RECLAMATION

Managing Water in the West

Final Environmental Assessment/Initial Study
with Mitigated Negative Declaration

RD 108 South Steiner Pumps and Pipeline Project

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
Sacramento, California

Reclamation District 108
Grimes, CA

November 2011

Mission Statements

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

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

The mission of Reclamation District 108 is to be a service-oriented organization that provides water delivery, drainage, and flood control in an economical and environmentally sound manner, while preserving District water rights.

MITIGATED NEGATIVE DECLARATION

PROJECT: South Steiner Pumps and Pipeline Project

CEQA LEAD AGENCY: Reclamation District 108

PROJECT DESCRIPTION: The U.S. Bureau of Reclamation (Reclamation) and Reclamation District 108 (District) have prepared a joint Environmental Assessment/ Initial Study (EA/IS) to evaluate the potential environmental effects of abandoning in place the South Steiner Pumping Plant (SSPP) on the Sacramento River after constructing a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from the Wilkins Slough Pumping Plant and Fish Screen Facility (also on the Sacramento River) to fields previously served by the SSPP. This action is required due to ongoing siltation caused by recent U.S. Army Corps of Engineers work on a critical erosion site in the area. The proposed action includes two primary components: 1) installation of pump sumps; and 2) construction of a dual 21-inch, 2,830 foot-long PVC pipeline.

The Draft EA/IS was circulated for public review and comment for a 30-day period beginning on September 30, 2011 and ending on October 31, 2011. The Draft and Final EA/IS may be reviewed at the District's Web site, [http://rd108.org/] and office located at 975 Wilson Bend Road, Grimes, CA, 95950; Reclamation's Web site, [http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=8384].

FINDINGS: The EA/IS has been prepared to assess the proposed action's potential effects on the environment and the significance of those effects. Using the results of the EA/IS, the proposed action would not have any significant effects on the environment once mitigation measures are implemented. This conclusion is supported by the following proposed findings:

The proposed action would result in no impacts to aesthetics, geology/soils/seismicity, hazards and hazardous materials, mineral resources, noise, population and housing, public services, recreation, utilities and service systems, and transportation/traffic.

The proposed action would result in less-than-significant impacts to agriculture and forestry resources, air quality, greenhouse gas emissions, and land use/planning.

The proposed action would result in less-than-significant impacts, once mitigation measures are implemented, to biological resources, cultural resources, and hydrology/water quality.

Although there are no known cultural resources that might be disturbed, mitigation is included to address the potential for discovering archaeological and/or human remains during the construction phase of the project.

The proposed action would not substantially 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, reduce the number or restrict the range of a special-status species, or eliminate important examples of California history or prehistory.

The proposed action would not achieve short-term environmental goals to the disadvantage of long-term environmental goals.

The proposed action would not have environmental effects that are individually limited but cumulatively considerable.

The proposed action would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

No substantial evidence exists that the proposed action would have a significant negative or adverse effect on the environment.

The proposed action incorporates all applicable mitigation measures, as listed below and described in the EA/IS.

The following mitigation measures will be implemented as part of the proposed action to avoid or minimize potential environmental impacts. Implementation of these mitigation measures would reduce the potential environmental impacts of the proposed action to a less-than-significant level.

MITIGATION MEASURE BIO-1: AVOIDANCE AND MINIMIZATION MEASURES FOR GIANT GARTER SNAKE

MITIGATION MEASURE BIO-2: BEST MANAGEMENT PRACTICES FOR GIANT GARTER SNAKE

MITIGATION MEASURE BIO-3: AVOIDANCE AND MINIMIZATION MEASURES FOR SWAINSON'S HAWK AND OTHER TREE NESTING RAPTORS

MITIGATION MEASURE BIO-4: AVOIDANCE AND MINIMIZATION MEASURES FOR SWALLOWS, BLACK PHOEBE, AND OTHER MIGRATORY BIRDS

MITIGATION MEASURE CR-1: POST REVIEW DISCOVERY/INADVERTENT FIND

MITIGATION MEASURE HYD-1: PREPARE A SWPPP

MITIGATION MEASURE HYD-2: BEST MANAGEMENT PRACTICES FOR WATER QUALITY

A copy of the EA/IS follows this MND.

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ACRONYMS AND ABBREVIATIONS

APE	area of potential effects
AQCR	air quality control region
BA	Biological Assessment
BMP	best management practices
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCAPCD	Colusa County Air Pollution Control District
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNDDB	California Native Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
Corps	U.S. Army Corps of Engineers
CVPIA	Central Valley Project Improvement Act
District	Reclamation District 108
DOI	U.S. Department of the Interior
EA	Environmental Assessment
ESA	Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gas
IS	Initial Study
ITA	Indian Trust Assets
MBTA	Migratory Bird Treaty Act
msl	mean sea level

NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PERP	Portable Equipment Registration Program
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM_{10}	Respirable particulate matter
$PM_{2.5}$	Fine particulate matter
RD 108	Reclamation District 108
Reclamation	Bureau of Reclamation
RWQCB	Regional Water Quality Control Board
SHPO	State Historic Preservation Officer
SHTAC	Swainson's Hawk Technical Advisory Committee
SO_x	sulfur oxides
SRFD	Sacramento River Fire District
SSPP	South Steiner Pumping Plant
SVAB	Sacramento Valley Air Basin
SWPPP	storm water pollution prevention plan
TAC	toxic air contaminant
THPO	Tribal Historic Preservation Officer
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOCs	volatile organic compounds

1.0 PURPOSE AND NEED FOR ACTION

1.1 PROPOSED ACTION

Reclamation District 108 (District) proposes to abandon in place the South Steiner Pumping Plant (SSPP) on the Sacramento River after constructing a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from the Wilkins Slough Pumping Plant and Fish Screen Facility (also on the Sacramento River) to fields previously served by the SSPP. This action is required due to ongoing siltation caused by recent U.S. Army Corps of Engineers (Corps) work on a critical erosion site in the area. The proposed action includes two primary components: 1) installation of pump sumps; and 2) construction of a dual 21-inch, 2,830 foot-long PVC pipeline. The Bureau of Reclamation (Reclamation) is the lead agency under the National Environmental Policy Act (NEPA). The District is the lead agency under the California Environmental Quality Act (CEQA).

1.2 LOCATION OF THE PROJECT AREA

The District is located along the western edge of the Sacramento River and delivers water to nearly 48,000 acres of farmland within southern Colusa County and northern Yolo County.

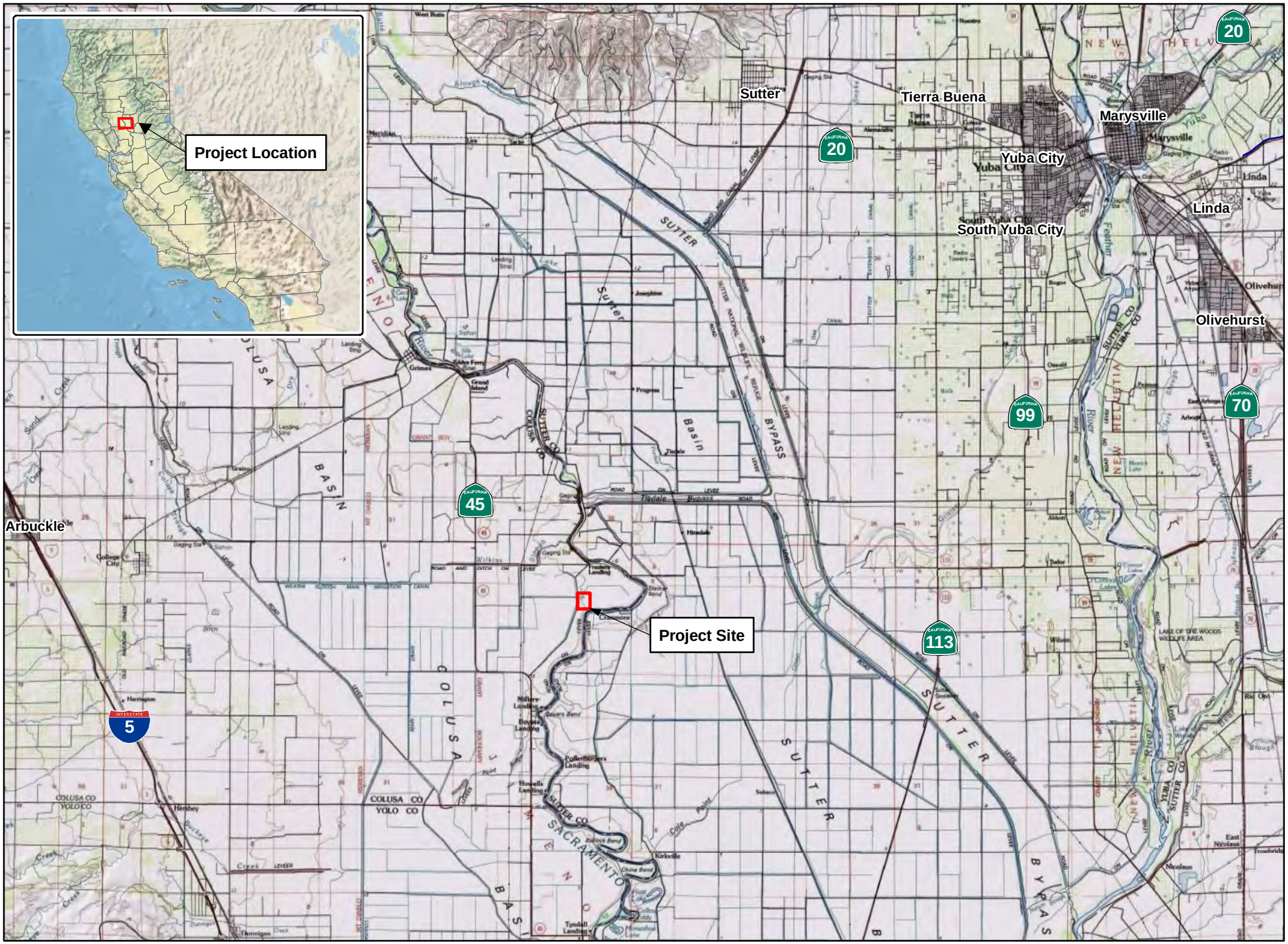
The proposed action is located in unincorporated Colusa County largely between Wilson Bend Road and the Sacramento River. Figure 1 shows the project location and vicinity. Figure 2 shows the proposed project area and pipeline alignment. Construction activities would be located within the proposed project area as shown in Figure 2.

1.3 BACKGROUND AND NEED FOR ACTION

The District was formed in 1870 under the Reclamation District Law of 1868 for the purpose of forming a district to build levees and "reclaim" land subject to periodic overflow from neighboring rivers and water bodies. At that time the government was promoting reclamation to develop swamp lands for the improvement and cultivation of the thousands of acres in California. On October 4, 1870 the landowners submitted a petition to the Colusa and Yolo County Boards of Supervisors authorizing the formation of a new Reclamation District and assigned it the number 108 (RD 108).

RD 108 receives water from the Sacramento River under riparian water rights, licenses for appropriation of surface water, and a Settlement Contract with Reclamation. The first irrigated crops were grains, but today include rice, wheat, corn, safflower, tomatoes, beans, vineseeds, cotton, walnuts and fruit.

The SSPP was built in 1956 and will continue to operate until this project is constructed. The SSPP is located on the west side of the Sacramento River and connects to the District's Irrigation Lateral 11B Canal. The District's ongoing use of the SSPP has been subject to interruptible operation, significant diver maintenance, and severe pump wear due to the abrasive nature of sediment laden water caused by the Corps' work on a critical erosion site in the area. Therefore, the District is proposing to redirect irrigation water pumped from the District's



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1 In = 3 Miles

Figure 1 - Project Location and Vicinity

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0 50 100 200 300 400 500
Feet

1 In = 300 feet

Figure 2 - Project Area and Pipeline Alignment

Irrigation Lateral 7J Canal through a pump and pipeline system to Irrigation Lateral 11B. Irrigation Lateral 7J receives water via Wilkins Slough Pumping Plant and Fish Screen, which diverts water from the Sacramento River, approximately 3.5 miles upstream of the SSPP. Once constructed, the proposed action would abandon the existing SSPP and provide new conveyance facilities to allow an existing fish screened intake at Wilkins Slough Pumping Plant to provide water to the area currently served by the SSPP. Although installing a fish screen at the existing SSPP was considered, it was determined to be infeasible because the existing SSPP is subject to significant sedimentation that would impede the operations and maintenance of a fish screen at this location.

The proposed action would be funded in part by Reclamation through the Central Valley Project Improvement Act (CVPIA) Anadromous Fish Screen Program via the Family Water Alliance Small Screen Program. Reclamation is providing partial funding for the proposed action for purposes of eliminating fish entrainment at the existing unscreened intake at SSPP [consistent with CVPIA Section 3406 b(21)]. The proposed action would allow the District to continue delivering irrigation water to the District's service area while protecting important fisheries.

1.4 PURPOSE OF THE ENVIRONMENTAL ASSESSMENT/INITIAL STUDY

This Environmental Assessment (EA)/Initial Study (IS): (1) describes the existing environmental resources in the project area; (2) evaluates the environmental effects of the alternatives on these resources; and (3) identifies measures to avoid or reduce any effects to less than significant. This EA/IS has been prepared in accordance with NEPA and CEQA.

2.0 ALTERNATIVES

2.1 NO ACTION ALTERNATIVE

The No-Action Alternative serves as the baseline against which the impacts and benefits of the action alternatives are evaluated. The No-Action Alternative represents conditions that "would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." The No-Action Alternative therefore, consists of the conditions that could be reasonably expected to occur in the foreseeable future if no permission to temporarily abandon the SSPP and to redirect irrigation water from the District's Irrigation Lateral 7J Canal would be granted by Reclamation and the District. Therefore, for the purposes of this analysis, the No Action Alternative would consist of keeping the existing SSPP system in its current configuration and no re-direction of irrigation water from the District's Irrigation Lateral 7J Canal to Irrigation Lateral 11B. Under this scenario the District would continue to deliver irrigation water throughout their service area through the current operation and maintenance of their various irrigation laterals.

2.2 PROPOSED ACTION

This section includes a discussion of the proposed action features and construction details including pump installation, pipeline alignment, staging and disposal, construction equipment and personnel, access routes, schedule, restoration and cleanup, and operation and maintenance.

Pump Installation. The proposed pump station would be constructed adjacent to existing farm pumps at the east end of Irrigation Lateral 7J Canal. Two pumps would be housed within a four-post steel framed structure. One pump would serve surface irrigation while the other would be used for drip irrigation. The pumps would be located adjacent to existing Pacific Gas and Electric (PG&E) facilities, thus eliminating the need for trenching for electrical power. Figure 3 shows a schematic of the proposed pump station.

The water supply for the pumps would come directly from the east end of the Irrigation Lateral 7J Canal. The District would dewater Irrigation Lateral 7J to place the pump sumps. Dewatering activities for placement of the pump sumps could coincide with the District's normal operations and maintenance activities in the fall/winter of 2011 when the irrigation lateral would already be dewatered. Once the Canal is dewatered, the Contractor would use an excavator to remove 1-2 feet of sediment from the bottom of the Canal to match the bottom elevation of the existing pumps and to make sure the pumps are deep enough to prevent cavitation. The Contractor would then use a crane and a pile driving hammer to drive four steel piles, one for each corner of the steel framed structure. A pre-fabricated steel platform would then be attached to the four piles along with a walkway to the structure from the bank. The pumps would be placed on the steel platform and would each feed into an underground 21-inch PVC pipeline that would head directly east (under the landowner's existing road/driveway). The pipeline alignment would cross the District's Drain 7H in the existing road pad, thus avoiding disturbance of the drainage canal. The pipeline alignment would then connect to an existing pipeline under Wilson Bend Road.

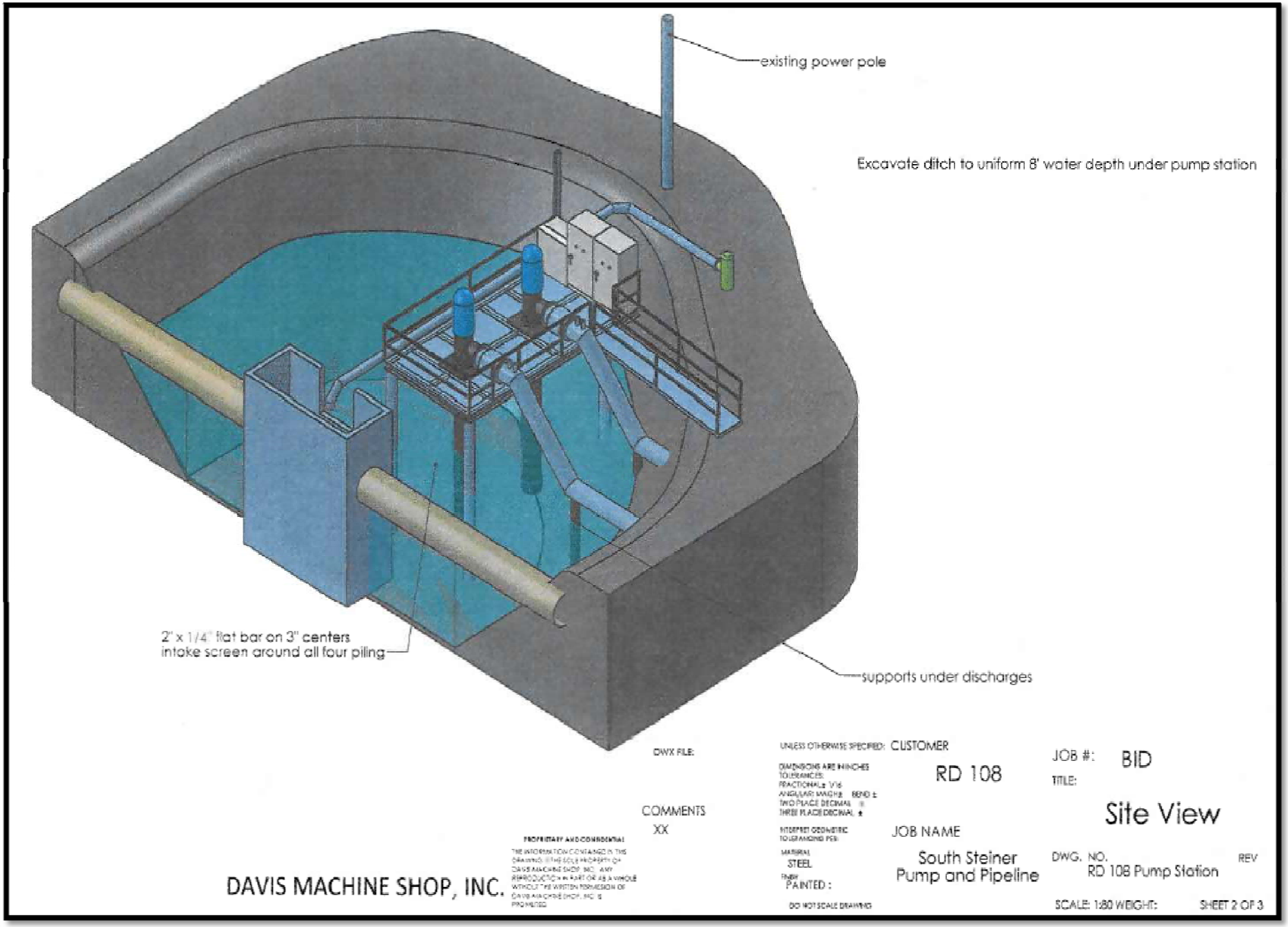

Figure 3 – Proposed Pump Station Schematic

Pipeline Alignment. The proposed action would include the installation of new dual 21-inch PVC pipelines that would extend for approximately 2,830 feet (5,660 feet of total pipe), from Wilson Bend Road through a farm field to the District's Irrigation Lateral 11B Canal. The proposed pipeline alignment would head directly east at a depth of five feet along the north side of the PG&E power pole line, making a 90 degree turn to the south rising to an elevation of three feet under the road pad until intersecting with concrete-lined Irrigation Lateral 11B, where a small discharge box would be installed to dissipate discharge water energy and avoid splashing. The District would coordinate and consult with PG&E during construction of the proposed action to minimize interference with gas and electric service.

For installation of the discharge box, the concrete lining in Irrigation Lateral 11B would be saw cut and a section approximately six to eight feet wide would be removed. The new discharge box would be placed in this gap in a liner and then a concrete patch would be used to cover the exposed dirt between the cut liner and the new discharge box.

The pipeline would have a minimum cover of five feet under the actively farmed area to avoid damage from farm operations. With a pipe diameter of 21 inches, 24 inches including pipe bell end, the total trench depth would be seven feet. The top two feet of soil material would be removed with a scraper and then a rectangular trench would be constructed 24 inches wide by five feet deep for each pipeline. The existing field is currently farmed to row crops (tomatoes in 2010 and 2011) and includes a drip irrigation system. The District would coordinate with the existing landowner to remove and replace approximately 100 rows of the drip tape as part of construction of the proposed action. The proposed dual 21-inch PVC pipeline would provide a high degree of flexibility to deliver water at a higher pressure for the existing drip systems.

Staging and Disposal Sites. Staging area for equipment would be located adjacent to the farmed field on the east side of Wilson Bend Road. Temporary equipment staging would also occur along the proposed pipeline alignment.

Old concrete from Irrigation Lateral 11B would be disposed at an approved waste site authorized to accept concrete waste.

Construction Equipment and Personnel. It is anticipated that an excavator, crane, pile driving hammer, trencher, scraper, rubber wheeled tractor, backhoe, small front-end loader, and a water truck would be used during construction. An estimated three to five workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and would park their vehicles in the staging area. Construction hours would be limited daily from 6:00 a.m. to 6:00 p.m. Monday through Saturday.

Access Routes. Access routes to and from the project area would include Interstate 5, Grimes-Arbuckle Road, Tule Road, County Highway 45, and Wilson Bend Road.

Schedule. Construction of the proposed action would take place in the fall/winter of 2011 and would last approximately four weeks.

Restoration and Cleanup. Once construction activities are completed, all equipment and excess materials would be transported offsite via the above described access routes. The

portions of the irrigation canals that would be disturbed would be restored to pre-project conditions. The staging area would be cleaned of all construction debris and also restored to pre-project conditions.

Operation and Maintenance. Operation and maintenance procedures would be consistent with the procedures already in place and used by the District.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 INTRODUCTION

This section describes the existing environmental resources in the project area that may be affected by the proposed action. This section also describes how these resources would be affected and includes mitigation measures, if required.

This EA/IS describes the analysis of potential impacts and cumulative effects associated with the proposed action on the following resources:

- Air Quality;
- Biological Resources;
- Cultural Resources;
- Hydrology and Water Quality;
- Land Use and Agricultural Resources;
- Environmental Justice; and,
- Indian Trust Assets;

Effects on several environmental resources were examined and found to be minor. Because of this the following resources were eliminated from further discussion: Aesthetic Resources; Geology, Soils, Seismicity, and Minerals; Hazards and Hazardous Materials; Noise; Socioeconomics, Population, and Housing; Recreation; Transportation and Circulation; and Utilities, Public Services, and Service Systems.

3.2 AIR QUALITY AND CLIMATE CHANGE

3.2.1 Affected Environment

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Under the CAA, the U.S. Environmental Protection Agency (USEPA) developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for criteria pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for Ozone (O_3); carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur oxides (SO_x); respirable particulate matter (PM), including particulate matter equal to or less than 10 (PM_{10}) or 2.5 ($PM_{2.5}$) microns in diameter; and lead (Pb) (40 Code of Federal Regulations [CFR] Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of California has adopted the NAAQS and promulgated additional California Ambient Air Quality Standards (CAAQS) for criteria pollutants.

USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either "attainment," "nonattainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment.

