

# RECLAMATION

*Managing Water in the West*

**Final Environmental Assessment / Initial Study and Mitigated  
Negative Declaration**

## **Eastside Conveyance Project**

**EA-10-021**



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



**Henry Miller Reclamation  
District No. 2131**

**June 2011**

## **Mission Statements**

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

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

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# List of Acronyms and Abbreviations

AAM	avoidance and minimization measures
AB 32	Assembly Bill 32
AB 1493	Assembly Bill 1493
af	Acre-feet
afy	Acre-feet per year
Air Basin	San Joaquin Valley Air Basin
APE	area of potential effects
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal regulations
cfs	cubic-feet per second
CH <sub>4</sub>	methane
CNDDDB	California Natural Diversity Data Base
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CVP	Central Valley Project
DMC	Delta Mendota Canal
ECIC	East Side Canal and Irrigation Company
EA	Environmental Assessment
EIR	Environmental impact report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FWCA	Fish and Wildlife Coordination Act
GHG	greenhouse gases
HDPE	high-density polyethylene
HMRD	Henry Miller Reclamation District No. 2131
IS	Initial Study
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO <sub>x</sub>	Nitrogen oxides
NRHP	National Register of Historic Places
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PWD	Panoche Water District
Reclamation	Bureau of Reclamation
Responsible Agencies	Stevinson Water District, Panoche Water District, California State Water Resources Control Board
SHPO	State Historic Preservation Officer
SJRECWA	San Joaquin River Exchange Contractors Water Authority
SLCC	San Luis Canal Company
State	State of California
SWD	Stevinson Water District
SWRCB	California State Water Resources Control Board

TDS	total dissolved solids
TIF	Turner Island Farms
U.S.	United States
USFWS	U.S. Fish and Wildlife Service
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 Henry Miller Reclamation District No. 2131 (HMRD) as lead state agency to satisfy the requirements of both the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). Under CEQA, Stevinson Water District (SWD), Panoche Water District (PWD), and the California State Water Resources Control Board (SWRCB) are the responsible agencies (Responsible Agencies). For the purposes of this document, the term, “Proposed Action” (NEPA) pertains to Reclamation’s Federal discretionary action and the term, “Proposed Project” (CEQA) pertains to the remaining components of the project, which does not require Reclamation approval; however, the actions are considered interrelated and both terms are used interchangeably.

## 1.1 Background / Project Overview

The Proposed Project is located in western Merced County, approximately 11 miles northeast of the City of Los Banos. The Proposed Project would consist of the construction of approximately eight miles of conveyance facilities (approximately 7.25 miles of canal and approximately 5,000 feet of pipe) and three pump stations (see Figure 1 for location map). The Proposed Project would also involve the transfer of up to 5,000 acre-feet (af) per year (afy) from SWD and the East Side Canal and Irrigation Company (ECIC) to San Luis Canal Company (SLCC), as the first leg of a two-way transfer.

As the second leg of the two-way transfer, the Proposed Action would involve Reclamation’s approval to transfer up to 5,000 afy of Central Valley Project (CVP) water (adjusted for system losses of up to 10%) from SLCC to PWD. PWD would take delivery of this water via the Delta-Mendota Canal (DMC) and/or the San Luis Canal through existing facilities.

Water subject to this transfer was made available primarily through recent conservation projects implemented within SWD and ECIC. SLCC holds its water right via contract through the San Joaquin River Exchange Contractors Water Authority (SJRECWA). As a result, the SJRECWA would be required to approve both the transfer of water to SLCC and from SLCC to PWD. The water transferred to SLCC and to PWD would be used for beneficial agricultural purposes.

## 1.2 Purpose and Need / Project Objectives

Delta pumping limitations, annual changes in hydrology, and increased loss of conveyance flexibility within the Federal and State water distribution systems has restricted the water supply allocation to PWD, creating a demand for reliable supplemental water supplies. Additionally, variations in regional surface water quality have adversely impacted the SLCC water supplies delivered through the CVP. The Proposed Project has two primary objectives:

1. Provide reliable, supplemental water supplies to PWD.
2. Improve water quality in the northwesterly region of SLCC.

## 1.3 Scope

This EA/IS was prepared to analyze the potential direct, indirect, and cumulative impacts of the construction and operation of the proposed conveyance facilities and the proposed water transfers. A CEQA Environmental Checklist has been included in Section 4. The Proposed Project would be located in western Merced County, northeast of the City of Los Banos. The scope of the project would include:

- Construction of a proposed conveyance facility. The proposed conveyance facilities would be generally bound by the Eastside Bypass at the north, the SLCC Delta Canal at the south, and generally runs adjacent to Turner Island Road. The Proposed Project facilities would be consistent with the existing landscape. Figure 1 shows the general project location. Figure 2 shows the project alignment including aerial photos of the region.
- Annual transfer of up to 5,000 af of water from SWD and ECIC to SLCC and from SLCC to PWD from March 1, 2011 through December 31, 2020. The SJRECWA and the SWRCB would be required to approve both actions.
- Environmental protection measures listed in Table 1.

This EA/IS was also prepared to analyze the potential direct and indirect impacts of the No Action Alternative.

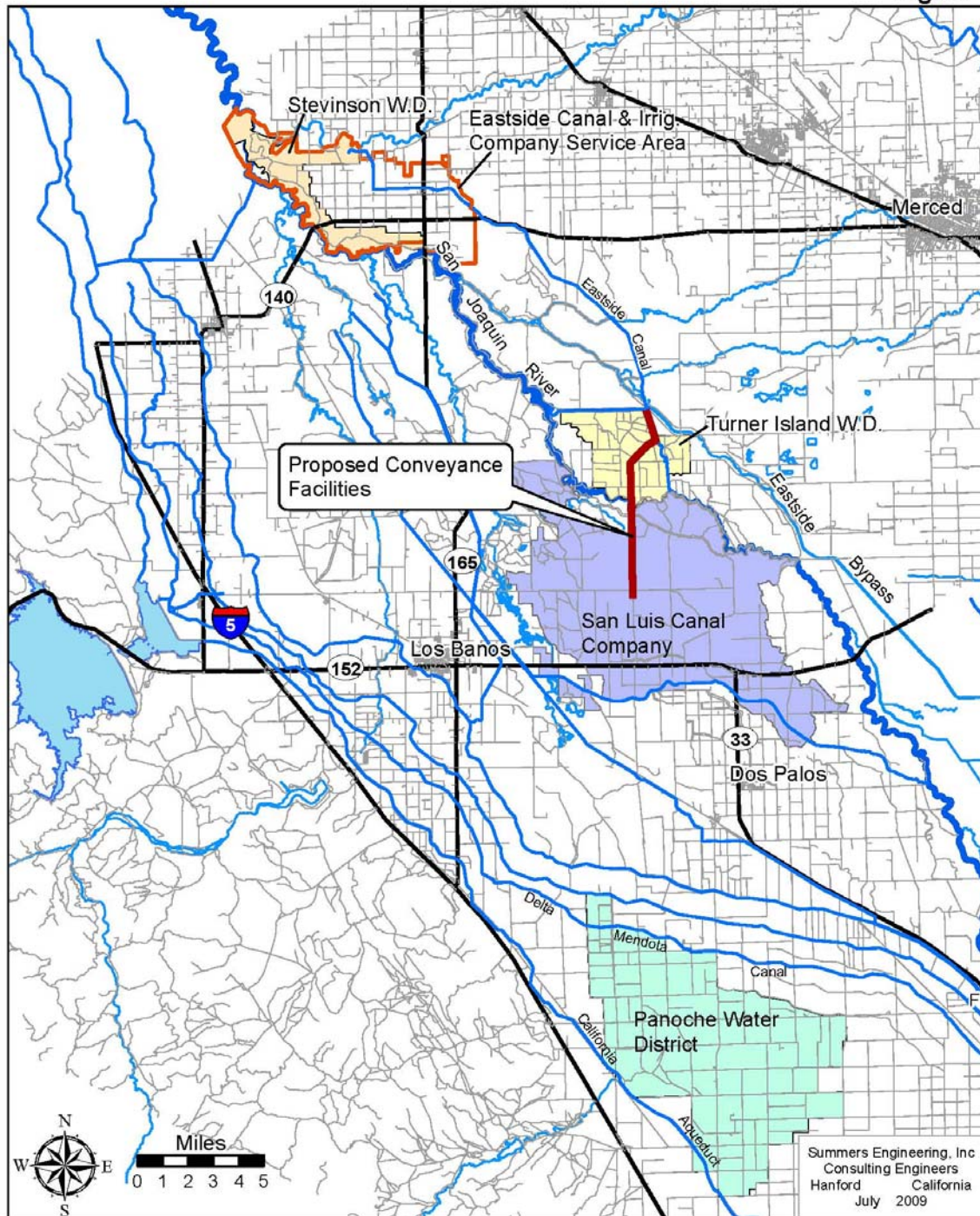
## 1.4 Potential Environmental Issues

This EA/IS will analyze the affected environment of the Proposed Action in order to determine the potential and cumulative impacts to the following resources:

- Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Sacred Sites
- Indian Trust Assets (ITA)
- Socioeconomic Resources
- Environmental Justice
- Air Quality
- Global Climate
- Resources Exclusive to CEQA Analysis (Section 4)



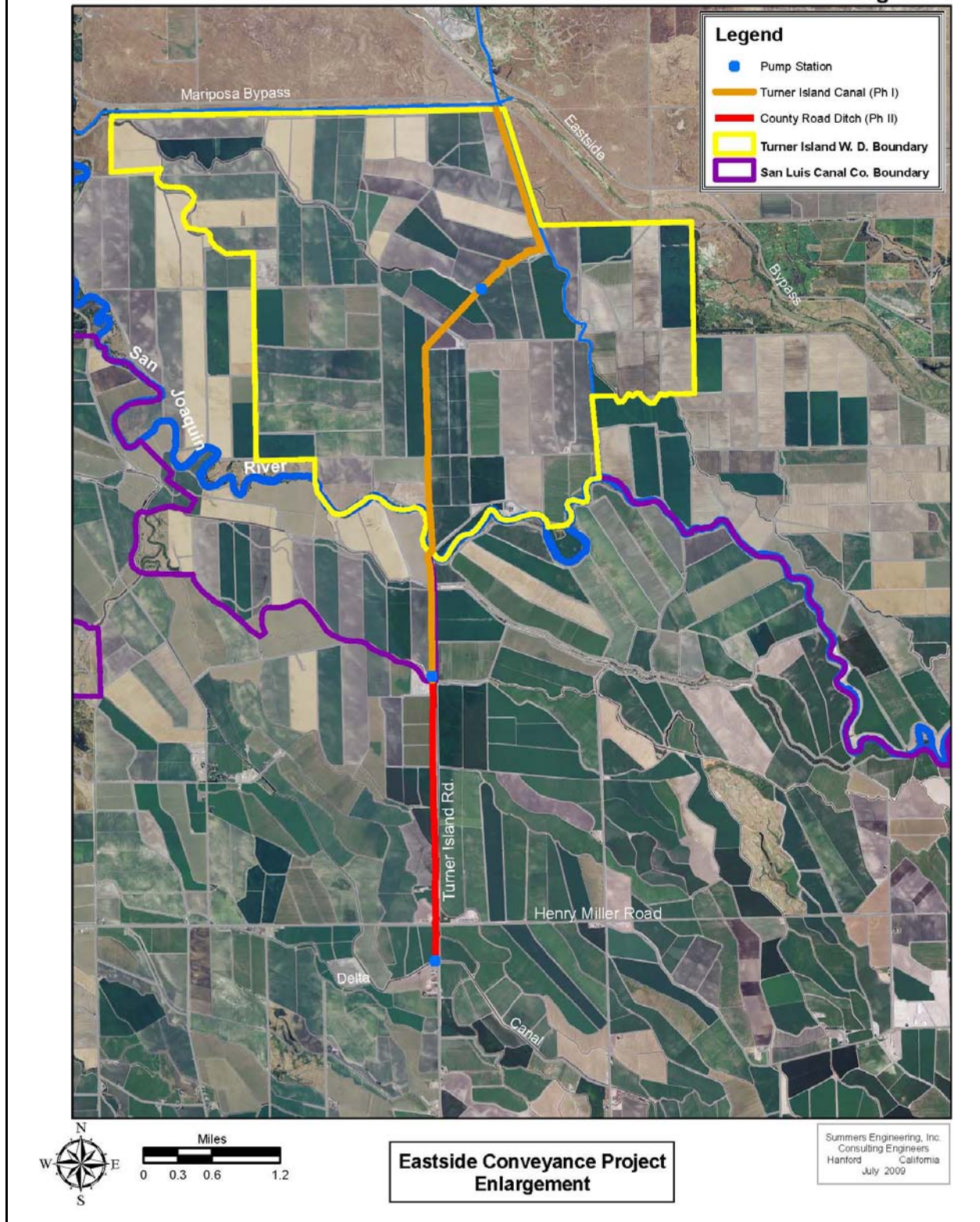
Figure 1



Eastside Conveyance Project  
Regional Map



**Figure 2**



## Section 2 Alternatives and Proposed Action

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

### 2.1 No Action Alternative

Under the No Action Alternative, the Proposed Project would not be constructed and the water transfer would not occur. The Proposed Project objectives listed in Section 1.2 would not be realized.

### 2.2 Proposed Action

The project includes two components: (1) construction of an 8-mile conveyance facility and (2) a two-way water transfer.

#### **Responsible Agencies' Proposed Project *Construction Project (Newly Constructed Facilities)***

The Proposed Project would include the phased construction of two new conveyance facilities to deliver the transferred water. Figure 2 shows both of the new facilities in relation to each other.

**Phase I - Turner Island Canal** A new 5.6-mile conveyance facility would be constructed from the discharge of the siphon under the Eastside Bypass, to the northern boundary of SLCC. This new conveyance facility, called the Turner Island Canal, would include two electrical pump stations, approximately 4.8 miles of high-density polyethylene (HDPE) lined canal, and 4,250 feet of pipe. The Turner Island Canal would use an existing siphon to cross the San Joaquin River and no construction would occur within or immediately adjacent to the river channel. The capacity of the Turner Island Canal would be 50 cubic-feet per second (cfs) and would be owned and operated by TIF.

