

# RECLAMATION

*Managing Water in the West*

**Draft Environmental Assessment / Initial Study**

## **Delano-Earlimart Irrigation District Turnipseed Southern Expansion Project**

**EA/IS-10-063**



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



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## **Mission Statements**

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

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

The mission of the Delano-Earlimart Irrigation District is to protect, enhance, and manage the District's water and energy resources and related assets to benefit its growers, the community, and the region it serves through outstanding customer service, commitment to quality, and leadership in the water resources industry.

# Table of Contents

<b>Section 1</b>	<b>Purpose and Need / Introduction .....</b>	<b>1</b>
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 Environmental Issues.....	2
<b>Section 2</b>	<b>Alternatives and Proposed Action .....</b>	<b>5</b>
2.1	No Action Alternative .....	5
2.2	Proposed Action.....	5
2.2.1	Environmental Protection Measures .....	6
<b>Section 3</b>	<b>Affected Environment &amp; Environmental Consequences.....</b>	<b>7</b>
3.1	Water Resources .....	7
3.2	Land Use.....	9
3.3	Biological Resources .....	10
3.4	Cultural Resources .....	14
3.5	Indian Trust Assets .....	15
3.6	Indian Sacred Sites.....	16
3.7	Socioeconomic Resources.....	16
3.8	Environmental Justice .....	17
3.9	Air Quality .....	18
3.10	Global Climate .....	20
<b>Section 4</b>	<b>Environmental Factors Potentially Affected.....</b>	<b>23</b>
4.1	CEQA Environmental Checklist .....	23
4.2	Discussion of Potentially Affected Environmental Factors .....	32
<b>Section 5</b>	<b>Consultation and Coordination .....</b>	<b>37</b>
5.1	Public Review Period .....	37
5.2	Fish and Wildlife Coordination Act (16 USC § 661 et seq.).....	37
5.2	Endangered Species Act (16 USC § 1531 et seq.) .....	37
5.3	National Historic Preservation Act (16 USC § 470 et seq.) .....	38
5.4	Migratory Bird Treaty Act (16 USC § 703 et seq.).....	38
5.5	Clean Air Act (42 USC § 176 et seq.) .....	38
<b>Section 6</b>	<b>List of Preparers and Reviewers .....</b>	<b>39</b>
<b>Section 7</b>	<b>References .....</b>	<b>40</b>
<b>Appendix A</b>	<b>– Fish &amp; Wildlife Species List.....</b>	<b>42</b>
<b>Appendix B</b>	<b>– URBEMIS Files.....</b>	<b>43</b>
<b>Appendix C</b>	<b>– CEQA Checklist Signature Page .....</b>	<b>44</b>
<b>Appendix D</b>	<b>– Construction Drawing.....</b>	<b>45</b>
<b>Appendix E</b>	<b>– Environmental Protection Measures.....</b>	<b>46</b>

# List of Acronyms and Abbreviations

AB 32	Assembly Bill 32
AB 1493	Assembly Bill 1493
AF	acre-feet
APE	area of potential effects
ARB	Air Resources Board
CAA	Clean Air Act
CEQA	California Environmental Quality Act
CFR	Code of Federal regulations
cfs	cubic-feet per second
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CNDDDB	California Natural Diversity Data Base
CVP	Central Valley Project
CWA	Clean Water Act
DEID	Delano-Earlimart Irrigation District
DWR	Department of Water Resources
EA	Environmental Assessment
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FKC	Friant-Kern Canal
ft	feet
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
IS	Initial Study
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NKWSD	North Kern Water Storage District
NRHP	National Register of Historic Places
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
Project	Turnipseed Southern Expansion Project
Reclamation	Bureau of Reclamation
SHPO	State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Board
SJVAPCD	San Joaquin Valley Air Pollution Control District
SIP	State Implementation Plan
TDS	total dissolved solids
U.S.	United States
USFWS	U.S. Fish and Wildlife Services
VOC	volatile organic compounds

# 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 Delano-Earlimart Irrigation District (DEID) 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

DEID is located in southern Tulare County and northern Kern County along the county line, northeast of the City of Delano (Figure 1). In 1993, DEID purchased and developed an 80-acre parcel specifically used as a groundwater recharge basin, known as the Turnipseed Recharge Basin, which could receive water from either the district's distribution system or from direct diversions from the White River. In an effort to convert the Turnipseed Recharge Basin into a banking facility, DEID and/or Reclamation performed a series of environmental reviews to analyze the construction involved and associated environmental impacts. The following documents are hereby incorporated by reference:

- DEID Initial Study/Mitigated Negative Declaration, *Turnipseed Groundwater Banking*, April 2008
- Reclamation Categorical Exclusion Checklist-09-72, *Turnipseed Groundwater Bank Project – Phase I*, February 2010
- Reclamation/DEID Final Environmental Assessment-09-108/Initial Study and Mitigated Negative Declaration, *Delano-Earlimart Irrigation District Turnipseed Groundwater Bank Project – Phase II*, February 2010

DEID now desires to increase its capacity to bank and regulate surface water by developing an 80-acre parcel to the south of the existing Turnipseed Recharge Basin into recharge cells, hereto referred to as the Turnipseed Southern Expansion Project (Project). Section 2.2 of this EA/IS will describe the Project in further detail. DEID applied for and was selected as a potential recipient for federal grant funding assistance to develop the Project.

## 1.2 Purpose and Need / Project Objectives

DEID needs a way to maximize its varied water resources. The Project would supplement surface supply irrigation water during dry hydrological years and help reduce the impacts to groundwater levels by banking surplus surface water supplies in the underlying aquifer. The surface water potentially made available for banking would be water that cannot currently be used during certain periods (i.e. flood season) due to low demands. The additional water supply would be stored as groundwater, and later be pumped and used as needed. The Project would help to improve water reliability, reduce groundwater overdraft, extend the irrigation season, and reduce potential crop losses during droughts.

Overall, the Project would expand the existing Turnipseed Recharge Basin, allowing DEID to recover up to 4,300 acre-feet (AF) annually for supplemental irrigation water and ultimately provide the district with the ability to better manage its varied water resources.

### **1.3 Scope / Project Location and Setting**

This EA/IS has been prepared to analyze the potential direct and indirect impacts of constructing and operating the Project, which includes developing an 80-acre parcel into recharge cells immediately south of the existing Turnipseed Recharge Basin (Figure 2).

The Project is located in southern Tulare County within DEID, and situated within the south-half of the northeast quarter of Section 17, Township 24 South, Range 26 East, Mount Diablo Base & Meridian.

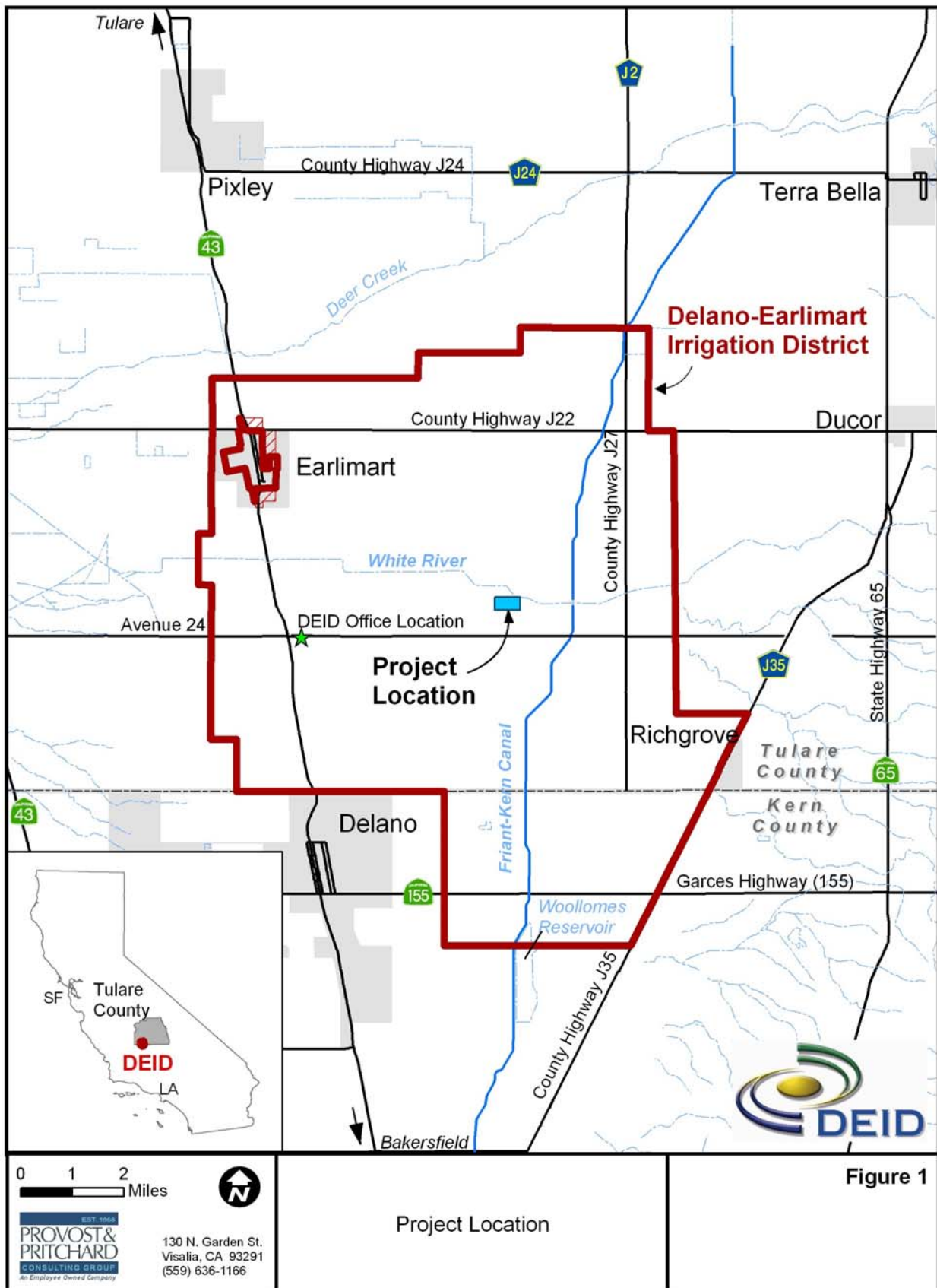
### **1.4 Potential Environmental Issues**

