proposed Action, when added to other existing and proposed actions, will not contribute to cumulative impacts to air quality since construction activities are short-term and operations will not result in air quality impacts. GHG impacts are considered to be cumulative impacts. Full operation of the water bank is estimated to produce 6 metric tons per year of CO₂. The Proposed Action, when added to other existing and proposed actions, will not contribute to cumulative impacts to global climate change owing to the *de minimis* magnitude of annual GHG emissions.

RECLAMATION

Managing Water in the West

Final Environmental Assessment/Initial Study

Fresno Irrigation District Oleander Basin Banking Project

EA-09-076



**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**

February 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 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.

Table of Contents

Section 1	Purpose and Need/Introduction.....	1
1.1	Background/Project Description.....	1
1.2	Purpose and Need/Project Objectives.....	1
1.3	Scope/Project Location and Setting.....	2
1.4	Potential Issues.....	2
Section 2	Alternatives Including the Proposed Action.....	5
2.1	No Action Alternative.....	5
2.2	Proposed Action/Project	5
2.2.1	Basin Construction	5
2.2.2	Basin Diversion Structure	6
2.2.3	Recovery Wells	6
2.2.4	Monitoring Wells	6
2.2.5	General Construction Activities	7
2.2.6	Environmental Protection Measures	7
2.2.7	Environmental Permitting	7
Section 3	NEPA Affected Environment and Environmental Consequences.....	9
3.1	Water Resources	9
3.1.1	Affected Environment	9
3.1.1.1	Friant Division of the Central Valley Project	9
3.1.1.2	Water Quality.....	9
3.1.1.3	Groundwater Resources	10
3.1.1.4	Subsidence	10
3.1.2	Environmental Consequences	10
3.1.2.1	No Action.....	10
3.1.2.2	Proposed Action.....	11
3.1.2.3	Cumulative Impacts	11
3.2	Land Use	11
3.2.1	Affected Environment	11
3.2.2	Environmental Consequences	12
3.2.2.1	No Action.....	12
3.2.2.2	Proposed Action.....	12
3.2.2.3	Cumulative Impacts	12
3.3	Biological Resources	12
3.3.1	Affected Environment	12
3.3.2	Environmental Consequences	15
3.3.2.1	No Action.....	15
3.3.2.2	Proposed Action.....	15
3.3.2.3	Cumulative Impacts	15
3.4	Cultural Resources	16
3.4.1	Affected Environment	16
3.4.2	Environmental Consequences	17
3.4.2.1	No Action.....	17
3.4.2.2	Proposed Action.....	17
3.4.2.3	Cumulative Impacts	17

3.5	Indian Trust Assets	18
3.5.1	Affected Environment	18
3.5.2	Environmental Consequences	18
3.5.2.1	No Action.....	18
3.5.2.2	Proposed Action.....	18
3.5.2.3	Cumulative Impacts	18
3.6	Environmental Justice.....	18
3.6.1	Affected Environment	18
3.6.2	Environmental Consequences	19
3.6.2.1	No Action.....	19
3.6.2.2	Proposed Action.....	19
3.6.2.3	Cumulative Impacts	19
3.7	Socioeconomic Resources	19
3.7.1	Affected Environment	19
3.7.2	Environmental Consequences	20
3.7.2.1	No Action.....	20
3.7.2.2	Proposed Action.....	20
3.7.2.3	Cumulative Impacts	20
3.8	Air Quality	20
3.8.1	Affected Environment	20
3.8.2	Environmental Consequences	22
3.8.2.1	No Action.....	22
3.8.2.2	Proposed Action.....	22
3.8.2.3	Cumulative Impacts	22
3.9	Global Climate Change.....	22
3.9.1	Affected Environment	23
3.9.2	Environmental Consequences	23
3.9.2.1	No Action.....	23
3.9.2.2	Proposed Action.....	23
3.9.2.3	Cumulative Impacts	23
Section 4	CEQA Environmental Factors and Mandatory Findings of	
	Significance.....	25
4.1	Discussion of Potentially Affected Environmental Factors.....	25
4.1.1	Aesthetics	25
4.1.2	Agricultural Resources	25
4.1.3	Air Quality and Climate Change	25
4.1.4	Biological Resources.....	25
4.1.5	Cultural Resources	28
4.1.6	Geology and Soils	28
4.1.7	Hazards and Hazardous Materials.....	28
4.1.8	Hydrology and Water Quality	28
4.1.9	Land Use and Planning.....	28
4.1.10	Mineral Resources	29
4.1.11	Noise.....	29
4.1.12	Population and Housing	29
4.1.13	Public Services	29
4.1.14	Recreation.....	30
4.1.15	Transportation and Traffic.....	30

4.1.16	Utilities and Service Systems	30
4.2	Mandatory Findings of Significance.....	30
Section 5	Consultation and Coordination	31
5.1	Public Review Period.....	31
5.2	Construction General Permit.....	31
5.3	Fresno County	31
5.4	Fish and Wildlife Coordination Act (16 USC § 651 et seq.).....	31
5.5	Endangered Species Act (16 USC § 1531 et seq.).....	32
5.6	National Historic Preservation Act (16 USC § 470 et seq.)	32
5.7	Executive Order 13007 – Indian Sacred Sites	32
5.8	Migratory Bird Treaty Act (16 USC § 703 et seq.)	33
5.9	Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands	33
Section 6	List of Preparers and Reviewers	33
Section 7	References.....	34

List of Tables and Figures

Figure 1-1	Fresno Irrigation District Location Map	3
Figure 2-1	Proposed Action Project Details	8
Table 2-1	Environmental Protection Measures.....	7
Table 3-1	Farmland Parcel Designations	12
Table 3-2	Federal listed species from the vicinity of the Project Area.....	13
Table 3-3	Fresno County Demographics (2009 estimate)	19
Table 3-4	San Joaquin Valley Attainment Status	21
Table 3-5	Calculated Proposed Action Emissions.....	22
Table 4-1	State-listed and Special Status Species List	25
Table 4-2	Noise Levels	29

Appendices

Appendix A	Site photographs
Appendix B	San Joaquin kit fox biological survey protocols
Appendix C	CEQA Environmental Checklist
Appendix D	Mitigation Monitoring and Reporting Program
Appendix E	SHPO Concurrence Memo
Appendix F	Environmental Documents

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
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
Challenge Grant	Reclamation Water Conservation Challenge Grant
CH ₄	Methane
CNDDDB	California Natural Diversity Database
CO	Carbon monoxide
CO ₂	Carbon dioxide
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
dBA	Decibels adjusted
DWR	California Department of Water Resources
EA	Environmental Assessment
EPA	Environmental Protection Agency
FWCA	Fish and Wildlife Coordination Act
FID	Fresno Irrigation District
GHG	Greenhouse gases
HRIC	Historic Records Information Center
IS	Initial Study
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
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
Project	Oleander Basin Banking Project
Reclamation	Bureau of Reclamation
ROG	Reactive Organic Gases
ROW	Rights-of-way
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SO ₂	Sulfur dioxide
SWP	State Water Project
TMDL	Total Maximum Daily Loads
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile Organic Compounds
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 800 miles of canals and pipelines, serving a total irrigated area of over 150,000 acres. The surface water supply for the 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 Briggs Canal and Fancher Canal systems to evaluate possible groundwater banking facilities and needed system improvements (Provost and Pritchard Engineering Group, Inc. 2006). The study recommended several projects, including groundwater banking facilities along the Fancher Canal system.

In 2009, FID applied to Reclamation for a \$300,000 grant through the Water Conservation Challenge Grant program (Challenge Grant) for the Oleander Basin Banking Project (Project). The Challenge Grant provides 50 percent cost-shared funding for the following types of on-the-ground projects: (1) water conservation and efficiency projects that allow users to decrease diversions and to use or transfer the water saved; (2) water marketing projects with willing sellers and buyers, including water banks, that transfer water to other uses to meet critical needs for water supplies; (3) projects that improve water management by increasing the use of renewable energy, by increasing operational flexibility (constructing aquifer recharge facilities or making system optimization and management improvements), or by addressing endangered species and other environmental issues; and (4) pilot and demonstration projects that address the technical and economic viability of treating and using brackish groundwater, seawater, impaired waters, or otherwise creating new water supplies within a specific locale.

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 purpose of the Proposed Action is to provide partial funding to construct a mechanism for FID to store and later recover a portion of their water supply for use in dry years when their water supplies are inadequate, or later in the same season when there is demand. The proposed facilities would also recharge groundwater to help reduce groundwater overdraft in the region.

1.3 Scope/Project Location and Setting

This EA/IS was prepared to analyze the potential impacts of constructing an approximately 23-acre groundwater bank and associated infrastructure. This EA/IS was also prepared to analyze the potential impacts of the No Action Alternative.

The Proposed Action area is located northeast of the intersection of Chestnut and Lincoln Avenues in Sections 6 and 7 of Township 15 South, Range 21 East, Mount Diablo Base and Meridian in Fresno County, California.

Prior to applying for a Challenge Grant, FID completed a geotechnical investigation of the banking site to determine soil infiltration rates. Thirteen soil borings were taken throughout the basin. Bore diameters ranged from 4 to 9 inches and depths ranged from 1 to 50 feet.

1.4 Potential 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 Trust Assets (ITA), Environmental Justice, Socioeconomic Resources, Air Quality, Global Climate, Aesthetics, Agricultural Resources, Geology and Soils, Hazards and Hazardous Materials, Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Utilities and Service Systems.

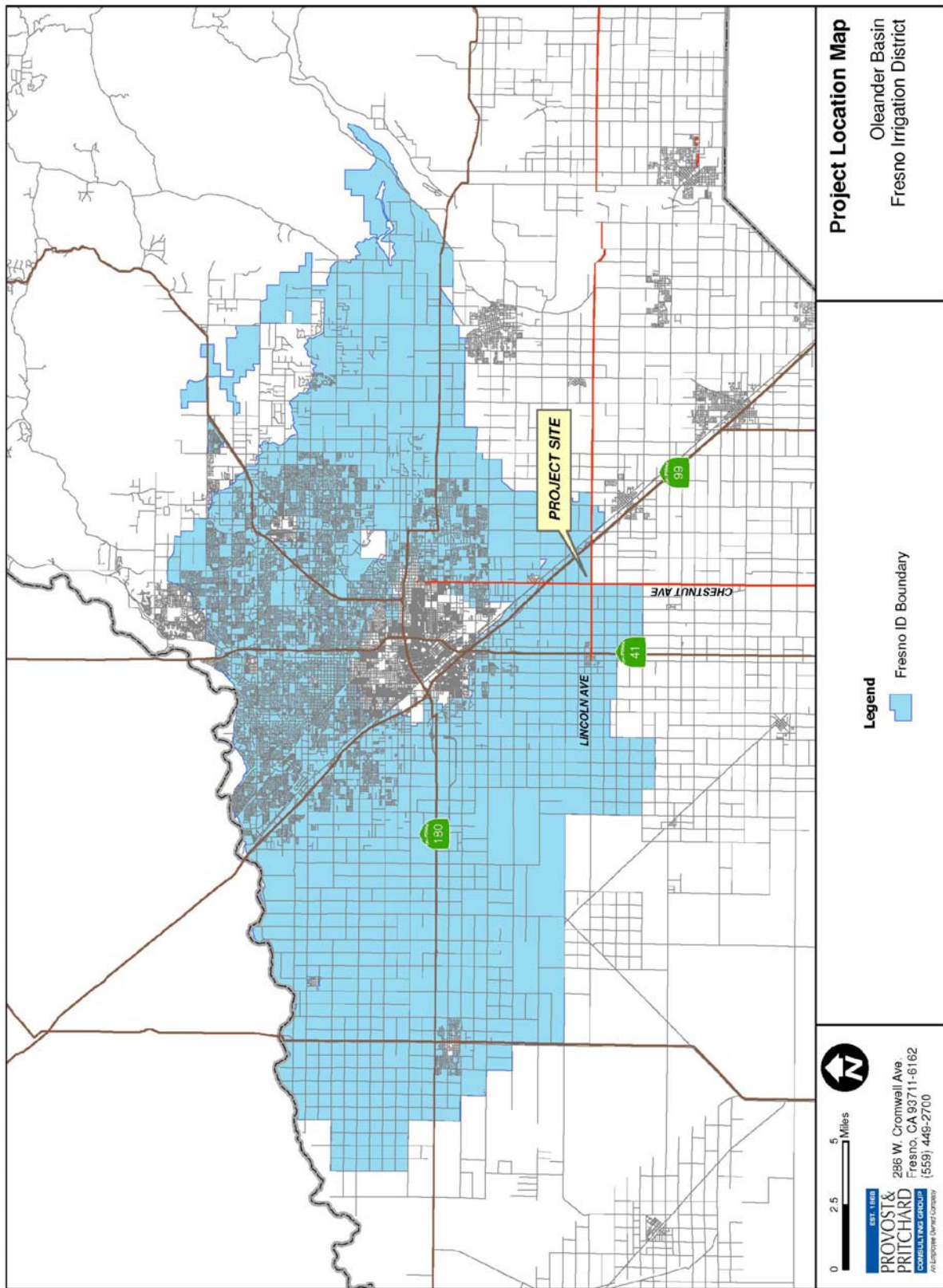


Figure 1-1 Fresno Irrigation District Location Map

THIS PAGE INTENTIONALLY LEFT BLANK

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.