**Phase II - County Road Ditch** A new 2.5 mile conveyance facility would be constructed from the northern boundary of SLCC at Palazzo Road, south to the existing Delta Canal. This new conveyance facility, called the County Road Ditch, would include one electrical pump station, approximately 2.3 miles of concrete lined canal and approximately 750 feet of 72-inch pipe. The County Road Ditch would be located on either fee title or easement land held by HMRD. The capacity of the County Road Ditch would be 150 cfs, which includes both the water transferred through the Proposed Project and other water supplies currently available to SLCC. A portion of the new County Road Ditch would replace an existing HMRD canal of the same name. The existing County Road Ditch is an unlined earthen channel and has been in its current form for approximately 40 years. The replacement of the existing ditch with the proposed, lined canal would be an improvement to the facility and would not result in a change in water deliveries to lands historically served by the existing ditch.

Once the proposed facilities are constructed, water from SWD and ECIC would be delivered by gravity to the headworks of the channel through an existing siphon under the Eastside Bypass. From that point the proposed canal would traverse through TIF property to the connection with SLCC facilities. Water delivered into SLCC through the Proposed Project would be transported to the Delta Canal, a primary conveyance channel for district-wide distribution. The canal alignment would be along Turner Island Road and a HMRD easement for the project facilities would be acquired prior to construction.

*Construction Activities* The Proposed Project would include all actions necessary to furnish and install approximately seven miles of lined open canal, approximately one mile of concrete pipe, and three permanent pump stations that would fit within the footprint of the canal just before it transitions into the pipe. Construction involved with the Proposed Project has two components owned by different entities. TIF would own a portion (component 1) and HMRD would own a portion (component 2). The estimated construction duration is approximately 150 days.

- The total canal excavation quantity would be approximately 100,000 cubic-yards. The canal is expected to be 5 to 6 feet deep, with a bottom width of 6 feet and a top width of 21 to 24 feet. Excavation would be performed by excavators, scrapers, front-end loaders, backhoes, water trucks, graders, and compactors. Excavation and compacted embankment would be approximately balanced.
- The total canal lining quantity would be approximately 1.1 million square feet. The liner for component 1 would be HDPE and would be placed on the interior of the canal banks and bottom to reduce seepage losses. The HDPE liner would be textured. One-foot wide by 2-foot deep anchor trenches, parallel to the canal, would be used at the top of each canal bank to anchor the lining. The liner for component 2 would either be HDPE or concrete. Loaders, trenchers, graders and slip forms (for concrete) would be used for lining installation.
- The Proposed Project would include three segments of 72-inch diameter reinforced concrete pipe with a total length of approximately 5,000 feet. The pipe joints would have rubber gaskets and the pipe would be designed to withstand external backfill and traffic loads. The pipe would be buried with a minimum of 36 inches of cover. Typical installation of the pipe would include trenching to the required width and depth (approximately 8 feet wide and 9 feet deep), placing and joining the pipe sections in the trench, and backfill and compaction using native material. Pipeline inlet and outlet structures would likely be cast-in-place reinforced concrete structures. Excavators, water trucks, graders and compactors would be used for pipe installation.
- Construction of three pump stations would include excavation and placement of reinforced concrete pump sumps, installation of pumping units, electric motors, controls, and steel discharge pipes. Individual pumps would range in size from approximately 15-horsepower to 50-horsepower. The sump excavation and structure placement would be performed by excavators. Pump installation would be performed by a boom truck or small crane. Other work would be performed by laborers and electricians.

### **Reclamation's Proposed Action / Proposed Project Water Transfer**

As part of the first leg of the two-way transfer, the SWRCB would approve SWD and ECIC transferring up to 5,000 afy of water rights water to SLCC from March 1, 2011 through

December 31, 2020. The water would be conveyed through existing conveyance facilities, under the Eastside Bypass (Chowchilla Bypass) and through an existing siphon to the headworks, which would be connected to the newly constructed conveyance facilities. Made available by utilizing the water rights water transferred from SWD and ECIC, Reclamation would approve SLCC transferring up to 5,000 afy of CVP water to PWD from March 1, 2011 through December 31, 2020. The transfer would meet the consumptive use criteria of the Central Valley Project Improvement Act. PWD would take delivery of SLCC's CVP water from the DMC or San Luis Canal. SLCC would beneficially use the transferred water for agricultural purposes within its boundaries; making an equivalent volume (adjusted for up to 10% system losses) of CVP water available for transfer to PWD.

SLCC is a member entity of the SJRECWA which also includes Central California Irrigation District, Firebaugh Canal Water District, and Columbia Canal Company. The SJRECWA holds historical Pre-1914 water rights and riparian rights from the San Joaquin River. These entities hold water rights with Reclamation under one Exchange Contract. Therefore, in order for SLCC to transfer the water to its ultimate destination within PWD, it would need approval from the SJRECWA board of directors representing the members. This process would be set forth in an approved agreement amongst the SJRECWA membership. During periods when the SJRECWA are receiving their rights to water from the San Joaquin River if CVP deliveries via the DMC are not possible, arrangements may be made for deliveries from Central California Irrigation District's Outside Canal, which would use existing facilities.

The SWRCB is required by California Law to approve water transfers involving state-issued water right permits and licenses. HMRD and ECIC/SWD are in the process of petitioning the SWRCB to approve this proposed transfer. In addition to approvals required as mentioned previously in this section, the Proposed Action would not be deemed complete and water would not be transferred under this proposal unless and until the SWRCB formally approves the transfer petition.

## 2.2.1 Environmental Protection Measures

The following environmental protection measures would be implemented to reduce and/or avoid environmental consequences associated with the Proposed Action (Table 1). Environmental consequences for resource areas assume the measures specified would be fully implemented.

**Table 1 Environmental Protection Measures**

Action	Addressing
Water Resources	The work site will be isolated (with coffer dams or other measures) and the impact will be short-lived. Work will be done during the low-flow period.
Air Quality	The contractor will use a water truck to minimize fugitive dust generation.
Biological Resources	A United States Fish and Wildlife (USFWS) approved biologist will conduct pre-construction protocol level surveys for the San Joaquin kit fox no fewer than 14 days and no more than 30 days prior to the onset of any ground disturbing activity (USFWS 2011a). SLCC will implement <i>U.S. Fish And Wildlife Service Standardized Recommendations For Protection Of The Endangered San Joaquin Kit Fox Prior To Or During Ground Disturbance</i> (USFWS 2011a). If kit foxes or their dens are detected at any time, all construction activities associated with the project will be halted immediately and Reclamation staff notified within two working days. The project will be placed on hold until further analysis with Reclamation staff, and if necessary consultation with the USFWS, is complete. (Refer to Appendix C)

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, and protection measures shall be determined in consultation with the California Department of Fish and Game in the event an active burrowing owl 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). Refer to Appendix F and G.
Biological Resources	If construction occurs during avian breeding season (February 15 to September 1), preconstruction surveys for nesting cliff swallows under two bridges located on Turner Island Road; Pick Anderson Drain and the San Joaquin River. Avoidance of any disturbance to nests would be required during avian breeding season (February 15 to September 1).
Biological Resources	If construction occurs during avian breeding season (February 15 to September 1), preconstruction surveys for nesting Swainson's hawks shall be performed within 0.5 mi of the project area according to established protocol and protective measures implemented to avoid and minimize any potential effects (CDFG 1994). Refer to Appendix E.
Biological Resources	<p>Revised USFWS standard avoidance and minimization measures during construction in giant garter snake (GGS) habitat shall be followed (USFWS 1999, as revised in USFWS 2011b). These include but are not limited to the following (also refer to Appendix B for revised GGS measures):</p> <ul style="list-style-type: none"> <li>• 24-hours prior to construction activities, surveys of the project area for GGS shall be completed by a USFWS approved biologist. Flag and designate avoided GGS habitat within or adjacent to the project area as Environmentally Sensitive Areas. A 200 foot buffer of these habitats should be avoided by all construction personnel.</li> <li>• Construction activity within habitat identified as "Environmentally Sensitive Areas" should be conducted between May 1 to October 1.</li> <li>• The survey of the project area would be repeated if a lapse in construction activity of two weeks or great has occurred. If a snake is encountered during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the snake would not be harmed. Report any sightings and any incidental take to the Service immediately by telephone (916) 414-6620.</li> <li>• Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.</li> </ul> <p>After completion of construction activities, remove any temporary fill and construction debris and, wherever feasible, restore disturbed areas to pre-project conditions. In Environmentally Sensitive Areas for GGS, under direction of the USFWS approved biologist :</p> <ul style="list-style-type: none"> <li>• Install temporary fencing at the edge of the construction area and the adjacent wetland, marsh, or ditch;</li> <li>• Restrict working areas, spoils and equipment storage and other project activities to areas outside of marshes, wetlands and ditches; and</li> <li>• Maintain water quality and limit construction runoff into wetland areas through the use of hay bales, filter fences, vegetative buffer strips, or other accepted equivalents.</li> </ul>

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

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

### **3.1 Water Resources**

#### **3.1.1 Affected Environment**

The Proposed Project location includes numerous canals and ditches of varied sizes which are used to convey water for irrigation. Water sources for the region include surface water supplies from the CVP (typically from the DMC), water diverted from the San Joaquin River and tributary streams, recovered tailwater from irrigation activities, and pumped groundwater.

SWD and ECIC jointly hold appropriative water rights from streams originating in the Sierra Nevada foothills, which intersect the East Side Canal in various locations. The existing canals within SWD and ECIC have historically conveyed water to this point for water deliveries to Turner Island Water District. Recent water conservation projects completed by SWD and ECIC would provide the water transferred through the Proposed Project. Approximately 60,400 linear feet of open ditches within ECIC's historic service area have been piped by SWD and private landowners. These piping projects have eliminated seepage and evaporation losses in the open ditches, conserving an estimated 6,200 af of water annually. Prior to this lining project, that volume of water was lost to deep percolation. This conserved water is newly developed and 5,000 af of this water is proposed to be transferred to SLCC.

SLCC is a member of the SJRECWA and receives water through the CVP via an exchange contract for San Joaquin River water with Reclamation. Water deliveries to SLCC normally come from the Mendota Pool via the DMC. The Exchange Contractors' water supply can also come from its rights to the San Joaquin River. Other water sources within SLCC include recirculated surface runoff and perched groundwater.

PWD is a federal water contractor through the CVP and receives its water through the San Luis Canal and DMC. PWD also relies on supplemental water sources, including groundwater, recirculated drain water, and water purchased from other districts.

In Fiscal Year 2000, HMRD was formed to work cohesively with SLCC to better manage the day-to-day functions of delivering water and providing drainage within the boundaries of SLCC. HMRD, formed as a California reclamation district, now either owns or has acquired easements on all water delivery infrastructures within SLCC boundaries. HMRD also operates and maintains all such facilities to ensure delivery of SLCC contract water to all its shareholder/water users. The duties and obligations on the relationship among the two entities are documented in an Administrative Services Agreement dated October 26, 2000.



### 3.1.2 Environmental Consequences

#### **No Action Alternative**

Under the No Action Alternative, the Proposed Project would not be implemented, there would be no construction and no water transfer would occur. SLCC would not benefit from the improved water quality and the supplemental water supplies would not be available to PWD. There would be no impacts to any of the conveyance facilities as conditions would remain the same.

#### **Proposed Action**

The Proposed Action would involve the transfer up to 5,000 afy of conserved and/or recovered water rights water from SWD and ECIC to SLCC, so that an equivalent volume may be transferred to PWD from SLCC. The water delivered through the Proposed Project would be high-quality (low total dissolved solids [TDS], see Table 2) surface water that would be blended with SLCC supplies, resulting in an overall improvement of SLCC water quality. Water delivered through the Proposed Project would be put to beneficial use within SLCC and would free up an equivalent volume of CVP supplies for transfer to PWD. PWD is a south-of-Delta CVP contractor which historically has applied up to its full contractual entitlement of 94,000 afy for beneficial use for irrigation. In recent years, PWD has been subject to CVP water allocation reductions due in large part to Delta pumping restrictions of up to 65%. PWD has very little available groundwater, and due to generally high salinity in groundwater, PWD landowners pump only to supplement available surface water supplies. PWD, therefore, must rely on supplemental water supplies such as those that would be provided through this Proposed Action to augment its shorted CVP surface allocation, so that its growers can maintain production on their agricultural lands. Portions of PWD are underlain by shallow, poor quality groundwater and are improved with subsurface drainage systems to prevent salty groundwater from reaching the crop root zone. PWD has stringent requirements for on-farm retention of return flows, and subsurface flows captured in the drainage system are discharged into a regional drainage system and also are subject to strict regulation.

The Proposed Project is expected to reduce the TDS concentrations within SLCC's Delta Canal by approximately 12%.

**Table 2 – Proposed Project Water Quality (July 2009)**

Constituent	Result	Unit
pH	7.2	
Electrical Conductivity	0.16	mili-Siemens per centimeter
Total Dissolved Solids	102.4	mg/L
Nitrate	4.8	mg/L
Sodium Absorption Ration	0.69	%

Denele Analytical, Inc – Lab No. W74013304  
mg/L – milligrams per liter

No adverse impacts to surface water supplies or water quality would be anticipated as part of the Proposed Project. No substantial change or impact to CVP operations or to Delta pumping by the CVP would result. The transferred water would provide supplemental water supplies to PWD, a CVP water contractor near Firebaugh. Drainage discharges arising from application of the additional supply would be subject to all existing regulations and would not result in any substantial increase in drainage discharges from the PWD.



The transferred water would consist only of surface water supplies and no groundwater supplies would be pumped as part of the Proposed Action. Therefore, there would be no adverse impacts to water resources.

### ***Cumulative Impacts***

Reclamation has completed 200 water service actions out of 300 proposed between 2005 and 2010 (see Table 3). These actions include: water assignments, water banking activities, water contracts including renewals, amendments and extensions, water exchanges, land exclusions, land inclusions, execution of contracts for surplus water, water transfers, and Warren Act contracts for conveyance and/or storage of non-CVP water in federal facilities. Between 2005 and 2010, 35 out of the 300 water service actions were specific to the Delta Division.

**Table 3. Reclamation's Completed Water Service Related Actions 2005-2010**

<b>Proposed Projects</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>Pending</b>
Assignments	3	2	0	2	0	0	1
Banking	9	9	2	5	20	5	13
Contracts	1	4	4	2	4	1	4
Exchanges	11	6	6	7	8	2	4
Exclusion	3	7	3	0	4	2	1
Inclusion	5	3	2	2	4	2	4
Surplus Water	5	5	4	3	2	3	4
Transfers	21	13	5	10	10	7	10
Warren Act Contracts	6	8	11	9	24	4	17
<b>Total Proposed Projects</b>	64	57	37	40	76	26	
<b>Projects Pending</b>	4	5	1	3	9	15	
<b>Cancelled Projects</b>	5	10	2	13	21	0	
<b>Completed projects</b>	55	42	34	24	40	5	

A total of 28 proposed water service projects are still pending from the past five years and an additional 26 water service projects have been proposed for 2010 (see Table 3). Each of these actions is currently undergoing environmental analysis and any future proposed activities require environmental review prior to implementation. It is likely more districts will request additional water service actions in 2010. The Proposed Action, when taken into consideration with other past, present, and future projects, would not have any adverse impact on surface or groundwater supplies or quality.