This EA/IS analyzed the affected environment of the Proposed Action in Section 3 (NEPA and CEQA) and Section 4 (CEQA only) in order to determine the potential and cumulative impacts to the following resources:

- Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trust Assets (ITA)
- Indian Sacred Sites
- Socioeconomic Resources
- Environmental Justice
- Air Quality
- Global Climate

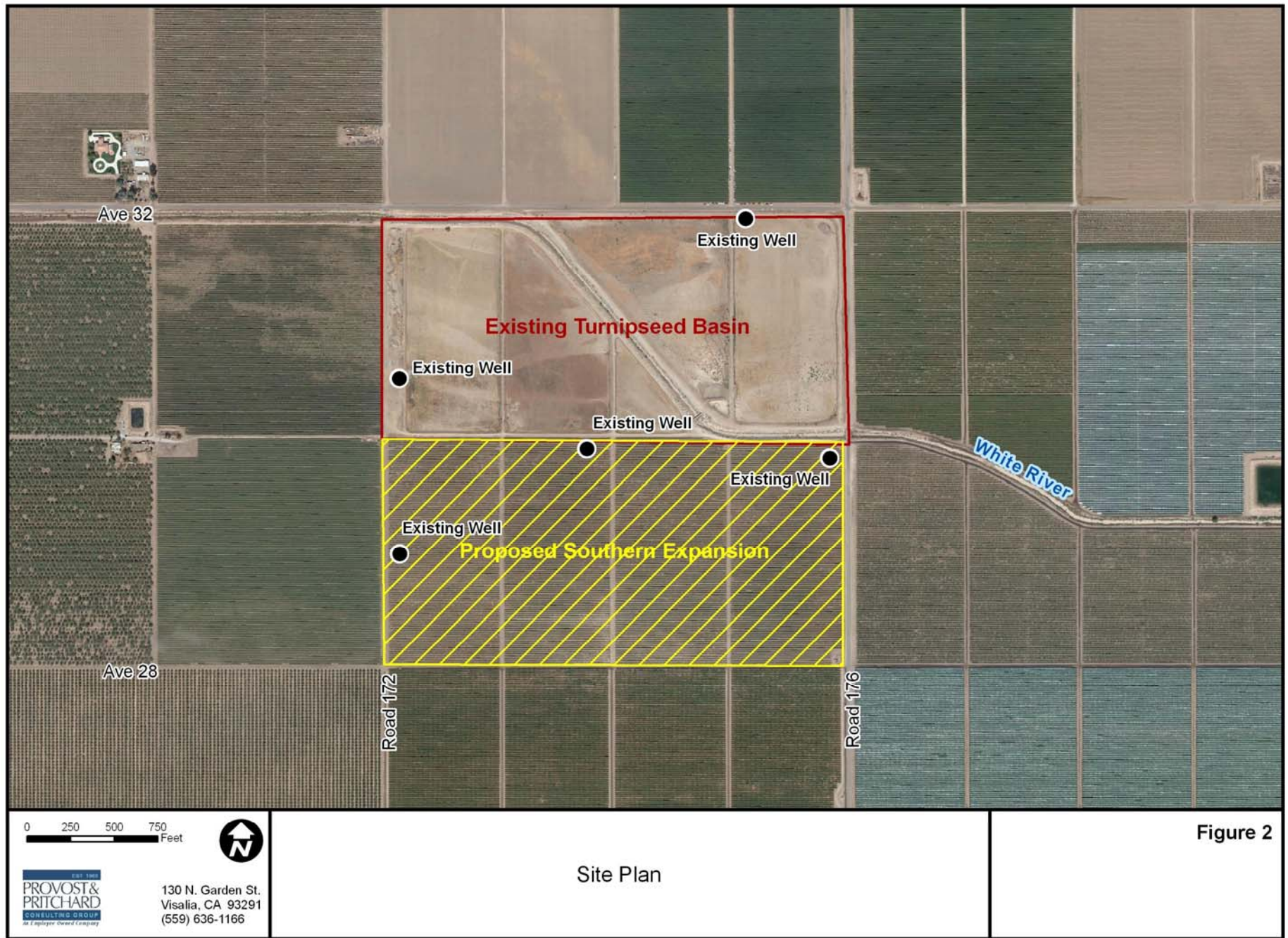
Resources Exclusive to CEQA analysis:

- Agricultural Resources
- Geology and Soils
- Hydrology & Water Quality
- Noise



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## **Section 2 Alternatives and Proposed Action**

This EA/IS considers two possible actions: the No Action Alternative and the Proposed Action. For the purposes of this EA/IS, the terms “Project” and “Proposed Action” are synonymous and will be used interchangeably. 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.

Absent of federal funding assistance, construction of the Project would, at a minimum, be delayed. It is DEID’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. With that said, 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 an unknown length of time, 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, only 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 federal grant funding to DEID that would partially fund the construction development of the Project. The Turnipseed Recharge Basin would continue to operate as a groundwater banking facility within its current capacity and conditions would remain the same as existing conditions.

### **2.2 Proposed Action**

Reclamation proposes to award DEID with a 2010 WaterSMART Grant and a 2010 Field Services Grant to help the district fund the expansion of the existing Turnipseed Recharge Basin. The Proposed Action would include excavation of an 80-acre parcel and subsequent levee construction to create four 20-acre recharge cells. Up to 100,000 cubic-yards of soil would be excavated from the parcel, which would be used to build up the levees. Each cell, from bottom to top, would not exceed 7 feet (ft) in depth. Water depth in the cell would range from 0-5 ft, although typical depths would be around 2-3 ft. It is anticipated that the cells would be filled seasonally; however, there may be years when it would be dry and other years in which it would operate continuously.

In order to deliver water into the new expansion area, a 3.5-ft tall earthen berm would be constructed to back up water in the southeast corner of Cell 3 of the existing basin, near DEID’s White River turnout. This berm would allow water to be delivered from Cell 3 into the new expansion area via gravity through a new 50-ft long, 3-ft diameter interconnecting pipeline. A 30-ft long, 3-ft diameter pipeline would be buried into the new berm to allow for continued water

delivery into Cell 3. Approximately 400 cubic-yards of soil would be excavated from Cell 3 to create the new berm. Three interconnecting pipelines, each roughly 30 ft long and 3 ft in diameter would be buried into the new levees of the new recharge cells of the expansion area. In addition, two new flow meters would be installed in DEID's two turnouts off the White River. Refer to Appendix E for construction drawing of this portion of the Proposed Action.

As weather allows, construction for the Proposed Action would start as soon as permitted, take 4-6 weeks, and completed by late summer in 2011. Equipment to be used include: drill rig, scraper, excavator, bulldozer, and backhoe.

## 2.2.1 Environmental Protection Measures

DEID would implement the following environmental protection measures to reduce environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified would be fully implemented.

<b>Table 1. Environmental Protection Measures*</b>	
<b><u>Resource</u></b>	<b><u>Protection Measure</u></b>
Biological Resources	United States Fish and Wildlife Service (USFWS) approved pre-construction protocol level surveys for San Joaquin kit fox shall be conducted no fewer than 14 days and no more than 30 days prior to the onset of any ground-disturbing activity (USFWS 1999). DEID shall follow Standardized Recommendations for Protection of the San Joaquin kit fox prior to and during ground disturbance (USFWS 1999).
Biological Resources	Areas subject to ground disturbance shall be surveyed for nesting burrowing owls no fewer than 14 days and no more than 30 days prior to start of construction according to established guidelines (CDFG 1995). Appropriate avoidance, minimization, or protection measures shall be determined in consultation with the California Department of Fish and Game in the event an active nest is located in an area subject to disturbance, or within the typical setback (i.e., occupied burrows or nests within 150 ft of an area subject to disturbance during the non-breeding season, or within 250 ft of an area subject to disturbance during the breeding season).
Cultural Resources	If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within 50 feet of the find shall be ceased. If the findings are deemed significant by the qualified archaeologist (as defined by Section 21084.1 of the Public Resources Code and 36 CFR 800.13 of the NHPA), appropriate mitigation measures shall be required prior to any resumption of work in the affected area of the project.
*Protection measures for San Joaquin kit fox and burrowing owls in further detail can be found in Appendix E.	