Without federal funding assistance (the Proposed Action), construction of the Project would, at a minimum, be delayed. It is FID's intent to eventually construct and operate the Project; however, the timing would be speculative. Further, there is always the chance that the Project would never be built. Consequently, the No Action Alternative could have two possible scenarios: A) no change from existing conditions as the project would not be built; or B) no change from existing conditions for at least a period of time, where the length of time is unknown, after which the project would be built 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 (but at a later date).

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not award a Challenge Grant to FID that would partially fund the construction of their Project. 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

Under the Proposed Action, Reclamation would award FID with a \$300,000 Challenge Grant for their Project which includes construction of an approximately 23-acre groundwater banking facility located northeast of the intersection of Lincoln and Chestnut Avenues in Fresno County. The Proposed Action would involve the construction of one basin, a basin diversion structure at the Oleander Canal, one recovery well, up to four monitoring wells, and the installation of water level and flow measurement devices (see Figure 2-1). Water to be used for groundwater banking would come from FID's Kings River Entitlement and from the Friant Division of the CVP.

2.2.1 Basin Construction

The banking facility would consist of one basin. Removal of approximately 23 acres of existing vines, and modifications of existing field irrigation systems would be required prior to construction of the basin. Outside dimensions of the basin would be approximately 1,500

feet by 650 feet. Basin levees would have a top width of 16 feet with side slopes of 3:1 (outside) to 5:1 (inside). Variance in levee heights is expected due to the undulating terrain of the Proposed Action area. In general, levee heights may be as high as seven feet along Lincoln Avenue and as low as one foot or less along the northern boundary of the basin. Approximate quantities of earthwork would be 35,000 cubic yards. Three-wire fencing would likely be placed around the basin once construction is complete.

2.2.2 Basin Diversion Structure

A small concrete turnout would be constructed in the bank of the Oleander No. 16 Canal near Lincoln Avenue and a concrete outfall structure would be constructed at the southwest corner of the proposed basin. A 42-inch diameter concrete pipeline, approximately 500 feet in length, would be constructed from the proposed turnout location to the proposed outfall location at the basin. The pipeline would be located parallel to and run north or south of Lincoln Avenue with a crossing at Chestnut Avenue. Trenching for the pipeline would have a maximum top width of 22 feet and an approximate depth of 10 feet with a minimum three feet of cover. Earthwork for the turnout construction activities would consist of approximately 2,340 cubic yards of cut and 1,300 cubic yards of backfill. Removed soil would be used to backfill the trench. Any excess soil would be used within the basin for levee construction. The earthwork for the Oleander Canal turnout structure would consist of approximately 30 to 40 cubic yards of cut and 10 to 20 yards of backfill around the turnout structure, with a net export of approximately 20 yards back to the basin construction site.

2.2.3 Recovery Wells

One recovery well would be constructed to recover banked water. The well would be located on the basin property and would be constructed to a maximum depth of 800 feet. The recovery well would include an electric motor between 200 to 250 horsepower. A discharge pipeline would also be constructed between the well and Oleander Canal in order to allow the recovered water to be used for irrigation purposes. With a maximum 24-inch diameter boring that is a maximum of 800 feet deep, the drilling earthwork would be approximately 100 cubic yards. It is anticipated that the well discharge pipeline would require approximately 1,300 cubic yards of trenching excavation (assuming a combination of 15-inch and 24-inch diameter pipe with a total length of approximately 1,700 feet). Trenching for the pipeline would likely have a maximum top width of 12 feet and an approximate depth of six feet.

The operation of the recovery well would be based on several factors, including the amount of banked water and the demand for additional surface water that cannot be satisfied by scheduled surface water supplies. FID anticipates that the well would operate less than 1,400 hours per year for the annual extraction of up to 4,500 AF of banked water. It is expected that up to 10 percent of the delivered water would not be recovered due to evaporation, conveyance, and aquifer recharge.

2.2.4 Monitoring Wells

A maximum of four monitoring wells would be constructed to monitor groundwater levels at the basin site and would be located within a 0.5 mile radius of the proposed basin site. Automated level sensors and data loggers would be used to measure water level data and would allow FID staff to periodically download recorded data for analysis. Each well would be approximately 12-inches in diameter and 800-feet deep with a surface disturbance of 50 square feet. Approximate earthwork would be 25 cubic yards per well.

2.2.5 General Construction Activities

The staging area for construction activities would be within the confines of the basin levees on the basin floor. Construction would involve the use of scrapers for the majority of the earthwork activities, along with compaction equipment, bulldozers, water trucks, excavators, drill rigs and other miscellaneous vehicles such as gang trucks.

It is anticipated that the earthwork activity would balance on site (i.e., there would be no export or import). Road surface material removed from Chestnut Avenue due to trenching would be discarded offsite at an asphalt collection facility. Roads would be repaired once construction is complete.

It is anticipated that construction of the basin, pipeline, and outfall structure would commence in March 2011. The Oleander Canal turnout structure would be constructed during FID's winter maintenance period, most likely sometime during the months of November and October 2011 through January 2012. The construction of the recovery wells and monitoring wells would occur after the basin construction is complete (June 2011). Each well would take approximately one month to drill, develop, equip, and test.

2.2.6 Environmental Protection Measures

FID shall implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (see Table 2-1 and Appendix A for survey protocols). Environmental consequences for resource areas assume the measures specified would be fully implemented. Copies of the biological resource survey report and cultural resource monitoring report shall be submitted to Reclamation.

Table 2-1 Environmental Protection Measures

Resource	Protection Measure
Biological Resources	Preconstruction surveys and implementation of avoidance and minimization measures for San Joaquin kit fox (USFWS 1999).
Cultural Resources	FID shall have a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology conduct archaeological monitoring of construction activities during Proposed Action implementation. If cultural resources are identified during construction monitoring, the Proposed Action shall be stopped within a 200 foot radius of the discovery and Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.

2.2.7 Environmental Permitting

Construction activities within the Chestnut Avenue and Lincoln Avenue rights-of-way would be subject to Fresno County permits. FID would be responsible for obtaining and complying with all County permits. Copies of all permits would be provided to Reclamation.

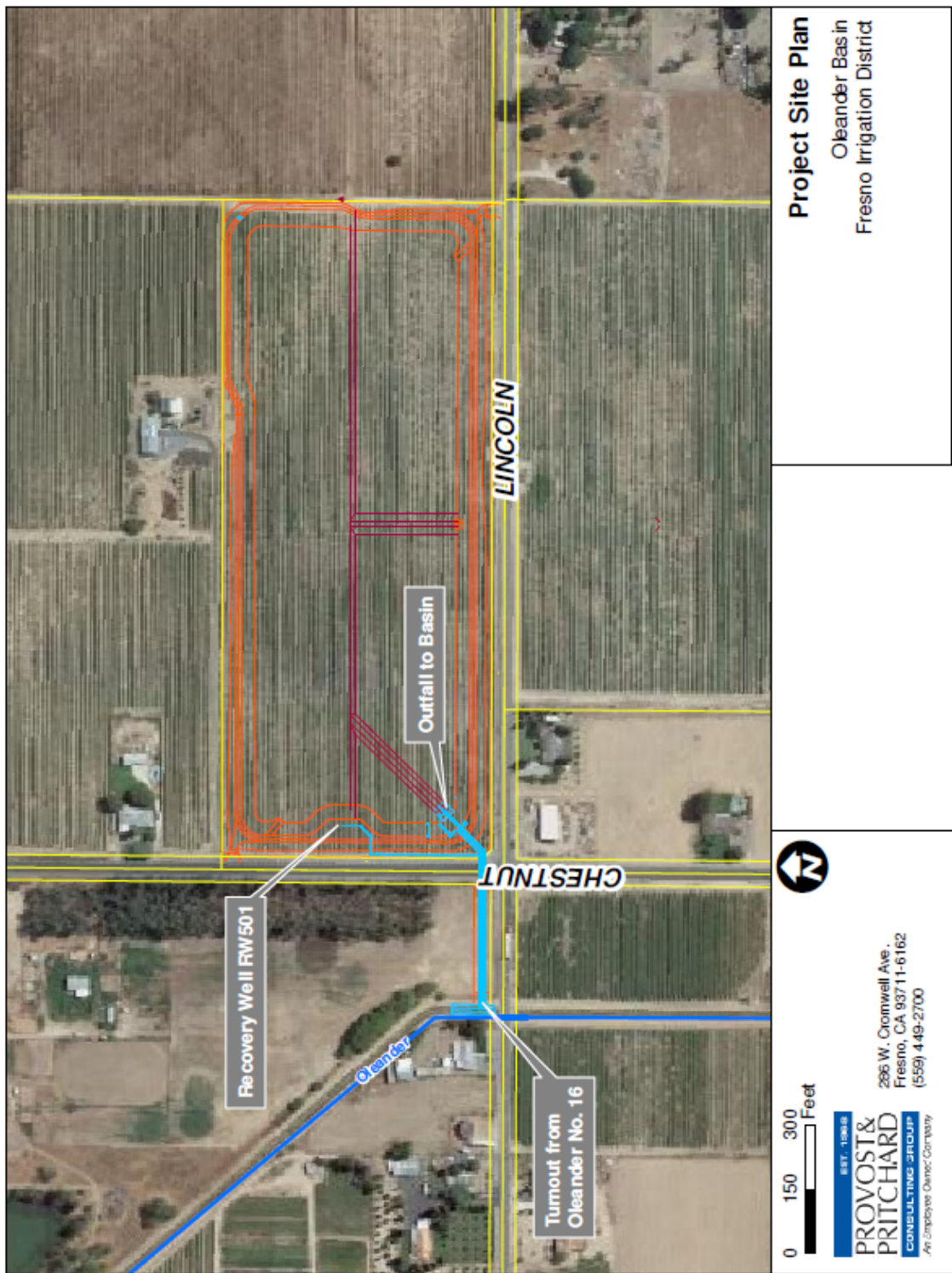


Figure 2-1 Proposed Action Project Details

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 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 800 miles of canals and pipelines. In 2001 FID entered into a long-term renewal contract with Reclamation for 75,000 AF per year (AFY) of Class 2 water (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.