## **3.2 Land Use**

### **3.2.1 Affected Environment**

The area in the vicinity of the Proposed Project is entirely surrounded by cultivated agriculture and agriculture-supporting infrastructure. The general topography is flat valley lowlands and the region has been actively farmed for the last several decades. Crops typically include alfalfa, annual fruit, vegetable, and forage crops (such as tomatoes, wheat, and corn) and the soil is tilled annually. A variety of water conveyance facilities exist within the proposed Construction Project

area including canals, drainage ditches, wells, pump stations, pipelines, and associated appurtenances.

In PWD, the land is fully developed for agricultural purposes, with approximately 60% being served with high-efficiency irrigation equipment, such as drip systems and micro-sprinklers. Crops grown include annual row crops (such as tomatoes, melons, cotton and vegetables), trees (such as almonds, pistachios and pomegranates) and vines. The PWD water delivery system is fully developed and consists of earthen and concrete ditches, pipelines, pump stations and associated appurtenances. The drainage system is also fully in place and consists of subsurface tile lines served by drainage sumps, gravity-fed deep drains, and earthen or lined drainage ditches connecting individual sumps to the regional system.

### **3.2.2 Environmental Consequences**

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

Under the No Action Alternative, the proposed project facilities would not be built and there would be no change in the project site land use. During periods of severe water shortages, substantial acreage within PWD would not be farmed due to insufficient water supplies for crop production.

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

The Proposed Project features would include segments of open canal, pump stations, and buried pipe, all of which support agricultural activities and would be consistent with the property zoning designations (all property is zoned for agricultural use). Where possible, the proposed conveyance facilities would be constructed over existing farm roads and a portion of an existing SLCC canal. The construction of the conveyance facility would convert approximately 19 acres of farmland to water conveyance facilities. This acreage would be used to support agricultural activities but would be unavailable for crop production. This change in land use is consistent with Merced County zoning designations for the Proposed Project site and would not be an adverse impact.

The water transfer portion of the Proposed Action would provide an additional 5,000 afy CVP water to PWD for agricultural use. These supplemental supplies would provide sufficient water to keep approximately 1,500 acres of farmland within PWD from going fallow during periods of severe water shortages. PWD is fully developed for agriculture, and none of the water would be utilized to convert native pasture or other undeveloped land for agricultural uses. The water transferred from SWD and ECIC would be new water generated through water conservation projects. No land within SWD or ECIC would be fallowed as a result of this project. This would be a beneficial impact.

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

The farmland converted to conveyance facilities amounts to a small fraction of the overall farmed area in the region and is not a substantial impact. The proposed water transfer to PWD would help make up for shortages in the PWD's CVP supply and could allow for up to 1,500 acres per year of developed farmland to be farmed, rather than fallowed, during periods of water shortage. This would be considered a beneficial impact. The Proposed Action, when added to

other past, present, and future actions, would not contribute significantly to cumulative impacts to land use.

### 3.3 Biological Resources

#### 3.3.1 Affected Environment

The Proposed Action location is entirely surrounded by actively cultivated agriculture and agriculture-supporting infrastructure (Fig. 3a-e). This region has been actively farmed for the last several decades. Crops typically include alfalfa, annual fruit, vegetable, and forage crops (such as tomatoes, wheat, and corn) and the soil is tilled annually.

There are five habitat types identified within the proposed Construction Project alignment and include: developed, active agriculture, ruderal, canal/drain, willow riparian, and active channel (Fig. 3a-e). Plant cover along the canal banks is generally sparse (<5%) due to frequent water level fluctuations and canal maintenance. Weeds are managed to minimize pests so there is little habitat to support significant animal populations.

Reclamation requested an official species list from USFWS 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) on July 29, 2010. The list is for the following USGS 7½ minute quadrangles: Oxalis, Dos Palos, Charleston School, Sandy Mush, Turner Ranch, Delta Ranch, Santa Rita Bridge, San Luis Ranch, Los Banos, Arena, Atwater, and Stevinson (document number: 100729121829). Reclamation further queried the California Natural Diversity Database (CNDDB) for records of protected species within 10 miles of the project location (CNDDB 2010). This information, in addition to other information within Reclamation's files, was compiled into Table 4.

**Table 4. Special status species that could potentially occur within affected area**

<u>Species</u>	<u>Status<sup>1</sup></u>	<u>Effects<sup>2</sup></u>	<u>Potential to Occur in Study Area<sup>3</sup></u>
Amphibians			
California red-legged frog ( <i>Rana draytonii</i> )	T	NE	<b>Absent.</b> No CNDDB-recorded occurrences and suitable habitat absent from action area.
California tiger salamander, central pop. ( <i>Ambystoma californiense</i> )	T	NE	<b>Unlikely.</b> There are two CNDDB-recorded occurrences (>15-years ago) located within 3 miles of Phase 1, at San Luis National Wildlife Refuge and Merced National Wildlife Refuge. Closest report is 1.4 miles to the east of Turner Island Canal (Phase 1). However, no records or vernal pools or other suitable habitat in area of effect.
Birds			
burrowing owl ( <i>Athene cunicularia</i> )	P	NE	<b>Possible.</b> Closest report is 9.1 miles to the east of Turner Island Canal (Phase 1) on W. Sandy Mush Road. Agricultural lands do provide foraging habitat, in addition to potential burrowing habitat in the vicinity of the Project site. Environmental protective measures have been incorporated into the project description to eliminate potential impacts to this species.

cliff swallow ( <i>Petrochelidon pyrrhonota</i> )	P	NE	<b>Possible.</b> There are reported occurrences of this species within and near the project area and potential suitable habitat is present. May occur during nesting season from March 1 through August 1. Environmental protective measures have been incorporated into the project description to eliminate potential impacts to this species.
Swainson's hawk ( <i>Buteo swainsoni</i> )	P	NE	<b>Possible.</b> There are reported occurrences of this species within and near the project area and potential suitable habitat is present. Environmental protective measures have been incorporated into the project description to eliminate potential impacts to this species.
Fish			
Central Valley spring-run chinook salmon ( <i>Oncorhynchus tshawytscha</i> )	T NMFS	NE	<b>Absent.</b> No natural waterways within the species' range will be affected by the proposed action.
Central Valley steelhead ( <i>Oncorhynchus mykiss</i> )	T, X NMFS	NE	<b>Absent.</b> No natural waterways within the species' range will be affected by the proposed action.
delta smelt ( <i>Acipenser medirostris</i> )	T	NE	<b>Absent.</b> No natural waterways within the species' range will be affected by the proposed action.
winter-run chinook salmon, Sac. River ( <i>Oncorhynchus tshawytscha</i> )	E NMFS	NE	<b>Absent.</b> No natural waterways within the species' range will be affected by the proposed action.
Invertebrates			
Conservancy fairy shrimp ( <i>Branchinecta conservatio</i> )	E, X	NE	<b>Absent.</b> Closest report is 3.0 miles to the north of Turner Island Canal (Phase 1) however, no records or vernal pools in area of effect. Critical Habitat absent from area of affect.
longhorn fairy shrimp ( <i>Branchinecta longiantenna</i> )	E, X	NE	<b>Absent.</b> No CNDDDB-recorded occurrences or vernal pools in area of effect. Critical Habitat absent from area of affect.
valley elderberry longhorn beetle ( <i>Desmocerus californicus dimorphus</i> )	T	NE	<b>Absent.</b> No CNDDDB-recorded occurrences and no elderberry shrubs in study area.
vernal pool fairy shrimp ( <i>Branchinecta lynchi</i> )	T, X	NE	<b>Absent.</b> Closest report is 2.9 miles to the west of Turner Island Canal (Phase 1) however, no records or vernal pools in area of effect. Critical Habitat absent from area of affect.
vernal pool tadpole shrimp ( <i>Lepidurus packardii</i> )	E, X	NE	<b>Absent.</b> Closest report is 2.9 miles to the west of Turner Island Canal (Phase 1) however, no records or vernal pools in area of effect. Critical Habitat absent from area of affect.
Mammals			
Fresno kangaroo rat ( <i>Dipodomys nitratoides exilis</i> )	E	NE	<b>Absent.</b> No CNDDDB-recorded occurrences in action area. Suitable habitat absent.
giant kangaroo rat ( <i>Dipodomys ingens</i> )	E	NE	<b>Absent.</b> No CNDDDB-recorded occurrences in action area. Suitable habitat absent.
San Joaquin kit fox ( <i>Vulpes macrotis mutica</i> )	E	NE	<b>Possible.</b> There are several CNDDDB-recorded occurrences within a 10-mile radius of the action area. The area could possibly be used as foraging habitat, though marginal because of the frequent ground disturbance in this area. Environmental protective

			measures have been incorporated into the project description to eliminate potential impacts to this species.
Plants			
Colusa grass ( <i>Neostapfia colusana</i> )	T, X	NE	<b>Absent.</b> No CNDDDB-recorded occurrences in action area and vernal pools absent from action area. Critical habitat will not be affected by the proposed action.
Hoover's spurge ( <i>Chamaesyce hooveri</i> )	T, X	NE	<b>Absent.</b> No CNDDDB-recorded occurrences in action area and vernal pools absent from action area. Critical habitat will not be affected by the proposed action.
Reptiles			
blunt-nosed leopard lizard ( <i>Gambelia sila</i> )	E	NE	<b>Absent.</b> No CNDDDB-recorded occurrences and suitable habitat is absent from action area.
giant garter snake ( <i>Thamnophis gigas</i> )	T	NLAA	<b>Possible.</b> Closest report occurs 5 miles to the west of the conveyance project. This species is adapted to drainage canals and irrigation ditches, and as such, there is potential habitat within the vicinity, though suboptimal. Environmental protective measures have been incorporated into the project description to eliminate potential impacts to this species.
<p>1 Status= Listing of Federally special status species  E: Listed as Endangered  P: Birds protected under the Migratory Bird Treaty Act  NMFS: Species under the Jurisdiction of the National Oceanic &amp; Atmospheric Administration Fisheries Service  T: Listed as Threatened  X: Critical Habitat designated for this species</p> <p>2 Effects = Effect determination under Section 7 of the Endangered Species Act  NE: No Effect  NLAA: May Affect but Not Likely to Adversely Affect</p> <p>3 Definition Of Occurrence Indicators  Possible: Species recorded in vicinity of the action area and habitat suboptimal  Unlikely: Species recorded in area from greater than 10-years ago and habitat suboptimal or lacking entirely  Absent: Species not recorded in study area and/or habitat requirements not met</p> <p>4 CNDDDB = California Natural Diversity Database 2010</p>			

The predominate habitat located within the Proposed Project area is actively cultivated agricultural lands and offers limited habitat value to wildlife. Of the 21 special-status species identified above (Table 4), only six protected species have the potential to occur in the Project area: California tiger salamander, central population (*Rana draytonii*: CTS), burrowing owl (*Athene cunicularia*), cliff swallow (*Petrochelidon pyrrhonota*), Swainson's hawk (*Buteo swainsoni*), San Joaquin kit fox (*Vulpes macrotis mutica*: SJKF), and giant garter snake (*Thamnophis gigas*: GGS).

**Critical Habitat** The Proposed Project area does not fall within designated or proposed critical habitat for any species.

### Migratory Birds

**Burrowing Owl** The burrowing owl is protected under the Migratory Bird Treaty Act (MBTA). This small ground-dwelling owl is a yearlong-resident that exhibits high site fidelity to breeding areas and nesting burrows (Rich 1984, Lutz and Plumpton 1999). They live in ground squirrel and other mammal burrows that it appropriates and enlarges for its own purposes (Martin 1973,

CDFG 1995). Burrowing owls are typically found in short-grass grasslands, open scrub habitats, and a variety of open, human-altered environments, such as the edges of canals or roadways, and agricultural fields. Foraging habitat in the form of agricultural lands, as well as suitable burrowing habitat occurs within the vicinity of the Proposed Project site, though marginal. Frequent ground disturbances and intensive chemical applications to agricultural lands limit prey and potential burrow sites. Within a 10-mile radius of the Proposed Action site, there is one CNDDDB-recorded occurrence (CNDDDB 2010). Therefore, burrowing owls do have the potential to occur in the Proposed Action site.

**Swainson's Hawk** Swainson's hawks are protected under the federal MBTA. Generally, their habitat consists of largely open and undeveloped landscapes, and includes suitable grassland or agricultural foraging habitat and sparsely distributed trees for nesting (England et al. 1997). They exhibit a high degree of nest site fidelity, and will return to the same tree for many years (Estep 1989). Swainson's hawks begin to arrive to their breeding grounds in the Central Valley late February to early March. The nesting season occurs from March 1<sup>st</sup> – September 15<sup>th</sup> and will breed in riparian areas and oak savannahs. Prey items include small mammals, insects, and birds.

Suitable nesting and foraging habitat is present within the Proposed Project area. There are CNDDDB records for nesting Swainson's hawk adjacent to the Proposed Project Area (CNDDDB 2010).

**Other Potential Birds** Cliff swallows (*Petrochelidon pyrrhonota*) are known to occur within a portion of the Proposed Project site, as per reconnaissance biological surveys conducted by H.T. Harvey & Associates on May 12, 2010. They were seen nesting on Turner Island Road: at Pick Anderson Drain and at the San Joaquin River. Cliff swallows are colonial nesters that feed primarily on a diet of insects which are caught during flight.

Swallows spend their winter months in South America but return to nest in the California Central Valley in February 15<sup>th</sup> to September 1<sup>st</sup>. Occupied nests and eggs of migratory birds are protected from disturbance and destruction.