USEPA has delegated the authority for ensuring compliance with the NAAQS to the California Air Resources Board (CARB). CARB has delegated responsibility for implementation of the Federal CAA and California CAA to local air pollution control agencies. The proposed action is located in Colusa County, which is within the Sacramento Valley Air Basin (SVAB). The project area is within the jurisdiction of the Colusa County Air Pollution Control District (CCAPCD) and is subject to rules and regulations developed by the CCAPCD. The CCAPCD is responsible for implementing and enforcing state and Federal air quality regulations in Colusa County. The air quality within the CCAPCD has been characterized by the USEPA as unclassified or attainment for all criteria pollutants. However, CARB has designated the CCAPCD as a nonattainment area for PM_{10}, and as a nonattainment-transitional area for Ozone (CARB 2011).

In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS. The USEPA General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

3.2.2 Environmental Consequences

NO ACTION ALTERNATIVE

No construction activities that could directly or indirectly affect local or regional air quality would occur under the No Action Alternative. However, as a result of the No Action Alternative, routine maintenance activities would occur, as necessary, and regional air quality would continue to be influenced by climatic conditions, vehicle emissions, and agricultural activities. Also, approved development consistent with the approved Colusa County General Plan (1989) would continue. Therefore, no impact on local and/or regional air quality would result from implementation of the No Action Alternative.

PROPOSED ACTION

Implementation of the proposed action would not result in any major sources of odor, and would not involve operation of any of the common types of facilities that are known to produce odors (e.g., landfill, wastewater treatment facility). In addition, the diesel exhaust from the use of on-site construction equipment would be intermittent and temporary, and it would dissipate rapidly from the source with an increase in distance. Thus, implementation of the proposed action would not expose sensitive receptors to odorous emissions, and this issue is not discussed further.

Almost all increased pollutant emissions that would be associated with the proposed action would be generated by construction activities. Emissions from construction activities would have short-term impacts on local air quality and would have negligible impacts on regional air quality. Implementation of the proposed action is not anticipated to result in violations of any ambient air quality standards. Under the USEPA's General Conformity Regulations, a regionally significant action/project is a Federal project or action with total direct and indirect emissions greater than 10% of the emissions inventory for the non-attainment or maintenance area. The proposed action is not considered a regionally significant action, and is located in an unclassified/attainment area for criteria pollutants identified by the USEPA; therefore, no formal conformity analysis is required.

Construction activities would generate air pollutant emissions because of grading, filling, compacting, trenching, and operation of construction equipment. Construction activities could generate fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Construction workers commuting daily to and from the construction site in their personal vehicles would also generate additional short-term pollutant emissions. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Construction activities would incorporate Best Management Practices (BMP) to minimize fugitive dust emissions.

Project construction, including site preparations and construction, would also result in short-term generation of diesel exhaust emissions from the use of off-road diesel equipment. Particulate exhaust emissions from diesel fueled engines were identified as a toxic air contaminant (TAC) by CARB in 1998. The dose to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk. The possible sensitive receptor exposure period for the proposed action is short (approximately four weeks during construction), and there is only one residential complex north of the project site. In addition, diesel particulate exhaust is highly dispersive and studies have shown that measured concentrations of vehicle-related pollutants, including ultra-fine particles, decrease dramatically with increased distance from the source. Because the use of mobilized equipment would be temporary, in combination with the dispersive properties of diesel particulate exhaust, and because the construction activities would not be concentrated near sensitive receptors, construction-related TAC emissions would not be anticipated to expose sensitive receptors to

substantial pollutant concentrations in the short- or long-term. No emergency or temporary diesel-powered generators are anticipated to be required during construction. In addition, there would be no operational emissions associated with the proposed action.

Based on the short-term (four weeks or less) and temporary nature of construction-related air quality impacts, and the limited amount of construction equipment and workers required for the proposed action, implementation of the proposed action is not anticipated to result in violations of any ambient air quality standards. In addition, the proposed action is not anticipated to result in a cumulatively considerable net increase of any criteria air pollutants for which the CCAPCD is already designated as non-attainment. Thus, impacts related to emissions of criteria air pollutants would be less than significant.

Construction activities associated with the proposed action would generate direct greenhouse gas (GHG) exhaust emissions. Currently, the EPA, CARB, and CCAPCD have not established significance thresholds for the evaluation of impacts associated with GHG emissions. This is because GHGs, especially CO_2, do not pose any health risks at ambient concentrations. The impacts associated with GHGs are long-term climatic changes, which are beyond the regulatory purview of the air district. GHG contaminant emissions tend to accumulate in the atmosphere because of their relatively long lifespan. As a result, their impact on the atmosphere is mostly independent of the point of emission; GHG contaminant emissions are more appropriately evaluated on a regional, state, or even national scale than on an individual project level. For this reason, project specific GHG emissions are considered less than significant, as climate change would not occur directly from project emissions.

3.3 BIOLOGICAL RESOURCES

3.3.1 Affected Environment

DESCRIPTION OF THE PROJECT AREA AND VICINITY

Within the project site and vicinity, the predominant vegetation cover is agricultural fields, comprised primarily of irrigated row crops, rice fields, and to a lesser extent orchard. Other vegetation communities that occur in the project site and vicinity include natural and man-made waterways, riparian, ruderal habitats, and land under a variety of urban land uses. Each of these habitat types is discussed briefly below.

AGRICULTURAL FIELDS

Irrigated crops grown within the RD 108 service area include rice, wheat, corn, safflower, tomatoes, beans, vineseeds, cotton, walnuts and fruit. The agricultural fields within the project site were in tomato production at the time of the biological reconnaissance survey on June 22, 2011. The proposed pipeline alignment would cross these tomato fields. Rice fields occur west of the project site along the north and south sides of Lateral 7J, where the new pump station would be located.

Agricultural fields used to produce irrigated row crops, such as tomatoes, provide habitat for small ground-dwelling mammals such as Valley pocket gopher (*Thomomys bottae*) and rats

(*Rattus* spp.), and foraging habitat for a variety of insectivorous birds, birds of prey, and shorebirds. Bird species observed foraging in and over the agricultural fields in the project site and vicinity included red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), great egret (*Ardea alba*), white faced ibis (*Plegadis chihi*), and red-winged blackbird (*Agelaius phoeniceus*). Rice fields contain an abundant aquatic vertebrate and invertebrate fauna and provide important foraging habitat for shorebirds, as well as native and non-native reptiles and amphibians such as bullfrog (*Rana catesbeiana*) and garter snakes (*Thamnophis* spp.).

NATURAL AND MAN-MADE WATERWAYS

Within the project site and vicinity, this habitat type is comprised primarily of a complex network of man-made irrigation canals and the Sacramento River.

Irrigation canals typically contain a variety of non-native gamefishes such as sunfishes (Centrarchidae) and catfishes (Ictaluridae). Irrigation canals provide foraging habitat for species such as garter snakes and piscivorous bird species such as belted kingfisher (*Ceryle alcyon*) and great blue heron (*Ardea herodias*). The Sacramento River provides habitat for a variety of resident and anadromous fishes including sunfishes, catfishes, and salmonids. The Sacramento River is outside of the project footprint and would not be affected by the proposed action.

RIPARIAN

A narrow riparian corridor occurs along the right bank of the Sacramento River adjacent to the south side of the project site. The riparian corridor is comprised of a variety of native shrub and tree species including Fremont's cottonwood (*Populus fremontii*), Valley oak (*Quercus lobata*), box elder (*Acer negundo*), willows (*Salix* spp.), wild rose (*Rosa* spp.), California button bush (*Cephalanthus occidentalis*), and coyote bush (*Baccharis pilularis*).

Riparian corridors, even in highly disturbed areas, provide nesting and foraging habitat for a variety of songbirds and birds of prey, as well as movement corridors for medium to large sized mammals such as raccoon (*Procyon lotor*) and mule deer (*Odocoileus hemionus*). The riparian habitat is outside of the project footprint and would not be affected by the proposed action.

RUDERAL

Within the project site and vicinity, ruderal habitats occur primarily as narrow linear strips within disturbed soil areas along roadways, canal banks, and levee berms. The ruderal habitats in the project site are vegetated primarily with non-native grasses and forbs typical of disturbed habitats, including a number of invasive plant species. Plant species observed within the ruderal habitats included wild oat (*Avena fatua*), yellow star thistle (*Centaurea solsticialis*), puncture vine (*Tribulus terrestris*), field bindweed (*Convolvulus arvensis*), alkali mallow (*Malvella leprosa*), and mustard (*Brassica* spp.).

Narrow strips of ruderal habitat in areas subject to a high level of human disturbance that occur in the project site and vicinity provide limited habitat value for wildlife. Wildlife species occupying adjacent habitats occasionally utilize theses areas for dispersal or foraging but are not expected to remain in these areas for an extended period of time.

URBAN LAND USES

Urban land uses in the project site and vicinity include buildings, paved and unpaved roads, and adjacent areas with compacted soil and little or no vegetation such as parking areas. These areas are limited to the landowner's property where the pump station will be located.

SPECIAL-STATUS SPECIES

Studies conducted by HDR for the purpose of evaluating potential impacts of the proposed action on special-status species and/or their habitats included background research to determine the special-status species and their habitats potentially occurring in the project site and a biological reconnaissance survey conducted on June 22, 2011 to characterize habitat types present.

Background research consisted of a literature review of the following resources:

- U.S. Geological Survey (USGS) maps of the "Kirkville, California" and "Tisdale Weir, California" 7.5 minute topographic quadrangles (quads).
- Color aerial photography of the project site and vicinity obtained from Google Earth Pro;
- California Department of Fish and Game (CDFG) Natural Diversity Database (CNDDB 2011) reported occurrences of special-status species within the "Kirkville, California" and "Tisdale Weir, California" quads;
- U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species with the potential to occur in or be affected by projects in the "Kirkville, California" and "Tisdale Weir, California" quads;
- California Native Plant Society (CNPS) list of rare and endangered plant species potentially occurring in the "Kirkville, California" and "Tisdale Weir, California" quads; and
- Pertinent published and unpublished literature.

Habitat types observed in the project site were compared to the habitat requirements of the regionally occurring special-status species and used to determine which of these species had the potential to occur in the project area. The lists of regionally-occurring special-status species obtained from USFWS, CNDDB, and the CNPS are included in Appendix B, Attachment 1. Also included as an attachment is a table of listed and proposed species and critical habitat potentially occurring or known to occur in the project area (Appendix B, Attachment 2). This table includes a discussion of each species' specific habitat requirements and a discussion of presence/ absence of suitable habitat for these species within the project site. Sensitive species and habitats that do not have the potential to occur in the project site and/or be impacted by the proposed action are not discussed further.

Twenty-two regionally-occurring special-status species were evaluated for potential to occur in the project site and immediate vicinity. Of those twenty-two species, only one species has the potential to occur in the project site and be potentially adversely affected by the proposed action. The irrigation canals and adjacent upland berms on the project site provide suitable foraging and aestivation habitat for the federally-threatened giant garter snake (*Thamnophis gigas*). The project site also provides suitable foraging habitat for the State listed as threatened

Swainson's hawk (*Buteo swainsoni*) and habitat for nesting migratory birds such as barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), and black phoebe (*Sayornis nigricans*). Special-status species with the potential to occur in the project site are discussed below.

Giant Garter Snake (*Thamnophis gigas*)

Giant garter snakes inhabit agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, the giant garter snake relies heavily on rice fields and adjacent agricultural canals in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and, (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (USFWS 1999). Giant garter snakes are typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2011b). Giant garter snakes feed primarily on small fishes, tadpoles, and frogs. The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. Giant garter snakes typically select burrows with sunny exposure along south and west facing slopes.

There are four reported occurrences of giant garter snakes in CNDDB on the Kirkville and Tisdale Weir USGS quads (CNDDB 2011). Two of the reported occurrences are on the west side of the Sacramento River (same side of the river as the project site) and two are on the east side of the Sacramento River. All four reported occurrences are of giant garter snake found in irrigation canals and/or agricultural fields near irrigation canals. The closest reported occurrence is approximately 2 miles north of the project site, on the east side of the Sacramento River. This record is of a juvenile giant garter snake that was observed in the Sutter Mutual Main Canal near Cranmore Road in 2008. The next closest record is given as "near Grimes", which is approximately 6 miles northwest of the project site on the west side of the Sacramento River, likely near Sills Lake. One adult giant garter snake was collected at this location in 1983. The third record occurs approximately 7 miles northeast of the project site, on the east side of the Sacramento River, where one adult giant garter snake was observed in 2005 near the west side of the Sutter Bypass. The last reported occurrence is approximately 7.5 miles south of the project site on the west side of the Sacramento River where a giant garter snake was observed in 1976.

Marginal dispersal and foraging habitat for giant garter snake occurs in Lateral 7J, where the pump station is proposed. Lateral 7J is approximately 50 feet wide from bank to bank and contains sufficient water and prey for giant garter snake, but cover is scarce in the location of the proposed pump station (Appendix B, Attachment 3, Photo 2). A narrow linear strip of bulrush (*Scirpus* sp.) is growing along the south bank of Lateral 7J, extending to within approximately 30 feet west of the location of the proposed pump station. Some floating aquatic vegetation,

consisting primarily of water primrose (*Ludwigia* sp.), also occurs in small patches along the north bank and scattered throughout Lateral 7J. North of the proposed pipeline location, Drain 7H also provides suitable dispersal and foraging habitat for giant garter snake with sufficient water and prey (Appendix B, Attachment 3, Photos 3 and 4). Drain 7H is approximately 25 feet wide and has cover for giant garter snake in the form of a narrow band of emergent vegetation on both sides consisting of bulrush and cattail (*Typha* sp.) as well as patches of floating aquatic vegetation (mostly water primrose). Approximately 100 feet south of the proposed pipeline location, Drain 7H tapers to a narrow (6 to 8 feet wide), shallow, agricultural ditch and is less suitable habitat for giant garter snake.

Swainson's hawk (*Buteo swainsoni*)

Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. Swainson's hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Swainson's hawks breed in California and overwinter in Mexico and South America. Swainson's hawks usually arrive in the Central Valley between March 1 and April 1, and migrate south between September and October. Swainson's hawks usually nest in trees adjacent to suitable foraging habitat. Swainson's hawks nest usually occur in trees near the edges of riparian stands, in lone trees or groves of trees in agricultural fields, and in mature roadside trees. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Suitable foraging areas for Swainson's hawk include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes crops such as vineyards, orchards, certain row crops, rice, corn and cotton crops. Swainson's hawks primarily feed on voles; however, they will feed on a variety of prey including small mammals, birds, and insects (CDFG 2011b).

There are 31 records of nesting Swainson's hawk in CNDDB on the Kirkville and Tisdale Weir USGS quads (CNDDB 2011). There are no suitable nest trees for Swainson's hawk in or directly adjacent to the proposed pump station or pipeline alignment. However, a large Valley oak that is suitable for raptor nesting occurs along Wilson Bend Road approximately 600 feet south of the proposed pump station location. Suitable nest trees also occur along the Sacramento River as close as approximately 100 feet south of the pipeline outfall into Lateral 11B. Although no Swainson's hawks were observed during the biological reconnaissance survey, the project site provides suitable foraging habitat for Swainson's hawk. It is likely that this species forages in the project site and nests in close proximity to the project site.

Other Raptors and Migratory Birds

Swallows, black phoebes, and other migratory birds commonly nest on the underside of bridges and other structures in the vicinity of streams and other watercourses. These species are protected from disturbance during the nesting season by the Migratory Bird Treaty Act (MBTA). Swallow nests were observed on the existing pump structure in Lateral 7J adjacent to the location of the proposed pump station.

3.3.2 Environmental Consequences

NO ACTION ALTERNATIVE

There would be no effect to special-status species and their habitats in the project area under this alternative. The types of species and their associated habitat in the project area would be expected to remain the same.

PROPOSED ACTION

Construction of the proposed action is not likely to adversely affect the giant garter snake or its habitat and could potentially indirectly affect the Swainson's hawk as well as other nesting raptors and migratory birds. These effects would be considered significant to these special status species.

Effects to Giant Garter Snake

Giant garter snake is unlikely to reside for long periods of time in the segment of Lateral 7J and Drain 7H in the project area due to the presence of more suitable habitat in the irrigation canals further from human disturbance; however, giant garter snakes could potentially disperse through the project area or use the project area for foraging or basking. In addition, the banks of Lateral 7J and Drain 7H provide marginal basking habitat and refugia for the giant garter snake.

If giant garter snakes were present in the project site during construction, they could potentially be harmed as a result of direct contact with construction equipment or personnel. In addition, giant garter snakes could potentially be harmed as a result of increased site disturbance during site preparation and construction activities within Lateral 7J and the immediate vicinity. The pump station itself would result in minimal impacts to potential giant garter snake habitat. However, the magnitude of this impact would be further reduced because the new pump station would be situated in an area of significant human disturbance between existing pumps and the east end of the lateral.

Placement of the pump station is not expected to result in a measurable reduction of habitat quality within Lateral 7J. The pump station is not expected to appreciably reduce the amount of available habitat for giant garter snakes in Lateral 7J, hinder the movement of giant garter snakes through the project site, or appreciably affect the amount of available prey, cover, or basking. Construction of the pump station would result in temporary impacts to marginal upland habitat for giant garter snakes in the bed and banks of Lateral 7J and an adjacent dirt roadway, but temporary impacts to potential aquatic habitat for giant garter snakes would be avoided by constructing when Irrigation Lateral 7J is dewatered. Dewatering activities for placement of the pump sumps could coincide with the District's normal operations and maintenance activities in the fall/winter of 2011 when the irrigation lateral would already be dewatered.

The proposed action is not anticipated to adversely affect giant garter snake. Effects on giant garter snake from construction activities are unlikely to occur and, are thus, discountable.

The project area could be used as a migratory corridor though unlikely; however, giant garter snake would not be migrating through the area during the time of construction and the project area would be restored to pre-project conditions and therefore no indirect effects would occur as a result of the proposed action.

Effects to Swainson's Hawk

Construction of the proposed action could potentially result in direct and indirect effects to Swainson's hawk and other tree nesting raptors if these species begin nesting adjacent to the project area prior to construction. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult hawks.

Effects to Nesting Swallows, Black Phoebes and Other Migratory Birds

Construction of the proposed action could potentially result in direct and indirect effects to nesting swallows, black phoebes, and other migratory birds. Swallow nests were observed on the existing pump in Lateral 7J adjacent to the project site. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by these species.

3.3.3 Mitigation

GIANT GARTER SNAKE

Reclamation prepared a Biological Assessment (BA) for Giant Garter Snake and initiated informal consultation with USFWS under Section 7 of the Endangered Species Act (August 16, 2011). Reclamation determined that the proposed action is not likely to adversely affect giant garter snake. The BA included that construction in aquatic habitat or upland habitat within 200 feet of Lateral 7J and Drain 7H shall conform to the USFWS's Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat, and/or other guidance/requirements resulting from consultation. Additional measures such as biological monitoring for giant garter snakes during construction and habitat protection would be implemented as determined appropriate by USFWS. Concurrence from USFWS that the proposed action is not likely to adversely affect giant garter snake was received on October 26, 2011 and is included in Appendix B.

The proposed avoidance and minimization measures listed below would reduce the effects on the giant garter snake to less than significant. The quantity and quality of giant garter snake habitat in the project site is not expected to decrease significantly compared to existing conditions due to implementation of the proposed action. With the implementation of the proposed avoidance and minimization measures, potential construction related affects would be minimized. Implementing pre-construction surveys and/or construction monitoring would further reduce the likelihood that any giant garter snakes are harmed as a result of the proposed action. Effects on giant garter snakes from construction activities are unlikely to occur and, are thus, discountable. The project area would be used as a migratory corridor though unlikely; however, giant garter snakes would not be migrating through the area during the time of construction and the project area would be restored to pre-project conditions and therefore, no indirect effects would occur as a result.

MITIGATION MEASURE BIO-1: AVOIDANCE AND MINIMIZATION MEASURES FOR GIANT GARTER SNAKE

- Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided GGS habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.
- Construction personnel should receive a USFWS-approved worker environmental awareness training. This training instructs workers to recognize GGS and its habitat(s).
- The project area should be surveyed for GGS 24 hours before construction activities. Survey of the project area should be repeated if a lapse in construction activity for two weeks or greater 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 will not be harmed. Report any sightings and any incidental take to the USFWS immediately by telephone at (916) 414-6600.
- After completion of construction activities, remove any temporary fill and construction debris, and wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include replanting species removed from banks or with emergent vegetation in the active channel.
- In the event that take cannot be avoided, contact the USFWS for information before starting the action.

MITIGATION MEASURE BIO-2: BEST MANAGEMENT PRACTICES FOR GIANT GARTER SNAKE

During placement of the pump and pipeline, best management practices would be followed to ensure that this project is completed with minimal environmental impacts:

- Disturbance of vegetation shall be kept to a minimum.
- No equipment shall be operated in stream channels.
- No intentional harassment, killing, or collection of plants or animals at or around the work sites.
- No firearms are allowed on site, except for those used by peace officers or CDFG wardens.
- No pets allowed.
- All persons must stay within the boundaries of the work sites, which consist of the top of the levees, walkways, public and private roadways and waters, and water-side levee slopes.
- No off-road travel or work is permitted; all vehicles must be confined to existing roads.
- All trash, including food-related trash and cigarette butts, must be properly disposed of and removed.

- Storage of hazardous materials, such as fuel, oil, etc. shall not be allowed within 150 feet of waterways. Any chemical spills must be cleaned up immediately and reported as soon as possible.

SWAINSON'S HAWK AND OTHER TREE NESTING RAPTORS

If construction is scheduled to occur outside of the typical nesting season of March 15 through September 15, no mitigation is necessary. If construction is scheduled to occur between March 15 and September 15, preconstruction surveys would be conducted in suitable nesting habitat within 0.5 miles of the project site for Swainson's hawk and within 1,000 feet of the project site for tree nesting raptors. Surveys shall conform to the Swainson's Hawk Technical Advisory Committee Guidelines (SHTAC 2001) where feasible.

MITIGATION MEASURE BIO-3: AVOIDANCE AND MINIMIZATION MEASURES FOR SWAINSON'S HAWK AND OTHER TREE NESTING RAPTORS

If nesting raptors are recorded within their respective buffers, CDFG would be consulted regarding suitable measures to avoid impacting breeding effort. Mitigation measures would include the following:

- Maintaining an appropriately sized buffer around each active raptor nest determined in consultation with CDFG; no construction activities would be allowed within this buffer except as allowed through consultation with CDFG.
- Depending on conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting breeding effort. In this case, as determined by consultation with CDFG, the nest(s) shall be monitored by a qualified biologist during construction within the buffer. If the monitoring biologist determines that construction would impact the nest, the biologist shall immediately inform the construction manager and CDFG. Construction activities within the buffer would be stopped until either the nest is no longer active or the project receives approval to continue by CDFG.

The proposed mitigation would reduce the effects on the above-listed special-status raptors to less than significant.

Swallows, Black Phoebe, and Other Migratory Birds

If construction is scheduled to occur outside of the typical nesting season of March 1 through September 1, no mitigation is necessary. If construction is scheduled to occur during the typical nesting season for these birds, March 1 through September 1, a preconstruction survey would need to be conducted within two weeks prior to construction for nesting birds on existing pump and bridge structures and in other suitable habitats. If no nests are detected, no further mitigation would be necessary.

MITIGATION MEASURE BIO-4: AVOIDANCE AND MINIMIZATION MEASURES FOR SWALLOWS, BLACK PHOEBE, AND OTHER MIGRATORY BIRDS

If active nests are detected, CDFG would need to be contacted to determine appropriate mitigation measures to prevent impacts to nesting birds.

- In consultation with CDFG, any existing unoccupied nests under the bridge should be removed prior to the nesting season by pressure washer or mechanical means. Nests can only be removed in consultation with CDFG and prior to eggs being laid in the nests.
- Nest exclusion should be conducted throughout the duration of construction within 100 feet of the nest locations consisting of either removing partially built nests weekly or installing exclusionary netting to prevent swallows from attempting to rebuild the nests.