3.1.1.1 Friant Division of the Central Valley Project

The Friant Division of the CVP includes facilities to collect and convey water from the upper San Joaquin River watershed to areas along the east side of the southern San Joaquin Valley from approximately Chowchilla on the north to the Tehachapi Mountains on the south (Reclamation 2010). Located in the southern San Joaquin River Basin and the Tulare Basin, the major facilities of the Friant Division include Friant Dam and Millerton Lake, the 36-mile long Madera Canal, and the 152-mile long Friant-Kern Canal. Friant Dam impounds and diverts the San Joaquin River forming Millerton Lake. The Friant Division is an integral part of the CVP, but is hydrologically independent and therefore operated separately from the other divisions of the CVP (Reclamation 2010).

The Friant Division was authorized by Congress under the concept of conjunctive use where CVP water was meant to be a supplemental supply to alleviate groundwater overdraft in the area. Based on the conjunctive use concept within the Friant Division, contractors are expected to continue mixed use of CVP and other surface water supplies and groundwater, with greater emphasis on groundwater use during dry periods when surface water is limited or expensive and percolate excess surface water in wet years.

3.1.1.2 Water Quality

Water quality for the Friant Division is pristine as it emanates from snow melt from the granitic Sierra Nevada delivered through the Friant-Kern Canal from Millerton Lake. Salinity measured as total dissolved solids typically averages about 50 milligrams per Liter (mg/L). No constituents in this water supply limit its use.

Water quality within the Kings River is normally pristine as it also originates from snow melt from the granitic Sierra Nevada. However, water quality during flood events can be degraded due to additional erosion from the scouring force of flood events.

In 2006, the Central Valley Regional Water Quality Control Board (CVRWQCB), in compliance with Section 303(d) of the Clean Water Act [33 USC Section 1313(d)], prepared a list of “impaired” water bodies in the State of California. The list was approved by the Environmental Protection Agency (EPA) on June 28, 2007 (State Water Resources Control Board [SWQCB] 2010). The list includes a priority schedule for the development of total maximum daily loads for each contaminant or “stressor” impacting a particular water body. CVRWQCB did not identify the upper portion of the Kings River as impaired but has identified water quality impairments for the 36-mile segment of the lower Kings River from Island Weir to Stinson and Empire Weirs which begins downstream of Highway 99 (SWRCB 2010).

3.1.1.3 Groundwater Resources

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-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.

3.1.1.4 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.

3.1.2 Environmental Consequences

3.1.2.1 No Action

Under the No Action Alternative, FID would not be able to bank any excess Kings River supply that may become available in the future nor would they be able to use up to 10 percent of the water that would have been banked to recharge the aquifer underlying the district. Available surface water supplies would continue as it has in the past which would mean that

farmers would continue to need to meet demand with additional groundwater pumping. 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.

3.1.2.2 Proposed Action

The Proposed Action would not generate a new supply of water; rather, it would improve the reliability of FID water supplies by using available surplus surface water to recharge the underlying groundwater subbasin for later use consistent with conjunctive use policies. In addition, the availability of up to 10 percent of the banked water for recharge may have a slight beneficial impact on groundwater levels. Therefore, the Proposed Action would not contribute to the existing overdraft nor create additional subsidence within the Proposed Action area.

Water delivery to the Proposed Action area would be accomplished through existing CVP and FID infrastructure. No modifications of the Friant-Kern Canal or FID's Kings River diversion points would be needed for the Proposed Action.

There would be no water quality impacts to ground water or surface water supplies as Friant CVP water and Kings River water quality is generally very good. Kings River water would be banked outside of flood events; therefore, water quality should be the same as it has been in the past. Therefore, there would be no adverse impacts to water resources as a result of the Proposed Action.

3.1.2.3 Cumulative Impacts

In 2009, seven water banking projects within the San Joaquin Valley were approved by Reclamation with another six still undergoing environmental analysis. Since 2005, a total of 23 water banking projects have been approved. Water banking projects provide a means for water districts 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.

3.2 Land Use

3.2.1 Affected Environment

The conversion of agricultural lands to urban uses in the expanding Fresno-Clovis metropolitan area has increased in recent years and has reduced the amount of agricultural crops within FID. Currently, about 150,000 acres or 60 percent of FID land remains as farmed agricultural land. Nearly 30 percent of the district is now urban, with the remaining 10 percent of land area classified as rural residential. The agricultural lands remaining are predominantly permanent crops (about 69 percent). Grape vineyards make up nearly 30 percent of the total FID acreage. Nuts, citrus, and deciduous fruits have also increased as cotton and pasture have declined.

The Oleander banking facilities would be located on lands classified by the California Department of Conservation (CDC) as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland (Table 3-1). These properties are also enrolled under the Land Conservation Act of 1965 (Williamson Act) and are defined as “Prime Agricultural Lands”. The Williamson Act was created by the California Legislature in order to protect the agricultural resources of the State from unnecessary or premature conversion to urban uses.

Table 3-1 Farmland Parcel Designations

Township	Range	Section	APN	CDC Farmland Designation	Williamson Act Designation
15S	21E	6	340-080-11	Prime	Yes
15S	21E	7	340-160-45S	Statewide Importance	Yes

Source: CDC 2006

3.2.2 Environmental Consequences

3.2.2.1 No Action

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

3.2.2.2 Proposed Action

Under the Proposed Action, construction of the Oleander banking facilities would not change existing land uses. Construction of the facilities would require the removal of the existing vineyard. Although this agricultural area is listed under the Williamson Act and is classified as either Prime Farmland or Farmland of Statewide Importance, the construction of irrigation facilities is considered to be a compatible agricultural use and would not change its land use designation. The Proposed Action would provide a mechanism for FID to store and later recover a portion of their water supply for use in dry years when their water supplies are inadequate, or later in the same season when there is demand. The Proposed Action would also provide facilities that would recharge groundwater to help reduce groundwater overdraft in the region. Consequently, the Proposed Action would maintain current land uses and would have no adverse impacts to land use.

3.2.2.3 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, no cumulative adverse impacts to land use are anticipated.

3.3 Biological Resources

3.3.1 Affected Environment

The biological resources found near the Proposed Action area are similar to those found in other agricultural areas of Fresno County. The Proposed Action involves construction in an agricultural area that has been intensively farmed for several decades. There is also a mix of rural residential, horse pasture, and commercial land use. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable animal and plant populations (Reclamation 2001).

Provost and Pritchard Engineering Group, Inc. were retained by FID to conduct reconnaissance-level biological surveys of the Proposed Action area and surrounding area on January 7, 2010 (Provost and Pritchard Engineering Group, Inc. 2010). The potential ground disturbance area was walked by foot and visually surveyed to evaluate occurrence for special-status species and habitat. Vine rows on the site were investigated for signs of animal use or roosting. Bridge culverts, irrigation facilities and trees on nearby offsite parcels were also inspected for potential animal use. The paved and unpaved roads surrounding the Proposed Action area were visually surveyed by slowly driving them and stopping occasionally to review the site.

The Sacramento United States Fish and Wildlife Service (USFWS) Database: http://www.fws.gov/sacramento/es/spp_list.htm, was accessed May 18, 2010, to determine federal protected species known or with the potential to occur in Fresno County (USFWS 2010a). The list includes species identified from the following U.S. Geological Survey 7½ minute quadrangles surrounding the Proposed Action area including: Sanger, Malaga, Conejo, Selma, Fresno South, Caruthers, Clovis, Round Mountain, and Fresno North. Reclamation further queried the California Department of Fish and Game's (CDFG) California Natural Diversity Database (CNDDDB) for records of protected species within 10 miles of the project location (CNDDDB 2010a). The two lists, in addition to the biologist's findings and other information within Reclamation's files were combined to create Table 3-2.

Table 3-2 Federal listed species from the vicinity of the Project Area

<u>Species</u>	<u>Status¹</u>	<u>Effects²</u>	<u>Occurrence in the Study Area³</u>
AMPHIBIANS			
California red-legged frog (<i>Ambystoma californiense</i>)	T	NE	Absent. No suitable habitat in the project area and none would be affected.
California tiger salamander, central population (<i>Rana aurora draytonii</i>)	T	NE	Absent. No vernal pools or suitable habitat present in the project area and none would be affected by the project.
FISH			
Central Valley steelhead (<i>Oncorhynchus mykiss</i>)	T NMFS	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
delta smelt (<i>Acipenser medirostris</i>)	T	NE	Absent. No natural waterways within the species' range will be affected by the proposed action.
INVERTEBRATES			
Conservancy fairy shrimp (<i>Branchinecta conservatio</i>)	E	NE	Absent. No CNDDDB-recorded occurrences or aquatic habitat present in action area.
valley elderberry longhorn beetle (<i>Desmocerus californicus dimorphus</i>)	T	NE	Absent. No CNDDDB-recorded occurrences or elderberry plants (suitable habitat) present in action area.
vernal pool fairy shrimp (<i>Branchinecta lynchi</i>)	T	NE	Absent. No CNDDDB-recorded occurrences or aquatic habitat present in action area.

<u>Species</u>	<u>Status</u> ¹	<u>Effects</u> ²	<u>Occurrence in the Study Area</u> ³
vernal pool tadpole shrimp (<i>Lepidurus packardii</i>)	E	NE	Absent. No CNDDDB-recorded occurrences or aquatic habitat present in action area.
MAMMALS			
Fresno kangaroo rat (<i>Dipodomys nitratooides exilis</i>)	E	NE	Absent. No CNDDDB-recorded occurrences or suitable habitat present in action area.
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	E	NE	Unlikely. There are three CNDDDB-recorded occurrences within a 15-mile radius of the action area. The closest record is located 10.3 miles northeast of the site reported in 1980 (Bell et al. 1994). FID shall implement environmental protective measures as described in Table 2-1 above.
PLANTS			
California jewel-flower (<i>Caulanthus californicus</i>)	E	NE	Absent. No suitable habitat occurs in the action area and none would be affected.
Greene's tuctoria (=Orcutt grass) (<i>Tuctoria greenei</i>)	E	NE	Absent. No suitable habitat occurs in the action area and none would be affected.
San Joaquin adobe sunburst (<i>Pseudobahia peirsonii</i>)	T	NE	Absent. No suitable habitat occurs in the action area and none would be affected.
San Joaquin Valley Orcutt grass (<i>Orcuttia inaequalis</i>)	T	NE	Absent. No suitable habitat occurs in the action area and none would be affected.
succulent owl's-clover (<i>Castilleja campestris</i> ssp. <i>succulenta</i>)	T, X	NE	Absent. No suitable habitat occurs in the action area and none would be affected. Critical habitat does not occur in action area.
REPTILES			
blunt-nosed leopard lizard (<i>Gambelia sila</i>)	E	NE	Absent. No CNDDDB-recorded occurrences and suitable habitat absent in action area
giant garter snake (<i>Thamnophis gigas</i>)	T	NE	Absent. No CNDDDB-recorded occurrences and suitable habitat in action area
<p>Sources: USFWS 2010a; CNDDDB 2010a; Provost and Pritchard Engineering Group, Inc. 2010</p> <p>1 Status= Listing of Federally special status species E: Listed as Endangered NMFS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. T: Listed as Threatened X: Critical Habitat designated for this species</p> <p>2 Effects = Effect determination NE: No Effect</p> <p>3 Definition Of Occurrence Indicators Unlikely: Species recorded near area but from greater than 20 years ago and habitat suboptimal or lacking entirely Absent: Species not recorded in study area and/or habitat requirements not met</p>			

Of the 17 special-status species identified above (Table 3-2), only the federally listed San Joaquin kit fox (*Vulpes macrotis mutica*) has the potential to occur in the Proposed Action area. The closest kit fox record is located 10.3 miles northeast of the Proposed Action site (CNDDDB 2010). Kit foxes prefer open annual grassland habitats with an abundance of small prey item food sources. Even though no natural habitat remains in the Proposed Action area

and prey base abundance is low, kit foxes could potentially move through the Proposed Action area.