### **Federally-listed Species**

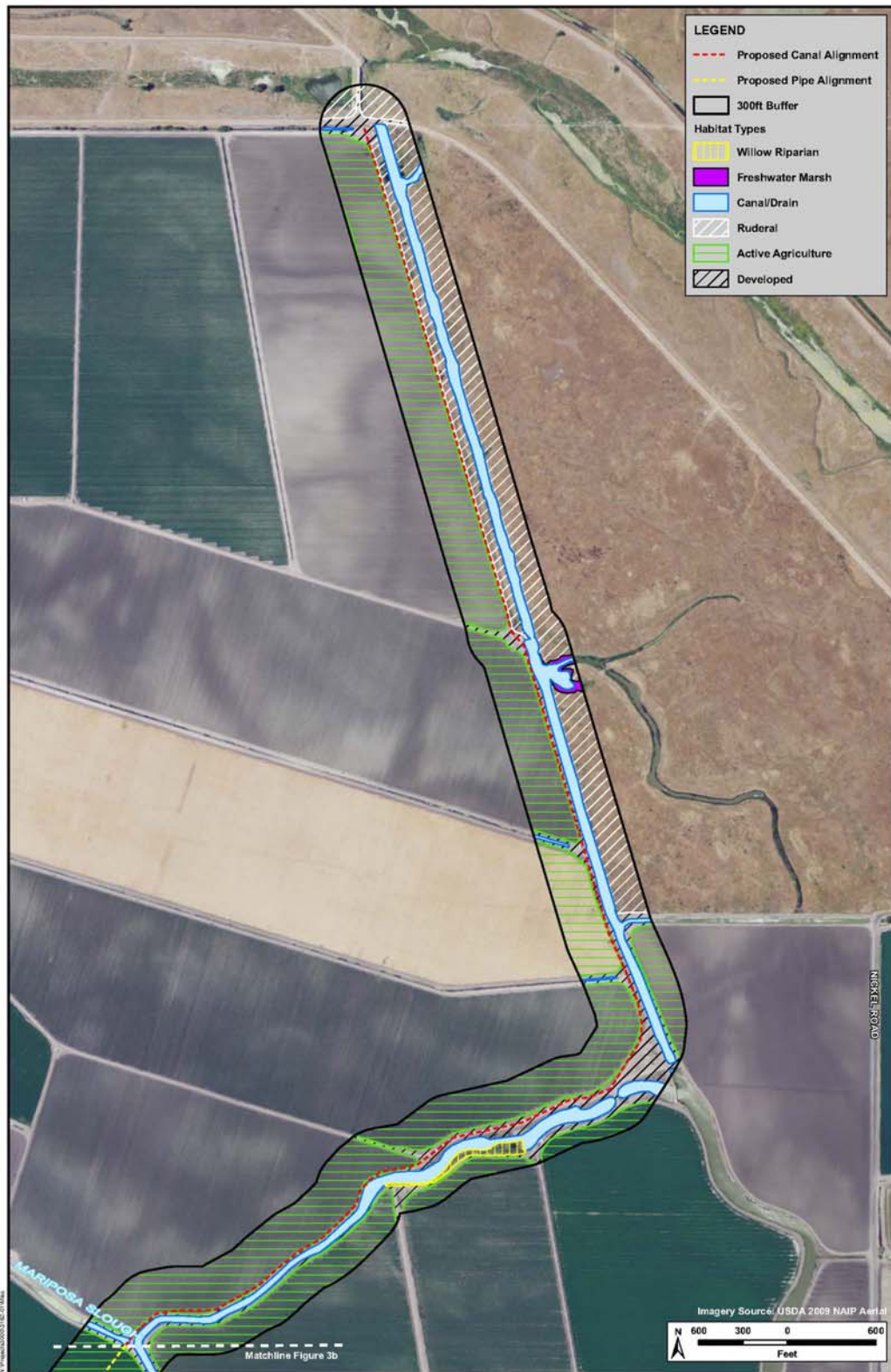
**San Joaquin Kit Fox** SJKF is federally listed as an endangered species. Their diet varies based on prey availability, and includes small to mid-sized mammals, ground-nesting birds, and insects. SJKF excavate their own dens, or use other animals, and human-made structures (culverts, abandoned pipelines, and banks in sumps or roadbeds). Primary reasons for the species decline include loss and degradation of habitat (USFWS 1998).

Current habitat in the Proposed Project area is unsuitable for long-term occupation by the species. Agricultural lands are subject to frequent ground disturbances and intensive chemical applications, thus limiting prey and potential denning sites. Within a 10-mile radius of the Proposed Project site, there have been many sightings of SJKF (CNDDDB 2010). It is possible during a year in which the SJKF population and/or reproductive output is elevated, transient kit foxes could disperse into and temporarily occupy the site.

**Giant Garter Snake** GGS is federally and state threatened. This giant water snake is endemic to the Central Valley wetland habitats, and includes freshwater marshes, low-gradient streams, as well as man-made waterways, drainage canals, irrigation ditches, slough habitats, rice fields, and adjacent uplands (USFWS 1993, 1999). These waterways typically contain cattails and other herbaceous vegetation for cover or foraging. Garter snakes are active foragers and feed primarily on small fish, frogs, and tadpoles (Fitch 1941, Hansen 1988; Hansen and Brode 1980). GGS active season is between May 1<sup>st</sup> to October 1<sup>st</sup>, so during this period is the best time to modify their habitat and will cause the least impact to them. During their dormant season, these snakes will seek shelter from flood waters during the winter months in burrows in upland habitat (USFWS 1993).

SLCC retained an environmental biologist to conduct biological surveys for GGS on October 18, 2010, of the Proposed Project area (Hansen 2010). The purpose for the surveys was to determine the likelihood of impacts from the Proposed Project to GGS and the adequacy to reduce impacts by following the USFWS approved standard avoidance and minimization measures for GGS (USFWS 1999). The biologist's findings concluded that the Proposed Project area consists almost exclusively of actively cultivated agricultural crops, thus providing very limited habitat for GGS. Ongoing maintenance of agricultural lands and irrigation canals have eliminated or prevented the establishment of habitat characteristics (including prey populations) required by snakes (Hansen 2010). Yet, marginal or suitable aquatic GGS habitat within 200 feet of the proposed canal alignment was reported by Mr. Hansen at four locations (Hansen 2010; Figures 3a-d).

The first area containing potential GGS habitat is located at the head of the Mariposa Bypass canal at the northern end of the canal alignment. The remaining three sites include the agricultural drain north of the airstrip, Salt Slough at TI Road, and 3) the agricultural drain north of Palazzo Road. Because each of these locations possess at least minimal suitability for giant garter snakes, work within channels or terrestrial habitat that is not currently cultivated should be avoided during the inactive season. However, for any work conducted in cultivated uplands within 200 feet of these features, risks of take could be reduced or eliminated by installing exclusion fencing as described above.



H. T. HARVEY & ASSOCIATES  
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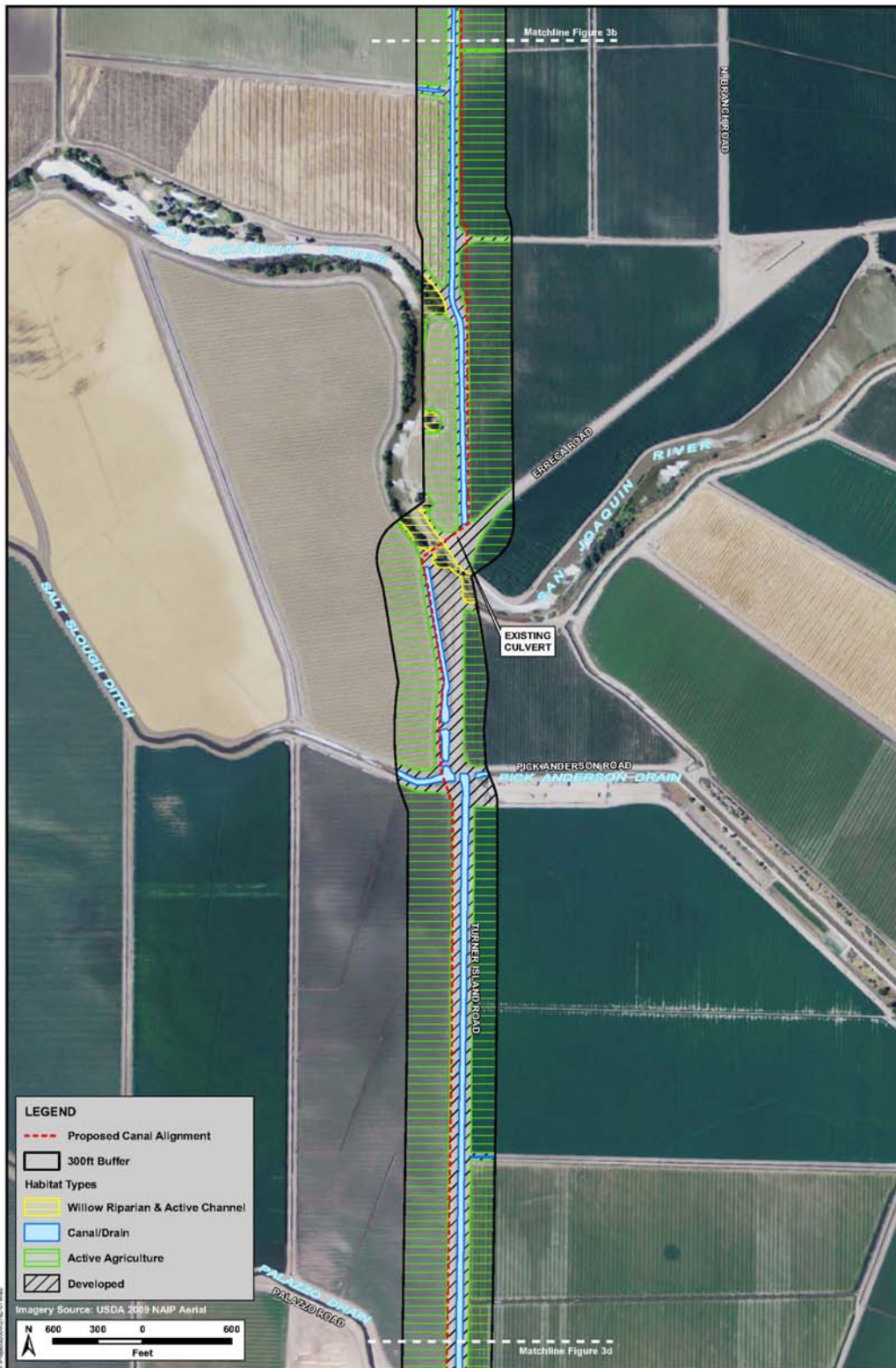
**Figure 3a: Habitat Map 1**  
Eastside Conveyance Canal Project (3162-01)  
June 2010





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**Figure 3b: Habitat Map 2**  
Eastside Conveyance Canal Project (3162-01)  
June 2010



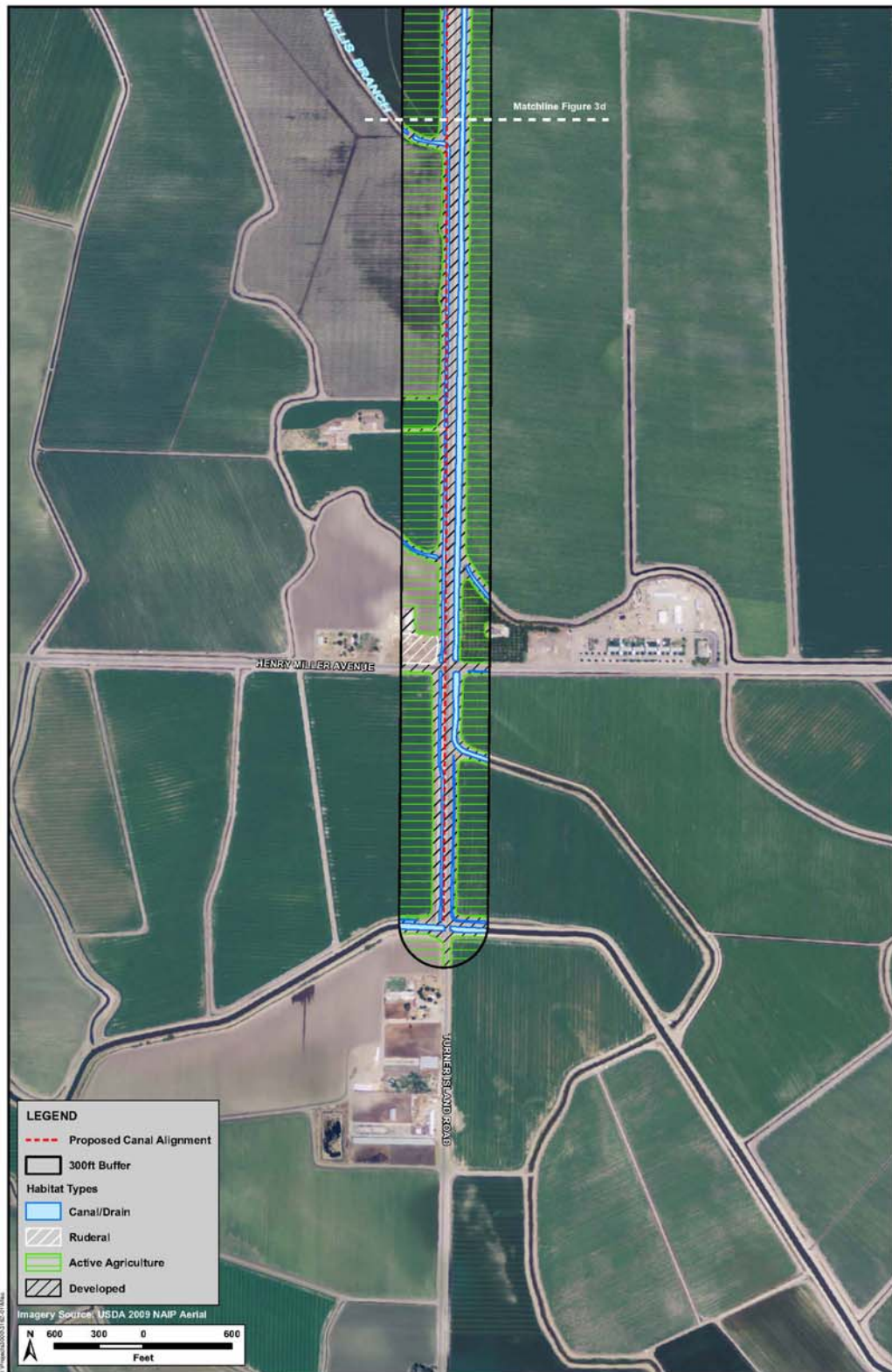
**Figure 3c: Habitat Map 3**  
Eastside Conveyance Canal Project (3162-01)  
June 2010





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**Figure 3d: Habitat Map 4**  
Eastside Conveyance Canal Project (3162-01)  
June 2010



**Figure 3e: Habitat Map 5**  
 Eastside Conveyance Canal Project (3162-01)  
 June 2010

### 3.3.2 Environmental Consequences

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

Under the No Action Alternative, the Proposed Project would not be implemented and there would be no change in existing conditions.