3.4 CULTURAL RESOURCES

Cultural resources is a term used to describe both "archaeological sites" depicting evidence of past human use of the landscape and the "built environment" which is represented in structures such as dams, canals, roadways, and buildings. The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation which 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 historic properties included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). Those resources that are included in, or eligible for inclusion in, the NRHP are referred to as "historic properties."

The Section 106 process is outlined in the Federal regulations under 36 CFR Part 800. These regulations describe the process that the Federal agency (Reclamation) takes to identify historic properties and the level of effect that the proposed undertaking will have on historic properties. In summary, Reclamation must first determine if the action is an undertaking that has the potential to affect historic properties. If so, then Reclamation must identify the Area of Potential Effects (APE); determine if historic properties are present within that APE; determine the effect that the undertaking will have on historic properties; and consult with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO) where applicable, to seek concurrence on Reclamation's findings. In addition, Reclamation is required through the Section 106 process to consult with Indian tribes concerning the identification of sites of religious or cultural significance and to consult with individuals or groups who are entitled to be consulting parties or have requested to be consulting parties.

3.4.1 Affected Environment

The proposed project is located in California's Central Valley, immediately west of the Sacramento River, in Colusa County. Human use and occupation of the greater Central Valley has a long history, likely extending back to the terminal Pleistocene when highly mobile, transient groups of big game hunters were present on the landscape throughout much of North America. Archaeological evidence indicates that by 4,000 years ago, population growth and

more sedentary lifeways were developing in many parts of California and the Central Valley, particularly along major rivers and waterways. At the time of Euro-American contact, the project area appears to have been home to the Patwin, a hunter-gatherer group that likely arrived in the lower Sacramento Valley by circa A.D. 700. The Patwin utilized a variety of valley resources including deer, elk, antelope, small game, and several species of fish from the Sacramento River and other waterways within their territory.

During the Spanish and Mexican periods of California history, the project area was part of the 44,854-acre Ranch Jimeno, which was later purchased by Thomas O. Larkin, an influential Californian, in association with James Missroon. The California Gold Rush of the mid-19th Century brought mining activity, and an increase in non-native populations, to portions of Colusa County. Following the peak of the Gold Rush, many miners who had previously been farmers recognized the agricultural potential of the fertile Sacramento Valley soils. It was during this period, beginning in the late 1860s, that reclamation of lands near the Sacramento River began in earnest, through the construction of flood control systems, such as levees, and irrigation canal systems.

The APE for the current undertaking is a 50-foot wide corridor encompassing the pump station location within Irrigation Lateral 7J, the pipeline alignment, the discharge location in Irrigation Lateral 11B, and a staging area. The total acreage of the APE is 3.80 acres with a vertical APE for the pipeline alignment of 7.0 feet. In an effort to identify historic properties within the APE, research at the Northwest Information Center and an archaeological pedestrian survey were completed by HDR on behalf of the District. HDR also contacted the Native American Heritage Commission requesting a review of its Sacred Lands file and a list of individuals and tribes that might have concerns or information about cultural resources in the project area. Both HDR and Reclamation are conducting Native American consultation for this project as appropriate. To date, no prehistoric or ethnographic-era historic properties or cultural resources have been identified in the APE as a result of these identification and consultation efforts.

Two historic-era cultural resources have been identified in the APE. These are Irrigation Lateral 7J and Irrigation Lateral 11B, which were constructed in the early- and mid-20th Century respectively. Based on their age and association with the agricultural development of Colusa County, for the purposes of the current undertaking both of these resources are considered historic properties and assumed eligible at the local level for NRHP inclusion. As the proposed project would not alter any of the characteristics of these properties that qualify them for NRHP eligibility, Reclamation consulted with the SHPO on a finding of "no adverse effect" for this undertaking, pursuant to 36 CFR § 800.5(b). Concurrence from SHPO that the project would have no adverse effect is included in Appendix C.

3.4.2 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities that could cause effects to historic properties or other cultural resources would occur. As such, there would be no impacts to cultural resources under the No Action Alternative.

PROPOSED ACTION

There are no known historic properties or other cultural resources in the proposed pipeline alignment within the agricultural field; however, Irrigation Lateral 7J and Irrigation Lateral 11B, which will be affected by project activities, are considered historic properties eligible for inclusion in the National Register. As the activities associated with the proposed action would result in only minimal impacts to these properties, and would not alter any of the characteristics that would qualify them for NRHP eligibility, Reclamation has reached a finding of "no adverse effect" for the proposed undertaking, pursuant to 36 CFR § 800.5(b). As such, there would be no adverse impacts to cultural resources under the proposed action alternative.

3.4.3 Mitigation

MITIGATION MEASURE CR-1: POST REVIEW DISCOVERY/INADVERTENT FIND

While unlikely, potentially significant buried deposits could exist under the ground surface. Such deposits cannot be detected during a surface survey. Prior to project implementation, construction personnel shall be briefed regarding what to do in the event buried cultural materials or human remains are encountered. Should a post-review discovery/inadvertent find occur, all applicable Federal, state, and local laws and regulations shall be followed. Implementing this mitigation measure would ensure proper identification and treatment of any significant cultural resources or human remains discovered as a result of project-related ground disturbance.

3.5 HYDROLOGY AND WATER QUALITY

3.5.1 Affected Environment

All domestic water systems in the County are supplied by groundwater, while most irrigation systems in the County are supplied by surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River (Colusa County 2010). Within the Sacramento Valley portion of the County, surface water is used on 74 to 86 percent of irrigated land and groundwater is used on 10 to 22 percent of that land (Colusa County 2010). Therefore, the setting discussion below focuses on surface water in the project area and region.

SURFACE WATER

The Sacramento River is the only major naturally occurring water body in Colusa County. There are four major man-made water bodies in the County, which include the Colusa Basin Drainage Canal, the Tehama Colusa Canal, the Glenn Colusa Canal, and the East Park Reservoir. The surface water discussion provides information on the Sacramento River and the Colusa Basin, which are located in the regional project vicinity.

Sacramento River

The Sacramento River is located approximately 200 feet south of the project area. Irrigation Lateral 11B parallels the levee that runs along the west bank of the Sacramento River. Water flows in the Sacramento River near Grimes, north of the project area, ranged from 6,500 cubic feet per second (cfs) to 16,900 cfs from 1946-2003 (Colusa County 2008).

Colusa Basin

The proposed action is located in the Colusa Basin, which is a flat, lowland on the Sacramento Valley floor that extends from the City of Orland south to Knights Landing. The Sacramento River and the Coastal Range foothills form the Colusa Basin's eastern and western boundaries, respectively. The Colusa Basin watershed is approximately 1,620 square miles (Colusa County 2010).

The main drainage feature of the Colusa Basin is the man-made Colusa Basin Drainage Canal, which was constructed to prevent flooding problems caused by development of the Colusa Basin and return flows from agriculture. The Colusa Basin Drainage Canal is located approximately seven miles west of the project area and discharges to the Sacramento River at Knights Landing. The Colusa Basin Drain is the single largest source of agricultural return flows to the Sacramento River (Colusa County 2008).

WATER QUALITY

The USGS conducted a study of the Sacramento River Basin and collected data between 1995 and 1998. The USGS selected indicator streams for the study. The Colusa Basin Drainage basin was chosen as an indicator stream to determine the impacts of agriculture on stream-water quality (Colusa County 2008). At the Colusa Basin Drainage Canal water quality station located near Knights Landing at Road 99E, pH levels were high, with declining suspended sediment concentrations over the two-year sampling period (Colusa County 2008).

The findings of the USGS study also indicated that the water of the Sacramento River and its major tributaries are generally of good quality. Higher median concentrations of dissolved solids occurred at agricultural sites such as the Colusa Basin Drainage Canal (Colusa County 2008).

GROUNDWATER

The project area is located in the Colusa Subbasin of the Sacramento Valley Groundwater Basin. The Sacramento Valley Groundwater Basin covers over 5,900 square miles and 10 counties, and has 18 subbasins. The Colusa Subbasin lies beneath the valley portion of Colusa County, west of the Sacramento River, and extends into Yolo, Glenn, and Tehama Counties. Groundwater in the Colusa Subbasin primarily exists in porous sediments, or alluvial aquifers (Colusa County 2008). In the Sacramento Valley, the subsurface consists of layers of gravel, sand, clay, and some volcanic ash. The characteristics of different aquifers, as well as the zones within each aquifer, are related to the materials that comprise the aquifer (sands, gravels, clays, etc.). The Colusa Subbasin aquifer system is composed of continental deposits of late Tertiary to Quaternary age. Quaternary deposits include Holocene stream channel and basin deposits and Pleistocene Modesto and Riverbank formations. The Tertiary deposits consist of the Pliocene Tehama Formation and the Tuscan Formation.

3.5.2 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities that could directly or indirectly affect hydrology or water quality would occur. Currently the SSPP is subject to interruptible operation, significant diver maintenance, and severe pump wear due to the abrasive nature of sediment laden water caused by the Corps' work on a critical erosion site in the area. Therefore, as a result of the No Action Alternative, the ability for the District to provide sufficient and quality irrigation water would be reduced or jeopardized. Also as a result of the No Action Alternative the beneficial effects of improved irrigation services would not occur. Therefore, the No Action Alternative could result in service disruptions, continued maintenance, and possible pump replacement due to the continued use of the SSPP. These effects would directly result in increased costs for the District and possible damage to agricultural lands that use the irrigation water from the SSPP system.

PROPOSED ACTION

The proposed action would not alter conditions in the Sacramento River channel or floodplain or the operation of the flood control system. As discussed below, the proposed action could result in temporary effects on water quality in Irrigation Lateral 7J and 11B during construction activities. However, construction activities in the project area would not result in any long-term changes to the existing drainage pattern of the project area, would not affect the rate or amount of surface runoff in the project area, would not increase exposure of persons or private property to flood hazards, would not alter the geomorphology of the Sacramento River, and would not reduce water supply or alter regional or local hydrology. The proposed action also would not affect the operation or risk of failure of upstream dams. Therefore, impacts related to these issues would not occur with implementation of the proposed action and are not discussed further.

The proposed walkway that would connect the bank to the pre-fabricated steel platform structure would result in a minimal amount of impervious surface. Impervious surfaces can alter drainage patterns or cause incremental increases in the rate and amount of surface water runoff. However, standard BMPs would be implemented to reduce the potential for erosion and sedimentation where the walkway connects to the bank. Furthermore, previous rainfall would have fallen directly into Irrigation Lateral 7J; therefore, since the pre-fabricated steel platform structure would be constructed within Irrigation Lateral 7J, there would be no net increase in runoff into Irrigation Lateral 7J. In addition, the proposed action is not expected to substantially alter on- or off-site erosion or siltation.

Water Quality

Construction activities would disturb soils in and existing vegetation on the banks of Irrigation Lateral 7J, would expose areas of disturbed ground that could be subject to rainfall and erosion, and could cause temporary discharges of sediment and other contaminants into receiving waters or onto the ground where they can be carried into receiving waters. During excavation, grading, and construction activities for the proposed action, it is anticipated that limited quantities of miscellaneous hazardous substances (such as petroleum-based products/fluids,

solvents, and oils) would be used in the project area and staging area and could be discharged inadvertently to waterways via stormwater runoff. In addition, given the historical and current land uses in the project area, it would not be unusual for potentially contaminated sites to be encountered during project construction such as buried burn or debris piles, abandoned vehicles and farm implements, unrecorded underground storage containers, and material in illegal dumping areas. However, the project area is separated from the Sacramento River by a levee and therefore, it is not anticipated that construction activities would result in direct discharges of sediments, stormwater runoff, or other construction debris into the Sacramento River.

Although erosion and generation of contaminated runoff are possible during construction, anything more than minor releases of sediment is unlikely. In addition, temporary erosion control measures would be implemented during construction activities to minimize stormwater pollution resulting from erosion and sediment migration from the construction area and staging area. These temporary measures may include:

- minimizing the extent of the construction staging area to minimize the amount of land disturbed at any one time;
- providing secondary containment for small quantity storage of construction equipment fuel and oil; and,
- the management of stockpiles and disturbed areas using earth berms, diversion ditches, straw wattles, straw bales, silt fences, gravel filters, mulching, revegetation, and temporary covers as appropriate.

Nevertheless, some soil erosion and sedimentation of local irrigation/drainage channels or discharge of contaminated runoff to local irrigation/drainage channels could occur. Therefore, construction activities could affect water quality in the project area by causing erosion and sedimentation or releasing construction materials into soil or water. Implementation of the mitigation measures described below would require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) and implementation of standard BMPs to minimize ground and vegetation disturbance and use and store hazardous materials in the designated staging area.

Groundwater

The proposed action would not result in any effects on groundwater quality and conditions in the project area. Construction of the pre-fabricated steel platform structure would require driving piles; however, these piles would not interfere with groundwater flow or quality. Pile-driving would be limited to Irrigation Lateral 7J and therefore, would not result in any vibration impacts to local wells. In addition, the proposed action would not affect groundwater recharge capabilities in the project area or vicinity. As a result, groundwater supplies, conditions, and recharge capabilities would not be affected in the project area. This impact would be less than significant and no mitigation is required.

3.5.3 Mitigation

MITIGATION MEASURE HYD-1: PREPARE A SWPPP

Before the start of any project construction work, site grading, or excavation, RD 108 or its primary construction contractor shall prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit a notice of intent (NOI) to the Central Valley Regional Water Quality Control Board (RWQCB) for stormwater discharges associated with general construction activity.

- RD 108 shall require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants.
- The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.
- The SWPPP shall identify the grading and erosion control BMPs and specifications that are necessary to avoid and minimize water quality impacts to the extent practicable.
- Standard erosion control measures (e.g., management, structural, and vegetative controls) shall be implemented for all construction activities that expose soil.
- Grading operations shall be conducted to eliminate direct routes for conveying potentially contaminated runoff to drainage channels.
- Erosion control barriers such as silt fences and mulching material shall be installed, and disturbed areas shall be reseeded with grass or other plants where necessary.
- The SWPPP shall contain specific measures for stabilizing soils at construction-related sites before the onset of the winter rainfall season. These standard erosion control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.

The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the proposed action include, but are not limited to, the following:

- Develop and implement strict on-site handling rules to keep construction and maintenance materials out of drainages and waterways. Conduct all refueling and servicing of equipment with absorbent material or drip pans underneath to contain spilled fuel. Collect any fluid drained from machinery during servicing in leakproof containers and deliver to an appropriate disposal or recycling facility.
- Maintain controlled construction staging, site entrance, concrete washout, and fueling areas at least 100 feet away from stream channels or wetlands to minimize accidental spills and runoff of contaminants in stormwater.
- Prevent raw cement; concrete or concrete washings; asphalt, paint, or other coating material; oil or other petroleum products; or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses.

- Maintain spill cleanup equipment in proper working condition. Clean up all spills immediately according to the spill prevention and response plan, and immediately notify CDFG and the RWQCB of any spills and cleanup procedures.

MITIGATION MEASURE HYD-2: BEST MANAGEMENT PRACTICES FOR WATER QUALITY

The following specific BMPs are recommended for implementation:

- Stabilize and protect stockpiles from exposure to erosion and flooding.
- Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized.
- Stabilize disturbed soils at all construction sites and the staging area before the onset of the winter rainfall season.

3.6 LAND USE AND AGRICULTURAL RESOURCES

3.6.1 Affected Environment

REGIONAL CONTEXT

Land use in Colusa County is typical of rural counties in the Sacramento Valley (Colusa County 1989). Large acreage farms dominate the eastern half of the County, with flat lands cultivated in rice fields, orchards, and row crops. The western portion of the County consists of larger cattle and sheep ranches, rangeland, and rolling hills and upland valleys. The Coast Range is to the west and the Sutter Buttes are to the east.

Colusa County has two incorporated cities, Colusa and Williams. The largest unincorporated town, and the third largest community, is Arbuckle, located to the west of the project area. Additional unincorporated communities include Maxwell, Princeton, Grimes, Stonyford, and College City. Together, these urban areas cover approximately 700 acres, or less than one percent of the County's land area (Colusa County 1989).

PROJECT AREA

Land Use, Ownership, and Jurisdiction

The project site is located on privately owned land in unincorporated Colusa County between Wilson Bend Road and the Sacramento River. Colusa County has land use planning jurisdiction over privately owned land in the project area. Colusa County contains about 740,000 acres of land, of which roughly 76 percent (over 564,000 acres) is agricultural land (California Department of Conservation 2008).

The project area is mostly agricultural and rural residential in nature. Most of the land in the project area is currently under cultivation, with the majority of the acreage planted in orchards and row crops. The project site is currently used for tomato crops. The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) provides data for use in planning for the present and future of California's agricultural land resources. As designated by the FMMP, the project area consists of prime farmland.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners for the purpose of

restricting specific parcels of land to agricultural or related open space use (California Department of Conservation 2011). According to the most recently available map of Colusa County Williamson Act Lands, the project site is located on Williamson Act - Farmland Security Zone Land (California Department of Conservation 2006).

Land Use Designations and Zoning

The Colusa County General Plan and Zoning Ordinance describe the types of land uses in the County, and the permitted activities within each land use (Colusa County 1989, 2009). The General Plan land use designation for the project area is "Agricultural General" (AG). Land in the AG designation is generally used for orchard and crop production, and residences in these areas are related to agricultural operations. The AG land use areas, including the project area, are zoned "Exclusive Agriculture" (E-A) and have a minimum 10-acre lot size requirement. The E-A zoning classification is applied to those areas where agricultural activities are the appropriate and desirable primary land use, and where the protection of agriculture from the encroachment of incompatible uses is essential to the general welfare of the county citizens.

3.6.2 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities that could change existing land uses would occur, and farmland designations within the project area would not change. However, as a result of the No Action Alternative, the ability for the District to provide irrigation services would be reduced. While there would be no direct changes in land use or conversion of farmland to other uses under the No Action Alternative, the beneficial effects of improved irrigation services would also not occur. Therefore, the No Action Alternative could result in damage to property and agricultural lands.

PROPOSED ACTION

The proposed action would not result in the physical division of a community or create a new barrier between various portions of the project area. Therefore, no impacts related to the physical division of communities would result from implementation of the proposed action. No habitat conservation or natural community conservation plans are in effect that would apply to the project area.

The proposed action would result in temporary impacts to agricultural land, including lands under Williamson Act contract, for the duration of the construction period. However, the construction period would be timed so as to not disrupt the farming season for the effected fields. It is anticipated that construction staging areas would also be developed on agricultural lands in the project area during the construction period. However, temporarily disturbed areas would be returned to pre-project conditions and agricultural uses could resume once construction is completed. Because the proposed action would result in temporary impacts to agricultural land, but would not result in the removal of land from agricultural production, implementation of the proposed action would be consistent with the Colusa County General Plan and Zoning Ordinance, and would be consistent with the terms of the applicable Williamson Act Contract. The proposed action would benefit valuable agricultural lands, including prime farmlands, by

continuing to provide irrigation services. Therefore, there would be no direct conversion of prime farmland to nonagricultural uses within the project or staging areas, and impacts to agricultural resources in the project area would be less than significant.

3.7 ENVIRONMENTAL JUSTICE

3.7.1 Affected Environment

Environmental justice refers to "nondiscrimination in Federal programs substantially affecting human health and the environment" and "providing minority and low-income communities with access to public information on, and an opportunity for public participation in, matters relating to human health or the environment." Environmental justice is analyzed for the purpose of preventing minority and low-income communities from being subjected to disproportionately high and adverse environmental effects of Federal actions.

The minority population in the project area is based on an analysis of race and ethnicity population data for Colusa County. Race and ethnicity data from the 2000 census were reviewed at the census tract level, and are divided into five racial categories: White, Black or African America, American Indian and Alaska Native, Asian, and Native Hawaiian and Other Pacific Islander. These categories, as used in the 2000 Census, relied on self-identification of racial/ethnic categories by respondents. Persons of Hispanic origin may be of any race, so this ethnic category is summarized separately. In 2000, the population of Census Tract 1 in Colusa County, which includes the project site, was 59.0 percent White, 0.2 percent Black, 0.7 percent American Indian and Alaska Native, 0.9 percent Asian, 0.2 percent Native Hawaiian and Other Pacific Islander, and 57.9 percent Hispanic (U.S. Census Bureau 2011a). For comparison purposes, county level race and ethnicity population data from the 2010 census was also reviewed. In 2010, the population of Colusa County was 64.7 percent White, 0.9 percent Black, 2.0 percent American Indian and Alaska Native, 1.3 percent Asian, 0.3 percent Native Hawaiian and Other Pacific Islander, and 55.1 percent Hispanic or Latino.

Low-income populations in the project area are identified by several socioeconomic characteristics, such as the number of persons below the poverty level. Based on income in 1999 as reported in the 2000 Census, 12.5 percent of Census Tract 1 had incomes that were below the poverty level, as compared to 16.0 percent in the County (U.S. Census Bureau 2011a).

3.7.2 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities that could disproportionately affect low-income or minority groups would occur.

PROPOSED ACTION

The proposed action would not displace any residences or businesses, would not take place near any sensitive receptors, and would not result in a change to any existing public service

or facility. The proposed action does not take place in minority or low-income areas or communities, and therefore, would not disproportionately affect low-income or minority groups in the project area.

3.8 INDIAN TRUST ASSETS

3.8.1 Affected Environment

Consistent with President Clinton's 1994 memorandum, "Government-to-Government Relations with Native American Tribal Governments," Reclamation assesses the effect of its programs on tribal trust resources and federally recognized tribal governments. Reclamation is tasked with actively engaging federally recognized tribal governments and consulting with such tribes on a government-to-government level (59 Federal Register 1994) when its actions affect Indian Trust Assets (ITAs).

The U.S. Department of the Interior (DOI) Departmental Manual Part 512.2 ascribes the responsibility for ensuring protection of ITAs to the heads of bureaus and offices (U.S. DOI 1995). Part 512, Chapter 2 of the Departmental Manual states that it is the policy of DOI to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members. All bureaus are responsible for, among other things, identifying any impact of their plans, projects, programs or activities on ITAs; ensuring that potential impacts are explicitly addressed in planning, decision, and operational documents; and consulting with recognized tribes who may be affected by proposed activities.

Consistent with this, Reclamation's Indian trust policy states that Reclamation will carry out its activities in a manner that protects ITAs and avoids adverse impacts when possible, or provides appropriate mitigation or compensation when it is not. To carry out this policy, Reclamation incorporated procedures into its NEPA-compliance procedures to require evaluation of the potential effects of its proposed actions on ITAs (U.S. DOI, Bureau of Reclamation 1996). Reclamation is responsible for assessing whether the proposed action has the potential to affect ITAs, and will comply with procedures contained in Departmental Manual Part 512.2.

3.8.2 Environmental Consequences

NO ACTION ALTERNATIVE

Under the No Action Alternative, no construction activities that could directly or indirectly affect ITAs would occur.

PROPOSED ACTION

The nearest ITA is the Colusa Rancheria, located north of the City of Colusa. The proposed action would not affect ITAs because the Colusa Rancheria is located approximately 20 miles northwest of the project area, and there are no discernable changes that would occur outside the project area.

4.0 CONSULTATION AND COORDINATION

4.1 INTRODUCTION

This chapter provides an overview of the permits and approvals that would likely be needed to implement the proposed action and describes the consultation and coordination that Reclamation has had with other agencies to date.