Results of the reconnaissance biological surveys found no evidence of San Joaquin kit fox or San Joaquin kit fox dens in the vicinity (Provost and Pritchard Engineering Group, Inc. 2010). No burrows large enough to house kit fox dens were observed although some burrows on the parcel edge had large initial openings. Only two small gopher burrows were observed on the site but several ground squirrel burrows were seen on or near the property lines surrounding the Proposed Action parcels. It is likely that frequent disturbance from cultivation and the highly sandy soils are prohibitive to burrow creation.

3.3.2 Environmental Consequences

3.3.2.1 No Action

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

3.3.2.2 Proposed Action

The Proposed Action would be constructed on highly disturbed agricultural lands where agricultural operations have taken place for many years. The Proposed Action site provides only limited opportunities for special-status animal and plant species to inhabit the property. Many of the listed species are not expected to occur in the Proposed Action area because of the lack of suitable habitat (Table 3-2). Additionally, there is no designated or proposed critical habitat for listed species within the Proposed Action area.

The area is largely outside the current range and lacks required habitat for kit foxes. The San Joaquin kit fox is not expected to occur on-site, because of the fact that the area was recently cultivated, is surrounded by miles of active farm lands, potential dens with signs of kit fox use were not found during reconnaissance surveys, and prey base abundance is extremely low. However, because there is the potential for kit fox to move through the area, protocol-level pre-construction surveys and avoidance and minimization measures shall be implemented. Therefore, no effect to San Joaquin kit fox is anticipated.

There are no records of birds protected under the Migratory Bird Treaty Act (MBTA) occurring within a 10 mile radius of the Proposed Action Area (CNDDB 2010). In addition, all work would be done outside of bird nesting periods. Therefore, there would be no adverse impacts to birds protected under the MBTA.

3.3.2.3 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, in addition to continued urbanization of current agricultural lands.

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 area of the Proposed Action is the aboriginal territory of the Southern Valley Yokuts; however, some Foothill Yokuts may have periodically utilized resources on the eastern edge of the San Joaquin valley. Archaeological sites are known to exist in the area of the Proposed Action, particularly in close proximity to permanent water sources such as the San Joaquin River. Many of these archaeological sites may be buried below the surface and not visible during surface identification efforts. Meyer et al. (2010) has identified the Proposed Action area as having only a moderate to low potential for yielding buried archaeological sites. No archaeological sites were identified during surface inventory of the Proposed Action area.

Historic era resources in the Proposed Action area are generally related to agricultural development of San Joaquin Valley. Agriculture took hold in the Central Valley following the gold rush years of the mid 19th century. As gold fields "panned out," miners turned to farming the rich soils of California's Central Valley. Farming was relatively productive in the San Joaquin Valley, as long as water was available. The Miller and Lux cattle empire helped to promote the construction of the earliest irrigation efforts in the San Joaquin Valley to help provide a more reliable and consistent farming effort and water supply. These early efforts still could not resolve the overall abundance of water in Northern California and the aridity of the lower Central Valley. It was not until the mid 20th century and the development of California's CVP by Reclamation that this natural imbalance was subverted to provide additional water supplies to lower Central Valley farms. Two historic era resources related to

farming were identified in the Proposed Action area; these include the Oleander Canal and a windmill.

3.4.2 Environmental Consequences

3.4.2.1 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.

3.4.2.2 Proposed Action

Under the Proposed Action alternative, Reclamation has an undertaking subject to Section 106 review. Initial efforts to identify cultural resources in the Proposed Action Area were conducted by RSO Consulting and are documented in Orfila 2010. A supplemental report providing additional context and national register eligibility assessments was prepared by Reclamation and are documented in Nickels (2010). Two cultural resources were recorded during identification efforts. These are the Oleander Canal and an Aermoter windmill, both historic era resources. No archaeological resources were identified. Utilizing the combined reports, Reclamation entered into consultation with SHPO seeking their consensus that the Oleander Canal is assumed and shall be treated as eligible for inclusion in the National Register for this Proposed Action and this Proposed Action only, and the Aermoter windmill is not eligible for inclusion in the National Register. Reclamation also sought SHPO's concurrence on a finding that the proposed undertaking would have no adverse effect to historic properties. The SHPO concurred with Reclamation's findings on December 20, 2010 (Appendix E). Note that, any subsequent actions with a Federal nexus shall consider the Oleander Canal as an unevaluated cultural resource.

Upon receiving SHPO concurrence, Reclamation has completed the Section 106 process with the mitigation commitment that a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology shall monitor construction activities during Proposed Action implementation. This commitment is due in part to the moderate potential to yield buried archaeological deposits as described in Meyer, Young, and Rosenthal (2010) and because initial field identification efforts failed to consider vertical contexts in the identification efforts. If Cultural Resources are identified during construction monitoring, the Proposed Action shall be stopped within a 200 foot radius of the discovery and Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.

Implementing the above described mitigation commitment and the completion of the Section 106 consultation process, Reclamation concludes that the Proposed Action alternative would result in no impacts to cultural resources.

3.4.2.3 Cumulative Impacts

Reclamation has determined that the Proposed Action would not result in adverse impacts to cultural resources; therefore, there would be no cumulative adverse impacts.

3.5 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.

3.5.1 Affected Environment

The nearest ITA is Table Mountain Rancheria approximately 24 miles north-northeast of the Proposed Action location.

3.5.2 Environmental Consequences

3.5.2.1 No Action

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

3.5.2.2 Proposed Action

There would be no impacts to ITA as there are none in the Proposed Action area.

3.5.2.3 Cumulative Impacts

As there are no ITA within the Proposed Action location there would be no adverse cumulative impacts to ITA.

3.6 Environmental Justice

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.

3.6.1 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 2008). 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 (see Table 3-3). 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 3-3 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 2010

3.6.2 Environmental Consequences

3.6.2.1 No Action

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

3.6.2.2 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. Therefore, there may be a slight beneficial impact to minority or disadvantaged populations as a result of the Proposed Action.

3.6.2.3 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.

3.7 Socioeconomic Resources

3.7.1 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 2010). 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 2010). Additionally, the number of families in Fresno County below the poverty line was nearly double the state's average (U.S. Census Bureau 2010).

3.7.2 Environmental Consequences

3.7.2.1 No Action

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

3.7.2.2 Proposed Action

Implementation of the Proposed Action would provide an additional water supply resource 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.

3.7.2.3 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.

3.8 Air Quality

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

3.8.1 Affected Environment

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in California. Air basins share a common "air shed," the boundaries of which are defined by surrounding topography. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin. The San Joaquin Valley experiences episodes of poor atmospheric mixing caused by inversion

layers formed when temperature increases with elevation above ground, or when a mass of warm, dry air settles over a mass of cooler air near the ground. 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 (PM₁₀ and 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 volatile organic compounds (VOC), 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} (see Table 3-4). State attainment status has also been reached for lead but is in non-attainment for both PM₁₀, and PM_{2.5}.

Table 3-4 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 2010; SJVAPCD 2010; 40 CFR 93.153

ppm = parts per million

mg/m³ = milligram per cubic meter

µg/m³ = microgram per cubic meter

-- = No standard established

3.8.2 Environmental Consequences

3.8.2.1 No Action

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

3.8.2.2 Proposed Action

Operation of FID's proposed Oleander Banking facility would not contribute to criteria pollutant emissions, as pumps used for water banking would be electrical. There would only be a negligible increase in emissions resulting from the generation of electricity to power the pumps. However, emissions would be associated with construction activities. Air quality emissions for construction activities associated with the Proposed Action were calculated with the URBEMIS Model, Version 9.2.4 (Table 3-5).

Table 3-5 Calculated Proposed Action Emissions

Pollutant	Federal Status	de minimis (Tons/year)	Project emissions (Tons/year)
VOC/ROG (as an ozone precursor)	Nonattainment serious 8-hour ozone	50	0.99
NO _x (as an ozone precursor)	Nonattainment serious 8-hour standard	50	7.65
PM ₁₀	Attainment	100	7.46
CO	Attainment	100	11.18

Source: Rimpo & Associates, Inc. 2010; CARB 2007; SJVAPCD 2010; 40 CFR 93.153

As calculated emissions are well below the *de minimus* thresholds for the San Joaquin Valley Air Pollution Control District, there would be no adverse air quality impacts associated with the Proposed Action and a conformity analysis would not be required. In addition, FID would comply with San Joaquin Valley Air Pollution Control District's Regulation VIII which would reduce air quality impacts.

3.8.2.3 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 operations would not result in air quality impacts.

3.9 Global Climate Change

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

Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG, such as carbon dioxide (CO₂), occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO₂, methane (CH₄), nitrous oxide (N₂O), and fluorinated gasses (EPA 2008a).

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 2010b).

3.9.1 Affected Environment

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

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

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

3.9.2 Environmental Consequences

3.9.2.1 No Action

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

3.9.2.2 Proposed Action

The Proposed Action would involve short-term impacts consisting of emissions during construction and long-term impacts are attributable to project operations and would involve the generation of electrical energy to power the two electric motor pump drivers. These emissions would vary annually, but have been estimated using the EPA's GHG Equivalencies Calculator (EPA 2010c). Estimated emissions for CO₂ equivalences for both electric pumps would be about 6 metric tons per year of CO₂ (EPA 2010c), which is 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.

3.9.2.3 Cumulative Impacts

GHG impacts are considered to be cumulative impacts. Full operation of the water bank is estimated to produce 6 metric tons per year of CO₂. The Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts to global climate change owing to the *de minimis* magnitude of annual GHG emissions.

THIS PAGE INTENTIONALLY LEFT BLANK

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. Reference to the “Project” in this section is synonymous with the term, “Proposed Action”, used in other sections.

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 subject site, it would not degrade the visual quality of the site. Temporary construction activities would be visible from roadside; however, would not affect a scenic vista.

The recharge basin would be constructed with a maximum berm height of six to seven feet adjacent to Lincoln Avenue. The Project site would be surrounded by a five foot tall wire fence. The proposed six to seven foot berm would impact views across the Project site; however, it would not degrade the existing visual character or quality of the area or its surroundings. Recharge basins are commonplace in the regional setting. The impact would be less than significant.

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 Section 3.3 above. A list of State-listed and special status species of concern relevant to CEQA was generated by Provost and Pritchard Engineering Group, Inc. on January 18, 2010 (USFWS 2010b) and CDFG’s CNDDDB (CNDDDB 2010b). The list includes species identified on the following U.S. Geological Survey 7½ minute quadrangles surrounding the Proposed Action area including: Fresno North, Clovis, Round Mtn, Fresno South, Malaga, Sanger, Caruthers, Conejo, Selma.