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

The majority of special-status plants and animals would most likely not occur within the boundaries of the disturbed land areas, as described in Table 4 above. However, federal-protected species that may occur in the vicinity of the Proposed Action area include: CTS, central distinct population segment, burrowing owl, cliff swallow, Swainson's hawk, SJKF, and GGS. See Section 4 for discussion of State-listed special-status species.

#### **Migratory Birds**

**Burrowing Owl** There are potential burrow sites at the Proposed Action site that could be utilized by burrowing owl. A protocol-level field survey for burrowing owl would be completed 14 to 30 days prior to any ground disturbance in order to determine their presence. In addition, measures for avoiding "take" of burrowing owl would be followed, as detailed in *CDFG Staff Report and Burrowing Owl Consortium Guidelines* (refer to Appendix F and G). No effect to this species is expected if burrowing owls are absent from the area. However, if they are present, SLCC will implement conservation measures in coordination with Reclamation, USFWS, and CDFG to avoid or minimize any potential impacts to this species due to the Proposed Action.

**Swainson's Hawk and Other Potential Birds** Construction activities, such as earthmoving with heavy construction equipment occurring within the area for the Proposed Project area could cause the failure of nesting bird species, if a pair was nesting in the vicinity. However, construction activities are scheduled to be complete prior to their avian nesting season (March 1<sup>st</sup> – September 15<sup>th</sup>). Therefore, no impact to Swainson's hawk or cliff swallows is anticipated. If construction occurs during avian breeding season, preconstruction surveys for nesting Swainson's hawks shall be performed within 0.5 mile of the project area according to established protocol and protective measures implemented to avoid and minimize any potential effects (see Appendix D and E) and preconstruction surveys for nesting cliff swallows under two bridges located on Turner Island Road: Pick Anderson Drain and the San Joaquin River.

#### **Federally-listed Species**

**San Joaquin kit fox** The project area is surrounded by orchards and alfalfa fields, which could potentially provide habitat utilized by the SJKF (Warrick et al. 2007). They are highly mobile and have excellent vision. In addition, SJKF are predominately nocturnal and would likely be inactive when work is being conducted.

SLCC would conduct pre-construction surveys for the kit fox at least 200 feet outside of the project area boundary 14 to 30 days prior to initiation of any ground disturbance or construction activity (refer to Appendix B). If no sign or evidence of SJKF is found, it is likely that they are not present in the vicinity and would not be directly affected by the Proposed Action. However, if there is evidence of any dens or signs of the kit fox, the project will be halted immediately and Reclamation staff notified within two working days. The project would be placed on hold until

further analysis with Reclamation staff, and if necessary consultation with the USFWS, is complete.

**Giant garter snake** Although no CNDDDB (2010) records of GGS have been reported in the immediate vicinity of the Proposed Project alignment, there are numerous reports of this species in the canals, drains, drainages, and wetlands to the west and south of the proposed Construction Project alignment; and significant hydrologic interconnectivity exists between these features and the canals and drains that bisect or are proximal to the proposed canal alignment. Consequently, GGS could occur in the canal/drains bisected by, and proximal to, the Proposed Project. If GGS are aestivating in the action area, they could be harmed, harassed, injured or even killed as a result of construction activities.

On March 23, 2011, Reclamation received a concurrence letter from USFWS Sacramento Field Office for the Proposed Action (ref. number: 81420-2011-1-0342), concurring with Reclamation that effects of the Proposed Action are not likely to adversely affect (NLAA) GGS (refer to Appendix J for USFWS letter). USFWS based their concurrence with a NLAA determination for GGS on SLCC's commitment to implementing a revised GGS avoidance and minimization measures (AAM) to, USFWS *Standard Avoidance and Minimization Measures During Construction in Giant Garter Snake Habitat*. The revisions deviate from the GGS AAM in two ways: 1) some construction would be allowed outside the active period of GGS, and 2) some construction would occur with 200 feet of GGS habitat (refer to Appendix B for revised GGS measures). Work proposed for the winter of 2010-2011 will take place mostly within actively cultivated agricultural fields (that are not in rice production) where giant garter snakes are not expected to occur, and will generally not fall within 200 feet of marginal or suitable aquatic habitat features.

### ***Cumulative Impacts***

Biological resources would continue to be affected by other types of activities that are ongoing but unrelated to the Proposed Action. However, the Proposed Action would have little effect on habitats of importance to special-status species, and all effects to habitats would be temporary. Impacts to biological resources from the implementation of the Proposed Action could occur only during construction activities, and these impacts would be avoided or minimized through the implementation of avoidance and minimization measures. Therefore, the Proposed Action, when added to other past, present and future actions, would not contribute significantly to adverse cumulative impacts to wildlife, plants, or habitat resources since construction activities would be short-term.

## **3.3 Cultural Resources**

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



The San Joaquin Valley is rich in historical and prehistoric cultural resources. Cultural resources in this area are generally prehistoric in nature and include remnants of native human populations that existed before European settlement. Prior to the 18th Century, many Native American tribes inhabited the Central Valley. 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 has probably disturbed many Native American cultural sites.

### **3.4.1 Affected Environment**

Archival investigation, public outreach, and pedestrian survey revealed no features of historical or cultural significance within the Proposed Project footprint. The Proposed Project site has been actively farmed for the last several decades and the discovery of previously unknown cultural resources is extremely unlikely.

### **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 additional ground disturbance, there would be no new impacts to potential historic properties.

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

The Proposed Project site would be excavated for the channel and other facilities. Considering that the area has been actively farmed, including soil cultivation, irrigation, and deep ripping, the presence of any cultural resource within the Proposed Project site is extremely unlikely. The Proposed Project would replace approximately 1.7 miles of an existing HMRD canal. However, this canal has been in its current form for less than 50 years and is not a feature of historical or cultural significance. The delivery of the supplemental supply of water to PWD under the Proposed Action would not involve construction of new facilities within the PWD boundaries and would be applied to areas that are actively farmed or have been actively farmed within the past two years.

The activities associated with Reclamation approving a water transfer from SLCC to PWD would result in no adverse effects to historic properties. The Proposed Project involves constructing a new conveyance facility in order to facilitate the transfer from SWD and ECIC to SLCC. Construction would involve approximately 7 miles of canal and 3 pump stations. Reclamation consulted with the State Historic Preservation Officer (SHPO) on April 7, 2011 regarding a finding of no adverse effects to historic properties determination. SHPO concurred with Reclamation's findings and determination on May 17, 2011. As a result, the Proposed Action would have no adverse impact on cultural resources (see Appendix H for determination).

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

The Proposed Action, when added to other past, present, and future actions, would not contribute to cumulative impacts to cultural resources as it is unlikely that cultural resources would be present, and the supplemental supply of water to PWD would not involve construction of new facilities within the PWD boundaries.

## 3.4 Indian Sacred Sites

### 3.4.3 Affected Environment

Sacred sites are defined in Executive Order 13007 (May 24, 1996) as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

Executive Order 13007 requires Federal land managing agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. It also requires agencies to develop procedures for reasonable notification of proposed actions or land management policies that may restrict access to or ceremonial use of, or adversely affect, sacred sites.

### 3.4.4 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***

No Indian sacred sites have been identified within or near the Proposed Action area; therefore, the Proposed Action will not affect any known Indian sacred sites and/or prohibit access to and ceremonial use of this resource.

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

The Proposed Action, when added to other past, present, and future actions, would not contribute to cumulative impacts to Indian sacred sites as there are none.

## 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 a 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 a Public Domain Allotment approximately 51 miles northeast of the Proposed Action location.

### **3.5.2 Environmental Consequences**

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

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

#### ***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. Therefore, the Proposed Action would not have a potential to affect ITA (See Appendix H for ITA determination).

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

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

## **3.6 Socioeconomic Resources**

### **3.6.1 Affected Environment**

The socioeconomic setting is dependent upon population, employment, housing, and revenues earned by the primary private employers. Communities within the vicinity of the Proposed Project include Dos Palos and South Dos Palos, which are disadvantaged communities according to data available from the 2000 Census (66% and 42% of the statewide median income, respectively). The local economy is dominated by agriculture and services supporting agriculture.

### **3.6.2 Environmental Consequences**

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

Under the No Action Alternative, Proposed Action would not occur and no water would be transferred. No additional jobs would be created or retained under the No Action Alternative. During drought events, some jobs would be lost due to land fallowing.

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

The Proposed Action would include the construction of the proposed project facilities in order to transfer of up to 5,000 afy of CVP water to PWD for beneficial use. The Proposed Action would provide approximately 15 construction related jobs during the construction period. The water transfer could allow an additional 1,500 ± acres of farm land to be farmed during drought years which would retain approximately 15-20 agriculture related jobs during drought years. Therefore, there would be a slight beneficial impact due to the Proposed Action.

### ***Cumulative Impacts***

The Proposed Action would result in a minor increase in construction-related jobs during project construction and would contribute to the retention of farm-related jobs during drought years. The Proposed Action, when added to other past, present, and future actions, would have a slight beneficial contribution to cumulative impacts associated with socioeconomics.

## **3.7 Environmental Justice**

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of Federal programs. Executive Order 12898, 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 National Environmental Policy Act, and to address significant and adverse effects on minority and low-income communities.

### **3.7.1 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 the vicinity of the Proposed Project which provides employment opportunities for minority and/or disadvantaged populations. The areas around the districts have stable economies based on a variety of agricultural products including fruits and vegetables and forage crops, as well as farm support services such as construction, equipment service and sales. As noted in Section 3.6.1, communities within the Proposed Project area consist of disadvantaged communities.

### **3.7.2 Environmental Consequences**

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

Under the No Action Alternative, the Proposed Project would not be constructed, the proposed water transfer would not occur, and there would be no change in the current environment. During periods of severe water shortages, substantial acreage within PWD may be fallowed due to insufficient water supply for crop production. Farm jobs associated with that crop production would likely be lost.

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

Agriculture and related businesses are the main industry in the vicinity of the Proposed Action, which provides employment opportunities for minority and/or disadvantaged populations. The Proposed Project would provide construction related jobs during the construction period. The operation of the Proposed Project would transfer up to 5,000 afy of CVP water to PWD. This additional water would allow for approximately 1,500 acres of farm land to be farmed during periods of severe water shortage, retaining approximately 15-20 farm related jobs that would otherwise be lost due to land fallowing. Minority and disadvantaged populations within the

Proposed Action area rely on farm-related jobs; therefore, there would be a slight beneficial impact.

### ***Cumulative Impacts***

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

## **3.8 Air Quality**

### **3.8.1 Affected Environment**

The Proposed Action lies within the San Joaquin Valley Air Basin. 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 Air Basin experiences episodes of 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.

On November 30, 1993, the Environmental Protection Agency 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 5 presents the emissions thresholds covering the project location’s overlying air basin.

**Table 5. San Joaquin Valley Air Basin Attainment Status and Emissions Thresholds for Federal Conformity Determinations**

<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
Nitrogen oxides (NO <sub>x</sub> ) (as an ozone precursor)	Attainment/Unclassified	100	548
Inhalable particulate matter (PM <sub>10</sub> )	Attainment	100	548
Carbon monoxide (CO)	Attainment/Unclassified	100	548

<sup>a</sup> San Joaquin Valley Air Resources Control Board.

<sup>b</sup> 40 Code of Federal Regulations (CFR) 93.153

### 3.8.2 Environmental Consequences

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

Under the No Action Alternative, there would be no impacts to air quality since the Proposed Project would not be implemented.

#### ***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, CO, VOC, sulfur dioxide, and small amounts of air toxics. Table 6 below provides a summary of the estimated emissions during construction.

**Table 6 - Estimated Project Emissions During Construction**

Pollutant	Estimated Project Emissions <sup>a</sup> (tons)
NO <sub>x</sub>	1.9
PM <sub>10</sub>	0.3
CO	2.4

<sup>a</sup>Road Construction Model Version 6.3.2, 2009

Comparison of the estimated Proposed Project emissions (Table 6) with the thresholds for Federal conformity determinations (Table 5) indicates that the estimated Proposed Project emissions are to be below these thresholds.

The Proposed Action also involves the operation of electrically-driven pumps and motors; accordingly, there would not be any direct emissions from the operation of the Proposed 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 in adverse impacts to air quality beyond Federal thresholds and a conformity analysis is not required.

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

Impacts to air quality would be associated with construction, and would generally arise from dust generation (fugitive dust) and operation of construction equipment. A review of Reclamation projects from 2005 to 2010 generated 25 minor construction projects through Reclamation's grant programs and modifications to infrastructure. The Proposed Project would be in the vicinity of the Cities of Merced, Atwater, and Los Banos. Atwater and Merced have minor construction in the form of industrial buildings and single-family dwellings. Los Banos prepared a draft environmental impact report (EIR) for the Los Banos City General Plan and a draft EIR for the construction of a Walmart in Los Banos. There is also ongoing highway construction work in Merced County.

The Proposed Project would not contribute to cumulative impacts to air quality when added to other past, present, and future actions. Most of the Reclamation projects have concluded with the effects being only temporary. The Atwater and Merced projects also only had temporary effects. The effects from the Los Banos projects would occur sometime in the future. The effects of the Proposed Project activities would be short-term and operations would not result in cumulative adverse air quality impacts. In addition, the Contractor would use a water truck to minimize fugitive dust generation.

## **3.9 Global Climate**

Climate change refers to significant 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 greenhouse gases that enter the atmosphere because of human activities are: CO<sub>2</sub>, methane (CH<sub>4</sub>), nitrous oxide, and fluorinated gasses (EPA 2009).

During the past century, humans have contributed 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. 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. Climate change could affect precipitation patterns, runoff timing and volume, sea level, and 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.

### **3.9.1 Affected Environment**

In 2002 California adopted Assembly Bill 1493 (AB 1493) which required the California Air Resources Board to develop and implement regulations to reduce automobile and light truck GHG emissions beginning with their respective 2009 models. The State has adopted Assembly Bill 32 (AB 32) and has identified GHG reduction goals. While the emissions of one single project will not cause global climate change, the State's objective is to reduce GHG emissions.

### **3.9.2 Environmental Consequences**

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

Under the No Action Alternative there would be no impact on GHG emissions since no construction would take place, and there would not be any long-term electrical energy requirement.