4.2 PERMITS AND APPROVALS

Environmental documentation will need to comply with federal, state, and local regulations. Reclamation is serving as the lead agency for NEPA and the District is the lead agency under CEQA. The Draft EA/IS was circulated for public review and comment for a 30-day period beginning on September 30, 2011 and ending on October 31, 2011. Two comments were received during the review period from Caltrans District 3 and the Central Valley Regional Water Quality Control Board (CVRWQCB). Caltrans District 3 stated that the District has no comments on the project due to the location of the project and that all work being proposed will be conducted in an area that should not be of significant impact to the state highway system. As a result, no formal response to Caltrans District 3 is warranted. CVRWQCB provided a letter stating the potential permits and requirements that may apply to the project in order to protect the quality of surface and ground waters of the State. The project would disturb less than one acre therefore, a construction storm water general permit is not necessary for the project. In addition, as stated in Section 4.2.4 below, construction or maintenance of irrigation ditches and maintenance of drainage ditches are exempt activities under the Clean Water Act (CWA) Section 404, therefore a CWA Section 404 permit is not necessary for the project. Coordination with CVRWQCB has occurred; therefore, no formal response is warranted.

4.2.1 Endangered Species Act, Section 7 Consultation

Section 7 of the Endangered Species Act (ESA) requires all federal agencies to ensure that their actions do not jeopardize the continued existence of species listed as endangered or threatened or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation prepared a BA for Giant Garter Snake and initiated informal consultation with USFWS under Section 7 of the Endangered Species Act (August 16, 2011). Reclamation determined that the proposed action is not likely to adversely affect giant garter snake. The BA included that construction in aquatic habitat or upland habitat within 200 feet of Lateral 7J and Drain 7H shall conform to the USFWS's Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat, and/or other guidance/requirements resulting from consultation. Concurrence from USFWS was received on October 26, 2011 and is included in Appendix B.

4.2.2 Migratory Bird Treaty Act (16 USC § 703-711)

The MBTA prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Take under this act is defined as the action of or attempt to "pursue, hunt, shoot, capture, collect, or kill." As described in Section 3.4.1 above, swallow nests were observed on the existing pump structure in Lateral 7J adjacent to the location of the proposed pump station. Reclamation would ensure that these species are protected from disturbance during the nesting season, as required by the MBTA.

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

The National Historic Preservation Act (NHPA) of 1966, as amended, is the primary Federal legislation outlining the Federal government's responsibility to cultural resources. Specifically, Section 106 of the NHPA requires "[t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." The process for implementing Section 106 of the NHPA is found at 36 CFR Part 800. Reclamation followed the Section 106 process, including consultation with the SHPO, pursuant to 36 CFR Part 800, which is included in Appendix C.

4.2.4 Clean Water Act

Federal water quality regulations are established primarily in the CWA and administered by the EPA. These regulations are subsequently implemented primarily by the State Water Resources Control Board (State Water Board), the Corps, and other state agencies as deemed appropriate. Several sections of the CWA pertain to regulating effects on waters of the United States. Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States. Under Section 404, the Corps is responsible for issuing permits authorizing the placement of dredged or fill material into jurisdictional waters of the United States. The proposed action would result in fill related to the intake structure in waters of the United States.

Based on a regulatory guidance letter from the Corps, dated July 4, 2007, construction or maintenance of irrigation ditches and maintenance of drainage ditches are exempt activities under the CWA Section 404.

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6.0 LIST OF PREPARERS

U.S. Department of the Interior, Bureau of Reclamation

Shelly Hatleberg, Natural Resources Specialist

Joanne Goodsell, Archeologist

U.S. Department of the Interior, U.S. Fish and Wildlife Service

Dan Meier, Program Manager, Anadromous Fish Screen Program

Reclamation District 108

Lewis Bair, General Manager

HDR

EA Review and Preparation –Laurie Warner Herson, QAQC
EA Review and Preparation – Linda Fisher, M.S., Project Manager
EA Review and Preparation – Jeanette Winter, REA, Environmental Planner
Biological Resources Specialist – Stephen Stringer, M.S., Biologist
GIS – Brandon Jones

APPENDIX A

CEQA CHECKLIST

PROJECT INFORMATION	
1. Project Title:	South Steiner Pumps and Pipeline Project
2. Lead Agency Name and Address:	Reclamation District 108 975 Wilson Bend Road Grimes, CA 95950
3. Contact Person and Phone Number:	Lewis Bair, (530) 437-2221
4. Project Location:	Between Wilson Bend Road and the Sacramento River Colusa County, CA
5. Project Sponsor's Name and Address:	Reclamation District 108 975 Wilson Bend Road Grimes, CA 95950
6. General Plan Designation:	AG: Agricultural General
7. Zoning:	E-A: Exclusive Agriculture
8. Description of Project: Reclamation District 108 proposes to abandon in place the South Steiner Pumping Plant (SSPP) on the Sacramento River after constructing a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from the Wilkins Slough Pumping Plant and Fish Screen Facility (also on the Sacramento River) to fields previously served by the SSPP. This action is required due to ongoing siltation caused by recent U.S. Army Corps of Engineers work on a critical erosion site in the area. The proposed action includes two primary components: 1) installation of pump sumps; and 2) construction of a dual 21-inch, 2,830 foot-long PVC pipeline.	
9. Surrounding Land Uses and Setting:	The project site is located on privately owned land in unincorporated Colusa County between Wilson Bend Road and the Sacramento River. The project area is mostly agricultural and rural residential in nature. Most of the land in the project area is currently under cultivation, with the majority of the acreage planted in orchards and row crops.
10: Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)	

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:		
The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.		
☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards/Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed project COULD have a significant effect on the environment, there WILL NOT be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☒

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☐

I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed. ☐

I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required. ☐

Signature

November 1, 2011

Date

Lewis Bair
Printed Name

General Manager
Title

Reclamation District 108
Agency

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a) Earlier Analysis Used. Identify and state where they are available for review.
    b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:
    a) the significance criteria or threshold, if any, used to evaluate each question; and,
    b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
1. AESTHETICS — Would the project**:**				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Potential viewers of the project area primarily include local residents and motorists. The regional viewshed includes large areas of agricultural and rural development. There are no State-designated visual resources in the project area. The project area is primarily rural in nature and includes rural residential areas with row crop lands and little topographic variation.

As described in Section 2.2, the only new project features that would be visible to viewers in the project area would be the two small pre-fabricated boxes that would house the pumps at the east end of Irrigation Lateral 7J Canal and the small discharge box in Irrigation Lateral 11B. These new features would not alter the visual character of the project area. The pipeline would be five feet below ground surface and therefore, would not alter the existing visual quality of the project area.

Alterations to the visual character of the project area during construction (i.e., presence of construction equipment and staging areas) would be isolated, temporary, and would be observed by a relatively small number of viewers due to the primarily agricultural and rural nature of the project area. There is a residential complex located west of Wilson Bend Road and immediately north and south of Irrigation Lateral 7J Canal. This complex is not within the direct impact area of the project and construction activities would only be in the vicinity for approximately 15 days during construction of the pump sumps. Construction activities would be completed in 10- to 12-hour shifts during daylight hours. Although local residents are considered a sensitive viewer group, changes in views from nearby residences (e.g., views of construction vehicles and equipment) would be minor and temporary in nature.

a), c), and d)
Changes in aesthetics would be temporary, and there would be no substantial changes in the visual quality and character of the area. There would be no impact.

b)
The proposed action is not located along a state scenic highway. In addition, no trees, rock outcroppings or historic buildings would be affected as a result of the proposed action. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
2. AGRICULTURE AND FORESTRY 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 Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☒	☐
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

a), d), and e)
See Chapter 3 analysis (Section 3.6 Land Use and Agricultural Resources). The proposed action would result in temporary impacts to agricultural land for the duration of the construction period. However, the construction period would be timed so as to not disrupt the farming season for the effected fields. Temporarily disturbed areas would be returned to pre-project conditions and agricultural uses could resume once construction is completed. There are no forest lands in the project area. Therefore, impacts related to the conversion of farmland would be less than significant, and there would be no impact on forest lands.

b) and c)
See Chapter 3 analysis (Section 3.6 Land Use and Agricultural Resources). There would be no change in existing zoning as a result of the proposed action. The proposed action would result in temporary impacts to agricultural land, including lands under Williamson Act contract, for the duration of the construction period. However, the proposed action would not result in the removal of land from agricultural production, and would be consistent with the terms of the applicable Williamson Act Contract. Therefore, this impact would be less than significant.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
3. 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:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

a), b), c), and d)
See Chapter 3 analysis (Section 3.2 Air Quality and Climate Change). Air quality would not be substantially affected by construction or operation of the proposed action. No federal, state, or local thresholds would be exceeded. Therefore, this impact would be less than significant.

e)
See Chapter 3 analysis (Section 3.2 Air Quality and Climate Change). Objectionable odors would not be created as a result of project construction or operations. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
4. BIOLOGICAL RESOURCES— Would the project:				
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?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

a), b), c), and d)

See Chapter 3 analysis (Section 3.3 Biological Resources). Construction of the proposed action would directly and indirectly affect the giant garter snake and its habitat, and could potentially indirectly affect the Swainson's hawk as well as other nesting raptors and migratory birds. However, implementation of mitigation measures would ensure that impacts to these species are less than significant. The proposed action would not affect any sensitive natural communities or federally protected wetlands, and would not interfere with the movement of any native fish or wildlife species.

e) and f)

The proposed action would not conflict with any local policies or ordinances protecting

biological resources, and would not conflict with the provisions of an adopted habitat conservation plan. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
5. CULTURAL RESOURCES— Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

a), b), c), and d)

See Chapter 3 analysis (Section 3.4 Cultural Resources). As discussed in Chapter 3 of the EA/IS, implementation of the proposed action is not anticipated to result in disturbance of eligible/significant cultural resources. However, implementation of mitigation measures would ensure that impacts to previously unidentified cultural resources are less than significant. No historic resources would be affected by the project. Therefore, there is no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
6. GEOLOGY, SOILS, AND SEISMICITY—Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

The project site is located in the Sacramento Valley, along the Sacramento River. The floor of the Sacramento Valley is generally flat and open with little natural relief. Elevations in the valley range from about sea level to about 400 feet above mean sea level (msl). Nearly level flood plains occur along the river in the project area and vicinity. The project area is situated on a structural trough which has been filled with a thick sequence of marine and alluvial sediments ranging in age from 135 million years to recent (Colusa County 1989). These sediments overlie a deep bed of volcanic or metamorphic rocks formed up to 350 million years ago.

Soils in the project area consist of Vina loam, 0-2 percent slopes, and Grandbend loam, 0-2 percent slopes (National Resources Conservation Service 1998). The Vina series consists of very deep, well drained soils on alluvial fans and flood plains. Vina series soils are well drained, with negligible to medium runoff and moderate permeability. Vina series soils are typically used for irrigated row crops, orchards, hay, and pasture. The Grandbend series consists of very deep, somewhat poorly drained soils that formed

in alluvium from mixed sources. Grandbend series soils are somewhat poorly drained, with negligible and low runoff and moderately slow permeability. Grandbend series soils are typically used for irrigated crops, such as tomatoes, beans, safflower, and wheat. Soils in the project area would be disturbed during construction due to excavation and reuse of soil material to construct the proposed action. The contractor would be required to prepare an Erosion and Sediment Control Plan to identify specific Best Management Practices to avoid or minimize soil erosion.

There are no known active faults in Colusa County; however, the County could still be subject to moderate groundshaking from earthquakes centered outside the County (Colusa County 1989). Seismic conditions associated with fault activity include groundshaking, liquefaction, settlement, and seiche. The proposed action does not include construction of any structures intended for human occupancy, and thus would not expose people to adverse effects resulting from fault activity.

a), b), c), and d)
The proposed action would not change the general topography of the project site and would have no effect on the topographic or geologic features of the project area. No increase in runoff is anticipated as a result of the proposed action, and there would be no effects on soil resources in the project area. The proposed action would have no effect on local faults or potential seismic activity in the project area. Implementation of the proposed action is not anticipated to result in a loss of mineral resources. There would be no impact on these resources.

e)
No septic tanks or alternative wastewater disposal systems are included as part of the proposed action. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
7. GREENHOUSE GAS EMISSIONS—Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a) and b)
See Chapter 3 analysis (Section 3.2 Air Quality and Climate Change). Construction activities associated with the proposed action would generate direct greenhouse gas (GHG) exhaust emissions. However, as discussed in Section 3.3, GHG contaminant emissions are more appropriately evaluated on a regional, state, or even national scale than on an individual project level. Therefore, project specific GHG emissions would be less than significant.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
8. HAZARDS AND HAZARDOUS MATERIALS Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒

A review of reasonably ascertainable and reviewable regulatory information published by federal, state, local, tribal, health, and/or environmental agencies pertaining to the project area was performed. The regulatory review did not identify the project site on any of the searched databases. Based on the information acquired from the regulatory review, the project site is not likely to have the potential for hazardous waste involvement.

During excavation and construction activities for the proposed action, it is anticipated that limited quantities of miscellaneous hazardous substances (such as petroleum-based products/fluids, solvents, and oils) would be employed in the project area. However,

construction activities would incorporate Best Management Practices (BMPs) to minimize hazards resulting from routine transport, use, or disposal of hazardous materials. Further, the proposed action would comply with all relevant federal, state, and local statutes and regulations related to transport, use, or disposal of hazardous materials.

The project area is located within a low fire hazard severity zone (Colusa County 1989). Construction activities for the proposed action include the use of mechanized construction equipment and vehicles that contain flammable fuels. However, construction activities would be scheduled such that equipment and vehicles would not be anticipated to come in contact with vegetated areas that may accidentally spark and ignite the vegetation.

a), b), c), and d)
Based on the information acquired from the regulatory review, the project site is not likely to have the potential for hazardous waste involvement. Construction activities would incorporate BMPs to minimize hazards resulting from routine transport, use, or disposal of hazardous materials. Further, the proposed action would comply with all relevant federal, state, and local statutes and regulations related to transport, use, or disposal of hazardous materials. Therefore, existing hazards and hazardous materials concerns related to the proposed action are not anticipated. There would be no impact.

e) and f)
The proposed action is not located within an airport land use plan or within two miles of a public airport. There would be no impact.

g)
The proposed action would not impair or interfere with any adopted emergency response plans or emergency evacuation plans. There would be no impact.

h)
The project area is located within a low fire hazard severity zone. There would be no changes in the likelihood of wildfire or other hazards, and the proposed action would not expose people or structures to the existing risk. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
9. HYDROLOGY AND WATER QUALITY— Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
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)?	☐	☐	☒	☐
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 that would result in substantial erosion of siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
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 authoritative flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

a) and f)

See Chapter 3 (Section 3.5 Hydrology and Water Quality). As described in Section 3.5, construction activities would disturb existing vegetation cover and soils in the staging area, the irrigation laterals, and the tomato field and would expose areas of disturbed

ground that could be subject to rainfall and erosion. Therefore, construction activities could cause temporary discharges of sediment and other contaminants into irrigation/drainage channels or onto the ground where they can be carried into irrigation/drainage channels. Petroleum products or other construction-related substances (e.g., hydraulic fluids, concrete, solvents) also could be discharged inadvertently irrigation/drainage channels via stormwater runoff. Accidental spills of construction-related substances such as oils and fuels could also contaminate both surface water and groundwater. Although erosion and generation of contaminated runoff are possible during construction, anything more than minor releases of sediment is unlikely. In addition, temporary erosion control measures would be implemented during construction activities to minimize stormwater pollution resulting from erosion and sediment migration from the construction areas and staging area.

Implementation of mitigation measures described in Section 3.5.3 would require the preparation of a SWPPP and implementation of standard BMPs to minimize ground and vegetation disturbance and use and store hazardous materials in the designated staging area. Therefore, implementation of mitigation would reduce impacts to water quality as a result of construction activities for the proposed action to a less-than-significant level.

b)
See Chapter 3 (Section 3.5 Hydrology and Water Quality). As described in Section 3.5, the proposed action would not result in any effects on groundwater quality and conditions in the project area. Construction of pre-fabricated steel platform structure would require driving piles; however, these piles would not interfere with groundwater flow or quality. Pile-driving would be limited to Irrigation Lateral 7J and therefore, would not result in any vibration impacts to local wells. In addition, the proposed action would not affect groundwater recharge capabilities in the project area or vicinity. As a result, groundwater supplies, conditions, and recharge capabilities would not be affected in the project area. This impact would be less than significant and no mitigation is required.

c), and d)
See Chapter 3 (Section 3.5 Hydrology and Water Quality). As described in Section 3.5, the proposed walkway that would connect the bank to the pre-fabricated steel platform structure would result in a minimal amount of impervious surface. standard BMPs would be implemented to reduce the potential for erosion and sedimentation where the walkway connects to the bank. Furthermore, previous rainfall would have fallen directly into Irrigation Lateral 7J; therefore, since the pre-fabricated steel platform structure would be constructed within Irrigation Lateral 7J, there would be no net increase in runoff into Irrigation Lateral 7J. In addition, the proposed action is not expected to substantially alter on- or off-site erosion or siltation.

The proposed project would also not alter conditions in the Sacramento River channel or floodplain or the operation of the flood control system. This impact would be less than significant and no mitigation is required.

e)
The proposed action would not change the amount of runoff from the project area nor would it provide substantial additional sources of polluted runoff. Therefore, the proposed action would not exceed the capacity of any existing or planned stormwater drainage systems. This impact would be less than significant and no mitigation is required.

g), h), i)
The proposed action would not include construction of any housing or structures nor would the project impede flood flows. Therefore, no impact would occur.

j)
The project area is geographically removed from areas where the potential for seiche, tsunami, or mudflow exists (e.g., near a lake, the ocean, or hillsides). Therefore, no impact would occur.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
10. LAND USE AND LAND USE PLANNING— Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a), b), and c)
See Chapter 3 (Section 3.6 Land Use and Agricultural Resources). The proposed action would not result in the physical division of a community or create a new barrier between various portions of the project area. Implementation of the proposed action would be consistent with the Colusa County General Plan and Zoning Ordinance. No habitat conservation or natural community conservation plans are in effect that would apply to the project area. Temporary, short-term impacts would occur primarily on agricultural land, and are addressed above.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
11. MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The western portion of Colusa County has a long history of mineral activity, producing mercury and gold since the mid 1800s (Colusa County 1989). Historical mineral resources throughout the County also include sandstone, mineral water, and sand and gravel. The project area is not located in an area of potential or recorded mineral resources (Colusa County 1989).

a) and b)
Construction of the proposed action would not require any mineral resources or preclude future mineral extraction. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
12. NOISE — Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The Safety Element of the Colusa County General Plan establishes policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses (Colusa County 1989). The County has established guidelines to assist in determining compatibility with surrounding land uses. The project site is located on privately owned land in unincorporated Colusa County between Wilson Bend Road and the Sacramento River. The project area is mostly agricultural and rural residential in nature. There is a single residential complex immediate north of the site. The proposed action would generate altered noise conditions during project construction activities, as described below. However, construction would be temporary and short-term, and would be consistent with the Safety Element of the Colusa County General Plan.

Construction activity noise levels associated with the proposed action would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. However, as noted above, construction activity noise levels would be short-term and temporary. Construction activities also have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and operations involved. As discussed in Section 2.2 Proposed Action, on-site construction equipment is assumed to include a trencher, a scraper, a rubber wheeled tractor, a backhoe, a small-end loader, and a water truck.

Excavators, bulldozers, and drilling equipment are not anticipated to be necessary for construction, as the proposed action is not anticipated to require deep excavations or generate excessive groundborne vibration or noise levels. As described above, the single residential complex located near the project site would be subject to short term construction noise but noise generation would be consistent with the Colusa County General Plan. Noise from construction-related traffic would also be minimal, as there would be limited construction equipment and personnel needed for the proposed action, and the construction schedule would last approximately four weeks or less.

Long-term operation of the proposed action would not include any new major stationary noise sources. Maintenance activities related to the proposed action would be the same as under existing conditions. Thus, long-term noise levels are anticipated to be equivalent to existing noise levels.

a), b), c), and d)
There are no noise sensitive receptors in the vicinity of the project site. The proposed action would generate altered noise conditions during project construction activities. However, construction would be temporary and short-term, and would be consistent with the Safety Element of the Colusa County General Plan. Long-term operation of the project would not include any new major stationary noise sources. Maintenance activities related to the proposed action would be the same as under existing conditions. Thus, long-term noise levels are anticipated to be equivalent to existing noise levels. The proposed action does not include the development of any new noise-sensitive receptors, and would not expose people residing or working in the project area to excessive noise levels. There would be no impact.

e) and f)
The proposed action is not located in an airport use plan area or in the vicinity of a private airstrip. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
13. POPULATION AND HOUSING—Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The project site is located on privately owned land in unincorporated Colusa County between Wilson Bend Road and the Sacramento River. The project area is mostly agricultural and rural residential in nature. According to the 2010 U.S. Census data for Colusa County, the 2010 County population was 21,419, which represents a 13.9 percent increase in population since the 2000 Census (U.S. Census Bureau 2011b). Per the 2010 U.S. Census data, there were 7,543 housing units in the County as of 2009. Colusa County's population has steadily grown over the last several decades, and housing has generally grown at proportional levels over the past twenty years (Colusa County 2010). The California Department of Finance has projected that Colusa County will grow by 35 percent to 41,662 by the year 2050 (Colusa County 2010). Over the past 10 years, the unemployment rate the County has ranged from a low of 11.5 percent in 2000 to a high of 18.4 percent in 2009. There is substantial seasonal employment in the County, which results in fluctuations in the employment rate on a monthly basis primarily related to the agricultural industry.

The proposed action would not involve the construction of new homes or businesses or the extension of roads or infrastructure, and would not displace any existing homes or necessitate the construction of replacement housing elsewhere. The four week construction period would generate temporary employment for construction workers, and would require approximately three to five workers at any given time. These workers are expected to be local and would commute to the project site. Project- related construction jobs would not directly or indirectly induce substantial population growth, and would not require new housing to be constructed to support the proposed action.

a), b), and c)
The proposed action would not involve the construction of new homes or businesses or the extension of roads or infrastructure, and would not displace any existing homes or necessitate the construction of replacement housing elsewhere. Implementation of the proposed action would not affect current and/or planned population growth patterns

within Colusa County, and would not affect the population and housing goals outlined in the Colusa County General Plan. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
14. PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government 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 following public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Public services addressed in this section include emergency services (fire, police, and emergency medical services). Schools, parks, and other public facilities are not discussed because the proposed action would neither affect these facilities nor result in a need for new or physically altered schools, parks, or other public facilities.

Colusa County is responsible for emergency response and evacuation plans within the unincorporated areas of the county. Unincorporated areas of Colusa County, including the project area, receive law enforcement patrol services from the Colusa County Sheriff's Department, which also operates the County Office of Emergency Services.

Fire protection in Colusa County is provided by six rural fire districts, one city fire department, one joint powers authority, the California Department of Forestry, and the U.S. Forest Service. The Sacramento River Fire District (SRFD) provides fire protection, emergency medical services, rescue, and hazardous materials response services to the eastern portion of unincorporated Colusa County, including the project area. The SRFD maintains mutual aid response agreements with other fire agencies within the County, Meridian Fire Department in Sutter County, Sutter County Fire Department, Glenn-Colusa Fire District in Glenn County, and Dunnigan and Knights Landing Fire Districts in Yolo County (Colusa County 2010).

The proposed action would not create any new demand for public services. The proposed action would not increase demands for fire protection and sheriff's services because it would not include new structures, such as housing or businesses, or indirectly increase housing or businesses in the project vicinity. The proposed action would not change the type or intensity of land uses in the area; therefore, the demand for fire and sheriff's protection services under the proposed action would be the same as that currently provided on-site. Project construction would occur over a period of approximately four

weeks. During the construction period, traffic on local roadways is not anticipated to increase to such levels that emergency access to the project area would to be reduced. No road closures are anticipated to be necessary during the construction period.

a)
The proposed action would neither affect nor result in a need for new schools, parks, and other public facilities. There are no established recreational sites in the project area, and no parks are located near the proposed action. The proposed action would not create any new demand for public services, including fire protection and sheriff's services because it would not include new structures, such as housing or businesses, or indirectly increase housing or businesses in the project vicinity. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
15. RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

According to the Colusa County General Plan (Colusa County 1989), there are several park and recreational areas in the County. These areas include the Mendocino National Forest located in the northwest portion of the County, the Colusa-Sacramento River State Recreation Area located near the City of Colusa, and Wilbur Hot Springs located in the southwest portion of the County. Public access to the Sacramento River in Colusa County is limited, as much of the land adjacent to the river is privately owned agricultural land, such as with the project site. Local parks are also located in the Cities of Colusa and Williams, and the communities of Maxwell, Arbuckle, Stonyford, Sites, and Lodoga. Private recreation areas include golf courses in Colusa and Arbuckle. There are no existing recreation opportunities available near the project area.