Table 4-1 State-listed and Special Status Species List

	State	CNPS	Habitat	Occurrence Evaluation
Amphibians				
western spadefoot (<i>Spea hammondi</i>)	SC		Primarily in grasslands, but also found in orchard and vineyard habitat	Regional Potential
Birds				

	State	CNPS	Habitat	Occurance Evaluation
tricolored blackbird (<i>Agelaius tricolor</i>)	SC		Open water, dairies, grain fields	Habitat Absent
Western yellow-billed cuckoo (<i>Coccyzus americanus occidentalis</i>)	E		broad, lower flood-bottoms of larger river systems, riparian jungles of willow, cottonwood w/ blackberry, nettle or wild grape understory	Habitat Absent, Extirpated
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
California linderella (<i>Linderiella occidentalis</i>)	CN		Vernal pools.	Habitat Absent
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
Molestan blister beetle (<i>Lytta molesta</i>)	CN		Little habitat information is available. Possibly related to dried vernal pools.	Habitat Absent
Mammals				
American badger (<i>Taxidea taxus</i>)	SC		Open, Uncultivated ground with burrowing rodents in open shrub, forest and herbaceous habitats.	Habitat Absent
hoary bat (<i>Lasiurus cinereus</i>)	SC		Generally roosts in dense foliage of medium to large trees.	Regional Potential
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
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 embankments.	Habitat Absent
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.	Regional Potential
Natural Communities				
Northern Claypan Vernal Pool	CN		Old neutral to alkaline silicone-cemented hardpan soils, intergrades with marsh	Habitat Absent
Northern Hardpan Vernal Pool	CN		Old, very acidic, Fe-Si cemented hardpan soils	Habitat Absent
Plants				
caper-fruited tropidocarpum (<i>Tropidocarpum capparideum</i>)		1B.1	Valley and foothill grassland chenopod scrub	Habitat Absent
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)		1B.2	Marshes and swamps	Habitat Absent
Shevock's copper moss (<i>Schizymenium shevockii</i>)		1B.3	Cismontane woodland, on metamorphic rocks	Habitat Absent

	State	CNPS	Habitat	Occurance Evaluation
Madera leptosiphon (<i>Leptosiphon serrulatus</i>)		1B.2	Chenopod scrub, valley and foothill grassland hillsides with alkaline clay soils	Habitat Absent
California satintail (<i>Imperata brevifolia</i>)		2.1	Coastal scrub, chaparral, riparian scrub, mesic sites	Habitat Absent
spiny-sepaed button celery (<i>Eryngium spinosepalum</i>)		1B.2	Vernal pools, foothill and valley grassland on sites with clay soils	Habitat Absent

State Status (State):

E = Listed Endangered

SC = CDFG Species of Concern

CN = Recorded in CNDDDB for conservation purposes

California Native Plant Society List (CNPS):

1B = Plants rare, threatened, or endangered in CA and elsewhere

2 = Plants rare, threatened, or endangered in CA but more common elsewhere

A reconnaissance level biological survey was conducted for the Project and surrounding area on January 7, 2010 as described in Section 3-2.

Western mastiff bat (*Eumops perotis californicus*) were not observed during the survey but have been documented within five miles of the Project area (CNDDDB 2010b). In addition, several chenopod scrub associated plant species, sand dune associated invertebrate species (robberflies) and vernal pool species were not observed during the survey but have been documented within six miles of the Project area (CNDDDB 2010b). However, with the exception of the western mastiff bat record, these observations were associated with a non-specific location surveyed in town, within a five mile radius of central Fresno in the 1960's. The habitats (such as vernal pools, clay soils, riparian vegetation, chenopod scrub and sand dunes) associated with these species are not present in or around the Proposed Action area.

The hoary bat (*Lasiurus cinereus*) has been observed and recorded within the 9 quad search area of the CNDDDB, but not within 5 miles of the Project site. This species requires woodlands with medium to large-size trees and dense foliage for roosting. Adequate roosting habitat does not exist on the Project site; however, there are medium-sized trees with dense foliage in the eucalyptus grove to the west across Chestnut Avenue. As there is high speed vehicle traffic on Chestnut close to the trees, it is not likely that any bats using those trees would be impacted by the Project.

Western spadefoot toad (*Spea hammondi*) requires rain pools/vernal pools or other water features free of predators (such as bullfrogs and mosquito fish) for breeding. The Project site does not have conditions amenable to vernal pool formation as it has sandy, well-drained soils. There is a recharge basin/pond about 800 feet to the northwest that sometimes contains water. However, it is likely to contain species 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 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 would not be suitable dormant period habitat. It is unlikely that spadefoot toad would be impacted by the project.

Listed species are not expected to occur in the Project area due to lack of suitable habitat. Additionally, there is no designated or proposed critical habitat for listed species within the Project area.

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

The Proposed Action does not involve the generation of any hazardous emissions or the transport, use, storage, or disposal of any hazardous materials and will 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).

4.1.8 Hydrology and Water Quality

Water quality 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 30 miles to the northeast. Due to the distance between the Dam and the Proposed Action area, there would be no impact to the Oleander Banking facilities 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. 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 Proposed Action site. The Proposed Action 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 impacts and long-term operational noise 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 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 environments. Most residents of urban areas recognize this reality and expect to hear construction activities on occasion. The impact is less than significant.

4.1.12 Population and Housing

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

4.1.13 Public Services

The Project does not include any features or facilities that will 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 will 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 will therefore not result in increased or decreased use of parks or other recreational facilities. Additionally, the Project does not include recreational facilities and will 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. Oleander canal, an existing FID structure, is immediately adjacent to the east of the proposed Project site, and requires 1-2 traffic trips per day. Any monitoring and maintenance activities that would occur at the proposed basin would be performed by the same crew that monitors Oleander canal, thereby trip-linking for any maintenance situations. 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 result in a change to facilities or operations at existing wastewater basins, nor would it require additional water supplies or generate wastewater. 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 will have a less than significant effect on the local environment. As described in sections above, the potential for impacts to biological resources from the construction of the improved basin facility 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 C for the CEQA Checklist and Appendix D for the proposed Mitigation Monitoring and Reporting Program.

Section 5 Consultation and Coordination

Several federal and state laws, permits, licenses, and policy requirements have directed, limited, or guided the NEPA and CEQA analyses and decision making processes of this EA/IS and are listed below.

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 January 10, 2010 and February 8, 2010. No comments were received.

FID also released the Draft EA/IS for a public review period which ended on February 7, 2011. FID received no comments.

5.2 Construction General Permit

The Project will 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 will also be coordinated with the corresponding Regional Water Quality Control Board. A Dust Control Plan will be required and will be prepared in coordination with the San Joaquin Air Pollution Control District.

5.3 Fresno County

Applicable encroachment and construction permits will be obtained from Fresno County for the construction of facilities within the County road right-of-ways.

5.4 Fish and Wildlife Coordination Act (16 USC § 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 USC § 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. Environmental Commitments, as described in Section 2.2.7, would be implemented under the Proposed Action to avoid take of San Joaquin kit fox. There would be no effect to critical habitat for listed species. No federally listed or proposed species or critical habitat occurs in the area that would be affected by the Proposed Action. A kit fox pre-activity survey and avoidance measures must be implemented. Reclamation has determined that the Proposed Action would not affect any federally proposed or listed species or any proposed or designated critical habitat. No consultation is required with the National Marine Fisheries Service, and if the kit fox pre-activity survey verifies that no kit fox has occupied the area since the reconnaissance level surveys, no consultation is required with the USFWS.

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

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

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the APE, conduct cultural resource inventories, determine if historic properties are present within the APE, and assess effects on any identified historic properties.

Reclamation sought SHPO's concurrence on a finding that the proposed undertaking would have no adverse effect to historic properties. SHPO concurred with Reclamation's findings on December 20, 2010 (Appendix E).

5.7 Executive Order 13007 – 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. At this time no Indian Sacred Sites have been identified. Should a sacred site be identified in the future, Reclamation would comply with Executive Order 13007.

5.8 Migratory Bird Treaty Act (16 USC § 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 will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns. The Proposed Action would have no adverse effect on birds protected by the MBTA.

5.9 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. Water would be delivered through existing facilities to the Proposed Action site. Impacts to wetlands and/or floodplains would not occur as there are none present in the Proposed Action area.

Section 6 List of Preparers and Reviewers

Bureau of Reclamation

Rain Healer, Natural Resources Specialist, SCCAO
Jennifer Lewis, Wildlife Biologist, SCCAO
Adam Nickels, Archaeologist, MP-153
Patricia Rivera, ITA, MP-400
Chuck Siek, Supervisory Natural Resources Specialist - reviewer
Patti Clinton, Natural Resources Specialist, SCCAO - reviewer
Michael Inthavong, Natural Resources Specialist, SCCAO - reviewer

Fresno Irrigation District

Bill Stretch, Chief Engineer

Provost & Pritchard Consulting Group

Susan Gladding, AICP
Emily Magill Bowen, LEED AP

Julie Phillips, AICP
Ronald Samuelian, P.E.

Section 7 References

Anderson, J, F Chung, M Anderson, L Brekke, D Easton, M Ejetal, R Peterson, and R Snyder. 2008. Progress on Incorporating Climate Change into Management of California's Water Resources. *Climatic Change* 87(Suppl 1):S91–S108 DOI 10.1007/s10584-007-9353-1

Baseline Consulting. 1999. Screen administrative draft #2 environmental impact report for Borba Farms Dairy. Kern County. July 12. Emeryville, CA.

Bureau of Reclamation (Reclamation). 2006. FONSI/EA-06-111. *Fresno Irrigation District Water 2025 Grant Enterprise Canal and Fancher Creek Project*. Mid-Pacific Region, SCCAO.

California Air Resources Board (CARB). 2007. Off-Road Emissions Inventory. OFFROAD2007 Model. Website: <http://www.arb.ca.gov/msei/offroad/offroad.htm>. Accessed: 2009.

California Air Resources Board (CARB). 2010. California Air Basins. Website: <http://www.arb.ca.gov/knowzone/basin/basin.htm>. Accessed: March 22, 2010.

California Department of Conservation (CDC). 2006. Farmland Mapping & Monitoring Program. Fresno County Important Farmlands Map. Website: <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2006/>. Accessed: March 22, 2010.

California Department of Conservation (CDC). 2007. California Geological Survey. Alquist-Priolo Fault Zones in Electronic Format. http://www.consrv.ca.gov/cgs/rghm/ap/Map_index/Pages/F4C.aspx Accessed: March 26, 2010.

California Department of Toxic Substances Control. 2007. ENVIROSTOR. Find Cleanup Sites and Hazardous Waste Permitted Facilities. <http://www.envirostor.dtsc.ca.gov/public/> Accessed: March 26, 2010.

California Employment Development Department. 2010. News Release: California's Unemployment Rate Unchanged at 12.4 percent. Website: http://www.edd.ca.gov/About_EDD/pdf/urate201010.pdf.

California Natural Diversity Database (CNDDDB). 2010a. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3. Updated: May 1, 2010.

California Natural Diversity Database (CNDDDB). 2010b. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3. Updated: April 2, 2010.

California Department of Water Resources (DWR). 2003. California Groundwater Bulletin 118. Update 2003:
http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-22.14.pdf. Accessed: 2010

Environmental Protection Agency (EPA). 2009. Mandatory Reporting of Greenhouse Gases, Final Rule (40 CFR Parts 86, 87, 89 et al.) *Federal Register*. 74(209): 56260-56519.

Environmental Protection Agency (EPA). 2010a: Website – Climate Change, Basic Information. <http://www.epa.gov/climatechange/basicinfo.html>.

Environmental Protection Agency (EPA). 2010b: Website – Climate Change, Science. <http://www.epa.gov/climatechange/science/index.html>.

Environmental Protection Agency (EPA). 2010c. Greenhouse Gas Equivalencies Calculator. Website: <http://www.epa.gov/RDEE/energy-resources/calculator.html>. Accessed: June 2, 2010.

Fresno County General Plan, Noise Element. 2000.

Meyer, J.D., C. Young, and J.S. Rosenthal. 2010. *Volume I: A Geoarchaeological Overview and assessment of Caltrans Districts 6 and 9*. Report prepared for Caltrans by Far Western Anthropological Research Group, Inc. On file with Reclamation, Sacramento, CA
Nickels, A.M. 2010. *Supplemental Project Description, Context Statements, Eligibility Determinations, and Findings for the Proposed Oleander Basin Water Recharge Project*. Report prepared by and for Reclamation, Mid-Pacific Region. On file with Reclamation, Sacramento, CA. Project No. 10-SCAO-112.

Orfila, R.S.: 2010 *A cultural Resources Assessment for the Fresno Irrigation District Oleander Basin Project Near Fresno in Fresno County, California*. Report prepared for FID on behalf of Reclamation by RSO Consulting. On file with Reclamation, Sacramento, CA. Project No. 10-SCAO-112.