***Proposed Action***

The Proposed Action would involve a short-term increase in emissions during the construction and long-term impacts attributable to the generation of electrical energy for pumping. These emissions would vary annually, but have been estimated to average about 34 tons/year of CO<sub>2</sub> (PG&E Carbon Footprint Calculator website, 2009), which is negligible compared to the threshold for annually reporting GHG emissions (25,000 metric tons/year). Accordingly, construction and operation of the Proposed Action would result in below *de minimis* impacts to global climate change.

***Cumulative Impacts***

Greenhouse gas impacts are considered to be cumulative impacts. The Proposed Action, when added to other past, present, and future actions, would not contribute to cumulative impacts to global climate change owing to the *de minimis* magnitude of annual GHG emissions.

## Section 4 CEQA Analysis of Potentially Affected Issues

This section of the EA/IS includes the CEQA analysis portion of potentially affected issues that may result from implementation of the Proposed Project. Reference to the “project” in this section is synonymous with the term, “Proposed Action”, used in other sections.

### 4.1 CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the Proposed 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 Proposed 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 optional model to use in assessing impacts on agriculture and farmland.

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



#### **IV. BIOLOGICAL RESOURCES**

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- |   |                          |                          |                          |                                     |
|---|--------------------------|--------------------------|--------------------------|-------------------------------------|
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d) Disturb any human remains, including those interred outside of formal cemeteries?                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

## **VI. GEOLOGY AND SOILS**

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) 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. | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| ii) Strong seismic ground shaking?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| iii) Seismic-related ground failure, including liquefaction?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| iv) Landslides?  | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| b) Result in substantial soil erosion or the loss of topsoil?  | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |

## **VII. HAZARDS AND HAZARDOUS MATERIALS**

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>

j) Inundation by seiche, tsunami, or mudflow?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## **IX. LAND USE AND PLANNING**

Would the project:

a) Physically divide an established community?

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"/>

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"/>
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c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## **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?

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"/>

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?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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## **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?

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"/>

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

- |   |                          |                          |                                     |                                     |
|---|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?  | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input 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 expose people residing or working in the project area to excessive noise levels? | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

## **XII. POPULATION AND HOUSING**

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) 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)? | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?   | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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"/> |

## **XIII. PUBLIC SERVICES**

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) 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: |                                      |   |                                    |                                     |
| 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:

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

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

Would the project:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 checked="" type="checkbox"/>	<input 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 addition to the provider's existing commitments? | <input type="checkbox"/>             | <input type="checkbox"/>  | <input type="checkbox"/>           | <input checked="" type="checkbox"/> |
| 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?
- 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)?
- 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 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"/>

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

### **Aesthetics**

The proposed Construction Project would include the construction of facilities related to the support of agricultural activities common in the area. The proposed facilities would be similar to existing facilities in the region and would not have an adverse effect on the existing vista nor dramatically change the landscape.

### **Agricultural Resources**

The proposed Construction Project would construct facilities used to support agricultural activities and would not have an adverse impact on agricultural resources or conflict with existing zoning ordinances. A small amount of farmland will be taken out of production to construct the facilities. This is a less than significant impact.

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

Temporary emissions from the Construction Project would be minimal as demonstrated in Table 5, and there would be no operational emissions. The Construction Project would not significantly contribute to the emission of GHGs, so the impact would be less than significant. Air quality and global climate change impacts are also discussed in Section 3.

## Biological Resources Affected Environment

The Proposed Project involves the construction of irrigation water conveyance facilities, including excavation of land that is actively farmed. The Proposed Project area is dominated by agriculture that includes annual field crops, and pasture. Weeds are managed to minimize pests so there is little habitat to support significant animal populations.

An official species list for the area affected by the proposed Construction Project from the USFWS was generated on April 20, 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 100420125822). The list is for the Delta Ranch and Turner Ranch 7½" USGS quadrangle maps. The California Natural Diversity Database was also queried for records of protected species within 10 miles of the Proposed Project location (CNDDDB 2010). This information is provided in Appendix A. Note that this is an inclusive list of special status species that may or may not be present in the vicinity of the proposed Construction Project.

Reconnaissance-level field surveys of the proposed Construction Project site were conducted by qualified ecologists to document biotic resources associated with the site that may pose constraints to the proposed Construction Project. Specifically, surveys were conducted to describe existing biotic habitats; assess the site for its potential to support special-status species and their habitats; and identify potential jurisdictional habitats, including those regulated by the United States Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG).

The application of water within the PWD would be for irrigation purposes on land already developed for irrigation and would help to supplement PWD's available water supplies during anticipated long-term shortages in PWD's CVP water allocation. The Proposed Project would not cause any change in land use that could cause a substantial impact on biological resources. Therefore, the balance of this Section considers the likely effects of the proposed Construction Project on Biological Resources.

## Biotic Habitats

Five habitat types occur within the proposed Construction Project alignment including *Developed*, *Active Agriculture*, *Ruderal*, *Canal/Drain*, and *Willow Riparian and Active Channel* (Figure 3). The proposed Construction Project alignment does cross the San Joaquin River and its associated Willow Riparian habitat; however, Proposed Project activities would not impact this habitat as the proposed canal would tie into an existing culvert. The biotic habitats and associated vegetation and wildlife occurring within and around the project alignment are described in detail below.

### ***Developed***

**Vegetation** Paved and unpaved roads and an airstrip comprise all of the currently developed areas of the proposed Construction Project (Figure 3). Weedy species such as prickly Russian thistle (*Salsola tragus*), redstem stork's bill (*Erodium cicutarium*), and puncturevine (*Tribulus terrestris*) were observed growing within developed areas.

**Wildlife** Developed portions of the site provide limited habitat for wildlife. Some representative avian species expected to occur in the developed areas include American crow

(*Corvus brachyrhynchos*), common raven (*Corvus corax*), house finch (*Carpodacus mexicanus*), and house sparrow (*Passer domesticus*). Amphibians and reptiles that may occur include southern California toad (*Anaxyrus boreas halophilus*), Pacific chorus frog (*Pseudacris regilla*), San Diego alligator lizard (*Elgaria multicarinata webbii*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), side-blotched lizard (*Uta stansburiana*), and Pacific gopher snake (*Pituophis catenifer catenifer*). Mammals expected to utilize the developed areas include Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and occasionally coyotes (*Canis latrans*). The federally endangered and state threatened San Joaquin kit fox (*Vulpes macrotis mutica*) may rarely traverse the agricultural fields surrounding the project site when dispersing.

### **Active Agriculture**

**Vegetation** Active agriculture is the dominant land use in the lands surrounding the Proposed Project site (Figure 3). In addition to the cultivated crops, prickly Russian thistle, barnyard grass (*Echinochloa crus-galli*), fivehook bassia (*Bassia hyssopifolia*), and other weeds were growing throughout the fields.

**Wildlife** Agricultural habitats on the Proposed Project site are of limited value to wildlife. California ground squirrels and Botta's pocket gophers could occur along the margins of these types of fields dependant on the intensity of agricultural activities. Coyotes and the introduced red fox (*Vulpes vulpes*) may occasionally forage in and traverse these fields. Birds potentially occurring in these habitats include horned lark (*Eremophila alpestris*), red-winged blackbird (*Agelaius phoeniceus*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), red-tailed hawk (*Buteo jamaicensis*), American crow, and turkey vulture (*Cathartes aura*). The state threatened Swainson's hawk (*Buteo swainsoni*) may prey on small mammals occurring in the fields under certain crop conditions. The burrowing owl (*Athene cunicularia*), a California species of special concern, may occur along the margins. Reptiles and amphibians expected to occur along the margins of the agricultural habitats on the site include side-blotched lizard, Pacific gopher snake, and southern California toad. The San Joaquin kit fox may rarely traverse the agricultural fields surrounding the project site when dispersing.

### **Canal/Drain**

**Vegetation** Numerous earthen irrigation canals and drains bisect or are proximal to the Proposed Project site (Figure 3). Water was observed in many of these conveyance structures during the reconnaissance surveys. Plant cover along the canal banks was generally sparse (<5%) due to frequent water level fluctuations and canal maintenance. Species observed along the canal margins included johnsongrass (*Sorghum halepense*), saltgrass (*Distichlis spicata*), and common mallow (*Malva neglecta*). Emergent species observed in the canal bottoms included bulrush (*Scirpus sp.*) and tule (*Schoenoplectus acutus*). Sanford's arrowhead (*Sagittaria sanfordii*), a California Native Plant Society (CNPS) List 1B.2 species, may also grow amongst the emergent vegetation within this habitat type.

**Wildlife** Fish species, such as the common carp (*Cyprinus carpio*), largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), and mosquitofish (*Gambusia affinis*) may occur in the aquatic habitat of the canal. The hardhead (*Mylopharodon conocephalus*), a California species of special concern, may also occur in this habitat. Amphibians and reptile species that may occur within and along the banks of the canal include

the bullfrog (*Lithobates catesbeianus*), southern California toad, side-blotched lizard, valley garter snake (*Thamnophis sirtalis fitchi*), and Pacific gopher snake. The habitat for the proposed Construction Project is moderately suitable for the federally and state threatened giant garter snake (*Thamnophis gigas*). The western pond turtle (*Actinemys marmorata*), a California species of special concern, may also occur in this habitat type. Bird species occurring in the vegetation along the canal bank may include mourning dove, and European starling. Burrowing owls (*Athene cunicularia*) could potentially nest in the banks if California ground squirrels excavate burrows. Mammals, such as raccoons (*Procyon lotor*), coyotes, and red fox, may forage and/or den along the canal banks.

### **Ruderal**

**Vegetation** Ruderal habitat (Figure 3) is limited to the property margins of farming facilities and roadsides. Plant species occurring within the ruderal areas of the project site include poison hemlock (*Conium maculatum*), shortpod mustard (*Hirschfeldia incana*), and common mallow.

**Wildlife** Ruderal habitats on the Proposed Project site are of limited value to wildlife. Birds potentially occurring in these habitats include horned lark, red-winged blackbird, mourning dove, European starling, red-tailed hawk, American crow, and turkey vulture. Swainson's hawks may forage over large ruderal fields if the vegetation is sparse and low in height. Reptiles and amphibians expected to occur along the margins of the agricultural habitats on the site include southern California toad, Pacific chorus frog, side-blotched lizard, and Pacific gopher snake. Mammals expected to utilize the developed areas include Botta's pocket gopher, raccoon, Virginia opossum, red fox, and coyotes. California ground squirrels may also utilize these habitats if the height and density of the vegetation remains low. The San Joaquin kit fox may rarely traverse and forage in the ruderal habitats of the project site when dispersing.

### **Willow Riparian and Active Channel**

**Vegetation** Willow Riparian habitat was present in several areas within and proximal to the project site (Figure 3), including the San Joaquin River, which also contains an active river channel. The dominant herbaceous vegetation in the riparian habitat was bulrush. Riparian woody vegetation included willow (*Salix sp.*) and scattered Fremont cottonwood (*Populus fremontii*).

**Wildlife** The San Joaquin River may provide habitat for waterbirds such as mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), gadwall (*Anas strepera*), common moorhen (*Gallinula chloropus*), and American coot (*Fulica americana*). Other waterbirds using these wetlands likely include great blue heron (*Ardea herodias*), great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night heron (*Nycticorax nycticorax*).

Songbird species likely to nest in this habitat includes marsh wrens (*Cistothorus palustris*), song sparrows (*Melospiza melodia*), common yellowthroats (*Geothlypis trichas*), and yellow-headed blackbirds (*Xanthocephalus xanthocephalus*), red-winged (*Agelaius phoeniceus*) blackbirds, red-tailed hawks, and Swainson's hawk. Reptiles and amphibians that may occur here include the Pacific chorus frog, southern California toad, bullfrog, valley garter snake, and California kingsnake (*Lampropeltis getula californiae*). The active channel of the river is suitable for the hardhead and western pond turtle. Mammals occurring in the riparian area may include raccoon, red fox, and coyote.

The proposed Construction Project could potentially impact the following special-status species: giant garter snake, Swainson's hawk, San Joaquin kit fox, hardhead, western pond turtle, burrowing owl, and Sanford's arrowhead (Table 7). Avoidance and minimization measures and mitigation for loss of habitat, as described below, are recommended, as appropriate. Focused biological surveys for special-status species would also be performed prior to the commencement of construction activities to determine whether additional measures beyond those recommended herein or agency consultation are warranted.

Operation of the Proposed Project is consistent with current activities in the region and effects to special-status species would be less than significant with the implementation of proposed mitigation.

### **Federal or State Threatened or Endangered Species**

*Giant garter snake* The giant garter snake is listed as threatened under both federal and California Endangered Species Acts. Although no CNDDDB (2010) records of giant garter snake exist in the immediate vicinity of the Proposed Project alignment, there are numerous records of this species occurrence in the canals, drains, drainages, and wetlands to the west and south of the Proposed Project alignment; and significant hydrologic interconnectivity exists between these features and the canals and drains that bisect or are proximal to the proposed canal alignment. Consequently, giant garter snakes could occur in the canal/drains bisected by, and proximal to, the Proposed Project. To avoid impacts to giant garter snakes, revised, *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (Thamnophis gigas) Habitat* (Appendix B) will be implemented. Implementation of the standard avoidance and minimization measures would reduce impacts to giant garter snakes to less than significant levels.