The proposed action would not involve the construction of new housing or other facilities beyond that already planned for and forecasted in the Colusa County General Plan and would therefore, not increase demand for recreational facilities. There are no developed recreational facilities in the project area or immediate vicinity. The proposed action would not permanently add, remove, or alter recreational facilities.

a) and b)
There are no existing recreation opportunities available near the project area. The proposed action would not permanently add, remove, or alter recreational facilities, and there would be no limitations on the use of recreation facilities or reduction in the availability of recreational opportunities in the project area. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
16. TRANSPORTATION AND TRAFFIC—Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

The project area is located in unincorporated Colusa County between Wilson Bend Road and the Sacramento River. Access routes to and from the project area are anticipated to include Interstate 5, Grimes-Arbuckle Road, Tule Road, County Highway 45, and Wilson Bend Road.

Construction equipment is anticipated to include a trencher, a scraper, a rubber wheeled tractor, a backhoe, a small-end loader, and a water truck. An estimated three to five workers would be onsite each day during construction. Workers would access the area via regional and local roadways, and would park their vehicles in the staging area. Construction hours would be limited daily from 7:00 a.m. to 6:00 p.m. Monday thru Saturday. The construction schedule is anticipated to last approximately four weeks. Other than construction related traffic, there would be no encroachment of the local roadway and therefore no disruption of local traffic patterns.

The effect of operation of the proposed action on transportation and circulation would be negligible. Few, if any, additional vehicle trips would be associated with long-term maintenance. Construction would not affect roadway or transportation system features in the long-term, and the proposed action would not include any permanent design features that would present hazards to transportation systems. Construction-related traffic would be minimal since there would be limited construction equipment and personnel needed for the proposed action, and the construction schedule would last approximately four weeks or less. Any increase in traffic resulting from project construction would be short term and temporary, and commute and truck traffic are not anticipated to affect peak hour travel at any individual roadway intersection in the project area.

a), b), and d)
As described above, the proposed action is not anticipated to add sufficient trips to local roadways to degrade levels of service below acceptable standards, result in significant short-term traffic impacts, or result in long-term traffic impacts. There would be no impact.

c)
The proposed action would not change air traffic patterns. There would be no substantial safety risk as a result. There would be no impact.

e) and f)
The proposed action would not disrupt emergency access or conflict with public transit, bicycle, or pedestrian facilities. There would be no impact.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
17. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
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?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Public services addressed in this section include public utilities and service systems (gas, electrical, water, and solid waste). Wastewater and drainage systems are not discussed in detail, as the proposed action would not result in the production of wastewater, exceed wastewater requirements, or necessitate expansion of any wastewater treatment facilities or water supply entitlements. Drainage systems are discussed in further detail in Section 3.5 Hydrology and Water Quality. Because the proposed action does not include new development, it would not result in demand for increased natural gas or electrical facilities, water infrastructure, sewer lines, or solid-waste services beyond their current capacity. Therefore, the evaluation for the potential increased demand for these services is not warranted.

The Pacific Gas and Electric Company (PG&E) provides electrical and natural gas service to residences and businesses throughout Colusa County, including the project area. The proposed pipeline alignment would run along the north side of an existing PG&E power pole line. There are no impacts anticipated to this PG&E power pole line during construction, however, consultation and coordination with PG&E during

implementation of the proposed action would minimize interference with gas and electric service.

Water supply in Colusa County comes from both groundwater and surface water. All domestic water systems in the County are supplied with groundwater, while most irrigation systems are supplied with surface water from the Tehama-Colusa or Glenn-Colusa Canals, the Colusa Drain, or the Sacramento River. There are community water systems located in Arbuckle, Maxwell, Princeton, Grimes, Stonyford, and the Cities of Colusa and Williams, and there are private groundwater wells located throughout the County to serve individual parcels in the unincorporated areas.

RD 108 receives water from the Sacramento River under riparian water rights, licenses for appropriation of surface water, and a Settlement Contract with Reclamation. The SSPP is located on the west side of the Sacramento River and connects to the District's Irrigation Lateral 11B Canal. The District stopped using the SSPP due to ongoing siltation possibly caused by recent Corps work on a critical erosion site in the area. Therefore, the District is proposing to redirect irrigation water pumped from the District's Irrigation Lateral 7J Canal through a pump and pipeline system to Irrigation Lateral 11B. Irrigation Lateral 7J receives water via Wilkins Slough Pumping Plant and fish screen, which receives water from the Sacramento River.

Residential and commercial solid waste pickup in Colusa County is provided by Recology Butte Colusa Counties, which provides service to the cities of Colusa and Williams, as well as the unincorporated communities of Arbuckle, Maxwell, and Princeton (Colusa County 2010). Solid waste picked up from areas east of the Tehama-Colusa Canal are taken to the Maxwell Transfer Station located on SR 99 south of the community of Maxwell, which receives up to 100 tons per day of mixed municipal and construction/demolition refuse (Colusa County 2010). The proposed action would comply with Federal, state, and local regulations related to solid waste, and would not result in the long-term production of any solid wastes. It is anticipated that the proposed action would generate excess materials during construction that would require disposal. Several disposal sites would be used depending on the type of material. Old concrete from Irrigation Lateral 11B would be disposed at an approved waste site authorized to accept concrete waste. Cleared vegetation would be transported to the nearest dump or landfill for disposal. Excess excavated materials would be either disposed of on-site, or hauled off-site and deposited in a suitable disposal area. Additional construction debris and excess material requiring disposal in a landfill would be hauled off-site to a suitable facility.

a), b), c), d), and e)
The proposed action would not result in demand for increased natural gas or electrical facilities, water infrastructure, sewer lines, or solid-waste services beyond their current capacity. The proposed action would not exceed wastewater requirements, nor would it necessitate expansion of any wastewater treatment facilities or water supply entitlements. This impact would be less than significant.

f) and g)
Construction waste generated by the proposed action would be minimal and would not affect the capacity of the local landfill. This impact would be less than significant.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
18. MANDATORY FINDINGS OF SIGNIFICANCE—				
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?	☐	☒	☐	☐

a)
Development of the proposed action would not substantially 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 or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory. As discussed previously in this EA/IS, mitigation measures are proposed to reduce potentially significant impacts on biological resources, cultural resources, and hydrology and water quality to a less-than-significant level.

b)
No past, current, or probable future projects were identified in the project vicinity that, when added to project-related impacts, would result in cumulatively considerable impacts. No cumulatively considerable impacts would occur with development of the proposed action. As discussed previously in this EA/IS, mitigation measures are proposed to reduce all potentially significant impacts to a less-than-significant level. The incremental effects of the proposed action are not cumulatively considerable when viewed in connection with the effects of past, current, and probable future projects.

c)
No project-related environmental effects were identified that would cause substantial adverse effects on human beings after mitigation is incorporated. As discussed herein, the proposed action has the potential to create temporary significant impacts related to

biological resources, cultural resources, and hydrology and water quality during construction. However, with implementation of required mitigation measures, these impacts would be reduced to a less-than-significant level.

APPENDIX B

BIOLOGICAL RESOURCES SURVEY REPORT AND USFWS CONSULTATION

HDR | ONE COMPANY *Many Solutions*℠

Memo

To:	Shelly Hatleberg, Reclamation		
From:	Linda Fisher	Project:	South Steiner Pumps and Pipeline Project
CC:	Lewis Bair, RD 108		
Date:	August 9, 2011	Job No:	165690

RE: South Steiner Pumps and Pipeline Project - Biological Resources Technical Memo

EXISTING CONDITIONS

Description of the Project Area and Vicinity

The project site is located approximately midway between the Interstate 5 and State Route 99 corridors along the eastern border of Colusa County. The project is located in a rural setting and the surrounding land use is predominantly agricultural. The closest towns to the project site are Yuba City, which lies approximately 13 miles northeast of the project site along the SR 99 corridor and the towns of College City and Arbuckle, which lie approximately 10 and 12.5 miles due west of the project site, respectively.

Within the project site and vicinity, the predominant vegetation cover is agricultural fields, comprised primarily of irrigated row crops, rice fields, and to a lesser extent orchard. Other vegetation communities that occur in the project site and vicinity include natural and man-made waterways, riparian, ruderal habitats, and land under a variety of urban land uses. Each of these habitat types is discussed briefly below.

Agricultural Fields
Irrigated crops grown within the RD 108 (District) service area include rice, wheat, corn, safflower, tomatoes, beans, vineseeds, cotton, walnuts and fruit. The agricultural fields within the project site were in tomato production at the time of the biological reconnaissance survey on June 22, 2011. The proposed pipeline alignment would cross these tomato fields. Rice fields occur west of the project site along the north and south sides of Lateral 7J, where the new pump station would be located.

Agricultural fields used to produce irrigated row crops, such as tomatoes, provide habitat for small ground-dwelling mammals such as Valley pocket gopher (*Thomomys bottae*) and rats (*Rattus* spp.), and foraging habitat for a variety of insectivorous birds, birds of prey, and shorebirds. Bird species observed foraging in and over the agricultural fields in the project site and vicinity included red-tailed hawk (*Buteo jamaicensis*), western kingbird (*Tyrannus verticalis*), great egret (*Ardea alba*), white faced ibis (*Plegadis chihi*), and red-winged blackbird (*Agelaius phoeniceus*). Rice fields contain an abundant aquatic vertebrate and invertebrate fauna and provide important foraging habitat for shorebirds, as well as native and non-native reptiles and amphibians such as bullfrog (*Rana catesbeiana*) and garter snakes (*Thamnophis* spp.).

Natural and Man-made Waterways
Within the project site and vicinity, this habitat type is comprised primarily of a complex network of man-made irrigation canals and the Sacramento River.

Irrigation canals typically contain a variety of non-native gamefishes such as sunfishes (Centrarchidae) and catfishes (Ictaluridae). Irrigation canals provide foraging habitat for species such as garter snakes and piscivorous bird species such as belted kingfisher (*Ceryle alcyon*) and great blue heron (*Ardea herodias*). The Sacramento River provides habitat for a variety of resident and anadromous fishes including sunfishes,

catfishes, and salmonids. The Sacramento River is outside of the project footprint and would not be affected by the proposed action.

Riparian
A narrow riparian corridor occurs along the right bank of the Sacramento River adjacent to the south side of the project site. The riparian corridor is comprised of a variety of native shrub and tree species including Fremont's cottonwood (*Populus fremontii*), Valley oak (*Quercus lobata*), box elder (*Acer negundo*), willows (*Salix* spp.), wild rose (*Rosa* spp.), California button bush (*Cephalanthus occidentalis*), and coyote bush (*Baccharis pilularis*).

Riparian corridors, even in highly disturbed areas, provide nesting and foraging habitat for a variety of songbirds and birds of prey, as well as movement corridors for medium to large sized mammals such as raccoon (*Procyon lotor*) and mule deer (*Odocoileus hemionus*). The riparian habitat is outside of the project footprint and would not be affected by the proposed action.

Ruderal
Within the project site and vicinity, ruderal habitats occur primarily as narrow linear strips within disturbed soil areas along roadways, canal banks, and levee berms. The ruderal habitats in the project site are vegetated primarily with non-native grasses and forbs typical of disturbed habitats, including a number of invasive plant species. Plant species observed within the ruderal habitats included wild oat (*Avena fatua*), yellow star thistle (*Centaurea solsticialis*), puncture vine (*Tribulus terrestris*), field bindweed (*Convolvulus arvensis*), alkali mallow (*Malvella leprosa*), and mustard (*Brassica* spp.).

Narrow strips of ruderal habitat in areas subject to a high level of human disturbance that occur in the project site and vicinity provide limited habitat value for wildlife. Wildlife species occupying adjacent habitats occasionally utilize theses areas for dispersal or foraging but are not expected to remain in these areas for an extended period of time.

Urban Land Uses
Urban land uses in the project site and vicinity include buildings, paved and unpaved roads, and adjacent areas with compacted soil and little or no vegetation such as parking areas.

Urban land uses do not provide significant wildlife habitat.

Special-Status Species

Studies conducted by HDR for the purpose of evaluating potential impacts of the proposed action on special-status species and/or their habitats included background research to determine the special-status species and their habitats potentially occurring in the project site and a biological reconnaissance survey conducted on June 22, 2011 to characterize habitat types present.

Background research consisted of a literature review of the following resources:

- USGS maps of the "Kirkville, California" and "Tisdale Weir, California" 7.5 minute topographic quadrangles (quads).
- Color aerial photography of the project site and vicinity obtained from Google Earth Pro;
- CDFG Natural Diversity Database (CNDDB 2011) reported occurrences of special-status species within the "Kirkville, California" and "Tisdale Weir, California" quads;
- USFWS list of threatened and endangered species with the potential to occur in or be affected by projects in the "Kirkville, California" and "Tisdale Weir, California" quads;
- CNPS list of rare and endangered plant species potentially occurring in the "Kirkville, California" and "Tisdale Weir, California" quads; and

- Pertinent published and unpublished literature.

Habitat types observed in the project site were compared to the habitat requirements of the regionally occurring special-status species and used to determine which of these species had the potential to occur in the project area. The lists of regionally-occurring special-status species obtained from USFWS, CNDDB, and the CNPS are included in as **Attachment 1** to this memo. Also included as an attachment is a table of listed and proposed species and critical habitat potentially occurring or known to occur in the project area (**Attachment 2**). This table includes a discussion of each species' specific habitat requirements and a discussion of presence/ absence of suitable habitat for these species within the project site. Sensitive species and habitats that do not have the potential to occur in the project site and/or be impacted by the proposed action are not discussed further.

Twenty-two regionally-occurring special-status species were evaluated for potential to occur in the project site and immediate vicinity. Of those twenty-two species, only one species has the potential to occur in the project site and be adversely affected by the proposed action. The irrigation canals and adjacent upland berms on the project site provide suitable foraging and aestivation habitat for the federally-threatened giant garter snake (*Thamnophis gigas*). The project site also provides suitable foraging habitat for the State listed as threatened Swainson's hawk (*Buteo swainsoni*) and habitat for nesting migratory birds such as barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), and black phoebe (*Sayornis nigricans*). Special-status species with the potential to occur in the project site are discussed below.

Giant Garter Snake (*Thamnophis gigas*)
Giant Garter Snake inhabit agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Because of the direct loss of natural habitat, the giant garter snake relies heavily on rice fields and adjacent agricultural canals in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and, (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter (USFWS 1999). Giant garter snake are typically absent from larger rivers because of lack of suitable habitat and emergent vegetative cover, and from wetlands with sand, gravel, or rock substrates. Riparian woodlands typically do not provide suitable habitat because of excessive shade, lack of basking sites, and absence of prey populations (USFWS 2011b). Giant garter snake feed primarily on small fishes, tadpoles, and frogs. The giant garter snake inhabits small mammal burrows and other soil crevices above prevailing flood elevations throughout its winter dormancy period. Giant garter snakes typically select burrows with sunny exposure along south and west facing slopes.

There are four reported occurrences of giant garter snakes in CNDDB on the Kirkville and Tisdale Weir USGS quads (CNDDB 2011). Two of the reported occurrences are on the west side of the Sacramento River (same side of the river as the project site) and two are on the east side of the Sacramento River. All four reported occurrences are of giant garter snake found in irrigation canals and/or agricultural fields near irrigation canals. The closest reported occurrence is approximately 2 miles north of the project site, on the east side of the Sacramento River. This record is of a juvenile giant garter snake that was observed in the Sutter Mutual Main Canal near Cranmore Road in 2008. The next closest record is given as "near Grimes", which is approximately 6 miles northwest of the project site on the west side of the Sacramento River, likely near Sills Lake. One adult giant garter snake was collected at this location in 1983. The third record occurs approximately 7 miles northeast of the project site, on the east side of the Sacramento River, where one adult giant garter snake was observed in 2005 near the west side of the Sutter Bypass. The last reported occurrence is approximately 7.5 miles south of the project site on the west side of the Sacramento River where giant garter snake was observed in 1976.

Marginal dispersal and foraging habitat for giant garter snake occurs in Lateral 7J, where the pump station is proposed. Lateral 7J is approximately 50 feet wide from bank to bank and contains sufficient water and prey for giant garter snake, but cover is scarce in the location of the proposed pump station (Photo 2 in **Attachment 3**). A narrow linear strip of bulrush (*Scirpus* sp.) is growing along the south bank of Lateral 7J, extending to within approximately 30 feet west of the location of the proposed pump station. Some floating aquatic vegetation, consisting primarily of water primrose (*Ludwigia* sp.), also occurs in small patches along the north bank and scattered throughout Lateral 7J. North of the proposed pipeline location, Drain 7H also provides suitable dispersal and foraging habitat for giant garter snake with sufficient water and prey (Photos 3 and 4 in **Attachment 3**). Drain 7H is approximately 25 feet wide and has cover for giant garter snake in the form of a narrow band of emergent vegetation on both sides consisting of bulrush and cattail (*Typha* sp.) as well as patches of floating aquatic vegetation (mostly water primrose). Approximately 100 feet south of the proposed pipeline location, Drain 7H tapers to a narrow (6 to 8 feet wide), shallow, agricultural ditch and is less suitable habitat for giant garter snake.

Swainson's hawk (*Buteo swainsoni*)
Swainson's hawk is an uncommon breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and the Mojave Desert. Swainson's hawk breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah in the Central Valley and forages in adjacent grasslands or suitable grain or alfalfa fields, or livestock pastures. Swainson's hawks breed in California and overwinter in Mexico and South America. Swainson's hawks usually arrive in the Central Valley between March 1 and April 1, and migrate south between September and October. Swainson's hawks usually nest in trees adjacent to suitable foraging habitat. Swainson's hawks nest usually occur in trees near the edges of riparian stands, in lone trees or groves of trees in agricultural fields, and in mature roadside trees. Valley oak, Fremont cottonwood, walnut, and large willow with an average height of about 58 feet, and ranging from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Suitable foraging areas for Swainson's hawk include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Unsuitable foraging habitat includes crops such as vineyards, orchards, certain row crops, rice, corn and cotton crops. Swainson's hawks primarily feed on voles; however, they will feed on a variety of prey including small mammals, birds, and insects (CDFG 2011b).

There are 31 records of nesting Swainson's hawk in CNDDB on the Kirkville and Tisdale Weir USGS quads (CNDDB 2011). There are no suitable nest trees for Swainson's hawk in or directly adjacent to the proposed pump station or pipeline alignment. However, a large Valley oak that is suitable for raptor nesting occurs along Wilson Bend Road approximately 600 feet south of the proposed pump station location. Suitable nest trees also occur along the Sacramento River as close as approximately 100 feet south of the pipeline outfall into Lateral 11B. Although no Swainson's hawks were observed during the biological reconnaissance survey, the project site provides suitable foraging habitat for Swainson's hawk. There is a high likelihood that this species forages in the project site and nests in close proximity to the project site.

Raptors and Migratory Birds
Swallows, black phoebes, and other migratory birds commonly nest on the underside of bridges and other structures in the vicinity of streams and other watercourses. These species are protected from disturbance during the nesting season by the Migratory Bird Treaty Act (MBTA). Swallow nests were observed on the existing pump structure in Lateral 7J adjacent to the location of the proposed pump station.

REGULATORY SETTING

Certain special status species and their habitats are protected by Federal, State, or local laws and agency regulations. The Federal Endangered Species Act (FESA) of 1973 (50 CFR 17) provides legal protection for plant and animal species in danger of extinction. This act is administered by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The California Endangered Species Act (CESA) of 1977 parallels FESA and is administered by the California Department of Fish and Game (CDFG). Other special status species lack legal protection, but have been characterized as "sensitive"

based on policies and expertise of agencies or private organizations, or policies adopted by local government. Special-status species are those that meet any of the following criteria:

- Listed or candidate for listing under the Federal Endangered Species Act of 1973 (50 CFR 17).
- Listed or candidate for listing under the California Endangered Species Act of 1977.
- Nesting bird species and active nests of birds listed under the Migratory Bird Treaty Act.
- Species listed in the Bald and Golden Eagle Protection Act.
- Fully protected or protected species under stated CDFG code.
- Wildlife species of special concern listed by the CDFG.
- Plant species listed as Rare under the California Native Plant Protection Act.
- Plant species listed by the California Native Plant Society.
- Essential Fish Habitat listed under the Magnuson-Stevens Act.
- Essential Fish Habitat is defined in the Magnuson-Stevens Act as ". . . those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The act requires that Federal agencies consult with the National Marine Fisheries Service when any activity proposed to be permitted, funded, or undertaken by a Federal agency may have adverse effects on designated Essential Fish Habitat.

A brief discussion of pertinent regulations is provided below.

Federal Endangered Species Act
The USFWS and the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NMFS) enforce the provisions stipulated within the Federal Endangered Species Act of 1973 (hereafter, "FESA," 16 USC Section 1531 et seq.). Threatened and endangered species on the Federal list (50 CFR Section 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via Section 7 consultation. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present in the study area and determine whether the proposed project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species that is proposed for listing under FESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3], [4]). Therefore, project related impacts to these species or their habitats would be considered significant and would require mitigation. Other federal agencies may designate species of concern (species that have the potential to become listed), which are evaluated during environmental review although they are not otherwise protected under FESA. Project related impacts to such species would also be considered a significant impact and may require mitigation.

Fish and Wildlife Coordination Act.
The Fish and Wildlife Coordination Act in general requires federal agencies to coordinate with USFWS and state fish and game agencies whenever streams or bodies of water are controlled or modified. This coordination is intended both to promote the conservation of wildlife resources by providing equal consideration for fish and wildlife in water project planning and to provide for the development and improvement of wildlife resources in connection with water projects. Federal agencies undertaking water projects are required to include recommendations made by USFWS and state fish and game agencies in project reports, and give full consideration to these recommendations.

Executive Order 13186: Migratory Bird Treaty Act
Most bird species, especially those that are breeding, migrating, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC Subsection 703-712), migratory bird species and their nests and eggs are protected from injury or death; these species are listed on the federal list (50 CFR Section 10.13). Project related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code Subsections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are "fully protected": those that may not be taken or possessed except under specific permit.

Executive Order 11990: Protection of Wetlands
Executive Order 11990 directs federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. A project that encroaches on wetlands may not be undertaken unless the agency has determined that (1) there are no practicable alternatives to construction, (2) the project includes all practicable measures to minimize harm to wetlands affected, and (3) the impact will be minor.

Bald and Golden Eagle Protection Act
When first enacted in 1940, the Act prohibited the take, transport, or sale of bald eagles, their eggs or any part of an eagle except where expressly allowed by the Secretary of the Interior. The Act was amended in 1962 to extend the prohibitions to the golden eagle as well.

Executive Order 13112: Invasive Species Prevention
On Feb 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. Executive Order 13112 required that each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, (1) identify such actions; (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions. In addition, it requires that Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

Magnuson-Stevens Fishery Conservation and Management Act
The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect "essential fish habitat (EFH)." EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Magnuson-Stevens Act states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase "adversely affect" refers to the creation of any impact that reduces the quality or quantity of EFH. Federal activities that occur outside of EFH, but which may have an impact on EFH must be considered in the

consultation process. The Act applies to Pacific salmon, groundfish, and several pelagic species found in the Pacific.