## **Section 3 Affected Environment & Environmental Consequences**

This section of the EA/IS includes the NEPA and CEQA 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**

##### ***Delano-Earlimart Irrigation District***

DEID is a Friant Division Central Valley Project (CVP) contractor with Reclamation and receives water diverted from the Friant-Kern Canal (FKC). DEID's annual entitlement from its CVP contract is for 108,800 AF Class 1 and 574,500 AF Class 2 supplies. When available, the district receives 215 Water (surplus CVP water) through annual contracts with Reclamation. DEID delivers surface water to approximately 400 landowners on roughly 56,500 acres of land through a completely piped system consisting of approximately 172 miles of pipeline, 527 irrigation turnouts, and 79 smaller metered deliveries to municipal and industrial water users. Currently, DEID provides 99% of its water supply for irrigation purposes and less than one percent (300 AF annually) to industrial uses. Farmers within DEID pump groundwater from privately-owned wells when surface water supplies are insufficient to meet their irrigation needs.

##### ***Groundwater Resources***

The Proposed Action area overlies Tule Groundwater Subbasin of the San Joaquin Valley Basin, and is confined within the Tulare Lake Hydrologic Region. On average, the subbasin water level has increased by a total of four feet from 1970 through 2000 (DWR 2005). Groundwater recharge is primarily from stream recharge (White River, Tule River, and Deer Creek) and from deep percolation of applied irrigation water (DWR 2005). Changes in the Tule Groundwater Subbasin level are evaluated by the State Department of Water Resources (DWR) by quarter township and computed through a custom DWR computer program using geostatistics, also known as kriging. Recent standing groundwater levels average about 130 to 150 ft below ground surface.

Groundwater levels underlying DEID have gradually stabilized since importation of surface water supplies. The drought period between 1987 through 1993 was an example for the need to have a conjunctive use program in the DEID area, as growers were forced to rely mostly on groundwater. In that seven-year span, the average depth to groundwater dropped roughly 27 feet (Brogan 2006). Currently, about 22 percent of the applied irrigation requirements within DEID are met by water users pumping from the groundwater basin. Farmers within DEID pump groundwater from roughly 200 private wells when surface water supplies are not sufficient to meet their irrigation needs (DEID 2003). The total amount pumped for agricultural use varies according to the amount of surface water available.

### ***Water Quality***

The quality of the CVP water conveyed in the FKC is considered to be of very good quality. Water quality data for the FKC indicates an average total dissolved solids (TDS) of 45 milligrams per liter for the period 1957 to 2000. Records indicate that there has not been much fluctuation in the quality of Friant Division CVP supplies from the FKC.

In general, groundwater quality throughout the region is suitable for most municipal and agricultural uses, with only local impairments. The primary constituents of concern for municipal uses are arsenic and nitrate, while salinity TDS is the primary area of concern for agricultural uses (DWR 2005). Owing to both its location and its high-quality surface water supplies, arsenic concentrations are not an issue in the groundwater underlying DEID; however, there are localized areas of elevated nitrate concentrations. In addition, salinity is relatively low in most of DEID and does not present a constraint on agricultural uses; however, similar to nitrate, there are localized areas of elevated TDS, which either affect crop choice or require blending of surface water and groundwater supplies.

### **3.1.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative, Reclamation would not fund construction of the Turnipseed Recharge Basin expansion. The surface storage capacity of the existing groundwater banking facility would remain the same. Groundwater levels underlying DEID would not be able to benefit from the additional recharge, and ground water quality would not improve from blending with better-quality surface water supplies. DEID would continue to use its surface water supplies from the CVP as has historically occurred.

#### ***Proposed Action***

The Proposed Action would not generate a new supply of water; rather, it would improve the reliability of DEID water supplies by using available surplus surface water to recharge the underlying groundwater subbasin for later use when groundwater pumping is necessary. The Proposed Action does not include additional groundwater pumping; rather, it would help to reduce the water-level impacts associated with existing groundwater pumping. In particular, the increased ability to recharge available surface water supplies would help to reduce the projected long-term decline in groundwater levels. Groundwater extraction would not exceed the total amount of water that is recharged, as to not deplete any groundwater supplies. Since the surface water supply has a lower salinity level than the existing groundwater, the long-term infiltration of these surface water supplies would serve to maintain and enhance the generally good quality of groundwater underlying the district area. Therefore, the Proposed Action would have slight beneficial impacts to DEID's water resources.

#### ***Cumulative Impacts***

DEID is currently engaged in a water banking program with North Kern Water Storage District (NKWSD). Under this project, which Reclamation has analyzed in a separate EA and which is hereby incorporated by reference, NKWSD would bank DEID's surplus CVP supplies (diverted off of the FKC) through its spreading ponds and, upon request, would extract groundwater for return to DEID at a later date (Reclamation 2009). The Proposed Action involves expanding the existing Turnipseed Recharge Basin within DEID, which the district would use to supplement its

surface water supplies for in-district use and would not adversely affect DEID's arrangement with NKWSD.

While banking opportunities may be made available to other interested parties through the use of DEID's groundwater bank, none have currently been identified. Typical water banking arrangements usually require that a small percentage is left behind to the groundwater basin for recharge purposes which would be a benefit to groundwater levels.

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

## **3.2 Land Use**

### **3.2.1 Affected Environment**

#### ***Delano-Earlimart Irrigation District***

DEID is composed of approximately 56,474 acres, of which 46,581 are irrigated to permanent crops. The major crops grown in the district include grapes, pistachios, almonds, and other fruit and nut trees, with a total of 23 different crops grown. Irrigation methods include drip, micro, gravity, and sprinkler. The Proposed Action area consists of row crops (grapes), surrounded by an existing groundwater banking facility and vineyards and almond orchards. The lands surrounding the Proposed Action area is zoned for agricultural use, with the majority being designated as prime agricultural lands.

### **3.2.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative, DEID would not expand their groundwater recharge facility, and thus not construct and operate the 80-acre basin expansion. Conditions related to the current use and operation of the Turnipseed Recharge Basin would remain the same.

#### ***Proposed Action***

The Proposed Action would not involve the development of new agriculture lands since the district is almost fully developed to agriculture. There are no residences adjacent to the basin boundaries, and construction of the Proposed Action would not develop new sources of water that would support any new housing or new permanent population growth that would exceed official regional or local population projections in the DEID service area. The main purpose of the Proposed Action is to improve DEID's water supply reliability in order to meet irrigation demands during dry hydrological years; therefore, no impacts to land use are anticipated.

#### ***Cumulative Impacts***

In recent years, land use changes to the south of DEID have involved the urbanization of agricultural lands. These types of changes are typically driven by economic pressures and they are as likely to occur without the Proposed Action as with it. Accordingly, no cumulative impacts to land use are anticipated.

## 3.3 Biological Resources

### 3.3.1 Affected Environment

The Proposed Action involves construction in a rural agricultural area that has been intensively farmed for several decades. The project area is dominated by agricultural habitat that includes field crops, orchards, and pasture. The vegetation is primarily crops and frequently includes weedy non-native annual and biennial plants. Much of the remaining habitat consists of isolated fragments supporting small, highly vulnerable animal and plant populations (Reclamation 2001).

Reclamation requested an official species list from the U.S. Fish and Wildlife Service (USFWS) on August 17, 2010, via the Sacramento Field Office's website, [http://www.fws.gov/sacramento/es/spp\\_lists/auto\\_list\\_form.cfm](http://www.fws.gov/sacramento/es/spp_lists/auto_list_form.cfm) (document number 100817084532) (Appendix A). The list is for the following 7½" U.S. Geological Survey quads: Deepwell Ranch, McFarland, Pond, Ducor, Sausalito School, Delano East, Richgrove, Pixley, and Delano West. Reclamation further queried the California Natural Diversity Database (CNDDB) for records of protected species within 10 miles of the project location (CNDDB 2010). The two lists, in addition to other information within Reclamation's files were combined to create the following list (Table 2).

Table 2. Federally listed species with potential to be present within or near the project area				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Status<sup>1</sup></u>	<u>Effects<sup>2</sup></u>	<u>Occurrence in the Study Area<sup>3</sup></u>
<b>Amphibians</b>				
California red-legged frog	<i>Rana aurora draytonii</i>	T	NE	<b>Absent.</b> No individuals or habitat in area of effect.
<b>Fish</b>				
delta smelt	<i>Hypomesus transpacificus</i>	T	NE	<b>Absent.</b> No natural waterways within the species' range will be affected by the proposed action.
<b>Invertebrates</b>				
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	E	NE	<b>Absent.</b> No individuals or habitat in area of effect.
valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	NE	<b>Absent.</b> No individuals or habitat in area of effect.
vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T, CH	NE	<b>Absent.</b> No individuals or vernal pools in area of effect.
<b>Mammals</b>				
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	NLAA	<b>Possible.</b> CNDDB records indicate this species occurs in the project area. The area could be used by individuals traveling through the area. The possibility that the area could be used for denning or as foraging habitat is less likely. DEID shall implement environmental protective measures as described in Section 2.2.1.