Poland, J.F. and B.E. Lofgren. 1984. Case History No. 9.13. San Joaquin Valley, California, U.S.A. in *Guidebook to studies of land subsidence due to ground-water withdrawal*. J.F. Poland (Ed). Prepared for the International Hydrological Programme, Working Group 8.4. Website: <http://wwwrcamnl.wr.usgs.gov/rgws/Unesco/>

Provost & Pritchard Consulting Group. 2006. Fancher Creek Groundwater Banking Investigation. October.

Rimpo and Associates, Inc. 2010. *Urbemis 2007 Version 9.2.4*: Environmental Management Software. Website: <http://www.urbemis.com/>.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2010. Ambient Air Quality Standards and Valley Attainment Status. Website: <http://www.valleyair.org/aqinfo/attainment.htm> Accessed: March 22, 2010.

State Water Quality Control Board (SWQCB). 2010. Total Maximum Daily Load Program. Website: http://www.swrcb.ca.gov/water_issues/programs/tmdl/303d_lists2006_epa.shtml. Accessed: February 2010.

U.S. Census Bureau. 2010. 2006-2008 American Community Survey 3-year Estimates: Kern County, CA. Website: <http://quickfacts.census.gov/qfd/states/06/06029lk.html>. Accessed: April 21, 2010.

U.S Department of Homeland Security. Federal Emergency Management Agency- The National Flood Insurance Program.
http://msc.fema.gov/webapp/wcs/stores/servlet/CategoryDisplay?storeId=10001&catalogId=10001&langId=-1&categoryId=12001&parent_category_rn=12001&type=1&stateId=&countyId=&communityId=&stateName=&countyName=&communityName=&dfirm_kit_id=&future=false&dfirmCatId=null&isCountySelected=1&isCommSelected=1&userType=G&urlUserType=G&sfc=0&cat_state=13011&cat_county=13255&cat_community=361971 Accessed: March 26, 2010.

U.S. Fish and Wildlife Service (USFWS). 1998. *Recovery plan for the upland species of the San Joaquin Valley, California*. Portland, OR. 319 pp.

U.S. Fish and Wildlife Service (USFWS). 1999. *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance*. Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, June 1999.

U.S. Fish and Wildlife Service (USFWS). 2010a. Federal Species List (document number 100518113449). Website: http://www.fws.gov/sacramento/es/spp_list.htm. Accessed: May 18, 2010. Site last updated April 29, 2010.

U.S. Fish and Wildlife Service (USFWS). 2010b. Federal Species List (document number 0100105045005). Website: http://www.fws.gov/sacramento/es/spp_list.htm. Accessed: January 18, 2010. Site last updated December 1, 2009.

FINAL ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT

Appendix A
Site Photographs

February 2011



Photograph 1. At the intersection of Chestnut and Lincoln Avenues, looking west toward the Oleander Canal along the approximate alignment of the conveyance facility leading to the basin.



Photograph 2. Western property line of the northern basin (adjacent to Chestnut Avenue), looking north.



Photograph 3. Southern property line of the northern basin (adjacent to Lincoln Avenue), looking east.



Photograph 4. Eastern property line of the northern basin (on left), looking north.



Photograph 5. Northern property line of the north basin (on left), looking west. Note grade change between the two parcels.



Photograph 6. Existing irrigation well and filter station that could be used as a recovery well. Well is adjacent to Lincoln Avenue near the northern line of the southern boundary.

FINAL ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT

Appendix B
San Joaquin kit fox biological survey protocols

February 2011

**U.S. FISH AND WILDLIFE SERVICE
STANDARDIZED RECOMMENDATIONS
FOR PROTECTION OF THE SAN JOAQUIN KIT FOX
PRIOR TO OR DURING GROUND DISTURBANCE**

Prepared by the Sacramento Fish and Wildlife Office
June 1999

INTRODUCTION

The following document includes many of the San Joaquin kit fox (*Vulpes macrotis mutica*) protection measures typically recommended by the U. S. Fish and Wildlife Service (Service), prior to and during ground disturbance activities. However, incorporating relevant sections of these guidelines into the proposed project is not the only action required under the Endangered Species Act of 1973, as amended (Act). Project applicants should contact the Service in Sacramento to determine the full range of requirements that apply to your project; the address and telephone number are given at the end of this document. Formal authorization for the project may be required under either section 7 or section 10 of the Act. Implementation of the measures presented in this document may be necessary to avoid violating the provisions of the Act, including the prohibition against "take" (defined as killing, harming, or harassing a listed species, including actions that damage or destroy its habitat). Such protection measures may also be required under the terms of a biological opinion pursuant to section 7 of the Act resulting in incidental take authorization (authorization), or an incidental take permit (permit) pursuant to section 10 of the Act. The specific measures implemented to protect kit fox for any given project shall be determined by the Service based upon the applicant's consultation with the Service.

The purpose of this document is to make information on kit fox protection strategies readily available and to help standardize the methods and definitions currently employed to achieve kit fox protection. The measures outlined in this document are subject to modification or revision at the discretion of the Service.

All surveys, den destructions, and monitoring described in this document must be conducted by a qualified biologist. A qualified biologist (biologist) means any person who has completed at least four years of university training in wildlife biology or a related science and/or has demonstrated field experience in the identification and life history of the San Joaquin kit fox. In addition, biologist(s) must be able to identify coyote, red fox, gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints such as an individual in-fill oil well, communication tower, or bridge repair. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a

future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features, and make recommendations on situating the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then preconstruction surveys should be conducted.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, and assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol).

Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping dens (active or inactive). Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project, and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances. The following radii are minimums, and if they cannot be followed the Service must be contacted:

Potential den	50 feet
Known den	100 feet
Natal/pupping den (occupied <u>and</u> unoccupied)	Service must be contacted
Atypical den	50 feet

Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Construction and other project activities should be prohibited or greatly restricted within these exclusion zones. Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited within the exclusion zones.

DESTRUCTION OF DENS

Disturbance to all San Joaquin kit fox dens should be avoided to the maximum extent possible. Protection provided by kit fox dens for use as shelter, escape, cover, and reproduction is vital to the survival of the species. Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service.**

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use. If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities. The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgement of the biologist, the animal has escaped from the partially destroyed den.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then destruction shall cease and the Service shall be notified immediately.

CONSTRUCTION AND OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of project-related disturbance should be minimized. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting project goals to be achieved. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be

included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated project areas should be prohibited.
2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.
3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site.
5. No firearms shall be allowed on the project site.
6. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets should be permitted on project sites.
7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control

must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the Service.
9. An employee education program should be conducted for any project that has expected impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the project site.
10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.
11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.
12. Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.
13. The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during

project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at:

Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

FINAL ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT

Appendix C
CEQA Environmental Checklist

February 2011

OLEANDER BASIN BANKING PROJECT

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

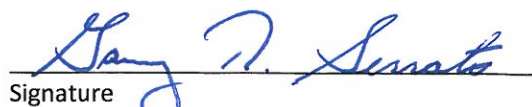

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.


Signature

Printed name

1-6-2011
Date

For

DRAFT ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT

Appendix D
Mitigation Monitoring and Reporting Plan

January 2011

MITIGATION MONITORING AND REPORTING PROGRAM

Public Resources Code § 21081.6 requires that, along with the adoption of the findings specified in a CEQA document approval, the lead agency must also adopt a “reporting/monitoring program to ensure compliance during project implementation.” The mitigation monitoring program has been prepared for the proposed Oleander Basin Banking Project (Project). This program was developed subsequent to final action by the Board of Directors of the Fresno Irrigation District. Implementation of the Project will be subject to the mitigation measures and monitoring program outlined in Table 1.

PROJECT DESCRIPTION

The Oleander Basin Banking Project includes the construction and operation of a 23-acre groundwater banking facility located north of Lincoln Avenue at the intersection of Lincoln Avenue and Chestnut Avenue in Fresno County, California. The Project components include the construction of a recharge basin; a basin diversion structure at the Oleander canal; conveyance pipelines; one new recovery well; and construction of monitoring wells and water level and flow measurement devices.

Table 1- Mitigation Monitoring Program

Affected Resources	Mitigation Measures	Implementation	Monitoring	Time Span								
Biology – candidate, sensitive, or special status species	<p>I) San Joaquin Kit Fox</p> <p>1. A pre-construction survey shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities on the project site, or prior to any project activity likely to impact the San Joaquin kit fox. The surveyor shall thoroughly check the project site for kit fox dens and, if found, exclusion zones shall be placed in accordance with USFWS Recommendations at the following radii:</p> <table><tr><td>1. Potential den</td><td>2. 50 feet</td></tr><tr><td>3. Known den</td><td>4. 100 feet</td></tr><tr><td>5. Natal/pupping den (occupied and unoccupied)</td><td>6. Contact Service</td></tr><tr><td>7. Atypical den</td><td>8. 50 feet</td></tr></table>	1. Potential den	2. 50 feet	3. Known den	4. 100 feet	5. Natal/pupping den (occupied and unoccupied)	6. Contact Service	7. Atypical den	8. 50 feet	To be the responsibility of the Fresno Irrigation District.	Construction contractor.	Completed prior to and during construction activities.
1. Potential den	2. 50 feet											
3. Known den	4. 100 feet											
5. Natal/pupping den (occupied and unoccupied)	6. Contact Service											
7. Atypical den	8. 50 feet											

Affected Resources	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>2. If dens must be removed, they must be appropriately monitored and excavated by a qualified wildlife biologist. Replacement dens will be required. Destruction of natal dens and other “known” kit fox dens must not occur until authorized by USFWS.</p> <p>3. Project-related vehicles shall observe a 20-mph speed limit in all project areas during construction, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, nighttime construction should be avoided. Off-road traffic outside of designated project areas should be prohibited during construction.</p> <p>4. To prevent inadvertent entrapment of kit foxes or other animals during project construction, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under numbers 8 and 9 of this section must be followed.</p> <p>5. Kit foxes are attracted to den-like structures such as pipes and therefore may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.</p> <p>6. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.</p>			

Affected Resources	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>7. No firearms shall be allowed on the project site.</p> <p>8. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on project sites during construction.</p> <p>9. A representative shall be appointed by FID who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the USFWS.</p> <p>10. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS shall be contacted for advice.</p> <p>11. Any contractor, employee(s), or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. The CDFG contact will contact the local warden or biologist.</p> <p>12. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846, (916) 414-6620. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, CA 95814, (916) 654-4262.</p>			
Cultural Resources	FID shall have a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology conduct archaeological monitoring of construction activities during Proposed Action implementation. If cultural resources are identified during construction monitoring, the Proposed Action shall be stopped within a 200 foot radius of the discovery and	To be the responsibility of the Fresno Irrigation District.	Construction contractor	Completed during construction activities.

Affected Resources	Mitigation Measures	Implementation	Monitoring	Time Span
	<p>Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.</p>			

FINAL ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT

Appendix E
SHPO Concurrence Memo

February 2011



**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

December 20, 2010

In Reply Refer To: BUR101213A

Michael A. Chotkowski
Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

BUREAU OF RECLAMATION OFFICIAL FILE COPY RECEIVED		
DEC 27 '10		
CODE	ACTION	SIGNATURE & DATE
150	<input checked="" type="checkbox"/>	12/28/10

Re: Proposed Ground Water Storage Project for the Fresno Irrigation District, Fresno County, California (Project No. 10-SCAO-112).

Dear Mr. Chotkowski:

Thank you for seeking my consultation regarding the above noted project. Pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA), the Bureau of Reclamation (BUR) is the lead Federal agency for this undertaking and is seeking my comments on the effects that the proposed project will have on historic properties. The BUR is providing a Water for America Challenge Grant to the Fresno Irrigation District (FID) to provide partial funds for the construction of the proposed water banking and storage project. The BUR has identified this use of federal funds as an undertaking subject to review under Section 106 regulations.