California Endangered Species Act/ California Environmental Quality Act
The California Endangered Species Act (CESA) of 1970 (CDFG Code Section 2050 et seq., and CCR Title 14, Subsection 670.2, 670.51) prohibits the take (interpreted to mean the direct killing of a species) of species listed under CESA (14 CCR Subsection 670.2, 670.5). Under CESA, state agencies are required to consult with the CDFG when preparing CEQA documents. Consultation ensures that proposed projects or actions do not have a negative effect on state-listed species. During consultation, CDFG determines whether take would occur and identifies "reasonable and prudent alternatives" for the project and conservation of special-status species. CDFG can authorize take of a state-listed species if an incidental take permit is issued by the Secretary of the Interior or Commerce in compliance with FESA, or if the director of CDFG issues a permit under Section 2080 in those cases where it is demonstrated that the impacts are minimized and mitigated. A CESA permit must be obtained if a project will result in the take of listed species, either during construction or over the life of the project. Under CESA, CDFG is responsible for maintaining a list of threatened and endangered species designated under state law (CDFG Code 2070). CDFG also maintains lists of species of special concern, which serve as "watch lists." Pursuant to the requirements of CESA, a state or local agency reviewing a proposed project within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the proposed project will have a potentially significant impact upon such species.

The California Environmental Quality Act (CEQA) of 1970 (Subsections 21000-21178) requires that CDFG be consulted during the CEQA review process regarding impacts of proposed projects on rare or endangered species. These "special-status" species are defined under CEQA Guidelines subsection 15380(b) and (d) as those listed under FESA and CESA, and species that are not currently protected by statute or regulation, but would be considered rare, threatened, or endangered under these criteria, or by the scientific community. Therefore, species that are considered rare or endangered are addressed in this study regardless of whether they are afforded protection through any other statute or regulation. CNPS inventories the native flora of California and ranks species according to rarity (CNPS 2008); plants on Lists 1A, 1B, and 2 are considered special-status species under CEQA.

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. Section 15380(d) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFG (i.e., candidate species) would occur. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of a project until the respective government agency has an opportunity to designate the species as protected, if warranted.

California Native Plant Protection Act
The California Native Plant Protection Act of 1977 (CDFG Code Section 1900-1913) requires all state agencies to use their authority to carry out programs to conserve endangered and otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require the project proponent to notify CDFG at least 10 days in advance of any change in land use, which allows CDFG to salvage listed plants that would otherwise be destroyed.

Nesting Birds
California Fish and Game Code Subsections 3503, 3503.5, and 3800 prohibit the possession, incidental take, or needless destruction of birds, their nests, and eggs. California Fish and Game Code Section 3511 lists birds that are "fully protected": those that may not be taken or possessed except under specific permit.

Waters of the U.S., Including Wetlands
Any person, firm, or agency planning to alter or work in "waters of the U.S.", including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403). Certain types of projects are exempt from CWA Section 404 jurisdiction; these exemptions are listed under Section 404(f) of the CWA.

The proposed action is exempt under Section 404(f) of the CWA under RGL 07-02, *Exemptions for Construction or Maintenance of Irrigation Ditches and Maintenance of Drainage Ditches Under Section 404 of the Clean Water Act*.

ENVIRONMENTAL CONSEQUENCES

Basis of Significance. Adverse effects on special-status species and their habitats were considered significant if an alternative would result in any of the following:

- Direct or indirect reduction in the growth, survival, or reproductive success of species listed or proposed for listing as threatened or endangered under the Federal or State Endangered Species Acts.
- Direct mortality, long-term habitat loss, or lowered reproduction success of Federal or State-listed threatened or endangered animal or plant species or candidates for Federal listing.
- Direct or indirect reduction in the growth, survival, or reproductive success of substantial populations of Federal species of concern, State-listed endangered or threatened species, plant species listed by the California Native Plant Society, or species of special concern or regionally important commercial or game species.
- Have an adverse effect on a species' designated critical habitat.
- Substantial loss of native vegetation or native vegetation communities.
- Substantial reduction in the quality or quantity of important habitat or access to such habitat for wildlife species.
- Substantial net loss of important wildlife habitat over the project life as compared to the existing conditions.

NO ACTION ALTERNATIVE

There would be no effect to special-status species and their habitats in the project area under this alternative. The types of species and their associated habitat in the project area would be expected to remain the same.

PROPOSED ACTION

Construction of the proposed action would directly and indirectly affect the giant garter snake and its habitat and could potentially indirectly affect the Swainson's hawk as well as other nesting raptors and migratory birds. These effects would be considered significant to these special status species.

Effects to Giant Garter Snake. Construction of the proposed pump station and pipeline would potentially result in direct and indirect affects to the giant garter snake. This species is unlikely to reside for long periods of time in the segment of Lateral 7J and Drain 7H in the project area due to the presence of more

suitable habitat in the irrigation canals further from human disturbance; however, giant garter snake could potentially disperse through the project area or use the project area for foraging or basking. In addition, the banks of Lateral 7J and Drain 7H provide marginal basking habitat and refugia for the giant garter snake. Direct affects to giant garter snake could occur if this species was present in the project area during construction. Indirect affects could also occur as a result of the construction and ongoing operations of the new pump station.

If giant garter snakes were present in the project site during construction, they could potentially be harmed as a result of direct contact with construction equipment or personnel. In addition, giant garter snakes could potentially be harmed as a result of increased site disturbance during site preparation and construction activities within Lateral 7J and the immediate vicinity. Construction activities that could potentially harm giant garter snake include pile driving of the four steel piles into the bed of Lateral 7J, which can cause physical vibration of the bed and banks, excavation of 1 to 2 feet of the bed of Lateral 7J, and an increase in human disturbance during operation of equipment and trucks. These site disturbances could cause snakes to flee the project area exposing them to increased chances of predation or other physical harm. The pump station itself would result in minimal impacts to potential giant garter snake habitat. However, the magnitude of this impact would be further reduced because the new pump station would be situated in an area of significant human disturbance between existing pumps and the east end of the lateral. Placement of the four steel piles to support the pump station would result in the permanent loss of less than 4 square feet of aquatic habitat in Lateral 7J. The two pipelines exiting the pump station would result in the loss of approximately 3 to 4 square feet of bank habitat. A minimal amount of potential marginal basking habitat for GGS would be permanently rendered unsuitable due to shading caused by the walkway to the pump station.

Placement of the pump station is not expected to result in a measurable reduction of habitat quality within Lateral 7J. The pump station is not expected to appreciably reduce the amount of available habitat for giant garter snake in Lateral 7J, hinder the movement of giant garter snake through the project site, or appreciably affect the amount of available prey, cover, or basking. Construction of the pump station would result in temporary impacts to marginal upland habitat for giant garter snake in the bed and banks of Lateral 7J and an adjacent dirt roadway, but temporary impacts to potential aquatic habitat for giant garter snake would be avoided by constructing during the period when Lateral 7J is normally dewatered. The District dewaters Irrigation Lateral 7J in mid-September for normal operations and maintenance and intends to place the pump station in Irrigation Lateral 7J during this time.

Effects to Swainson's Hawk. Construction of the proposed action could potentially result in direct and indirect affects to Swainson's hawk and other tree nesting raptors if these species begin nesting adjacent to the project area prior to construction. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by adult hawks.

Effects to Nesting Swallows, Black Phoebes and Other Migratory Birds. Construction of the proposed action could potentially result in direct and indirect affects to nesting swallows, black phoebes, and other migratory birds. Swallow nests were observed on the existing pump in Lateral 7J adjacent to the project site. Construction activities in the vicinity of a nest have the potential to result in forced fledging or nest abandonment by these species.

MITIGATION

Giant Garter Snake. The BOR shall initiate consultation with USFWS under Section 7 of the Endangered Species Act. The BOR and RD 108 shall ensure implementation of the respective terms and conditions and reasonable and prudent measures identified in the resulting Biological Opinion once it is received. Construction in aquatic habitat or upland habitat within 200 feet of Lateral 7J and Drain 7H shall conform to

the USFWS's *Standard Avoidance and Minimization Measures During Construction Activities in Giant Garter Snake Habitat*, including the requirement that construction be limited to the period between May 1 and October 1, the active period for the snake. Additional measures such as biological monitoring for giant garter snake during construction and habitat protection would be implemented as determined appropriate by USFWS.

The proposed mitigation would reduce the effects on the giant garter snake to less than significant. The quantity and quality of giant garter snake habitat in the project site is not expected to decrease significantly compared to existing conditions due to implementation of the proposed action. With the implementation of the proposed avoidance and minimization measures, potential construction related affects would be minimized. Limiting construction activities to the snake's active season would allow any individual giant garter snakes potentially present in the construction area to move away unharmed. Implementing pre-construction surveys and/or construction monitoring would further reduce the likelihood that any giant garter snakes are harmed as a result of the proposed action.

Swainson's hawk and Other Tree Nesting Raptors. If construction is scheduled to occur outside of the typical nesting season of March 15 through September 15, no mitigation is necessary. If construction is scheduled to occur between March 15 and September 15, preconstruction surveys would be conducted in suitable nesting habitat within 0.5 miles of the project site for Swainson's hawk and within 1,000 feet of the project site for tree nesting raptors.

Surveys shall conform to the Swainson's Hawk Technical Advisory Committee Guidelines (SHTAC 2001) where feasible. If nesting raptors are recorded within their respective buffers, CDFG would be consulted regarding suitable measures to avoid impacting breeding effort. Mitigation measures would include but are not limited to the following:

- Maintaining an appropriately sized buffer around each active raptor nest determined in consultation with CDFG; no construction activities would be allowed within this buffer except as allowed through consultation with CDFG.

- Depending on conditions specific to each nest, and the relative location and rate of construction activities, it may be feasible for construction to occur as planned within the buffer without impacting breeding effort. In this case, as determined by consultation with CDFG, the nest(s) shall be monitored by a qualified biologist during construction within the buffer. If the monitoring biologist determines that construction would impact the nest, the biologist shall immediately inform the construction manager and CDFG. Construction activities within the buffer would be stopped until either the nest is no longer active or the project receives approval to continue by CDFG.

The proposed mitigation would reduce the effects on the above-listed special-status raptors to less than significant.

Swallows, Black Phoebe, and Other Migratory Birds. If construction is scheduled to occur outside of the typical nesting season of March 1 through September 1, no mitigation is necessary. If construction is scheduled to occur during the typical nesting season for these birds, March 1 through September 1, a preconstruction survey would need to be conducted within two weeks prior to construction for nesting birds on existing pump and bridge structures and in other suitable habitats. If no nests are detected, no further mitigation would be necessary. If active nests are detected, CDFG would need to be contacted to determine appropriate mitigation measures to prevent impacts to nesting birds.

Alternatively, in order to prevent swallows and black phoebes from nesting on pump and bridge structures adjacent to the project site, a nest survey should be conducted prior to the nesting season in the year that construction is scheduled to commence. In consultation with CDFG, the existing unoccupied nests under the bridge should be removed prior to the nesting season by pressure washer or mechanical means. Nests can only be removed in consultation with CDFG and prior to eggs being laid in the nests. Nest exclusion should be conducted throughout the duration of construction within 100 feet of the nest locations consisting of either removing partially built nests weekly or installing exclusionary netting to prevent swallows from attempting to rebuild the nests.

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NOAA Fisheries. 2011c. Species Account for Chinook Salmon (*Oncorhynchus tshawytscha*). http://www.nmfs.noaa.gov/pr/species/fish/chinooksalmon.htm

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U.S. Fish and Wildlife Service (USFWS). 1999. Draft Recovery Plan for the Giant Garter Snake *(Thamnophis gigas)*. U.S. Fish and Wildlife Service, Portland, Oregon. ix+ 192.

U.S. Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon. viii + 173 pp.

U.S. Fish and Wildlife Service. 2005. Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon. Portland, Oregon. xxvi + 606 pages.

U.S. Fish and Wildlife Service. 2011a. Sacramento Fish & Wildlife Office Species Account for California Tiger Salamander (*Ambystoma californiense*). Online at http://www.fws.gov/sacramento/es/animal_spp_acct/california_tiger_salamander.pdf

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U.S. Fish and Wildlife Service. 2011c. Sacramento Fish & Wildlife Office Species Account for Western Yellow-billed Cuckoo (*Coccyzus americanus*). Online at http://www.fws.gov/sacramento/es/animal_spp_acct/yellow-billed_cuckoo.pdf

U.S. Fish and Wildlife Service (USFWS). 2011d. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Roseville, Folsom, Citrus Heights, Rio Linda, Gold Hill, Rocklin, Lincoln, Sheridan, and Pleasant Grove quads. Obtained online on November 2009 http://www.fws.gov/sacramento/es/spp_list.htm.

Attachment 1

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

Document Number: 110803042019

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Lepidurus packardi
- vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
- green sturgeon (T) (NMFS)

Hypomesus transpacificus
- delta smelt (T)

Oncorhynchus mykiss
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
- Critical habitat, winter-run chinook salmon (X) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
- California tiger salamander, central population (T)

Rana draytonii
- California red-legged frog (T)

Reptiles

Thamnophis gigas
- giant garter snake (T)

Candidate Species

Birds

Coccyzus americanus occidentalis
- Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

KIRKVILLE (530A)
TISDALE WEIR (545D)

County Lists

Colusa County

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
Critical habitat, vernal pool tadpole shrimp (X)
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Strix occidentalis caurina

Critical habitat, northern spotted owl (X)

northern spotted owl (T)

Plants

Cordylanthus palmatus

palmate-bracted bird's-beak (E)

Candidate Species

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (C)

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

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

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

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

Plants

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

Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist and/or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list. See our Protocol and Recovery Permits pages.

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

Your Responsibilities Under the Endangered Species Act

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

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

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

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

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

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

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

Critical Habitat

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

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

If any species has proposed or designated critical habitat within a quad, there will be a

separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our Map Room page.

Candidate Species

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

Species of Concern

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

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6520.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 01, 2011.

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Landscape
CNDDB Summary Report for Kirkville and Tisdale Weir USGS Quads

	Scientific Name	Common Name	Element Code	Federal Status	State Status	Global Rank	State Rank	CNPS	CDFG
1	***Agelaius tricolor***	tricolored blackbird	ABPBXB0020			G2G3	S2		SC
2	***Ardea alba***	great egret	ABNGA04040			G5	S4		
3	***Ardea herodias***	great blue heron	ABNGA04010			G5	S4		
4	***Branta hutchinsii leucopareia***	cackling (=Aleutian Canada) goose	ABNJB05035	Delisted		G5T4	S2		
5	***Buteo swainsoni***	Swainson's hawk	ABNKC19070		Threatened	G5	S2		
6	***Charadrius montanus***	mountain plover	ABNNB03100	Proposed Threatened		G2	S2?		SC
7	***Great Valley Mixed Riparian Forest***	Great Valley Mixed Riparian Forest	CTT61420CA			G2	S2.2		
8	***Hibiscus lasiocarpos var. occidentalis***	woolly rose-mallow	PDMAL0H0R3			G4	S2.2	1B.2	
9	***Riparia riparia***	bank swallow	ABPAU08010		Threatened	G5	S2S3		
10	***Thamnophis gigas***	giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3		
11	***Trichocoronis wrightii var. wrightii***	Wright's trichocoronis	PDAST9F031			G4T3	S1.1	2.1	

Inventory of Rare and Endangered Plants

v7-11jul 7-12-11

Status: search results - Wed, Aug. 3, 2011, 19:01 b

{QUADS_123} =~ m/530A/ Search

Tip: Want to search by habitat? Try the **Checkbox and Preset** search page.[all tips and help.] [search history]

Your Quad Selection: Kirkville (530A) 3812187

Hits 1 to 1 of 1

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	**Trichocoronis wrightii var. wrightii**	Wright's trichocoronis	Asteraceae	List 2.1

No more hits.

Inventory of Rare and Endangered Plants

v7-11jul 7-12-11

Status: search results - Wed, Aug. 3, 2011, 19:02 b

{QUADS_123} =~ m/545D/ Search

Tip: Word fragments must be completed with a wildcard, e.g., `esch* hyp*` for Eschscholzia hypecoides.[all tips and help.][search history]

Your Quad Selection: Tisdale Weir (545D) 3912117

Hits 1 to 2 of 2

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	**Hibiscus lasiocarpos var. occidentalis**	woolly rose-mallow	Malvaceae	List 1B.2
		1	**Trichocoronis wrightii var. wrightii**	Wright's trichocoronis	Asteraceae	List 2.1

No more hits.

Attachment 2

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE/--/--	Conservancy fairy shrimp inhabit rather large, cool-water vernal pools with moderately turbid water. It is likely the Conservancy fairy shrimp once occupied suitable vernal pool habitats throughout a large portion of the Central Valley and southern coastal regions of California. It may still exist in unsurveyed pools within this region. The species is currently known from several disjunct populations: the Vina Plains in Tehama County, south of Chico in Butte County, the Jepson Prairie Preserve and surrounding area in Solano County, Sacramento National Wildlife Refuge in Glenn County, Mapes Ranch west of Modesto, San Luis National Wildlife Refuge and the Haystack Mountain/Yosemite Lake area in Merced County, and two locations on the Los Padres National Forest in Ventura County (USFWS 2005).	A	There are no vernal pools present in the project site or immediate vicinity.
Branchinecta lynchi Vernal pool fairy shrimp	FT/--/--	The vernal pool fairy shrimp occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. Although the species has been collected from large vernal pools, including one exceeding 25 acres, it tends to occur in smaller pools. It is most frequently found in pools measuring less than 0.05 acre. These are most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. Vernal pool fairy shrimp is currently known to occur in a wide range of vernal pool habitats in the southern and Central Valley areas of California (USFWS 2005).	A	There are no vernal pools present in the project site or immediate vicinity.

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT/--/--	Valley elderberry longhorn beetle is endemic to the riparian habitats in the Sacramento and San Joaquin Valleys where it resides on elderberry (*Sambucus* spp.) plants. The beetle's current distribution is patchy throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield (USFWS 1984).	A	There are no elderberry shrubs present in the project site or immediate vicinity.
Lepidurus packardi Vernal pool tadpole shrimp	FE/--/--	This animal inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the former Mather Air Force Base area of Sacramento County, to the 89-acre Olcott Lake at Jepson Prairie. The vernal pool tadpole shrimp is currently distributed across the Central Valley of California and in the San Francisco Bay area (USFWS 2005).	A	There are no vernal pools present in the project site or immediate vicinity.
Fish				
Acipenser medirostris Green sturgeon	FT/CSC/--	Green sturgeon is a long-lived, slow-growing fish and the most marine-oriented of the sturgeon species. Green sturgeon is believed to spend the majority of their lives in nearshore oceanic waters, bays, and estuaries. Early life-history stages reside in fresh water, with adults returning to freshwater to spawn. Today green sturgeon are believed to spawn primarily in the Rogue River, Klamath River Basin, and the Sacramento River. Spawning appears to rarely occur in the Umpqua River, South Fork Trinity River, and Eel River (NOAA Fisheries 2011a).	A	The project site does not include water bodies suitable to support this species. Suitable habitat for this species occurs adjacent to the project site in the Sacramento River. However, the Sacramento River will not be affected by the proposed project.
Hypomesus transpacificus Delta smelt	FT/ST/--	Delta smelt are tolerant of a wide salinity range. They have been collected from estuarine waters up to 14 ppt (parts per thousand) salinity. For a large part of their one-year life span, delta smelt live along	A	The project site does not include water bodies suitable to support this species. Suitable habitat for this species occurs adjacent to the project

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
		the freshwater edge of the mixing zone (saltwater-freshwater interface), where the salinity is approximately 2 ppt. Shortly before spawning, adults migrate upstream from the brackish-water habitat associated with the mixing zone and disperse into river channels and tidally-influenced backwater sloughs. They spawn in shallow, fresh or slightly brackish water upstream of the mixing zone. Most spawning happens in tidally-influenced backwater sloughs and channel edgewaters. Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches. Delta smelt are found only from the Suisun Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo counties (USFWS 1995).		site in the Sacramento River. However, the Sacramento River will not be affected by the proposed project.
Oncorhynchus mykiss Central Valley Steelhead	FT/--/--	Steelhead spawn in rivers and streams with cool, clear, water and suitable substrate. The Central Valley Steelhead distinct population segment includes all naturally spawned anadromous *O. mykiss* (steelhead) populations below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries, as well as two artificial propagation programs: the Coleman NFH, and Feather River Hatchery steelhead hatchery programs (NOAA Fisheries 2011b).	A	The project site does not include water bodies suitable to support this species. Suitable habitat for this species occurs adjacent to the project site in the Sacramento River. However, the Sacramento River will not be affected by the proposed project.
Oncorhynchus tshawytscha Winter-run Chinook salmon	FE/--/--	Chinook salmon spawn in rivers and streams with cool, clear, water and suitable substrate. The Sacramento winter-run Chinook ESU includes all naturally spawned populations of winter-run	A	The project site does not include water bodies suitable to support this species. Suitable habitat for this species occurs adjacent to the project

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
		Chinook salmon in the Sacramento River and its tributaries in California (59 FR 440; January 1, 1994), as well as two artificial propagation programs: Winter-run Chinook from the Livingston Stone National Fish Hatchery (NFH), and winter run Chinook in a captive broodstock program maintained at Livingston Stone NFH and the University of California Bodega Marine Laboratory (NOAA Fisheries 2011c).		site in the Sacramento River. However, the Sacramento River will not be affected by the proposed project.
Oncorhynchus tshawytscha Central Valley spring-run Chinook salmon	FT/--/--	Chinook salmon spawn in rivers and streams with cool, clear, water and suitable substrate. The Central Valley spring-run Chinook ESU includes all naturally spawned populations of spring-run Chinook salmon in the Sacramento River and its tributaries in California, including the Feather River (64 FR 50394; September 16, 1999). One artificial propagation program is considered part of the ESU: The Feather River Hatchery spring run Chinook program (NOAA Fisheries 2011c).	A	The project site does not include water bodies suitable to support this species. Suitable habitat for this species occurs adjacent to the project site in the Sacramento River. However, the Sacramento River will not be affected by the proposed project.
Amphibians				
Ambystoma californiense California tiger salamander	FT/SSC/--	California tiger salamanders are generally restricted to vernal pools and seasonal ponds, including many constructed stockponds, in grassland and oak savannah plant communities from sea level to about 1,500 feet in central California. In the Coastal region, populations are scattered from Sonoma County in the northern San Francisco Bay Area to Santa Barbara County, and in the Central Valley and Sierra Nevada foothills from Yolo to Kern counties (USFWS 2011a).	A	There are no vernal pools or seasonal ponds present in the project site or immediate vicinity.
Rana aurora draytonii California red-legged frog	FT/SSC/--	The California red-legged frog occupies a fairly distinct habitat, combining both specific aquatic and	A	There is no suitable habitat in the project site. This species is

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
		riparian components. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water. The largest densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter. California red-legged frogs aestivate (enter a dormant state during summer or dry weather) in small mammal burrows and moist leaf litter. They have been found up to 100 feet from water in adjacent dense riparian vegetation. Studies have indicated that this species can not inhabit water bodies that exceed 70° F, especially if there are no cool, deep portions (USFWS 2002).		considered extirpated from the Valley floor.
Reptiles				
Thamnophis gigas Giant garter snake	FT/ST/--	Primarily found in marshes and sloughs. May be found in slow-moving creeks but are absent from large rivers. They are generally aquatic but often bask on emergent vegetation such as cattails and tulles (USFWS 2011b).	HP	Suitable habitat for this species is present within the irrigation canals in the project site and within the rice fields adjacent to the project site.
Birds				
Agelaius tricolor Tricolored blackbird	--/SSC/--	Tricolored blackbird occurs in California and Baja California, Mexico. Nests in dense thickets of cattails, tulles, willow, blackberry, wild rose, and other tall herbs near fresh water (CNDDB 2011).	A	While foraging habitat for this species may occur in agricultural fields within the project site, suitable nesting habitat for this species is not present within the site.
Branta hutchinsii leucopareia Cackling (Aleutian Canada)	FD/--/--	Winters in the Sacramento and northern San Joaquin Valleys. Roosts on ponds or open ground. Often	A	No suitable nesting habitat occurs within the site. Foraging habitat for