<u><b>Common Name</b></u>	<u><b>Scientific Name</b></u>	<u><b>Status<sup>1</sup></b></u>	<u><b>Effects<sup>2</sup></b></u>	<u><b>Occurrence in the Study Area<sup>3</sup></b></u>
Tipton kangaroo rat	<i>Dipodomys nitratoideus nitratoideus</i>	E	NE	<b>Absent.</b> No individuals or habitat in area of effect. Disturbed agricultural lands do not provide habitat.
<b>Plants</b>				
California jewelflower	<i>Caulanthus californicus</i>	E	NE	<b>Absent.</b> CNDDDB records indicated this species is extirpated from area.
Kern mallow	<i>Eremalche kernensis</i>	E	NE	<b>Absent.</b> No individuals or habitat in area of effect.
San Joaquin adobe sunburst	<i>Pseudobahia peirsonii</i>	T	NE	<b>Absent.</b> CNDDDB records indicated this species is believed extirpated from
<b>Reptiles</b>				
blunt-nosed leopard lizard	<i>Gambelia sila</i>	E	NE	<b>Absent.</b> No individuals or habitat in area of effect.
giant garter snake	<i>Thamnophis gigas</i>	T	NE	<b>Absent.</b> Species believed to have been extirpated from Tulare Basin.
Status= Listing of Federally special status species, unless otherwise indicated E: Listed as Endangered MBTA: Birds protected by the Migratory Bird Treaty Act T: Listed as Threatened CH: Critical Habitat designated for this species 2 Effects = Effect determination NE: No Effect anticipated from the Proposed Action to federally listed species NLAA: Not likely to adversely affect NT: No Take 3 Definition Of Occurrence Indicators Possible: Species or habitat recorded in area Absent: Species not recorded in study area and/or habitat requirements not met				

In addition to the federally listed species protected under the ESA, migratory birds, including the burrowing owl, are protected under the Migratory Bird Treaty Act (MBTA). Burrowing owl records are not known at the Proposed Action site, but are known from the vicinity.

### 3.3.2 Environmental Consequences

#### ***No Action Alternative***

Under the No Action Alternative, Reclamation would not provide grant funds for the construction of the Project and conditions regarding biological resources would remain the same as described above. There would be no impacts to wildlife and special-status species as no new facilities would be constructed and historical operation and maintenance practices related to the Turnipseed Recharge Basin would continue.

#### ***Proposed Action***

Reclamation has determined that the Proposed Action would have no effect to any of the species listed in Table 2 except possibly San Joaquin kit fox and burrowing owls, as described below.

Other than for San Joaquin kit fox and burrowing owl, the affected lands don't provide suitable habitat for the species identified in Table 2.

**California jewelflower & San Joaquin adobe sunburst** The nearest recorded occurrences of either species are four (jewelflower) and five (sunburst) miles from the project area (CNDDDB 2010). The project area is currently row crop agriculture, which has no potential to be habitat for the species, based on the regular maintenance of the area.

**Blunt-nosed leopard lizard & Tipton kangaroo rat** The nearest recorded occurrences of these species are six (lizard) and four (Tipton) miles from the project area. As with the plant species above, the project area is the disturbed row crop agriculture, which does not serve as habitat for either species, based on the maintenance of the area. The levees would be maintained to prevent the immigration of small burrowing mammal species such as kangaroo rats and ground squirrels, which also would preclude use by blunt-nosed leopard lizards.

**Vernal pool fairy shrimp & VPFS critical habitat** The nearest unit of vernal pool fairy shrimp critical habitat is nearly 10 miles from the project area, well outside the ability of the project to affect (CNDDDB 2010). The nearest recorded occurrence of the species outside of the critical habitat boundary is 7.5 miles from the project area (CNDDDB 2010). As with the plant species above, the project area consists of previously highly disturbed agricultural row crop production, which would not provide habitat for these species.

**Other species** Other species on the USFWS list (Table 2) would not be found within the action area. The disturbed areas of the basin does not provide habitat for California red-legged frog, giant garter snake, or Kern mallow. There are no elderberry shrubs that would provide habitat for Valley elderberry longhorn beetle. Conservancy fairy shrimp would not be affected for the same reasons as the vernal pool fairy shrimp. Delta smelt are not present, and there are no downstream affects that could potentially affect the species.

**San Joaquin kit fox** This species is known within the vicinity of the project area, and is highly mobile. Potential direct effects to the species would be avoided through implementation of the standard avoidance measures. If kit foxes are detected during construction, all construction activities within the area would halt until further analysis, and if necessary consultation with the USFWS, is complete.

The Proposed Action consists of converting 80 acres of row crops to a water recharge facility and indirect effects from the action, including ongoing operation of the facilities must also be considered. Some prey species and their burrows may periodically exist at the facilities and burrows on the inner prism of the levee banks could be flooded or disturbed by operations of the bank. Levees would be maintained to suppress growth of vegetation and this would limit herbivorous prey. Pests, such as ground squirrels would be discouraged and would be controlled to maintain the integrity of the impoundment levees. During periods when cells are dry, or during periods of drought or dry times when water for percolation might not be available, cells would naturally dry but basins would be periodically disturbed to preclude establishment of vegetation, likely through mechanical disturbance of the soil. As such, there would be limited

opportunity for establishment of prey populations and their burrows, which could be used by San Joaquin kit fox.

Additionally, based on expected low density of San Joaquin kit fox that may be found in the agriculturally dominated landscape surrounding the action area, along with intensive cultivation of those lands and continued and frequent disturbance of the land for water banking activities, it is highly unlikely that San Joaquin kit fox would come to occupy affected lands. It also is unlikely that San Joaquin kit fox would forage in the affected area for reasons described above, although San Joaquin kit fox might occasionally travel through the area. For these reasons, because there is negligible risk of affecting dens of San Joaquin kit fox, and because conversion of only a relatively small area (~ 80 acres) of cropland would occur from within a vast expanse of agricultural land surrounding the area which contains little high quality habitat to support this species, the Proposed Action is not likely to adversely affect San Joaquin kit fox.

**Burrowing owl** This species is considered as a Species of Special Concern under the California Endangered Species Act, and is protected under the MBTA. No CNDDB records show the species within the project area, but the habitat is suitable and burrowing owls have been detected within 8 miles (CNDDB 2010). Potential effects to the species from initial construction would be avoided with the implementation of avoidance measures recommended by the California Burrowing Owl Consortium and CDFG, including preconstruction surveys, prevention of disturbance within ~ 164 ft (50 meters) of occupied burrows during the non-breeding season (September 1 through January 31), and prevention of disturbance within ~246 ft (75 meters) during the breeding season (February 1 through August 31) (CDFG 1995). Burrows that show evidence of use by burrowing owls would not be destroyed unless a qualified biologist confirms that the owls are not present and are not actively using the burrow.

Reclamation has determined that the Proposed Action is not likely to adversely affect the San Joaquin kit fox and burrowing owls, and concurrence for this determination is being sought from the USFWS. Pre-construction surveys would be conducted before any ground-disturbing activities are to begin (refer to Table 1 and Appendix E). If the USFWS concurs with Reclamation's determination for San Joaquin kit fox and burrowing owls, and pre-construction surveys find no individuals or evidence of either species within the Proposed Action area, then construction could begin. If the pre-construction surveys detect the presence of these species then the Proposed Action would be paused while Reclamation revisits the ESA and MBTA determinations, and completes any consultation with the USFWS that might be necessary.

### ***Cumulative Impacts***

Impacts to biological resources from implementation of the Proposed Action would occur primarily during construction activities. On-going effects would not affect listed species, or in the case of San Joaquin kit fox are considered discountable and would not likely adversely affect this species. Measures to avoid take of burrowing owls following construction would be implemented for on-going operation of the recharge basin. The Proposed Action, when added to other similar past, existing, and future proposed actions, would not contribute to adverse cumulative impacts to wildlife resources since construction activities are short-term.

### **3.4 Cultural Resources**

A cultural resource 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 (NRHP). Those resources that are on or eligible for inclusion in the NRHP are referred to as historic properties. For Federal projects, cultural resource significance can be evaluated in terms of eligibility for listing in the NRHP.

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 would 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 would have on historic properties, and consult with the State Historic Preservation Officer (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 San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area can include historical resources associated with agriculture but are also often prehistoric in nature and can include remnants of native villages inhabited before European settlement. It is possible that many cultural resources lie undiscovered across the valley. The San Joaquin Valley supported extensive populations of Native Americans, principally the Northern Valley Yokuts, in the prehistoric period. Cultural studies in the San Joaquin Valley have been limited. The conversion of land and intensive farming practices over the last century may have disturbed many Native American cultural sites.

A cultural resources records search on November 25, 2009 by RSO Consulting at the Southern San Joaquin Valley Historical Resources Information Center at California State University, Bakersfield (RS #09-455). The records search included an examination of the NRHP, the California Register of Historical Resources, California Points of Historical Interest, California Inventory of Historic Resources, California State Historic Landmarks Registry, and the HRIC files of pertinent historical and archaeological data. No archaeological or historical sites have been recorded within the current Proposed Action area or within one mile of the Proposed Action area. The expansion area was reviewed during a field survey for cultural and historical resources. No cultural resources, prehistoric or historical were observed during the course of the field survey, but inventory of EA/IS-09-108 as whole did identify the channelized White River as a historic property.

### **3.4.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, conditions related to any potentially historic properties would remain the same as before. Since there would be no change in operations and no ground disturbance, there would be no new impacts to potential historic properties.

#### ***Proposed Action***

Reclamation has determined that the Proposed Action impacts comprise a no adverse effect to historic properties pursuant to 36 CFR Part 800.5(b). In the unlikely event that project implementation revealed previously unidentified cultural resources, then procedures outlined at 36 CFR Part 800.13(B) would be followed and would insure impacts are avoided (see Table 1).