The project will be installed in existing agricultural fields (vineyards) and will consist of the construction of two separate basins. The northern basin will be approximately 1500 by 650 feet and the southern basin will be approximately 1150 by 650 feet. A diversion structure will divert water from the Oleander Canal to the recharge basins when water demand is low. The 420-foot long diversion pipeline will be 72-inches in diameter and will be buried in a trench approximately 10-feet deep. Additional excavations will be required for the construction of the new turnout structure on the Oleander Canal. An extraction well (in addition to an existing well) will also be installed.

The BUR has determined that the area of potential effects (APE) for these proposed project components and all necessary staging and access locations totals an area of approximately 41 acres. In addition to your letter of December 10, 2010, you have submitted the following documents as evidence of your efforts to identify and evaluate historic properties in the project APE:

- A Cultural Resources Assessment for the Fresno Irrigation District Oleander Basin Project near Fresno in Fresno County, California (Rebecca S. Orfila, RSO Consulting: January and July 2010).

Classification	ENV 3.02
Project	214
Control No.	10091719
Folder I.D.	111452
Date Input & Initials	12-27-2010 L2

- *Supplemental Project Description, Context Statements, Eligibility Determinations, and Findings for the Proposed Oleander Basin Water Recharge Project, Fresno County, California* (Adam Nickels, Division of Environmental Affairs, Cultural Resources Branch, Bureau of Reclamation Mid-Pacific Region: December 2010).

Two historic-era cultural resources were identified in the project APE, an Aeromotor windmill and the Oleander Canal. The BUR has applied the four criteria of eligibility for the National Register of Historic Places (NRHP) to the Aeromotor windmill and has determined that it is not eligible. Records indicate that the Oleander Canal (or its precursor), the second historic property in the APE, was in existence by 1881, although a firm construction date is not known. Based on the limited historic context data available on the Oleander Canal, and the constraints of this undertaking in evaluating a 6-mile long linear historic property, the BUR is proposing to treat this historic water conveyance feature as eligible for the NRHP (under criterion A) for the purposes of this undertaking. Based on this strategy, the BUR has concluded that the proposed action, the construction of a new turnout on the Oleander Canal and a buried pipeline to the proposed recharge basins, is a standard type of water conveyance facility modification or upgrade. The BUR has thus determined that the minor effects of the proposed undertaking will not alter the characteristics that impart NRHP eligibility to the Oleander Canal and do not constitute an adverse effect pursuant to 36 CFR Part 800.5(a)(1).

After reviewing your letter and supporting documentation, I concur that the Oleander Basin Aeromotor Windmill is not eligible for the NRHP and I have no objection to your finding of No Adverse Effect for this undertaking. Be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for this undertaking under 36 CFR Part 800. Thank you for seeking my comments and for considering historic properties in planning your project. If you require further information, please contact William Soule, Associate State Archeologist, at phone 916-445-7022 or email wsoule@parks.ca.gov.

Sincerely,

Susan H Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

FINAL ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

*FRESNO IRRIGATION DISTRICT
OLEANDER BASIN BANKING PROJECT*

**Appendix F
Environmental Documents**

February 2011

Project: EA-09-76 2009 Water for America Challenge Grant Fresno Irrigation District Oleander Banking Project

Location: Fresno County; Malaga 7.5' USGS topographic quadrangle

The Bureau of Reclamation (Reclamation) has reviewed Fresno Irrigation District (FID) Water Conservation Challenge Grant program (Challenge Grant) for the Oleander Basin Banking Project (Proposed Project) for impacts to biological resources. The Challenge Grant would provide funding to FID to increase water conservation, water management, water marketing, and a pilot project for water treatment purposes on a 23 acre parcel. The Project is located northeast of the intersection of Lincoln and Chestnut Avenues in Fresno County (Fig. 1). Habitat currently in the Project site is dominated by grape vineyards and irrigation facilities (CSU 2004).

FID proposes to construct a groundwater banking facilities, a basin diversion structure at the Oleander Canal, one recovery well, up to four monitoring wells, and the installation of water level and flow measurement devices (Fig. 1). The approximate outside dimensions of the basins would be approximately 1,500 feet by 650 feet. The levee would be constructed to have a top width of 16 feet with side slopes of 5:1 (inside) and 3:1 (outside). Levee height would vary by location due to the undulating terrain, but in general seven feet high.

The turnout structure would be constructed in the Oleander Canal bank near Lincoln Ave. A concrete pipeline, 42-inch diameter and approximately 500 feet in length, would be placed parallel just north of Lincoln Ave., to connect the canal to an outfall structure at the Proposed Project. Trenching for the pipeline would have a maximum top width of 22 feet and an approximate depth of 10 feet with a minimum three feet of cover. Groundwater would be monitored by a maximum of four monitoring wells constructed within the basin site. Recovery wells would be located within the basin at a maximum depth of 800 feet.

It is anticipated that construction of the basin, pipeline, and outfall structure would begin February 2011. The turnout structure would be constructed during FID's winter maintenance period, during October 2011 through January 2012. Recovery well and monitoring well construction would occur following the construction of the basin (June 2011). Construction equipment would include scrapers, compaction equipment, bulldozers, water trucks, excavators, drill rigs, and various other trucks. Staging will occur within basins and soil spoils will be used to construct the levees.

California Department of Fish and Game Natural Diversity Database (CNDDB 2010) records were searched for listed species within the vicinity of the Project area. Special-status species with the potential to occur in the Project area and with the potential to be impacted by the Project include the federally listed San Joaquin kit fox (*Vulpes macrotis mutica*; SJFK) (Fig. 2)

Project: EA-09-76 2009 Water for America Challenge Grant Fresno Irrigation District
 Oleander Banking Project
 Location: Fresno County; Malaga 7.5' USGS topographic quadrangle

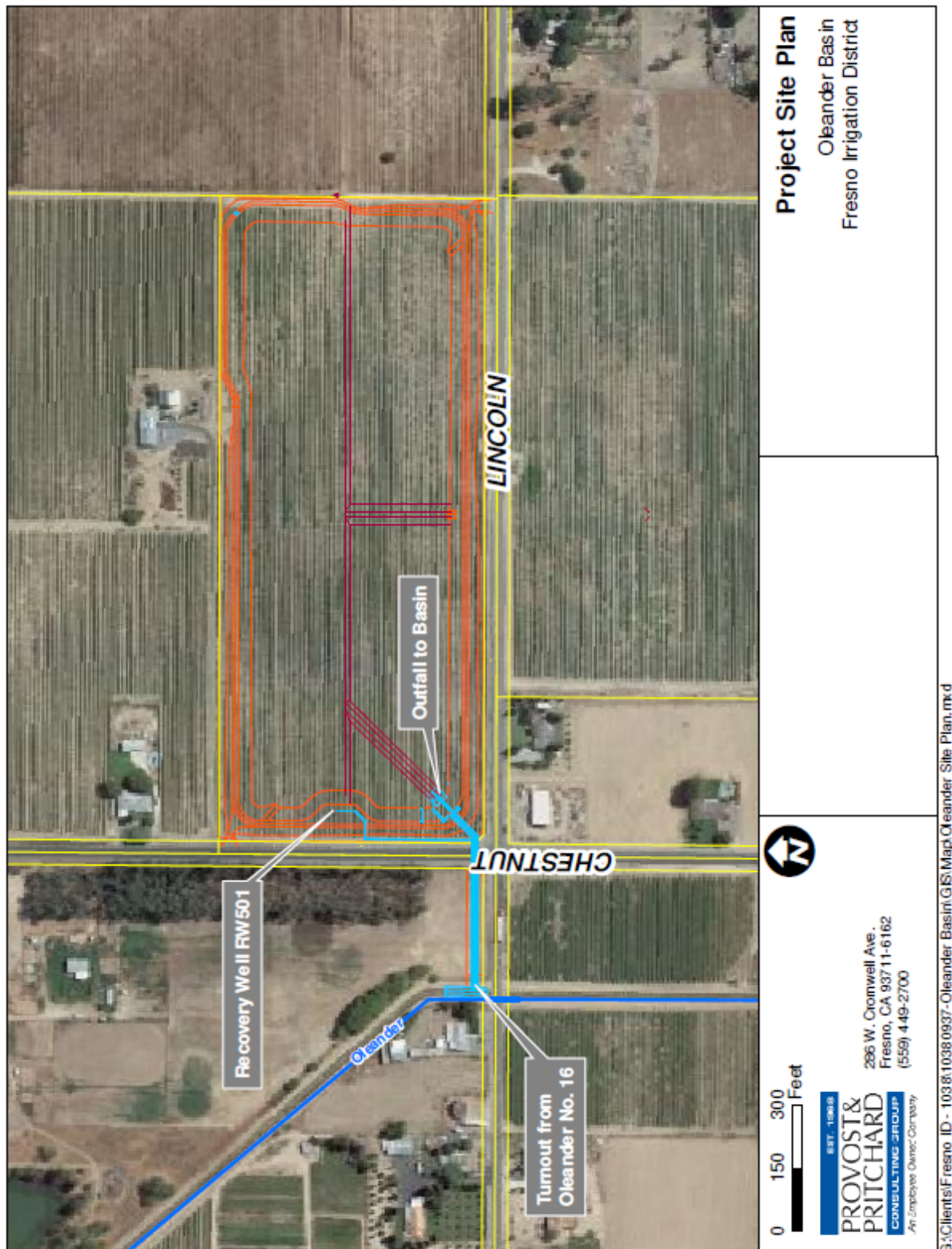
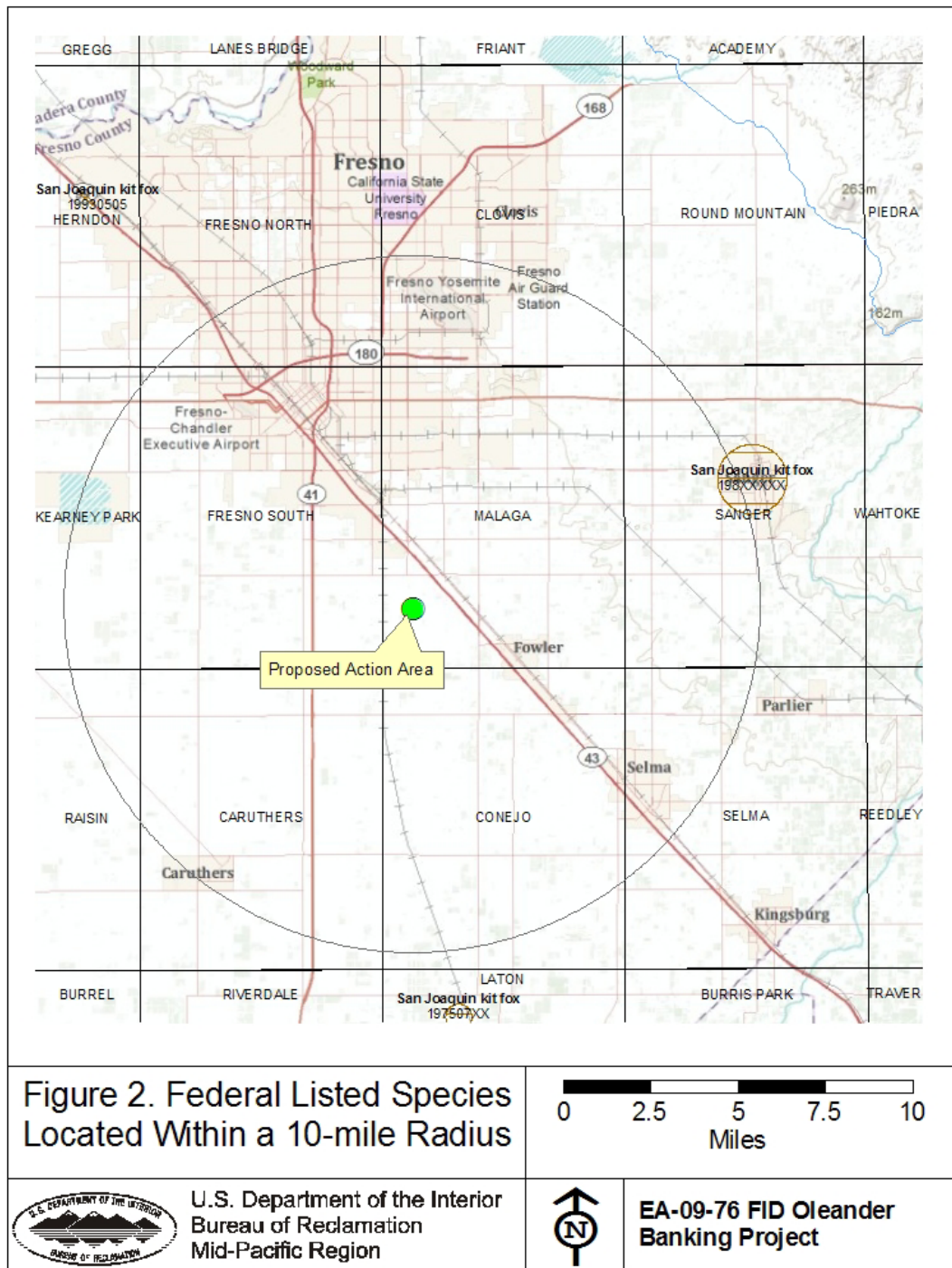