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
goose		found in marshes, grassland, or agricultural fields (CNDDB 2011).		this species in the project site is marginal. This species is not expected to occur in the project site or be impacted by the proposed project.
Buteo swainsoni Swainson's hawk	--/ST/--	In California, breeds in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County, and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, Antelope Valley, and in eastern San Luis Obispo County. Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands, alfalfa, or grain fields supporting rodent populations (CDFG 1994).	HP	Trees along the Sacramento River and around the margins of agricultural fields in the vicinity of the project site provide suitable nesting habitat for this species and agricultural fields in the project site provide suitable foraging habitat.
Charadrius montanus mountain plover	PT/SSC/	Winter migrant of the Central Valley from Sutter and Yuba counties southward. Uses open shortgrass plains, plowed fields with little vegetation, and open sagebrush areas for cover and feeding. Avoids high and dense cover (CNDDB 2011).	A	No suitable nesting habitat occurs within the site. Foraging habitat for this species in the project site is marginal. This species is not expected to occur in the project site or be impacted by the proposed project.
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FC/SE/--	Summer migrant along the Colorado River, Sacramento and Owens valleys, Kern River, and other scattered locations throughout lowland California. Frequents valley foothill and desert riparian habitats. Densely foliaged, deciduous trees and shrubs, especially willows, are required for roosting sites (USFWS 2011c).	A	There is no habitat for this species in the project site. Habitat for this species in the adjacent riparian areas is extremely poor. Riparian areas adjacent to the project site occur in narrow strips and the tree canopy is insufficiently dense to provide cover that this species prefers for roosting. The area is also subjected to a high level of disturbance. For these

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
				reasons, western yellow-billed cuckoo is not expected to occur in or adjacent to the project site.
Riparia riparia Bank swallow	--/ST/--	In California, primarily nests from Siskyou, Shasta and Lassen Counties, south along the Sacramento River to Yolo County. Found primarily in riparian and other lowland habitats west of the deserts during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes (CNDDB 2011).	A	Suitable habitat for this species is not present within the project site.
Strix occidentalis caurina *Northern spotted owl*	FT, PCH/--/--	This species occurs from British Colombia to northwestern California south to San Francisco. Resides in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats, from sea level up to approximately 2300 m (0-7600 ft). In southern California, nearly always associated with oak and oak-conifer habitats.	A	Suitable habitat for this species is not present within the project site.
Plants				
Cordylanthus palmatus palmate-bracted bird's beak	FE/SE/1B.1	This species is distributed through the Great Valley from Colusa County south to Fresno County in chenopod scrub and valley and foothill grasslands on alkaline soils at elevations between 5 and155 meters. Blooms May to October (CNPS 2011).	A	Suitable habitat for this species is not present within the project site.
Hibiscus lasiocarpos Woolly rose-mallow	--/--/2.2	Habitat consists of moist riverbanks and peat islands in sloughs, and freshwater marshes. Known to occur within the Sacramento and San Joaquin Valleys. Occurs at elevations below 120 meters. Blooms from June to September (CNPS 2011).	A	Suitable habitat for this species is not present within the project site.
Trichocoronis wrightii var.	--/--/2.1	Habitat consists of meadows, seeps, marshes,	A	Suitable habitat for this species is not

Listed and Proposed Species and Critical Habitat Potentially Occurring or Known to Occur in the Project Area				
Scientific Name/ Common Name	**Federal/State/ CNPS or Other Status**	**General Habitat Description**	**Habitat Present/ Absent**	**Rationale**
wrightii Wright's trichocoronis		swamps, riparian forest, and vernal pools with alkaline soils at elevations between 5 and 435 meters. Known occurrences within California in Colusa, Merced, Riverside, San Joaquin, and Sutter counties. Blooms May to September (CNPS 2011).		present within the project site.
Sensitive Habitats				
Great Valley Mixed Riparian Forest	--/--/ G2;S2.2	This is a tall, dense, winter-deciduous, broadleafed riparian forest. The tree canopy is usually fairly well closed and moderately to densely stocked with several species including *Acer negundo* var. *californica, Juglans hindsii*, *Platanus racemosa, Populus fremontii, Salix gooddingii, Salix laevigata*, and *Salix lucida*. Occurs on floodplains of low-gradient, depositional streams of the Great Valley, usually below about 500 feet (Holland 1986).	A	This habitat type occurs adjacent to the southern end of the project site along the Sacramento River, however it does not occur within the project site.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Proposed Critical Habitat [PCH] – Critical Habitat has been proposed but not designated. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC).

California Native Plant Society (CNPS)

1B = Rare, threatened, or endangered in California and elsewhere
- 1B.1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)

2 = Rare, threatened, or endangered in California but more common elsewhere.
- 2.1 = Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- 2.2 = Fairly endangered in California (20-80% occurrences threatened)

Global Ranking
Species or Natural Community Level
G1 = Less than 6 viable element occurrences (EO) OR less than 1000 individuals OR less than 2000 acres.
G2 = 6-20 EOs OR 1000-3000 individuals OR 2000-10000 acres.
G3 = 21-100 EOs OR 3000-10000 individuals OR 10000-50000 acres.
G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world
Subspecies Level

Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species; whereas, the T-rank reflects the global situation of just the subspecies.

State Ranking

S1 = Less than 6 EOs OR less than 100 individuals OR less than 2000 acres
- S1.1 = very threatened

S2 = 6-20 EOs OR 1000-3000 individuals OR 2000-10000 acres
- S2.1 = very threatened
- S2.2 = threatened

S3 = 21-100 EOs OR 3000-10000 individuals OR 10000-50000 acres
- S3.1 = very threatened

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e., there is some threat, or somewhat narrow habitat. NO THREAT RANK.

Attachment 3

Photo 1. View of the location of the proposed pump station in Lateral 7J looking west from the dirt road/parking area. The proposed pump station would be installed between the existing pumps and the eastern end of Lateral 7J (orange arrow).

Photo 2. View of the approximate location of the proposed pump station in Lateral 7J looking east from the south bank of Lateral 7J. The proposed pump station would be installed between the existing pumps and the eastern end of Lateral 7J (orange arrows).

Photo 3. View of Drain 7H looking south from the existing driveway culverted over Drain 7H in the project site.

Photo 4. View of Drain 7H looking north from the existing driveway culverted over Drain 7H in the project site.

Photo 5. View of the proposed pipeline alignment looking southeast from Wilson Bend Rd. The proposed pipeline route crosses agricultural fields currently in tomato production.

Photo 6. View of Lateral 11B in the approximate location of the proposed pipeline outfall. Lateral 11B would be dewatered prior to construction.

Photo 7. View of the north bank of Lateral 7J from just west of the location of the proposed pump station. Rice fields are visible north of Lateral 7J in the photo background.

Photo 8. View of the existing South Steiner Pumping Plant owned by RD 108 on the Sacramento River.

RECLAMATION

Managing Water in the West

BIOLOGICAL ASSESSMENT

RD108 South Steiner Pump & Pipeline Project

Project Location:
SACRAMENTO RIVER, COLUSA COUNTY, CALIFORNIA
USGS 7.5 minute Quadrangles: Kirkville & Tisdale Weir

August 2011

Table of Contents

Chapter 1 Introduction and Species Considered

The Bureau of Reclamation (Reclamation) proposes to provide Central Valley Project Improvement Act (CVPIA) funding under its Anadromous Fish Screen Program to Reclamation District 108 (RD108) to abandon its South Steiner Pumping Plant (SSPP) on the Sacramento River and construct a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from Wilkins Slough Pumping Plant and Fish Screen Facility (also on the Sacramento River) to fields previously served by the SSPP. The Proposed Action is necessary due to ongoing siltation at the SSPP caused by recent U.S. Army Corps of Engineers work on a critical erosion site in the area.

1.1 Purpose of the Biological Assessment

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project upon threatened, endangered, proposed, or sensitive species that have the potential to be affected by the Proposed Action.

An official list of federally listed endangered, threatened, and proposed threatened or endangered species that have the potential to occur in the vicinity of the Proposed Action was obtained on August 2, 2011 from the Sacramento U.S. Fish and Wildlife Service (USFWS) website for the Kirkville and Tisdale Weir U.S. Geological Survey 7.5-minute quadrangles (Appendix A). A species list from National Marine Fisheries Service is included in the USFWS list. Recorded occurrences of species were also obtained from the California Natural Diversity Database (CNDDB) and are included in Appendix A. Those species which occur and have habitat within the Proposed Action area are analyzed in this document.

This BA has been prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1536 (c)) and follows the guidance standards Reclamation established under the National Environmental Policy Act (NEPA) and ESA.

1.2 Species Considered

The following endangered (E) and threatened (T) species that could potentially be impacted by the Proposed Action and therefore is included in this analysis of the Proposed Action is:

- Giant garter snake (GGS) (*Thamnophis gigas*) (T)

1.3 Authority

CVPIA Section 3406 (Fish, Wildlife, Improved Water Management and Conservation), authorized the Secretary, immediately upon the enactment of this title, to operate the water diversions of Reclamation's Central Valley Project (CVP) to meet all obligations under state and federal law, including but not limited to the federal ESA, 16 U.S.C. s 1531, et seq., and all decisions of the California State Water Resources Control Board establishing conditions on applicable licenses and permits for the project.

Each federal agency has an obligation to insure that any discretionary action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify its critical habitat unless that activity is exempt pursuant to the ESA (16 U.S.C. 1536(a)(2); 50 CFR 402.03).

1.4 Consultation to Date

Reclamation met with USFWS in May 2011 to informally discuss the Proposed Action. Based on those discussions, it was determined that the Proposed Action is not likely to adversely affect GGS because of the project location (no GGS have been recorded within the proposed project area or surrounding area) and low likelihood that GGS would be found within the project area (lack of suitable habitat).

Chapter 2 Proposed Action

2.1 Proposed Action Area

The project site is located approximately midway between the Interstate 5 and State Route 99 corridors along the eastern border of Colusa County, largely between Wilson Bend Road and the Sacramento River. The District is located along the western edge of the Sacramento River and delivers water to nearly 48,000 acres of farmland within southern Colusa County and northern Yolo County. The project is located in a rural setting and the surrounding land use is predominantly agricultural. The closest towns to the project site are Yuba City, which lies approximately 13 miles northeast of the project site along the SR 99 corridor and the towns of College City and Arbuckle, which lie approximately 10 and 12.5 miles due west of the project site, respectively.

The Proposed Action area includes all areas affected directly or indirectly by project construction and operation, including areas outside the immediate construction area (Figure 1).

2.2 Description of Proposed Action

Reclamation proposes to provide partial funding to RD108 to abandon the SSPP on the Sacramento River and construct a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from Wilkins Slough Pumping Plant and Fish Screen Facility (also on the Sacramento River) to fields previously served by the SSPP.

The SSPP, built in 1956, will continue to operate until this project is complete. The SSPP is located on the west side of the Sacramento River and connects to RD108's Irrigation Lateral 11B Canal. RD 108's ongoing use of the SSPP has been subject to interruptible operations, significant diver maintenance, and severe pump wear due to the abrasive nature of sediment laden water caused by the Corps' work on a critical erosion site in the area. Therefore, RD 108 is proposing to redirect irrigation water pumped from its Irrigation Lateral 7J Canal through a pump and pipeline system to Irrigation Lateral 11B. Irrigation Lateral 7J receives water via Wilkins Slough Pumping Plant and Fish Screen Facility, which diverts water from the Sacramento River, approximately 3.5 miles upstream of the SSPP.

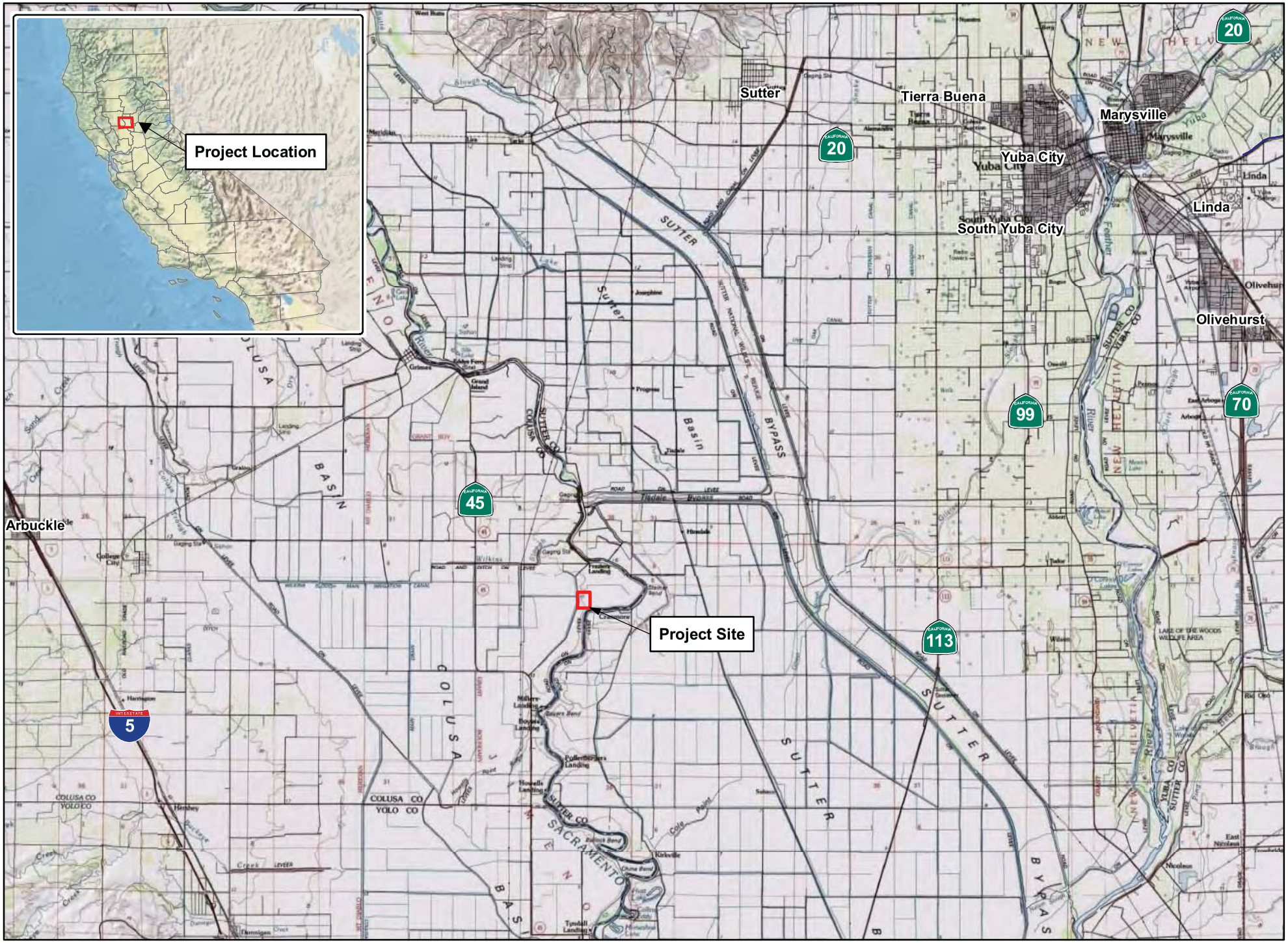

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Figure 1 - Project Location and Vicinity

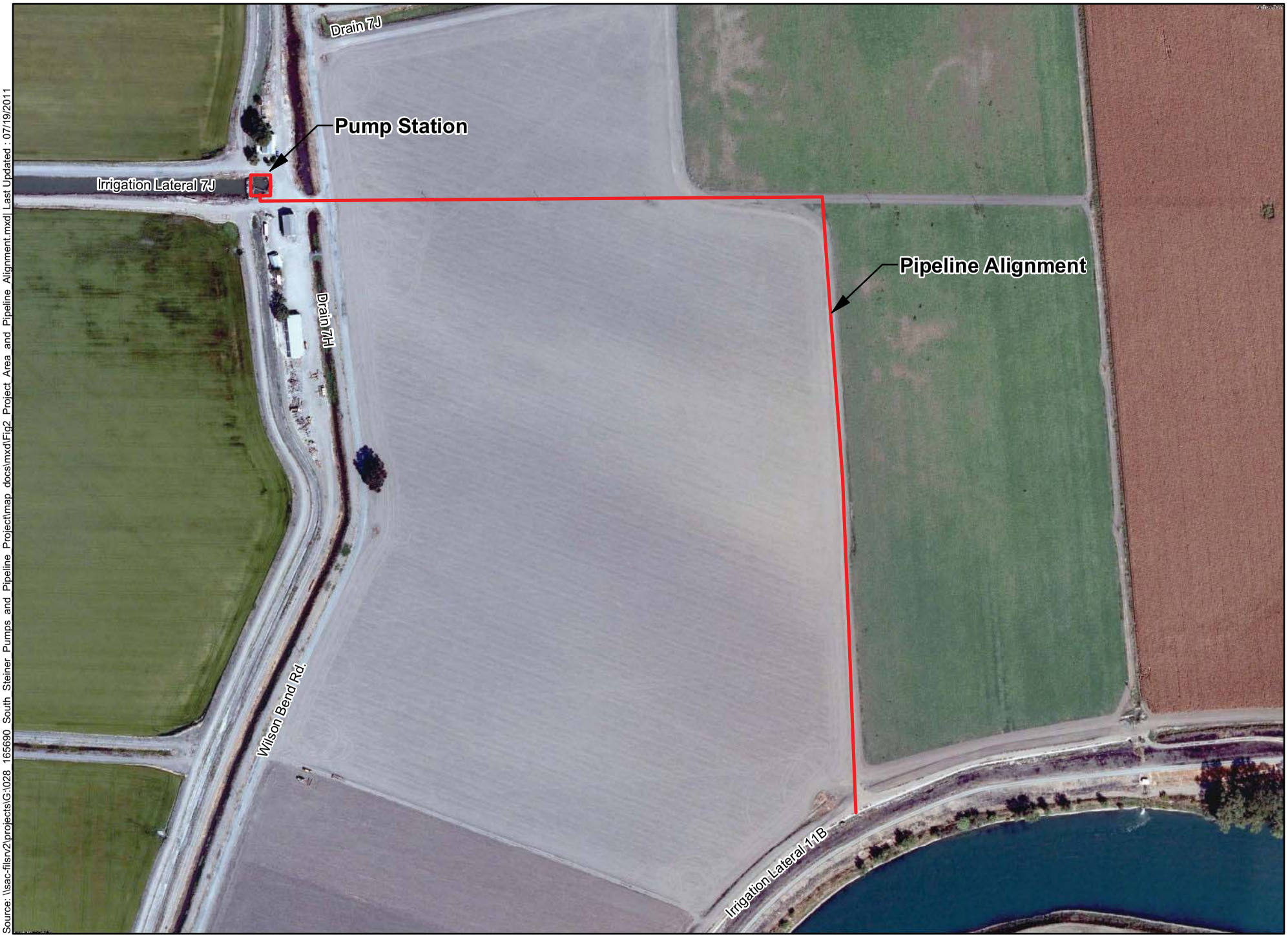
South Steiner Pumps and Pipeline Project

Reclamation is providing partial funding for the Proposed Action for purposes of eliminating fish entrainment at the existing unscreened intake at SSPP [consistent with CVPIA Section 3406 b(21)]. The Proposed Action would abandon the existing SSPP and provide new conveyance facilities to allow an existing fish screened intake at Wilkins Slough Pumping Plant to provide water to the area currently served by the SSPP. Although installing a fish screen at the existing SSPP was considered, it was determined to be infeasible because the existing SSPP is subject to significant sedimentation that would impede the operations and maintenance of a fish screen at this location.

Following is a discussion of the Proposed Action features and construction details including pump installation, pipeline alignment, staging and disposal sites, construction equipment and personnel, access routes, schedule, restoration and cleanup, and operation and maintenance.

Pump Installation - The proposed pump station would be constructed adjacent to existing farm pumps at the east end of Irrigation Lateral 7J Canal adjacent to Wilson Bend Road (Figure 2). Two pumps would be housed within a four-post steel framed structure. One pump would serve surface irrigation while the other would be used for drip irrigation. The pumps would be located adjacent to existing PG&E facilities, thus eliminating the need for trenching for electrical power. Figure 3 shows a schematic of the proposed pump station.

The water supply for the pumps would come directly from the east end of the Irrigation Lateral 7J Canal. RD 108 dewaters Irrigation Lateral 7J in mid- to late September for normal operations and maintenance and intends to place the pump sumps in Irrigation Lateral 7J during this time. Once the Canal is dewatered, the Contractor would use an excavator to remove one to two feet of sediment from the bottom of the Canal to match the bottom elevation of the existing pumps and to make sure the pumps are deep enough to prevent cavitation. The Contractor would then use a crane and a pile driving hammer to drive four steel piles, one for each corner of the steel framed structure. A pre-fabricated steel platform would then be attached to the four piles along with a walkway to the structure from the bank. The pumps would be placed on the steel platform and would each feed into an underground 21-inch PVC pipeline that would head directly east. The pipeline alignment would cross RD 108's Drain 7H in the existing road pad, thus avoiding disturbance of the drainage canal. The pipeline alignment would then connect to an existing pipeline under Wilson Bend Road.



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N

0 50 100 200 300 400 500
Feet

1 In = 300 feet

Figure 2 - Project Area and Pipeline Alignment

South Steiner Pumps and Pipeline Project

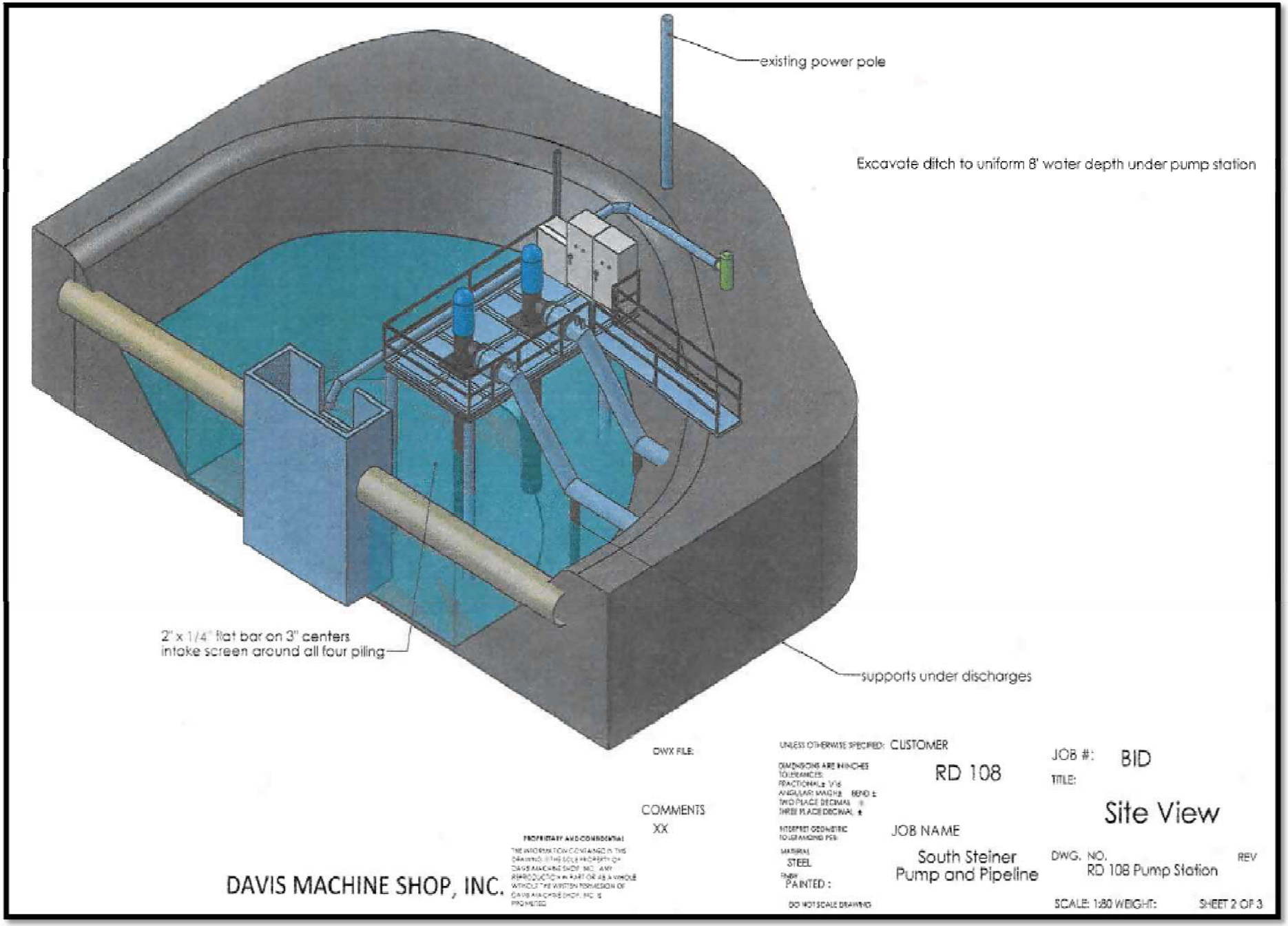

Figure 3 – Proposed Pump Station Schematic

Pipeline Alignment - The Proposed Action would include the installation of new dual 21-inch PVC pipelines that would extend for approximately 2,830 feet (5,660 feet of total pipe), from Wilson Bend Road through a farm field to RD 108's concrete lined Irrigation Lateral 11B Canal (Figure 2). The proposed pipeline alignment would head directly east at a depth of five feet along the north side of the PG&E power pole line, making a 90 degree turn to the south rising to an elevation of three feet under the road pad until intersecting with Irrigation Lateral 11B, where a small discharge box would be installed to dissipate discharge water energy and avoid splashing.