#### ***Cumulative Impacts***

The Proposed Action, when added to similar past, existing, and future proposed actions, would not contribute to cumulative impacts to cultural resources.

## **3.5 Indian Trust Assets**

ITA are legal interests in assets that are held in trust by the United States (U.S.) 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 U.S. on behalf of Federally recognized Indian tribes. “Assets” are anything owned that holds monetary value. “Legal interests” means there is a property interest for which there is a legal remedy, such as compensation or injunction, if there is improper interference. ITA cannot be sold, leased or otherwise alienated without the U.S.’ approval. “Assets” can be real property, physical assets, or intangible property rights, such as a lease, or right to use something; which may include lands, minerals and natural resources in addition to hunting, fishing, and water rights. Indian reservations, rancherias, and public domain allotments are examples of lands that are often considered trust assets. In some cases, 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 the Tule River Reservation approximately 22 miles northeast of the project location.

### **3.5.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, conditions would remain the same as existing conditions and there would be no impacts to ITA.

#### ***Proposed Action***

There are no tribes possessing legal property interests held in trust by the U.S. in the lands involved with the Proposed Action. In addition, there are no ITA, Indian Reservations, or Public Domain Allotments found within DEID; therefore, no impacts to ITA would occur.

### ***Cumulative Impacts***

The Proposed Action, when added to other similar past, existing, and future proposed actions, would not contribute to cumulative impacts to ITA, since the Proposed Action would have no effect on ITA.

## **3.6 Indian Sacred Sites**

Executive Order 13007 provides that in managing Federal lands, each Federal agency with statutory or administrative responsibility for management of Federal lands will, to the extent practicable and as permitted by law, accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and avoid adversely affecting the physical integrity of such sacred sites.

### **3.6.1 Affected Environment**

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

### **3.6.2 Environmental Consequences**

#### ***No Action***

Under the No Action Alternative, there would be no impacts to Indian sacred sites since conditions would remain the same as existing conditions.

#### ***Proposed Action***

Since no known Indian sacred sites have been identified, the Proposed Action would not impact known Indian sacred sites and/or prohibit access to and ceremonial use of this resource.

### ***Cumulative Impacts***

Since the Proposed Action would not have any impacts to known Indian sacred sites and/or prohibit access to and ceremonial use of this resource, there would be no cumulative impacts to Indian sacred sites when taking into consideration similar past, present, and reasonably foreseeable projects.

## **3.7 Socioeconomic Resources**

### **3.7.1 Affected Environment**

The socioeconomic setting is dependent upon population, employment, housing, and revenues earned by the primary private employers. Kern County's economy is based on diverse assets of agriculture, oil, aerospace, transportation, and warehousing services. The area located within DEID is primarily rural agricultural land which provides farm-related jobs. There are small businesses that support agriculture, for example: feed and fertilizer sales, machinery sales and service, pesticide applicators, transport, packaging, marketing, etc. within the surrounding area.



### **3.7.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative, DEID would be unable to maximize its varied water resources and improve its surface water supply reliability through the use of expanded groundwater banking. Some permanent crop acreage may return to annual crops, where it can be fallowed in water-short years (unlike permanent crops). Accordingly, socioeconomic resources could be expected to be slightly impacted. Fallowing results in losses in crop revenues, farm income, and farm employment, along with additional losses in related manufacturing, trade, and service industries.

#### ***Proposed Action***

Over the long term, the Proposed Action would facilitate an increase in the reliability of DEID'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). As a result, there would be slight beneficial impacts to socioeconomic resources.

#### ***Cumulative Impacts***

The Proposed Action would result in an increase in DEID's water supply reliability, which would help sustain an economy of irrigated agriculture. When added to other similar past, existing, and future proposed actions, the Proposed Action would contribute to beneficial cumulative impacts to socioeconomic resources.

## **3.8 Environmental Justice**

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of Federal programs. Executive Order 12898, dated February 11, 1994, establishes the achievement of environmental justice as a Federal agency priority. The memorandum accompanying the order directs heads of departments and agencies to analyze the environmental effects of federal actions, including human health, economic, and social effects when required by NEPA, and to address significant and adverse effects on minority and low-income communities.

### **3.8.1 Affected Environment**

The market for seasonal workers on local farms draws thousands of migrant workers, commonly of Hispanic origin from Mexico and Central America, into the San Joaquin Valley. Agriculture and related businesses are the main industry in DEID, which provides employment opportunities for these minority and/or disadvantaged populations. The areas around the districts have stable economies based on local grapes, pistachios, almonds, and other fruit and nut tree products.

### **3.8.2 Environmental Consequences**

#### ***No Action Alternative***

The No Action Alternative may result in a slight adverse impact to minority or low-income populations near the project location. Without the ability to improve DEID's water supply reliability, there could be a decrease in farm-related jobs which these communities rely upon.

#### ***Proposed Action***

To the extent that water supply reliability is improved in DEID, it would serve to support the continued viability of the agricultural economy that has developed in reliance (in whole or in part) upon it, which provides jobs to the residents of disadvantaged populations. As a result, there would be beneficial impacts to environmental justice from the implementation of the Proposed Action.

#### ***Cumulative Impacts***

The Proposed Action, when added to similar past, existing, and future proposed actions, would have a slight beneficial contribution to cumulative impacts associated with environmental justice. The Proposed Action would help support and maintain jobs that low-income and disadvantaged populations rely upon.

## **3.9 Air Quality**

### **3.9.1 Affected Environment**

The Proposed Action lies within the San Joaquin Valley Air Basin (SJVAB), the second largest air basin in the State. 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.

Despite years of improvements, the SJVAB does not meet all State and Federal health-based air quality standards. To protect health, the San Joaquin Valley Air Pollution Control District (SJVAPCD) is required by Federal law to adopt stringent control measures to reduce emissions. On November 30, 1993, the Environmental Protection Agency (EPA) promulgated final general conformity regulations at 40 CFR 93 Subpart B for all federal activities except those covered under transportation conformity. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by a proposed action equal or exceed certain emissions thresholds, thus requiring the Federal agency to make a conformity determination. Table 3 presents the emissions thresholds covering the project location's overlying air basin.

<b>Table 3. San Joaquin Valley Attainment Status and Emissions Thresholds for Federal Conformity Determinations</b>			
<b>Pollutant</b>	<b>Federal Attainment Status<sup>a</sup></b>	<b>(tons/year)<sup>b</sup></b>	<b>(pounds/day)</b>
Volatile organic compounds (VOC) (as an ozone precursor)	Nonattainment/Serious (8-hour ozone)	50	274
Nitrous oxides (NO <sub>x</sub> ) (as an ozone precursor)	Attainment/Unclassified	50	274
Inhalable particulate matter (PM <sub>10</sub> )	Attainment	100	548
Carbon monoxide (CO)	Attainment/Unclassified	100	548

<sup>a</sup>SJVAPCD 2009

<sup>b</sup>40 CFR 93.153

### 3.9.2 Environmental Consequences

#### ***No Action Alternative***

Under the No Action Alternative, there would be no impacts to air quality since no construction would take place.

#### ***Proposed Action***

Short-term air quality impacts would be associated with construction, and would generally arise from dust generation (fugitive dust) and operation of construction equipment. Fugitive dust results from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. Fugitive dust is a source of airborne particulates, including PM<sub>10</sub> and PM<sub>2.5</sub>. Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including nitrogen dioxide (NO<sub>2</sub>), CO, VOC, sulfur dioxide, and small amounts of air toxics. Table 4 below provides a summary of the estimated emissions during construction and the URBEMIS files can be seen in Appendix C.

<b>Table 4 - Estimated Project Emissions During Construction</b>	
<b>Pollutant</b>	<b>Estimated Project Emissions<sup>a</sup> (tons/year)</b>
VOC	2.15
NO <sub>x</sub>	0.44
PM <sub>10</sub>	2.79
CO	0.97

<sup>a</sup>URBEMIS 2007, Version 9.2.4

Comparison of the estimated Proposed Action emissions (Table 4) with the thresholds for Federal conformity determinations (Table 3) indicates that project emissions are estimated to be below these thresholds.

The Proposed Action also involves the continued operation of electrically-driven pumps and motors; accordingly, there would not be any direct emissions from the operation of project facilities/equipment. The air quality emissions from electrical power have already been

considered in environmental documentation for the generating power plant; therefore, a conformity determination is not required. Accordingly, project construction and operations under the Proposed Action would not result adverse impacts to air quality beyond Federal thresholds.

### ***Cumulative Impacts***

The Proposed Action, when added to similar past, existing, and future proposed actions, would not contribute to cumulative impacts to air quality since construction activities are short-term and operations would not result in cumulative adverse air quality impacts.