Figure 1. Proposed Action Project Details

Project: EA-09-76 2009 Water for America Challenge Grant Fresno Irrigation District
Oleander Banking Project

Location: Fresno County; Malaga 7.5' USGS topographic quadrangle



The closest record for SJKF is located 10.3 miles northeast of the Proposed Action Site (Fig. 2). The area in and around the Action Site is highly disturbed and currently used as agricultural habitat. However, because the SJKF could use the area for movement, a preconstruction survey must be completed 14 to 30 days prior to the initiation of the project (USFWS 1999). By following the avoidance and minimization measures, no effect is anticipated to SJKF.

Project: EA-09-76 2009 Water for America Challenge Grant Fresno Irrigation District Oleander Banking Project

Location: Fresno County; Malaga 7.5' USGS topographic quadrangle

The proposed action would not involve the conversion of any land fallowed and untilled for three or more years. The Proposed Action also would not change the land use patterns of the cultivated or (allowed fields that do have some value to listed species (i.e. the kit fox) or birds protected by the Migratory Bird Treaty Act (MBTA). 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.

Thank you,

Jennifer L. Lewis

References

- CNDDDB (California Natural Diversity Database). 2010. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3 (computer application). April 2, 2010.
- USFWS (U.S. Fish and Wildlife Service). 1999. Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance. Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, June, 1999.
- CSU (California State University, Stanislaus, Endangered Species Recovery). 2004. Land use and land cover of the San Joaquin Valley of California and surrounding areas. Endangered Species Recovery Pro, 2004-07-10.

Healer, Rain L

From: Nickels, Adam M
Sent: Tuesday, December 28, 2010 11:26 AM
To: Healer, Rain L
Cc: Perry, Laureen (Laurie) M; Overly, Stephen A; Bruce, Brandee E; Fogerty, John A; Goodsell, Joanne E; Dunay, Amy L; Barnes, Amy J
Subject: EA-09-76 Water for American Challenge Grant FID Oleander Banking Project
Attachments: 10-SCAO-112 SHPO Concurrence.pdf; 10-SCAO-112 SHPO Consultation.pdf; CR Edits for EA 09-76.doc

Project No. 10-SCAO-112

Rain:

The proposed undertaking to provide Federal appropriations through Reclamations Water for America Challenge Grant for the purpose of constructing and operating a water recharge basin in the Oleander Basin as part of the Oleander Water Banking project was determined to be the type of activity that had the potential to cause effects to historic properties. As a result, Reclamation initiated the Section 106 process as outlined in the regulations at 36 CFR Part 800. This initiation constituted the need to conduct historic property identification efforts. Given the size and scale of the undertaking, Reclamation requested that the Fresno Irrigation District (FID; the grant recipient), acquire the services of a qualified cultural resources professional to conduct the identification effort process as well as provide recommendations of eligibility for any identified cultural resources identified in the APE.

FID acquired the services of RSO Consulting Services out of Bakersfield, California. RSO conducted surface inventory of the APE and identified the Oleander Canal and an historic era windmill in the APE. RSO Consulting recommended that both the Oleander Canal and the windmill were not eligible for inclusion in the National Register of Historic Places (National Register). Upon review of RSO Consulting findings, Reclamation determined that the recommended findings of National Register eligibility lacked sufficient background context to make a determination of effect. Reclamation cultural resources staff prepared a supplemental report providing additional background and historic context for the Oleander Canal and windmill reaching a determination that the Oleander Canal is assumed and shall be treated as eligible for inclusion in the National Register for this undertaking and this undertaking only, and that the Aermoter Windmill is not eligible for inclusion in the National Register.

Using the report by RSO Consulting (Orfila 2010) and Reclamation's supplemental report (Nickels 2010), Reclamation entered into consultation with the California State Historic Preservation Officer (SHPO) seeking their concurrence on our finding that the proposed undertaking would not have an adverse effect to historic properties (consultation attached). Reclamation entered into this consultation on December 10, 2010. The SHPO reviewed Reclamations and concurred with our findings on December 20, 2010 which was received by Reclamation on December 27, 2010.

In reviewing buried archaeological site potential for the area of the Oleander Basin, the area has a moderate potential to yield buried archaeological deposits as described in Meyer, Young, and Rosenthal (2010). Initial field efforts by RSO consulting failed to identify the vertical context of the APE. Recognizing only a moderate potential for yielding buried archaeological deposits, Reclamation committed to the SHPO that a qualified archaeologist who meets the Secretary of Interior Standards for Archaeology shall monitor construction activities during project implementation. This commitment should also be reflected in the Finding of No Significant Impact (FONSI). I have included this commitment language and EA write up section in the attached file titled CR Edits for EA 09-76. If Cultural Resources are identified during construction monitoring, the project shall stopped within a 200 foot radius of the discovery and Reclamation's archaeological staff contacted immediately. Reclamation will follow the procedures outlined in the 36 CFR Part 800.13 regulations for post review discoveries.

After completing consultation with the SHPO and based on the commitment to conduct construction monitoring, Reclamation is concluding the Section 106 process for this undertaking barring any post review discoveries. Please retain a copy of this email concurrence and attached files with the administrative record of EA.

Sincerely,

Adam Nickels

Healer, Rain L

From: Rivera, Patricia L
Sent: Wednesday, January 20, 2010 1:41 PM
To: Healer, Rain L
Subject: RE: IS/EA-09-76 Oleander Canal Banking Project

Rain,

I reviewed the proposed action wherein the Fresno Irrigation District (FID), in 2009, applied to the Bureau of Reclamation for a grant through the Water Conservation Challenge Grant program (Challenge Grant) for the Oleander Basin Banking Project (Proposed Action). The Challenge Grant provides 50 percent cost-shared funding for the following types of on-the-ground projects: (1) water conservation and efficiency projects that allow users to decrease diversions and to use or transfer the water saved; (2) water marketing projects with willing sellers and buyers, including water banks, that transfer water to other uses to meet critical needs for water supplies; (3) projects that improve water management by increasing the use of renewable energy, by increasing operational flexibility (constructing aquifer recharge facilities or making system optimization and management improvements), or by addressing endangered species and other environmental issues; and (4) pilot and demonstration projects that address the technical and economic viability of treating and using brackish groundwater, seawater, impaired waters, or otherwise creating new water supplies within a specific locale.

FID has purchased a 41 acre parcel located east of the intersection of Chestnut and Lincoln avenues. Approximately 23 acres is located on the north side of Lincoln Avenue and the remaining 18 acres is located south of Lincoln Avenue. A geotechnical investigation of the banking site has been completed to determine soil infiltration rates. Thirteen soil borings have been taken throughout the basin. Bore diameters ranged from 4 to 9 inches and depths ranged from 1 to 50 feet.

The Proposed Action includes the removal of existing grape vines and irrigation facilities within the 41 acres, construction of a two basin groundwater banking facility, a basin diversion structure at the Oleander Canal, a basin intertie structure and conveyance facility between the two basins, construction of two recovery wells to pump banked water, construction of four monitoring wells, and water level and flow measurement devices. Existing water supplies would be diverted into the new bank for deep percolation. The new bank would be capable of yielding up to 1,500 acre-feet per year to downstream users in lieu of surface water deliveries. On average, ten percent of water banked would be left in the bank to recharge the aquifer.

Proposed Action designs have not been finalized; therefore, descriptions of construction activities are based on a maximum up-to amount. It is possible that actual construction activities could be less than this amount, but would not be more than this amount.

Basin Construction Activities

The banking facility would consist of two basins (northern and southern), one on either side of Lincoln Avenue. Outside dimensions for the northern and southern basins would be approximately 1,500 feet by 650 feet and 1,150 feet by 650 feet, respectively. Basin levees would have a top width of 16 feet with side slopes of 3:1 to 5:1. Variance in levee heights is expected due to the undulating terrain of the Proposed Action area. In general, levee heights may be as high as seven feet along Lincoln Avenue and as low as one foot or less along the northern boundary of the northern basin and the southern boundary of the southern basin. Approximate quantities of earthwork would be 35,000 cubic yards for the northern basin and 25,000 cubic yards for the southern basin. Three-wire

Basin Construction Activities

The banking facility would consist of two basins (northern and southern), one on either side of Lincoln Avenue. Outside dimensions for the northern and southern basins would be approximately 1,500 feet by 650 feet and 1,150 feet by 650 feet, respectively. Basin levees would have a top width of 16 feet with side slopes of 3:1 to 5:1. Variance in levee heights is expected due to the undulating terrain of the Proposed Action area. In general, levee heights may be as high as seven feet along Lincoln Avenue and as low as one foot or less along the northern boundary of the northern basin and the southern boundary of the southern basin. Approximate quantities of earthwork would be 35,000 cubic yards for the northern basin and 25,000 cubic yards for the southern basin. Three-wire

Monitoring Wells

Up to four monitoring wells would be constructed within the boundaries of the two basins. Each well would be approximately 12-inches in diameter and 800-feet deep with a surface disturbance of 50 square feet. Approximate earthwork would be 25 cubic yards per well.

Staging Location

Staging areas for the Proposed Action would be within the confines of the two basins.

Movement of Materials

FID anticipates that all removed soil from the Proposed Action would be used to build up levee walls requiring no import or export of soil from the Proposed Action area. Road surface material removed from Chestnut and Lincoln Avenues would be hauled off site for disposal.

Required Permits

Construction activities within the Chestnut Avenue and Lincoln Avenue rights-of-way would be subject to Fresno County permits. FID would be responsible for obtaining and complying with all County permits.

Construction Equipment

Construction equipment would include scrapers, compaction equipment, bulldozers, water trucks, excavators, drill rigs, and various trucks.

Timeline

Construction activities for the basins, RGRCP, and outfall structure would begin September 2010 once environmental compliance is complete. Construction of the turnout would begin during FID's winter maintenance period (November 2010-January 2011) when the Oleander Canal is dewatered.

Extraction/recovery wells and monitoring wells would be constructed once the basin construction is complete (February or March 2011).

The proposed action does not affect Indian Trust Assets. The nearest ITA is Table Mountain Rancheria approximately 24 miles NNE of the project location.

Patricia