**Table 7. Special-status Species, Their Status, and Potential Occurrence at the Project Site.**

NAME	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE ON-SITE
<b>Federal or State Endangered or Threatened Species</b>			
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	Elderberry trees in the Central Valley.	<b>Absent.</b> Suitable habitat (i.e., elderberry shrubs) is absent from the project site and adjacent areas.
Giant garter snake <i>Thamnophis gigas</i>	FT ST	Freshwater marshes and low gradient streams with emergent vegetation; adapted to drainage canals and irrigation ditches with mud substrate.	<b>Possible.</b> The abundance of nearby occurrence records and the presence of suitable aquatic habitat within and near the project site are indicators of this species' potential presence.
Swainson's hawk <i>Buteo swainsoni</i>	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; forages in adjacent livestock pasture, grassland, or grain fields.	<b>Present.</b> On May 12, 2010, an individual was observed from the project site foraging over adjacent agricultural fields. Two currently active nests were observed approximately 0.9 and 1.4 mi from the proposed canal alignment.
San Joaquin kit fox <i>Vulpes macrotis mutica</i>	FE ST	Annual grassland with scattered shrubby vegetation in areas with loose-textured soils. Requires suitable prey base.	<b>Unlikely.</b> San Joaquin kit foxes may occur only during rare years in which the kit fox population and/or reproductive output is elevated.
<b>California Species of Special Concern</b>			
Hardhead <i>Mylopharodon conocephalus</i>	CSSC	Occurs in small to large streams at low to middle elevations; may also inhabit lakes or reservoirs.	<b>Possible.</b> Could be present in the many of the various canals, drains, and drainages that bisect or are proximal to the proposed canal alignment San Joaquin River adjacent to project impact areas.
Northern leopard frog <i>Lithobates pipiens</i>	CSSC	Aquatic habitats with emergent or submergent vegetation with nearby dense, tall, grass or forb-dominated cover with a moist substrate.	<b>Unlikely.</b> Although a 1976 CNDDDB record exists near the north end of the proposed canal alignment, this occurrence is well outside the species' natural range and almost certainly represents a transplanted individual. It is highly unlikely that a population of this species has reproduced and persisted in the vicinity of the project site.
Western pond turtle <i>Actinemys marmorata</i>	CSSC	Lives where water persists throughout the year: ponds along foothill streams, lakes, ditches, and marshes. The ponds favored by turtles are characterized by emergent and floating vegetation such as cattails and mats of algae. These islands of vegetation are usually large enough to ensure a fair supply of food and protection for the pond turtle.	<b>Possible.</b> Suitable aquatic habitat is present in the San Joaquin River and the various canals and drains that bisect, or are proximal to, the proposed canal alignment.
Tricolored blackbird <i>Agelaius tricolor</i>	CSSC	Breeds near fresh water in dense emergent vegetation.	<b>Possible.</b> Suitable nesting habitat is present in the San Joaquin River and the various canals and drains that bisect, or are proximal to, the proposed canal alignment.



NAME	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE ON-SITE
Burrowing owl <i>Athene cunicularia</i>	CSSC	Found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals, such as ground squirrels.	<b>Possible.</b> Marginal habitat exists on-site, though suitable burrows are scarce.
Northern harrier <i>Circus cyaneus</i>	CSSC	Forages in marshes, grasslands, and ruderal habitats; nests in extensive marshes and wet fields.	<b>Likely.</b> This species probably forages over the agricultural fields adjacent to the project site but suitable nesting habitat is absent from the site.
<b>CNPS Species</b>			
Sanford's arrowhead <i>Sagittaria sanfordii</i>	1B.2	Occurs in shallow, standing, freshwater and sluggish waterways of marshes, swamps, ponds, vernal pools and lakes, reservoirs, sloughs, ditches, canals, streams, and rivers at elevations of 10 to 2000 ft.	<b>Possible.</b> Suitable habitat is present in the wet canals and drains that bisect, or are proximal to, the proposed canal alignment.

**\*Listing Status**

FE	=	Federally listed Endangered
FC	=	Federal Species of Concern
ST	=	State listed Threatened
SR	=	State Rare
CSSC	=	California Species of Special Concern

**Definitions Regarding Potential Occurrence:**

Present:	Species or sign of their presence observed on the site
Likely:	Species or sign not observed on the site, but reasonably certain to occur on the site
Possible :	Species or sign not observed on the site, but conditions suitable for occurrence
Unlikely:	Species or sign not observed on the site, conditions marginal for occurrence
Absent:	Species or sign not observed on the site, conditions unsuitable for occurrence

**CNPS LISTS:**

- 1A – Plants presumed extinct in California
- 1B – Plants rare, threatened, or endangered in California and elsewhere
- 2 – Plants rare, threatened, or endangered in California, but more common elsewhere
- 3 – Plants about which more information is needed – a review list
- 4 – Plants of limited distribution – a watch list

**CNPS THREAT CODE EXTENSIONS:**

- .1 – Seriously endangered in California
- .2 – Fairly endangered in California
- .3 – Not very endangered in California

**Swainson's hawk.** The proposed Construction Project site is within the breeding range of the Swainson's hawk. While there is no suitable nesting habitat for this species along the proposed canal alignment proper, the CNDDDB (2010) lists 12 Swainson's hawk nests within 5 miles of the Proposed Project site, and the agricultural lands surrounding the site provides a suitable foraging cover type. A survey conducted by H. T. Harvey & Associates on May 13, 2010 located two currently active nests approximately 0.9 and 1.4 miles from the proposed canal alignment. Therefore, the Proposed Project development may result in loss of 19 acres of potential Swainson's hawk foraging habitat. Of the 19 acre total area impacted 1.3 acres are within 1 mile of one of the nests and the remaining 17.7 acres are within 5 miles of at least one of the nests. However, implementation of the recommended mitigation measures would reduce impacts to Swainson's hawk to less than significant levels.

Following the methods developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC 2000 [Appendix D]), a qualified ornithologist shall conduct surveys during the Swainson's hawk breeding season (i.e., March through August) to determine the locations of active Swainson's hawk nests within a 10-mile radius of the Proposed Project site. Under CDFG mitigation guidelines, loss of suitable foraging habitat within 10 mi of a Swainson's hawk nest site should be mitigated by protecting or creating equally suitable foraging habitat elsewhere within the territory's 10-mi radius (CDFG 1994 [Appendix E]). The acreage of Habitat Management (HM) lands provided would be derived from the following recommendations included in the 1994 CDFG staff report:

- If the Proposed Project is determined to be within 1 mi of an active nest tree, the Proposed Project proponent shall provide 1 acre of HM land (at least 10% of the HM land requirements shall be met by fee title acquisition or a conservation easement allowing for the active management of the habitat, with the remaining 90% of the HM lands protected by a conservation easement acceptable to the California Department of Fish and Game [CDFG] on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawk) for each acre of development authorized (1:1 ratio); or

One-half acre of HM land (all of the HM land requirements shall be met by fee title acquisition or a conservation easement (acceptable to the CDFG) which allows for the active management of the habitat for prey production on the HM lands) for each acre of development authorized (0.5:1 ratio).

- If the project is determined to be within 5 mi of an active nest tree but greater than 1 mi from the nest tree, the project proponent shall provide 0.75 acres of HM land for each acre of urban development authorized (0.75:1 ratio). All HM lands protected under this requirement may be protected through fee title acquisition or conservation easement (acceptable to the CDFG) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawks.
- If the project is determined to be within 10 mi of an active nest tree but greater than 1 mi from the nest tree, the project proponent shall provide 0.5 acres of HM land for each acre of urban development authorized (0.5:1 ratio). All HM lands protected under this requirement may be protected through fee title acquisition or conservation easement (acceptable to the

CDFG) on agricultural lands or other suitable habitats that provide foraging habitat for Swainson's hawks.

Management Authorization holders/project sponsors shall provide for the long-term management of the HM lands by funding a management endowment (the interest on which shall be used for managing the HM lands).

**San Joaquin kit fox** The proposed Construction Project site is within the range of the state and federally threatened San Joaquin kit fox. Although habitat at the site is not suitable for long-term occupation by the species, during a year in which the kit fox population and/or reproductive output is elevated, transient kit foxes could disperse onto and temporarily occupy the site. Records for kit foxes within the region mandate caution against harming a kit fox during construction. The standard recommendations contained within the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of The San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix C) will be fully implemented. Implementation of these measures would reduce impacts to San Joaquin kit fox to less than significant levels.

### **California Species of Special Concern**

**Hardhead** The Hardhead is a California fish Species of Special Concern. A portion of the proposed Construction Project site is within the range of the hardhead, and suitable aquatic habitat for the species is present in many of the various canals, drains, and drainages that bisect or are proximal to the proposed canal alignment. The CNDDDB (2010) lists 1 occurrence of the species within 10 mi of the project site. Construction activities may result in direct loss of individuals during dewatering activities that will occur at sites where the proposed canal crosses other canals or drains. Hardhead could also be impacted by erosional or contaminated runoff into occupied aquatic habitat as a result of ground-disturbing construction activities in upland areas. However, implementation of the following measures would reduce impacts to hardhead to less than significant levels:

- A qualified, on-site biological monitor will remain on-site during all dewatering activities. If hardhead are discovered in the dewatering area, the monitor will capture and translocate the individual(s) to suitable aquatic habitat. The precise location of the release site depends on the availability of suitable habitat and shall be determined by the biologist. Released animals shall be monitored until they are not imperiled by predators or other dangers. If the dewatered area becomes inundated before work there is completed, the biological monitor must again monitor the dewatering process.
- If pumps are used to dewater the work area, the pump intake nozzle must be placed inside a perforated bucket or barrel filled with coarse gravel to prevent fish from being sucked through the intake hose and into the pump mechanism.
- An employee education program shall be conducted for contractors and their employees involved in the project prior to the initiation of construction activities. The program shall consist of a brief presentation by persons knowledgeable about the hardhead. The program shall include the following: a description of the species and its habitat needs, photographs, an explanation of the legal status of the species, and a list of measures being taken to reduce effects to these species during project construction. A fact sheet conveying this information shall be prepared for distribution to contractors and their employees and anyone else who

may enter the construction site. Upon completion of training, employees shall sign a form stating that they attended the training and understand all the conservation and protection measures. The original form(s) shall be submitted to the CDFG.

- A representative shall be appointed to serve as the contact source for any employee, contractor, or agency personnel who might inadvertently kill or injure a hardhead, or who finds a dead, injured or entrapped individual. The representative shall be identified during the employee education program. The representative's name and telephone number shall be provided to the CDFG.
- If a hardhead or any fish that construction personnel believe may be a hardhead is encountered during project construction, the following protocol shall be followed:
  - a. All work that could result in direct injury, disturbance, or harassment of the individual hardhead(s) shall immediately cease.
  - b. The foreman and on-call biologist shall be immediately notified.
  - c. The on-call biologist shall translocate the fish as previously described.
- The use of pesticides, rodenticides, and herbicides in construction areas shall be utilized in such a manner to prevent primary or secondary poisoning of hardheads and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other appropriate State and Federal regulations, as well as additional project-related restrictions deemed necessary by the CDFG.
- During all construction in the vicinity of aquatic habitat, Best Management Practices (BMPs) shall be used to minimize erosion and impacts to water quality to protect water quality in downstream areas used by hardheads.

**Western pond turtle** The western pond turtle is a California Species of Special Concern. The proposed Construction Project alignment is within the range of the western pond turtle, and suitable aquatic habitat for the species is present in many of the various canals, drains, and drainages that bisect or are proximal to the proposed alignment. The CNDDB (2010) lists 14 occurrences of the species within 10 mi of the project site. Western pond turtles have the potential to attempt to nest within the project alignment or to make overland movements across the project site if present in aquatic habitat proximal to the project site. Construction activities may result in direct loss of individuals. However, implementation of the following measures would reduce impacts to western pond turtle to less than significant levels:

- If construction is initiated between 15 March and 31 October, a qualified biologist will conduct a daytime pre-construction survey at the project site for pond turtles during the day prior to the commencement of construction activities within 400 feet of suitable pond turtle habitat. If construction begins outside this period, a pre-construction survey is not required. If, after construction has begun, a lapse in construction of 7 or more days occurs between 15 March and 31 October, a daytime pre-construction survey shall be conducted the day prior to the resumption of construction. Any individual western pond turtle encountered within the construction area shall be re-located to suitable aquatic habitat away from the impact area. The precise location of the release site depends on the availability of suitable habitat and shall be determined by the biologist. Released animals shall be monitored until they are not imperiled by predators or other dangers.

- The project proponent shall implement the following avoidance and minimization measures during construction:
  - a. A qualified biologist shall be on call during all activities, including groundbreaking, earthmoving, and construction activities that could result in the mortality or injury of western pond turtles.
  - b. Project-related vehicles will observe a 15 miles per hour speed limit in all project areas, except on City and County roads and State highways.
  - c. If at any time a pond turtle is discovered in the construction area by the on-call biologist or anyone else, the on-call biologist shall move the animal to a safe location in suitable aquatic habitat outside of the impact area. The biologist shall monitor translocated animals until safe from induced exposure to predators or other dangers.
  - d. Because pond turtles may take refuge within and under cavity-like and den-like structures, such as pipes, and may enter stored pipes and become trapped, all construction pipes, culverts, or similar structures that are stored at a construction site for one or more overnight periods shall be either securely capped prior to storage or thoroughly inspected by the on-call biologist and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a pond turtle is discovered inside or under a pipe by the on-call biologist or anyone else, the on-call biologist shall translocate the animal as previously described.
  - e. To prevent inadvertent entrapment of pond turtles during construction, the on-call biologist and/or construction foreman/manager shall ensure that all excavated, steep-walled holes or trenches more than 1-ft deep are completely 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 will be thoroughly inspected for trapped animals by the on-call biologist and/or construction foreman/manager. If at any time the on-call biologist or anyone else discovers a trapped turtle, the on-call biologist shall translocate the turtle as previously described.
  - f. To eliminate an attraction for the predators of pond turtles, all food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in solid, closed containers (trash cans) and removed at the end of each working day from the entire construction site.
  - g. An employee education program shall be conducted for contractors and their employees involved in the project prior to the initiation of construction activities. The program shall consist of a brief presentation by persons knowledgeable about pond turtles. The program shall include the following: a description of the species and its habitat needs, photographs, an explanation of the legal status of the species, and a list of measures being taken to reduce effects to these species during project construction. A fact sheet conveying this information shall be prepared for distribution to contractors and their employees and anyone else who may enter the construction site. Upon completion of training, employees shall sign a form stating that they attended the training and understand all the conservation and protection

measures. The original form(s) shall be submitted to the California Department of Fish and Game (CDFG).

- h. A representative shall be appointed to serve as the contact source for any employee, contractor, or agency personnel who might inadvertently kill or injure a pond turtle, or who finds a dead, injured or entrapped individual. The representative shall be identified during the employee education program. The representative's name and telephone number shall be provided to the CDFG.
- i. If a pond turtle or any turtle that construction personnel believe may be a pond turtle is encountered during project construction, the following protocol shall be followed:
  - All work that could result in direct injury, disturbance, or harassment of the individual turtle shall immediately cease.
  - The foreman and on-call biologist shall be immediately notified.
  - The on-call biologist shall translocate the turtle as previously described.
- j. Tightly woven fiber netting or similar material shall be used for erosion control or other purposes at the project to ensure that juvenile western pond turtles do not get trapped. This limitation will be communicated to any contractors through use of Special Provisions included in the bid solicitation package. Plastic monofilament netting (erosion control matting) or similar material shall not be used in construction areas because juvenile turtles may become entangled or trapped in it.
- k. The use of pesticides, rodenticides, and herbicides in construction areas shall be utilized in such a manner to prevent primary or secondary poisoning of pond turtles and the depletion of prey populations on which they depend. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other appropriate State and Federal regulations, as well as additional project-related restrictions deemed necessary by the CDFG.
- l. During all construction in the vicinity of aquatic habitat, Best Management Practices (BMPs) shall be used to minimize erosion and impacts to water quality to protect water quality in downstream areas used by pond turtles.