## **3.10 Global Climate**

Climate change refers to change in measures of climate (e.g., temperature, precipitation, or wind) lasting for decades or longer. Many environmental changes (changes in sun's intensity, changes in ocean circulation, deforestation, urbanization, burning fossil fuels, etc.) can contribute to climate change (EPA 2009). Gases that trap heat in the atmosphere are often called greenhouse gases (GHG). Some GHG such as carbon dioxide (CO<sub>2</sub>) occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHG (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHG that enter the atmosphere because of human activities are: CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrogen oxides (NO<sub>x</sub>), and fluorinated gasses (EPA 2009). During the past century, humans have substantially added to the amount of GHG in the atmosphere by burning fossil fuels such as coal, natural gas, oil, and gasoline to power our cars, factories, utilities, and appliances. The added gases, primarily CO<sub>2</sub> and CH<sub>4</sub>, 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 2009). More than 20 million Californians rely on regulated delivery of water resources such as the State Water Project and the CVP, as well as established water rights from rivers. 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 the State's water resources and project operations. While there is general consensus in their trend, the magnitudes and onset-timing of impacts are uncertain and are scenario-dependent (Anderson et al. 2008).

### **3.10.1 Affected Environment**

In 2002, with the passage of Assembly Bill 1493 (AB 1493), the State launched an innovative and proactive approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations would apply to automobiles and light trucks beginning with their respective 2009 models (Hanemann 2007). The State has adopted Assembly Bill 32 (AB 32) and has identified GHG reduction goals; the effect of increased GHG emissions as they relate to global climate change is inherently an adverse environmental impact. While the emissions of one single project will not cause global climate change, GHG emissions from multiple projects throughout the world could result in an impact with respect to global climate change.

### **3.10.2 Environmental Consequences**

#### ***No Action Alternative***

Under the No Action Alternative, there would be no impacts respecting global climate since no construction would take place and there would not be any additional long-term electrical energy requirement.

#### ***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 electric motor pump drivers associated with the existing Turnipseed Groundwater Banking Facility. These emissions would vary annually, but have been estimated using the EPA's GHG Equivalencies Calculator (EPA 2010). Estimated emissions for CO<sub>2</sub> equivalences for all 5 electric pumps for the existing Turnipseed Groundwater Banking Facility would be approximately 1.6 metric tons/year of CO<sub>2</sub> (EPA 2010c). The run times of the existing pumps would double with project implementation, increasing the emissions for CO<sub>2</sub> equivalences by another 1.6 metric tons/year of CO<sub>2</sub>, for a total of 3.2 metric tons/year of CO<sub>2</sub>, 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 the global climate.

#### ***Cumulative Impacts***

GHG impacts are considered to be cumulative impacts. Full operation of the expanded groundwater banking facility is estimated to produce 3.2 metric tons/year of CO<sub>2</sub>. 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.

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## Section 4 Environmental Factors Potentially Affected

This section of the EA/IS includes the CEQA analysis portion of potentially affected issues that may result from implementation of the Project; however, analysis of certain resources has already been covered in Section 3 and will not be repeated in further detail in this section.

### 4.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the Project. Although some project elements could result in an environmental affect, modifications were made to the project description or mitigation measures have been proposed that would reduce all impacts to less than significant. The words “significant” and “significance” used throughout the following checklist and section are related to CEQA, not NEPA, impacts. In many cases, background studies performed in connection with the Project indicate no impacts. A “No Impact” answer in the last column reflects this determination. Where there is a need to clarify any issues, discussions are included in Section 4.2 following this checklist.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
<b><u>I. AESTHETICS</u></b>				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **II. AGRICULTURE RESOURCES**

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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optional model to use in assessing impacts on agriculture and farmland.

Would the project:

- |  |                          |                          |                                     |                          |
|--|--------------------------|--------------------------|-------------------------------------|--------------------------|
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### **III. AIR QUALITY**

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

- |   | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact        | No Impact                           |
|---|--------------------------------|---|-------------------------------------|-------------------------------------|
| a) Conflict with or obstruct implementation of the applicable air quality plan?   | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| d) Expose sensitive receptors to substantial pollutant concentrations?  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| e) Create objectionable odors affecting a substantial number of people?   | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| f) Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate?  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |

### **IV. BIOLOGICAL RESOURCES**

Would the project:

- |  |                          |                                     |                          |                          |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|
| a) Have a substantial adverse effect, either directly or through habitat modifications, on | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--|--------------------------|-------------------------------------|--------------------------|--------------------------|

any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **V. CULTURAL RESOURCES**

Would the project:

- |   | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact        | No Impact                |
|---|--------------------------------|---|-------------------------------------|--------------------------|
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?    | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                 | <input type="checkbox"/>            | <input type="checkbox"/> |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/>       | <input checked="" type="checkbox"/>                 | <input type="checkbox"/>            | <input type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?       | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries?                          | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## **VI. GEOLOGY AND SOILS**

Would the project:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

- ii) Strong seismic ground shaking?

- iii) Seismic-related ground failure, including liquefaction?

- iv) Landslides?

- b) Result in substantial soil erosion or the loss of topsoil?

- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

- d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

- e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## **VII. HAZARDS AND HAZARDOUS MATERIALS**

Would the project:

- a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
--------------------------------	---	------------------------------	-----------

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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release of hazardous materials into the environment?

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **VIII. HYDROLOGY AND WATER QUALITY**

Would the project:

- |   | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact        | No Impact                |
|---|--------------------------------|---|-------------------------------------|--------------------------|
| a) Violate any water quality standards or waste discharge requirements?   | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Substantially alter the existing drainage  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

- |   |                          |                          |                                     |                                     |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| f) Otherwise substantially degrade water quality?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| j) Inundation by seiche, tsunami, or mudflow?   | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |

## **IX. LAND USE AND PLANNING**

Would the project:

- |   | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact | No Impact                           |
|---|--------------------------------|---|------------------------------|-------------------------------------|
| a) Physically divide an established community?  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |
| c) Conflict with any applicable habitat conservation plan or natural community  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input type="checkbox"/>     | <input checked="" type="checkbox"/> |



conservation plan?

## **X. MINERAL RESOURCES**

Would the project:

- a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
- b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **XI. NOISE**

Would the project:

- a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **XII. POPULATION AND HOUSING**

Would the project:

- a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- b) Displace substantial numbers of existing housing, necessitating the construction of

Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

replacement housing elsewhere?

- c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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### **XIII. PUBLIC SERVICES**

Would the project:

- a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **XIV. RECREATION**

Would the project:

- a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### **XV. TRANSPORTATION/TRAFFIC**

Would the project:

- a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e.,

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e) Result in inadequate emergency access?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f) Result in inadequate parking capacity?  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **XVI. UTILITIES AND SERVICE SYSTEMS**

Would the project:

- |  | Potentially<br>Significant<br>Impact | Less than<br>Significant<br>With<br>Mitigation<br>Incorporation | Less than<br>Significant<br>Impact | No Impact                           |
|--|--------------------------------------|---|------------------------------------|-------------------------------------|
| a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?  | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?          | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in                       | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |

addition to the provider's existing commitments?

- |  |                          |                          |                          |                                     |
|--|--------------------------|--------------------------|--------------------------|-------------------------------------|
| f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| g) Comply with federal, state, and local statutes and regulations related to solid waste?                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **XVII. MANDATORY FINDINGS OF SIGNIFICANCE**

Would the project:

- |  | Potentially Significant Impact | Less than Significant With Mitigation Incorporation | Less than Significant Impact        | No Impact                |
|--|--------------------------------|---|-------------------------------------|--------------------------|
| a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?   | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?  | <input type="checkbox"/>       | <input type="checkbox"/>                            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

## **4.2 Discussion of Potentially Affected Environmental Factors**

### **Aesthetics**

There would be no significant impact to aesthetics due to the low profile nature of the basin; no lights are proposed for the Project. There would be no impact regarding a scenic vista nor would the proposed Project damage an existing scenic resource. As the Project is an expansion of an existing groundwater banking facility immediately to the north, the proposed Project would fit in with the scenic viewshed of the region.

### **Agricultural Resources**

The Project would include the conversion of 80-acres of row crop agriculture to expand an existing groundwater banking facility, which would allow DEID to bank additional surface water supplies when water is available and pump the banked groundwater during times of water

scarcity. Water recharge facilities are an allowed agricultural use, according to the Tulare County General Plan (2001). Groundwater banking facilities would not convert farmland to non-farmland uses nor would it conflict with any Williamson Act contract; as banking is an allowable agricultural use.

### **Air Quality and Climate Change**

Impacts to air quality have been discussed in Section 3.8; however, potential impacts resulting from Climate Change are discussed below.

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC 1998), the efforts devoted to GHG emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of AB 1493, the State launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year (Hanemann 2007).

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the year 2020, and 3) 80% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of AB 32, the Global Warming Solutions Act of 2006 (Hanemann 2007). AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. For more information regarding GHG emissions, see Section 3.9.

Temporary project construction emissions would be minimal, as demonstrated in Table 3, due to the increase in electric pump usage. The Project would not significantly contribute to the emission of GHGs. The impact would be less than significant.

### **Biological Resources**

Impacts have been discussed in Section 3.3.

### **Cultural Resources**

All impacts have been discussed in Section 3.4.

## **Geology and Soils**

The proposed Project would include the construction of an 80-acre recharge basin. The Project would result in a less than significant impact regarding soil erosion and topsoil loss.

No substantial faults are known to exist in the Tulare County area according to the Alquist-Priolo Earthquake Fault Zoning Map; 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 substantial risks 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.

## **Hazards and Hazardous Materials**

The Project would not involve the use or transport of hazardous materials nor is it on a site that has been designated a hazardous site by the Cortese List. There is no airport, public or private, in the vicinity, nor is there an adopted emergency evacuation plan. There is no impact.

## **Hydrology and Water Quality**

DEID uses CVP surface water delivered from the FKC. This water originates from the San Joaquin River. The water is tested annually by the Friant Water Authority and currently, there are no constituents of concern.

The proposed Project would convert land currently in row crop production to an 80-acre groundwater banking facility. According to the Federal Emergency Management Agency National Flood Insurance Program, the Project site is located within Zone X500, outside of the 500 year flood plain. The nearest dam to the project site is the Success Dam on the Tule River, approximately 45 miles to the northeast. Due to the distance between the Dam and the project site, there would be no impact to the Project if dam failure were to occur. Additionally, due to the lack of a significant water body near the project site, there would be no potential for seiche or tsunami to occur. There would be no impact. Potential impacts to groundwater resources have been discussed in Section 3.1.

## **Land Use and Planning**

The proposed Project is located in southern Tulare County, not in the vicinity of an established community. The site is zoned AE-20 and the proposed Project is in conformance with that zone. There is no adopted Habitat Conservation Plan in the vicinity. There is no impact.

## **Mineral Resources**

There are no mineral resources in the vicinity. There is no impact.

## Noise

The Project would convert an existing agricultural field into an expansion area of an existing groundwater banking facility. The Project would include the construction of an 80-acre recharge basin immediately south of the existing facility. The noise and vibration associated with these construction activities depends on the equipment used and distance from the source to the receptor. Typical construction equipment would include scrapers, backhoes, drilling rigs and miscellaneous equipment (i.e. pneumatic tools, generators, and portable air compressors). Typical noise levels generated by this type of construction equipment at various distances from the noise source are listed in Table 5.

Table 5: Typical Noise Levels Generated by Construction Equipment

<b>Construction Equipment Noise Source</b>	<b>dBA at 50 ft</b>	<b>dBA at 100 ft</b>	<b>dBA at 1.0 mile</b>
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: Borba Farms Dairy EIR, BASELINE Consulting, 1999, Cunniff 1977

Noise levels generated by the equipment would range from 76 to 88 dBA at a distance of 50 feet from the noise source; at 100 feet, the noise levels would range from 70 to 82 dBA. Noise from construction activities would not exceed the Tulare County Noise Element (Tulare County 2001) noise standards of 60 dBA at the exterior of nearby residences, approximately 1500 feet away from the project site. The impact is less than significant.

## Population and Housing, Public Services, Recreation

The Project does not involve the addition of any new housing and would not require the need for any additional public services or recreational facilities.

## Transportation/Traffic

The Project would not cause an increase in local traffic. Daily maintenance trips already occur for the existing Turnipseed Groundwater Banking Facility. No additional trips would be generated as a result of the expansion. There is no impact.

## Utilities and Service Systems

The Project would require a minimal increase in electricity provided by Southern California Electric, as shown in Section 3.9. The impact would be less than significant.

**Mandatory Findings of Significance**

The analysis conducted in this IS/MND results in a determination that the Project would have a less than significant effect on the local environment. As described above, the potential for impacts to biological resources from the basin construction would be less than significant following the implementation of the provided mitigation measures. Accordingly, the Project would involve no potential for significant impacts through the degradation of the quality of the environment, 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. Adverse effects on human beings resulting from implementation of the project would be less than significant. Refer to Appendix D for the CEQA Checklist signature page.



## **Section 5 Consultation and Coordination**

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

### **5.1 Public Review Period**

Reclamation intends to provide the public with an opportunity to comment on the Draft EA/IS and Draft FONSI during a 30-day comment period.

### **5.2 Fish and Wildlife Coordination Act (16 USC § 661 et seq.)**

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (Federal and State) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the FWS and State fish and wildlife agencies where the “waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted or otherwise controlled or modified” by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources.”

Reclamation is proposing to fund the Project. Reclamation is not issuing DEID a permit or license and the Project would not develop new water supplies. Therefore, the FWCA does not apply.

### **5.2 Endangered Species Act (16 USC § 1531 et seq.)**

Section 7 of the ESA requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action is not likely to adversely affect the San Joaquin kit fox. Concurrence for this determination is being sought from the USFWS. Reclamation has determined that the Proposed Action would not affect other federally listed species and would not affect designated critical habitat. This determination is based on the information presented previously in Section 3.3.2 and is largely reliant on the absence of listed species from areas that would be affected by the Proposed Action. Pre-construction biological surveys would be conducted before any ground-disturbing activities are to begin. If the USFWS concurs with Reclamation’s determination for San Joaquin kit fox and surveys find no individuals or evidence of listed species within the action area, no further consultation would be required. If the surveys detect the presence of listed species, then the Proposed Action would be paused while Reclamation revisits the ESA determination and completes any consultation with the USFWS that might be necessary.

### **5.3 National Historic Preservation Act (16 USC § 470 et seq.)**

The NHPA of 1966, as amended, is the primary Federal legislation that outlines the Federal Government's responsibility to consider the effects of their actions on historic properties. The 36 CFR Part 800 regulations that implement Section 106 of the NHPA describe how Federal agencies address these effects. Additionally, Native American human remains, cultural objects, and objects of cultural patrimony are protected under the Native American Graves Protection and Repatriation Act of 1990 (25 USC 32) and its implementing regulation outlined at 43 CFR Part 10. The Archaeological Resources Protection Act of 1979 (16 USC 470aa), as amended, and its implementing regulations at 43 CFR 7, protects archaeological resources on Federal land.

The Proposed Action is anticipated to not have any adverse impacts on historic properties based on conclusions in Section 3.4.2.

### **5.4 Migratory Bird Treaty Act (16 USC § 703 et seq.)**

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

The Proposed Action would convert lands currently used for agricultural production to lands used as percolation basins. The basins may periodically be used by species of birds protected by the MBTA, although the Proposed Action is not expected to result in take of birds protected by the MBTA based on conclusions in Section 3.3.2.

### **5.5 Clean Air Act (42 USC § 176 et seq.)**

Section 176 (c) of the Clean Air Act (CAA) (42 USC 7506 (c)) requires that any entity of the Federal government that engages in, supports, or in any way provided financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110 (a) of the CAA (42 USC 7401 (a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken. As described in Section 3.8.2, the Proposed Action would not result in air quality impacts that would exceed Federal thresholds.

## **Section 6 List of Preparers and Reviewers**

### **U.S. Bureau of Reclamation**

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XXXXXXXX, Indian Trust Assets, MP- 400

Tony Overly, Cultural Resources, MP-153

Ned Gruenhagen, Ph.D., Wildlife Biologist, SCCAO – Reviewer

Chuck Siek, Supervisory Natural Resources Specialist, SCCAO – Reviewer

Patti Clinton, Natural Resources Specialist, SCCAO - Reviewer

### **Provost & Pritchard Consulting Group**

Emily Bowen, Senior Planner, LEED AP

Dawn Marple, Project Planner

Herb Simmons, Project Engineer

### **Delano-Earlimart Irrigation District**

Dale Brogan, District Manager

## Section 7 References

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## **Appendix A – Fish & Wildlife Species List**



**United States Department of the Interior**  
**FISH AND WILDLIFE SERVICE**

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825



August 17, 2010

Document Number: 100817084532

Emily Bowen  
Provost & Pritchard Consulting  
130 N Garden Street  
Visalia, CA 93291

Subject: Species List for Delano-Earlimart Irrigation District Southern Turnipseed Groundwater Basin Expansion

Dear: Ms. Bowen

We are sending this official species list in response to your August 17, 2010 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 15, 2010.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at [www.fws.gov/sacramento/es/branches.htm](http://www.fws.gov/sacramento/es/branches.htm).

Endangered Species Division



**U.S. Fish & Wildlife Service**  
**Sacramento Fish & Wildlife Office**  
**Federal Endangered and Threatened Species that Occur in**  
**or may be Affected by Projects in the Counties and/or**  
**U.S.G.S. 7 1/2 Minute Quads you requested**

Document Number: 100817084532

Database Last Updated: April 29, 2010

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Quad Lists

Listed Species

Invertebrates

*Branchinecta conservatio*

Conservancy fairy shrimp (E)

*Branchinecta lynchi*

Critical habitat, vernal pool fairy shrimp (X)

vernal pool fairy shrimp (T)

*Desmocerus californicus dimorphus*

valley elderberry longhorn beetle (T)

Fish

*Hypomesus transpacificus*

delta smelt (T)

Amphibians

*Rana draytonii*

California red-legged frog (T)

Reptiles

*Gambelia (=Crotaphytus) sila*

blunt-nosed leopard lizard (E)

*Thamnophis gigas*

giant garter snake (T)

Mammals

*Dipodomys nitratoide nitratoide*

Tipton kangaroo rat (E)

*Vulpes macrotis mutica*

San Joaquin kit fox (E)

Plants

*Caulanthus californicus*

California jewelflower (E)

*Eremalche kernensis*

Kern mallow (E)

*Pseudobahia peirsonii*

San Joaquin adobe sunburst (T)

Quads Containing Listed, Proposed or Candidate Species:

DEEPWELL RANCH (263A)



MCFARLAND (263B)  
POND (264A)  
DUCOR (287A)  
SAUSALITO SCHOOL (287B)  
DELANO EAST (287C)  
RICHGROVE (287D)  
PIXLEY (288A)  
DELANO WEST (288D)

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## County Lists

No county species lists requested.