**Burrowing owl** The burrowing owl is a California Species of Special Concern and the proposed Construction Project site is within the breeding and wintering range of the burrowing owl. The CNDDDB (2010) lists no occurrences of burrowing owl within 10 mi of the project site, although marginal habitat exists with the Project boundary and they may occur along the alignment. Construction activities may result in direct loss of individuals. However, implementation of the following measures would reduce impacts to burrowing owl to less than significant levels:

- In conformance with federal and state regulations regarding the protection of raptors, a habitat assessment in accordance with CDFG recommendations for burrowing owls (CBOC 1993 [Appendix F], CDFG 1995 [Appendix G],) shall be completed prior to land conversion. All ground squirrel colonies, if present, shall be mapped at an appropriate scale.
- A pre-activity survey for burrowing owls consisting of 4 site visits, in conformance with CDFG recommendations (CDFG 1995 [Appendix G]), shall be completed no more than 30 days prior to the start of construction activities within suitable habitat in the proposed activity

area and throughout a 500-foot buffer zone. If owls are detected, occupied burrows shall not be disturbed during the nesting season (1 February through 31 August) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from CDFG. A 250-foot buffer, within which no activity would be permissible, shall be maintained between project activities and nesting burrowing owls during the nesting season. This protected area would remain in effect until 31 August or at CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.

- If avoiding development of occupied areas is not feasible, then habitat compensation on off-site mitigation lands shall be implemented (CBOC 1993 [Appendix F], CDFG 1995 [Appendix G]). HM lands comprising existing burrowing owl foraging and breeding habitat shall be acquired and preserved. An area of 6.5 acres (the amount of land found to be necessary to sustain a pair or individual owl) shall be secured for each pair of owls or individual in the case of an odd number of birds. As part of an agreement with CDFG, the project proponent shall secure the performance of its mitigation duties by providing CDFG with security in the form of funds that would 1) allow for the acquisition and/or preservation of HM lands; 2) provide initial protection and enhancement activities on the HM lands, potentially including, but not limited to, such measures as fencing, trash clean-up, artificial burrow creation, grazing or mowing, and any habitat restoration deemed necessary by CDFG; and 3) establish an endowment for the long-term management of the HM lands.

**Sanford's arrowhead** This plant is listed as a CNPS 1B.2 species, which is considered rare, threatened, or endangered in California although they may be common elsewhere. The proposed Construction Project site is within the range of Sanford's arrowhead, and suitable habitat for the species is present in many of the various canals, drains, and drainages that bisect or are proximal to the proposed canal alignment. Work activities within the two canal crossings could result in the destruction of individual plants during the course of construction. However, implementation of the following measures would reduce impacts to Sanford's arrowhead to less than significant levels:

- A pre-construction survey for Sanford's arrowhead will be conducted at least 1 day prior to the commencement of construction in suitable aquatic habitat.
- If plants are detected in an impact area, a perimeter fence around the plants will be installed and that area will be avoided.
- If complete avoidance is not feasible, the affected plants will be translocated to the nearest suitable habitat outside the impact area.

**Migratory birds** Migratory birds, including cliff swallows, horned lark, mourning dove, house finches, and red-tailed hawks, are known or are expected to nest in the vicinity of the Construction Project area. During a reconnaissance survey conducted on May 12, 2010 by H. T. Harvey & Associates, cliff swallows were noted to be nesting on the understructures and pilings of 2 bridges on Turner Island Road: at Pick Anderson Drain and at the San Joaquin River. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Construction disturbance during the breeding season could



result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFG. Loss of fertile eggs or nesting birds or any activities resulting in nest abandonment could constitute a significant impact if the species is particularly rare in the region. Construction activities such as tree removal, site grading, etc., that disturb a rare nesting bird on-site or immediately adjacent to the construction zone could constitute a significant impact. However, the following conservation measures will be included in the conditions of approval to comply with CEQA and MBTA.

- To the extent practicable, construction shall be scheduled to avoid the nesting season, which extends from January through August.
- If it is not possible to schedule construction between August and January, pre-construction surveys for nesting birds shall be conducted by a qualified ornithologist or wildlife biologist to ensure that no nests of rare or protected species will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the qualified person shall inspect all potential nest substrates in and immediately adjacent to the impact areas for nests. If an active nest is found close enough to the construction area to be disturbed by these activities, the ornithologist, in consultation with CDFG, shall determine the extent of a construction-free buffer zone to be established around the nest.

## **Cultural Resources**

Impacts are discussed in Section 3.

## **Geology and Soils**

The Proposed Project would not have any impact on soil erosion or expose people or structures to potential adverse effects.

## **Hazards and Hazardous Materials**

No hazardous materials would be used or exposed for the Proposed Project. The proposed pipeline section on TIF property would cross an existing private airstrip. The airstrip is owned and operated by TIF and would be out of service a few days to allow pipe installation. Proper safety precautions will be implemented during construction. This is a less than significant impact.

## **Hydrology and Water Quality**

The Proposed Project would transport water for agricultural beneficial use. No adverse impacts to water quality would occur. Blending the high quality project water into SLCC’s existing supplies should improve the overall quality of their irrigation deliveries. The proposed channel would be parallel and immediately adjacent to existing irrigation channels so existing drainage patterns would not be significantly altered. The Proposed Project would not impact groundwater supply or quality.

## **Land Use and Planning**

The proposed Construction Project is located in western Merced County, not in the vicinity of an established community. The site is zoned AE-20 and the proposed Construction 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 proposed Construction Project would result in an increase in ambient noise levels during construction, however, these noise levels are not expected to be substantial nor exceed established standards. There are no residences or schools in the vicinity of the proposed Construction Project that would be impacted by noise levels during construction. Operation of the project pumps would result in a minor increase in ambient noise levels. Since there are no dwellings in the vicinity of the proposed pumps, the impact would be less than significant.

## **Population and Housing, Public Services, Recreation**

The Proposed 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 Proposed Project would not cause an increase in local traffic. During construction there would be a short term service interruption of an existing airstrip that is privately owned and operated by TIF. This would be a less than significant impact. Since a buried pipeline would be used in the vicinity of the air strip, there would be no impact following construction of the pipeline.

## **Utilities and Service Systems**

The Proposed Project would not require an expansion of any utilities. There is no impact.

## **Mandatory Findings of Significance**

The Proposed Project would not have the potential to degrade the environment or impact habitat or wildlife species. The Proposed Project would not contribute to significant cumulative impacts or have impacts that would cause adverse effects to humans.

Based on the Draft EA/IS and consideration of comments received, it is the finding of the Board of Directors of HMRD that the Proposed Project, with the implemented mitigation activities, could not have a significant effect on the environment. Pursuant to Section 2100 et. Seq. of the Public Resources Code, State of California, a Mitigated Negative Declaration is adopted for the Proposed Project. This finding is based on the independent judgment of the Board of Directors (see Appendix K for Notice of Determination to Adopt Mitigated Negative Declaration).

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## 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 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 USFWS 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.”

Under the Proposed Project, a redundant canal would be created on private land, and does not require a Federal permit or license; 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.

San Joaquin kit fox preconstruction/pre-activity 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 (USFWS 2011). SLCC will implement *U.S. Fish And Wildlife Service Standardized Recommendations For Protection Of The Endangered San Joaquin Kit Fox Prior To Or During Ground Disturbance* (USFWS 2011a). If kit foxes or their dens are detected at any time, all construction activities associated with the project will be halted immediately and Reclamation staff notified within two working days. The project will be placed on hold until further analysis with Reclamation staff, and if necessary consultation with the USFWS, is complete.

On March 23, 2011, Reclamation received a concurrence letter from USFWS Sacramento Field Office for the Proposed Action (ref. number: 81420-2011-1-0342), concurring with Reclamation that effects of the Proposed Action are not likely to adversely affect the giant garter snake (see Appendix J for USFWS concurrence letter). USFWS based their concurrence on the implementation of the *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake (Thamnophis gigas) Habitat*, as revised. This requires a survey for giant garter snake of the Proposed Project area by a USFWS approved biologist 24-hours prior to ground disturbances, in addition to other revisions as found in Appendix B.

No anadromous fishes or their critical habitat occur in the affected area; therefore, no consultation with the National Marine Fisheries Service is needed.

### **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.

Reclamation consulted with the SHPO on April 7, 2011 regarding a finding of no adverse effects to historic properties. SHPO concurred with Reclamation's findings and determination on May 17, 2011 (refer to appendix H for cultural resources determination).

### **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.

Preconstruction surveys for migratory birds would be completed and appropriate avoidance, minimization, and protection measures would be followed in consultation with USFWS and CDFG if active nests are located in the area of disturbance. Therefore, the Proposed Action would have no effect on birds protected under the MBTA.

### **5.5 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands**

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. The Proposed Action would construct irrigation water conveyance facilities that are not located within a wetland or floodplain. No impacts to wetlands and/or floodplains are anticipated.

## 5.6 Public Review Period

Reclamation provided the public with an opportunity to comment on the draft EA/IS and Finding of No Significant Impact from November 3 through December 2, 2010. Through the State Clearing House, the HMRD (acting as Lead Agency for CEQA) made the CEQA portion of the draft EA/IS and the proposed adoption of a negative declaration available to the public.

Reclamation did not receive any comment letters; however, HMRD received one set of comments from CDFG for the CEQA and have responded to those comments (refer to Appendix I for public comments and responses).

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

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### **Panoche Water District**

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## Section 7 References

- Barry, S.J., and H.B. Shaffer. 1994. The Status of the California Tiger Salamander (*Ambystoma californiense*) at Lagunita: A 50-Year Update. *Journal of Herpetology* 28: 159-164.
- CDFG (California Department of Fish and Game). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. California Department of Fish and Game, Sacramento, CA
- CDFG (California Department of Fish & Game). 1995. Staff Report on Burrowing Owl Mitigation. California Department of Fish and Game, Sacramento, CA.
- CNDDDB (California Natural Diversity Database). 2010. California Department of Fish and Game's Natural Diversity Database, Version 3.1.1. RareFind 3 (computer application). Last Updated: July 6, 2010.
- Cunniff, P. F. 1977. *Environmental Noise Pollution* (New York: Wiley).
- EPA (Environmental Protection Agency) 2009. Final Mandatory Reporting of Greenhouse Gases Rule. Website: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>. Accessed: December 10, 2009.
- England, A. S., M. J. Bechard, and C. S. Houston. 1997. Swainson's hawk (*Buteo swainsoni*) in A. Poole and F. Gill (eds.), *The Birds of North America*, No. 265. The Academy of Natural Sci., Philadelphia, PA, and The American Ornithologists' Union. Washington, D.C.
- Estep, J. A. 1989. Biology, movements, and habitat relationships of the Swainson's hawk in the Central Valley of California, 1986-87. Calif. Dept. Fish and Game, Nongame Bird and Mammal Sec. Rep., 52pp.
- Fitch, H. S. 1941. The feeding habits of California garter snakes. Department of Fish & Game 27: 2-32.
- Hansen, E. C. 2010. Considerations for giant garter snake (*Thamnophis gigas*) compliance pursuant to the proposed East Side Conveyance Project, Merced County, California. Memorandum, November 1, 2010. Consulting Environmental Biologist, Sacramento, CA. 5 pp.
- Hansen, G. E. 1988. Review of the status of the giant garter snake (*Thamnophis couchi gigas*) and its supporting habitat during 1986-1987. Final report for California Department of Fish and Game, Contract C-2060. 31 pp.
- Hansen, G.E. and J.M. Brode. 1980. Status of the giant garter snake, *Thamnophis couchi gigas* (Fitch). California Department of Fish & Game, Inland Fisheries Endangered Species Program Special Publication Report. 80-5: 1-14.

- Jennings, M. R., and M. P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final Report to the California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, CA. 225 pp.
- Lutz, R.S. and D.L. Plumpton. 1999. Philopatry and nest site reuse by Burrowing Owls: implications for productivity. *Journal of Raptor Research* 33:149-153.
- Martin, D.J. 1973. Selected aspects of Burrowing Owl ecology and behavior. *Condor* 5: 446-456.
- PG&E (Pacific Gas & Electric Company). 2009. Pacific Gas and Electric Company Carbon Footprint Calculator Assumptions. Website: <http://www.pge.com/includes/docs/pdfs/about/environment/calculator/assumptions.pdf>. Accessed: November 17, 2009.
- Rich, T. 1984. Monitoring burrowing owl populations: Implications of burrow re-use. *Wildlife Society Bulletin* 12:178-180.
- Roadway Construction Emissions Model, Version 6.3.2. July 2009. Website: <http://airquality.org>.
- Trenham, P.C. 2001. Terrestrial habitat use by adult California tiger salamanders. *Journal of Herpetology* 35:343-346.
- USFWS (U.S. Fish and Wildlife Service). 1998. Recovery plan for the upland species of the San Joaquin Valley, California. Portland, OR.
- USFWS (U.S. Fish and Wildlife Service). 1993. Endangered and threatened wildlife and plants; determination of threatened status for the giant garter snake. *Federal Register* 58: 54053-54066.
- USFWS (U.S. Fish and Wildlife Service). 1999a. Draft recovery plan for the giant garter snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Portland, OR. 192 pp.
- USFWS (U.S. Fish and Wildlife Service). 2005. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the California Salamander, Central Population; Final Rule. *Federal Register Notice*. August 23, 2005. 70: 49379-49458.
- USFWS (U.S. Fish and Wildlife Service) 2010. Sacramento Fish and Wildlife Office. Endangered Species List. Available [http://www.fws.gov/sacramento/es/spp\\_list.htm](http://www.fws.gov/sacramento/es/spp_list.htm). Accessed: 2010.
- USFWS (U.S. Fish and Wildlife Service) 2011a. Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance. Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service, January 2011.

USFWS (U.S. Fish and Wildlife Service) 2011b. Consultation on the Eastside Conveyance Project (ref. number: 81420-2011-1-0342). Sacramento Fish and Wildlife Office, US Fish and Wildlife Service, March 2011.

Warrick, G. D., H. O. Clark, Jr., P. A. Kelly, D. F. Williams, and B. L. Cypher. 2007. Use of agricultural lands by kit foxes. *Western North American Naturalist* 67: 270-277.

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