### Key:

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
- (C) *Candidate* - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) *Critical Habitat* designated for this species

## Important Information About Your Species List

### How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

### Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

### Surveying

Some of the species on your list may not be affected by your project. A trained biologist

and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our [Protocol](#) and [Recovery Permits](#) pages.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

### Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

### Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our [Map Room](#) page.

## Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

## Species of Concern

The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. [More info](#)

## Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

## Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 15, 2010.

## **Appendix B – URBEMIS Files**

Page: 1

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name:

Project Name: South Turnipseed Expansion

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007



8/17/2010 10:02:57 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2010 TOTALS (tons/year unmitigated)	0.07	0.52	0.31	0.00	4.80	0.03	4.83	1.00	0.03	1.03	49.71
2011 TOTALS (tons/year unmitigated)	0.11	0.84	0.51	0.00	8.20	0.05	8.25	1.71	0.04	1.76	84.93

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.87	0.00	0.14	0.00	0.00	0.00	0.25

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.10	0.00	0.01	0.00	0.00	0.00	1.11

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	1.97	0.00	0.15	0.00	0.00	0.00	1.36

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
------------	------------	-----------	------------	------------------	---------------------	-------------	-------------------	----------------------	--------------	------------

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.01	0.00	0.14	0.00	0.00	0.00	0.25
Consumer Products	0.00						
Architectural Coatings	1.86						
TOTALS (tons/year, unmitigated)	1.87	0.00	0.14	0.00	0.00	0.00	0.25

Area Source Changes to Defaults

Percent residential using natural gas changed from 60% to 0%

Percent nonresidential using natural gas changed from 100% to 0%

The number of persons per household for consumer product use changed from 2.861 persons to 0 persons

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Groundwater Recharge Basin	0.10	0.00	0.01	0.00	0.00	0.00	1.11
TOTALS (tons/year, unmitigated)	0.10	0.00	0.01	0.00	0.00	0.00	1.11

Operational Settings:



8/17/2010 10:02:57 AM

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2012 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Groundwater Recharge Basin		0.01	acres	80.00	0.80	5.91
					0.80	5.91

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	42.5	0.9	98.9	0.2
Light Truck < 3750 lbs	12.1	2.5	91.7	5.8
Light Truck 3751-5750 lbs	21.1	0.9	98.6	0.5
Med Truck 5751-8500 lbs	11.9	0.8	99.2	0.0
Lite-Heavy Truck 8501-10,000 lbs	2.4	0.0	75.0	25.0
Lite-Heavy Truck 10,001-14,000 lbs	0.9	0.0	44.4	55.6
Med-Heavy Truck 14,001-33,000 lbs	1.3	0.0	15.4	84.6
Heavy-Heavy Truck 33,001-60,000 lbs	2.7	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.0	0.0	0.0	0.0
Motorcycle	3.9	59.0	41.0	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

	<u>Travel Conditions</u>				
	<u>Residential</u>		<u>Commercial</u>		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1		
% of Trips - Commercial (by land use)					
Groundwater Recharge Basin				2.0	1.0
					97.0

## **Appendix C – CEQA Checklist Signature Page**

**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"/> Greenhouse Gas Emissions        | <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.

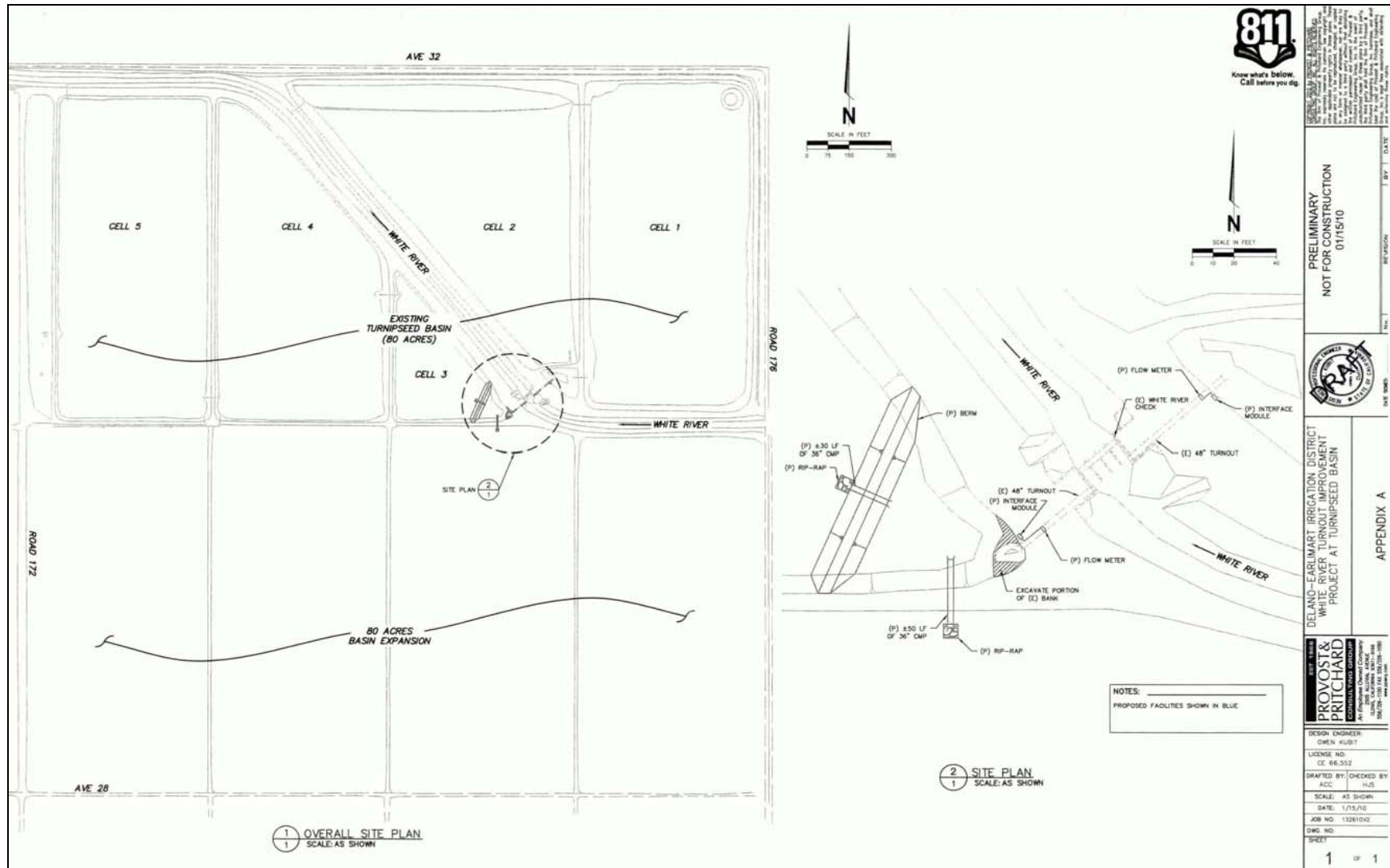
  
Signature

DAVE BROGAN  
Printed name

9/29/10  
Date

DELANO - EARLEMAN I.D.  
For

# Appendix D – Construction Drawing



## **Appendix E – Environmental Protection Measures**

## **Conservation Measures for the Western Burrowing Owl**

- (a) Before any ground-disturbing construction activities begin on the project or mitigation site, qualified biologist shall conduct focused surveys for burrowing owls in areas of suitable habitat on and within 250 feet of the project and wetland construction footprint if accessible. Surveys shall be repeated if a two-day or longer lapse in project construction activities occurs. Surveys shall be conducted as detailed in the DFG staff report and Burrowing Owl Consortium Guidelines to avoid direct take.
- (b) If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings will be submitted to DFG at least 5 days before construction.
- (c) If occupied burrowing owl burrows are found prior to initiating construction, impacts will be minimized by establishing a buffer around the burrow of 160 feet or by completing passive relocation according to DFG guidelines during the nonbreeding season (September 1 through January 31). During the breeding season (February 1 through August 31), impacts will be minimized by establishing a buffer around the burrow of 250 feet for all project-related construction activities until a qualified biologist confirms that the nest is no longer active and DFG concurs, or consultations with DFG specifically allow certain construction activities to continue. The size of the buffer may be adjusted if a qualified biologist and DFG determine that the adjustment would not likely adversely affect the nesting pair. DFG also will be consulted to determine whether it is necessary to temporarily preserve foraging habitat (in addition to the buffer area) until the nest is no longer active. Eviction pending evaluation of breeding status and eviction plans during the nesting season may be permitted upon approval from DFG authorizing the eviction.

Active nests will be monitored by a qualified biologist to determine when the young have fledged and are feeding on their own. DFG will be consulted for clearance before construction activities resume within a nondisturbance buffer.

- (d) If a burrowing owl is observed at the construction site at any time during construction, then exclusion fencing will be used to establish a safe buffer area until the animal can be passively relocated out of the construction area or other appropriate buffer distance is established consistent with DFG guidance. Construction sites in areas that are excavated will remain active and disturbed to ensure that it is highly unlikely that the burrowing owl will return to the construction area.
- (e) Before construction, a worker environmental training awareness program will be conducted by a qualified biologist. The training will include instruction regarding species identification, natural history, habitat, and protection needs. New workers will be provided information from the training program concerning species identification, natural history, habitat, and protection needs.

**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 9<sup>th</sup> 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.