For installation of the discharge box, the concrete lining in Irrigation Lateral 11B would be saw cut and a section approximately six to eight feet wide would be removed. The new discharge box would be placed in this gap in a liner and then a concrete patch would be used to cover the exposed dirt between the cut liner and the new discharge box.

The pipeline would have a minimum cover of five feet under the actively farmed area to avoid damage from farm operations. With a pipe diameter of 21 inches (24 inches including pipe bell end), the total trench depth would be seven feet. The top two feet of soil material would be removed with a scraper and then a rectangular trench would be constructed 24 inches wide by five feet deep for each pipeline. The existing field is currently farmed to row crops (tomatoes in 2010 and 2011) and includes a drip irrigation system. RD 108 would coordinate with the existing landowner to remove and replace approximately 100 rows of the drip tape as part of construction of the proposed project. The proposed dual 21-inch PVC pipeline would provide a high degree of flexibility to deliver water at a higher pressure for the existing drip systems.

Staging and Disposal Sites - The staging area for equipment would be located adjacent to the farmed field on the east side of Wilson Bend Road. Temporary equipment staging would also occur along the proposed pipeline alignment. Old concrete from Irrigation Lateral 11B would be disposed at an approved waste site authorized to accept concrete waste.

Construction Equipment and Personnel - It is anticipated that an excavator, crane, pile driving hammer, trencher, scraper, rubber wheeled tractor, backhoe, small front-end loader, and a water truck would be used during construction. An estimated three to five workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and would park their vehicles in the staging area. Construction hours would be limited daily from 6:00 a.m. to 6:00 p.m. Monday through Saturday.

Access Routes - Access routes to and from the project area would include Interstate 5, Grimes-Arbuckle Road, Tule Road, County Highway 45, and Wilson Bend Road.

Schedule - Construction of the proposed project would take place in the fall of 2011 (after crops are harvested and Lateral 7J is dewatered; anticipated to be around the end of September) and would last approximately four weeks.

Restoration and Cleanup - Once construction activities are completed, all equipment and excess materials would be transported offsite via the above described access routes. The portions of the irrigation canals that would be disturbed would be restored to pre-project conditions. The staging area would be cleaned of all construction debris and also restored to pre-project conditions.

Operation and Maintenance - Operation and maintenance procedures would be consistent with the procedures already in place and used by RD 108.

Chapter 3 Environmental Baseline

Surveys over the last two decades have located GGS as far north as the Butte Basin in the Sacramento Valley (USFWS 1997). The USFWS recognizes 13 separate populations of GGS, with each population representing a cluster of discrete locality records which largely coincide with historical riverine flood basins and tributary streams throughout the Central Valley (Hansen 1980, Brode and Hansen 1992 as referenced in USFWS 1997). These populations are: (1) Butte Basin, (2) Colusa Basin, (3) Sutter Basin, (4) American Basin, (5) Yolo Basin-Willow Slough, (6) Yolo Basin-Liberty Farms, (7) Sacramento Basin, (8) Badger Creek-Willow Creek, (9) Caldoni Marsh, (10) East Stockton-Diverting Canal and Duck Creek, (11) North and South Grasslands, (12) Mendota, and (13) Burrel/Lanare. These populations span the Central Valley from just southwest of Fresno (i.e., Burrell-Lanare) north to Chico (i.e., Hamilton Slough). The 11 counties where GGS is still presumed to occur are: Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo. Since April 1995, the National Biological Survey (NBS; now known as the Biological Resources Division (BRD) of USGS) has further documented occurrences of GGS within some of the 13 populations identified in the final rule (58 FR 54053, October 1993). The BRD has studied populations of GGS at the Sacramento and Colusa National Wildlife Refuges (NWRs) within the Colusa Basin, at Gilsizer Slough within the Sutter Basin, and at the Badger Creek area of the Cosumnes River Preserve within the Badger Creek-Willow Creek area. These populations, along with the American Basin population of GGS represent the largest extant populations. With the exception of the American Basin, these populations are largely protected from many of the threats to the species. Outside of these protected areas, GGS in these population clusters are still subject to all threats identified in the final rule. The remaining nine population clusters identified in the final rule are distributed discontinuously in small isolated patches and are vulnerable to extirpation by stochastic environmental, demographic, and genetic processes. All 13 population clusters are isolated from each other with no protected dispersal corridors. Opportunities for recolonization of small populations which may become extirpated is unlikely given the isolation from larger populations and lack of dispersal corridors between them. (USFWS 1997)

3.1 Potentially Affected Listed Species and Associated Critical Habitats

The Proposed Action may affect, is not likely to adversely affect the following species which is further addressed in this document:

- Giant Garter Snake (*Thamnophis gigas*)

3.1.1 Current Status

According to the USFWS Draft Recovery Plan for the Giant Garter Snake (1999), GGS inhabits wetland habitats within the Central Valley of California. Loss and fragmentation of wetland habitats have extirpated the GGS from the majority of its historic range. The USFWS listed GGS as threatened on October 20, 1993 (Federal Register 58:54053). No critical habitat has been designated for GGS.

3.1.2 Habitat Requirements and Limiting Factors

GGS inhabits agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley. Essential habitat components consist of: (1) adequate water during the snake's active season (early spring through mid-fall) to provide adequate permanent water to maintain dense populations of food organisms; (2) emergent, herbaceous wetland vegetation, such as cattails (*Typha* spp.) and bulrushes (*Scirpus* spp.), for escape cover and foraging habitat during the active season; (3) upland habitat with grassy banks and openings in waterside vegetation for basking; and (4) higher elevation upland habitats for cover and refuge from flood waters during the snake's inactive season in the winter (G. Hansen 1980, G. Hansen 1988, Brode and Hansen 1992, Hansen and Brode 1993 referenced in U.S. Fish and Wildlife Service 1999).

GGS bask in bulrush, cattails, shrubs overhanging the water, patches of waterweed (*Ludwigia peploides*) and other floating vegetation, and on grassy banks. In the San Joaquin Valley, GGS have also been observed basking in saltbush (*Atriplex* spp.) (Van Denburgh and Slevin 1918, Brode 1988 referenced in U.S. Fish and Wildlife Service 1999). Riparian vegetation such as saltbush and willows (*Salix* spp.) provide cover from predation. GGS also bask in openings in vegetation, created by riprap placed around water control structures. GGS use small mammal burrows, typically with sunny exposures along south and west facing slopes, and other soil crevices above prevailing flood elevations during winter (November to mid-March) (G. Hansen 1993 referenced in U.S. Fish and Wildlife Service 1999). Small mammal burrows, crayfish burrows, and soil crevices provide retreats from extreme heat for GGS during the active season (Hansen and Brode 1993 referenced in U.S. Fish and Wildlife Service 1999). Wintering sites varied from canal banks and marsh locations, to riprap along a railroad grade near the marsh (Wylie et al. 1997 referenced in U.S. Fish and Wildlife Service 1999). Wintering locations of radio-telemetered snakes tended to be in the vicinity of spring capture sites. GGS use burrows in the summer as much as 50 meters (164 feet) away from the marsh edge, whereas, overwintering snakes use burrows as far as 250 meters (820 feet) from the edge of marsh habitat (Wylie et al. 1997 referenced in U.S. Fish and Wildlife Service 1999).

The width of uplands used by GGS varies considerably. Many summer basking and refuge areas used by GGS are immediately adjacent to canals and other aquatic habitats and may even be located in the upper canal banks. USFWS has considered 200 feet as the width of upland vegetation providing habitat along the borders of aquatic habitat for GGS (USFWS 2006 referenced in Reclamation 2009). GGS also seek refuge in upland burrows during hot summer weather and have been documented up to 164 feet from aquatic habitat during this time. In a dynamic habitat, GGS frequently move in response to changing conditions in their rice, marsh, canal and ditch habitats, especially during the dry summer months. Connectivity between GGS home range size has been estimated from multiple studies conducted at Colusa NWR, and movement patterns have been described from studies within the Natomas and Colusa Basins. Home range size at Colusa NWR was reported to be as large as 2,792 acres in 1997 (Wylie et al. 1997 referenced in Reclamation 2009) and 427 acres in 2001 (Wylie et al. 2002 referenced in Reclamation 2009). The Draft Recovery Plan for GGS reports home range sizes as large as 642 acres at Gilsizer Slough and 202 acres at Badger Creek (USFWS 1999). Home range size is likely inversely correlated with habitat quality; such that smaller home range sizes occur in areas with the highest quality habitat. Recent work by Wylie and Hansen suggest that as long as conditions are optimal, snakes will stay close to where they over-winter and larger home range sizes are typically in response to adverse conditions.

GGS can move relatively long distances. Wylie et al. 1997 documented snakes moving up to 4.8 miles over a few days in response to de-watering at Colusa NWR. In the Natomas Basin, snakes routinely moved over a half mile and distances of over a mile were recorded on more than one occasion (Wylie and Casazza 2000 referenced in Reclamation 2009). A Colusa Basin study recorded the longest average movement distances of 0.62 miles, with the longest being 1.7 miles, for sixteen snakes in 2006, and an average of 0.32 miles, with the longest being 0.6 miles, for eight snakes in 2007 (Wylie and Amarello 2008 referenced in Reclamation 2009).

Because of the direct loss of natural habitat, GGS relies heavily on rice fields in the Sacramento Valley, but also uses managed marsh areas in Federal National Wildlife Refuges and State Wildlife Areas. There have been only a few recent sightings of GGS in the San Joaquin Valley. Habitat loss and fragmentation, flood control activities, changes in agricultural and land management practices, predation from introduced species, parasites, water pollution, and continuing threats are the main causes for the decline of this species.

It has been suggested that selenium contamination and impaired water quality may be contributing factors in the decline of GGS (USFWS 1993 and USFWS 1999 as referenced in Hansen 2007). However, reptile toxicology information is lacking and no studies have been conducted that specifically examine toxicology in GGS (Hansen 2007). Research on species occupying a similar ecological niche as GGS (eastern water snakes) shows that bioaccumulation of trace elements, pesticides and other contaminants does occur in snakes and can result in adverse biological effects (Hansen 2007). While the effects of contaminants such as selenium on reptiles is not fully understood, toxicity thresholds are anticipated to be similar for reptiles, fish and birds, particularly for GGS which feeds exclusively on aquatic prey (USFWS 1993 and USFWS 1999 as referenced in Hansen 2007).

3.1.3 Status of Giant Garter Snake in Action Area

Rice fields represent a large area in Sutter and Butte Counties. Rice fields have become important habitat for GGS since the species' biological needs appear to coincide with the cycle of rice production. GGS are attracted to rice fields in the spring because the fields are flooded and provide an ample source of prey (amphibians and small fish) (USFWS 1999). About the time the fields are drained and harvested (September), GGS move to adjacent wetland habitats, ditches or canals where there is greater abundance of prey. Generally by late October/early November, GGS retreat into rodent burrows or sometimes riprap to hibernate through winter (USFWS 1999).

Marginal dispersal and foraging habitat for GGS occurs in Lateral 7J, where the pump station is proposed. Lateral 7J is approximately 50 feet wide from bank to bank and contains sufficient water and prey for GGS, but cover is scarce in the location of the proposed pump station. A narrow linear strip of bulrush is growing along the south bank of Lateral 7J, extending to within approximately 30 feet west of the location of the proposed pump station. Some floating aquatic vegetation, consisting primarily of water primrose, also occurs in small patches along the north bank and scattered throughout Lateral 7J. North of the proposed pipeline location, Drain 7H also provides suitable dispersal and foraging habitat for GGS with sufficient water and prey. Drain 7H is approximately 25 feet wide and has cover for GGS in the form of a narrow band of emergent vegetation on both sides consisting of bulrush and cattail as well as patches of floating aquatic vegetation (mostly water primrose). Approximately 100 feet south of the proposed pipeline location, Drain 7H tapers to a narrow (6 to 8 feet wide), shallow, agricultural ditch and is less suitable habitat for GGS.

Chapter 4 Effects of the Proposed Action

4.1 Direct Effects Analysis for Giant Garter Snake

GGS is unlikely to reside for long periods of time, if at all, in the segment of Lateral 7J and Drain 7H in the project area due to the presence of more suitable habitat in the irrigation canals further from human disturbance; however, GGS could potentially disperse through the project area or use the project area for foraging or basking. In addition, the banks of Lateral 7J and Drain 7H could provide marginal basking habitat and refugia for GGS.

If GGS were present in the project site during construction, they could potentially be harmed as a result of direct contact with construction equipment or personnel. In addition, GGS could potentially be harmed as a result of increased site disturbance during site preparation and construction activities within Lateral 7J and the immediate vicinity. The pump station itself would result in minimal impacts to potential GGS habitat. However, the magnitude of this impact would be further reduced because the new pump station would be situated in an area of significant human disturbance between existing pumps and the east end of the lateral.

Placement of the pump station is not expected to result in a measurable reduction of habitat quality within Lateral 7J. The pump station is not expected to appreciably reduce the amount of available habitat for GGS in Lateral 7J, hinder the movement of GGS through the project site, or appreciably affect the amount of available prey, cover, or basking. Construction of the pump station would result in temporary impacts to marginal upland habitat for GGS in the bed and banks of Lateral 7J and an adjacent dirt roadway, but temporary impacts to potential aquatic habitat for GGS would be avoided by constructing during the period when Lateral 7J is normally dewatered. RD 108 dewaters Irrigation Lateral 7J in mid-September for normal operations and maintenance and intends to place the pump station in Irrigation Lateral 7J during this time.

The Proposed Action is not anticipated to adversely affect GGS. Effects on GGS from construction activities are unlikely to occur and, are thus, discountable. The Proposed Action area could be used as a migratory corridor though unlikely; however, GGS would not be migrating through the area during the time of construction and the Action area would be restored to pre-project conditions and therefore no indirect effects would occur as a result of the Proposed Action.

4.2 Interrelated and Interdependent Effects on Giant Garter Snake

There are no interrelated or interdependent actions associated with the Proposed Action.

4.3 Measures to Avoid Take of Special-status Species

Although no effects to GGS are anticipated as a result of the Proposed Action, Standard Avoidance and Minimization Measures for GGS would be implemented during construction (see below). By implementing these measures, take of these special-status species would be further reduced or eliminated. Since GGS habitat is not being directly impacted, there are no mitigation or conservation measures, or compensation/set-asides proposed.

- Confine movement of heavy equipment to existing roadways to minimize habitat disturbance.
- Confine clearing to the minimal area necessary to facilitate construction activities. Flag and designate avoided GGS habitat within or adjacent to the project area as Environmentally Sensitive Areas. This area should be avoided by all construction personnel.
- Construction personnel should receive a USFWS-approved worker environmental awareness training. This training instructs workers to recognize GGS and its habitat(s).
- The project area should be surveyed for GGS 24 hours before construction activities. Survey of the project area should be repeated if a lapse in construction activity for two weeks or greater 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 will not be harmed. Report any sightings and any incidental take to the USFWS immediately by telephone at (916) 414-6600.
- After completion of construction activities, remove any temporary fill and construction debris, and wherever feasible, restore disturbed areas to pre-project conditions. Restoration work may include replanting species removed from banks or with emergent vegetation in the active channel.
- In the event that take cannot be avoided, contact the USFWS for information before starting the action.

4.4 Restrictions/Avoidance Areas

During placement of the pump and pipeline, best management practices would be followed to ensure that this project is completed with minimal environmental impacts:

- Disturbance of vegetation shall be kept to a minimum.
- No equipment shall be operated in stream channels.
- No intentional harassment, killing, or collection of plants or animals at or around the work sites.
- No firearms are allowed on site, except for those used by peace officers or CDFG wardens.
- No pets allowed.
- All persons must stay within the boundaries of the work sites, which consist of the top of the levees, walkways, public and private roadways and waters, and water-side levee slopes.
- No off-road travel or work is permitted; all vehicles must be confined to existing roads.
- All trash, including food-related trash and cigarette butts, must be properly disposed of and removed.
- Storage of hazardous materials, such as fuel, oil, etc. shall not be allowed within 150 feet of waterways. Any chemical spills must be cleaned up immediately and reported as soon as possible.

4.5 Determination of Effects

Based on information presented within this BA and on discussions with USFWS, Reclamation has determined that the Proposed Action is not likely to adversely affect GGS.

Chapter 5 References

Federal Register 58:54053. October 20, 1993. Listing of Giant Garter Snake as Threatened. http://ecos.fws.gov/docs/federal_register/fr2446.pdf

Hansen, E.C. 2007. Implementation of Priority 1 Recovery Tasks for the Giant Garter Snake (*Thamnophis gigas*) in Merced County, California. Report prepared for the U.S. Fish and Wildlife Service pursuant to FWS Agreement No. 802706G120, April 15, 2007.

U.S. Bureau of Reclamation. 2009. Drought Water Bank Biological Assessment.

U.S. Fish and Wildlife Service. 1999. Draft Recovery Plan for the giant Garter Snake (*Thamnopsis gigas*). USFWS, Portland, Oregon. ix+ 192 pp.

_____. 1997. Programmatic Formal Consultation for U.S. Army Corps of Engineers 404 Permitted Projects with Relatively Small Effects on the Giant Garter Snake within Butte, Colusa, Glenn, Fresno, Merced, Sacramento, San Joaquin, Solano, Stanislaus, Sutter and Yolo Counties, California. November 13, 1997.

APPENDIX A
USFWS SPECIES LIST AND CNDDB RECORDED OCCURRENCES

Sacrar

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

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

Document Number: 110802095637

Database Last Updated: April 29, 2010

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Candidate Species

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Quads Containing Listed, Proposed or Candidate Species:

KIRKVILLE (530A)
TISDALE WEIR (545D)

County Lists

Kirkville & Tisdale weir quads RD 108 SD. Steiner

Selected Elements by Scientific Name

California Department of Fish and Game

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFG SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S2	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T4	S2	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S2	
Charadrius montanus mountain plover	ABNNB03100	Proposed Threatened	None	G2	S2?	SSC
Great Valley Mixed Riparian Forest Great Valley Mixed Riparian Forest	CTT61420CA	None	None	G2	S2.2	
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G4	S2.2	2.2
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2S3	
hamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3	
Trichocoronis wrightii var. wrightii Wright's trichocoronis	PDAST9F031	None	None	G4T3	S1.1	2.1

Record Count: 11

APPENDIX B
PHOTOGRAPHS OF PROPOSED PROJECT AREA

Looking across Drain 7H towards where pipeline would be placed (Sacramento River is where large trees in background are). Photo taken from gravel driveway/parking area of landowner's home. Drain 7H not being affected by Proposed Action (pipeline will connect from Lateral 7J (out of photo, to right) across driveway and Wilson Bend Road to ag field.

RD108 Lateral 7J where pump station being installed and pipeline would tie into. Photo taken from gravel driveway/parking area of landowner's home.

RD108 South Steiner Pumps & Pipeline Project Photos (April 2011)

Ag field where pipeline would cross diagonally from concrete box in right side of picture to upper right of photo – Photo taken from top of levee

United States Department of the Interior

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

In reply refer to:
81420-2011-I-0835-1

OCT 26 2011

Memorandum

To: Regional Resources Manager, Mid-Pacific Regional Office,
U.S. Bureau of Reclamation, Sacramento, California

Daniel Russell

From: Deputy Assistant Field Supervisor, Endangered Species Division,
Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Informal Endangered Species Section 7 Consultation for the South Steiner Pump and Pipeline Project, Colusa County, California

This is in response to your August 16, 2011, letter and supporting documentation requesting informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed South Steiner Pump and Pipeline Project (proposed project) for potential effects to the federally-threatened giant garter snake (*Thamnophis gigas*) (snake). Your request was received by the Service on August 16, 2011. You determined that the proposed project may affect but is not likely to adversely affect the snake. Our primary concern and mandate is the protection of federally-listed species pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

We have reviewed the proposed project, including: (1) the August 2011, *RD108 South Steiner Pump and Pipeline Project, Biological Assessment*; (2) the August 16, 2011, initiation letter from the U.S. Bureau of Reclamation (BOR); (3) the December 15, 2010, meeting with representatives of the Service and BOR; (4) electronic mail correspondence between representatives of the Service and BOR; and (5) other information available to the Service.

The proposed project is located approximately midway between Interstate 5 and State Route 99 corridors, between Wilson Bend Road and the Sacramento River in Colusa County, California. The proposed project includes the construction of a 2,830 foot pipeline and related facilities to redirect irrigation water pumped from the Wilkins Slough Pumping Plant and Fish Screen Facility to fields previously served by the South Steiner Pumping Plant (SSPP). The SSPP, built in 1956, will only continue to operate until this project is complete. The SSPP is located on the west side of the Sacramento River and connects to the Reclamation District (RD) 108 Irrigation Lateral 11B Canal. The SSPP would redirect irrigation water pumped from its Irrigation Lateral

7J Canal through a pump and pipeline system to Irrigation Lateral 11B. Irrigation Lateral 7J receives water via Wilkins Slough Pumping Plant and Fish Screen Facility, which diverts water from the Sacramento River approximately 3.5 miles upstream of the SSPP.

Pump Installation - The proposed pump station would be constructed adjacent to existing farm pumps at the east end of Irrigation Lateral 7J Canal adjacent to Wilson Bend Road. Two pumps would be housed within a four-post steel framed structure. One pump would serve surface irrigation while the other would be used for drip irrigation. The pumps would be located adjacent to existing PG&E facilities, thus eliminating the need to trench for electrical power.

The water supply for the pumps would come directly from the east end of the Irrigation Lateral 7J Canal. The RD 108 dewaters Irrigation Lateral 7J Canal in mid to late September for normal operations and maintenance and intends to place the pump sumps in Irrigation Lateral 7J during this time. Once the canal is dewatered, the contractor would use an excavator to remove one to two feet of sediment from the bottom of the canal to match the bottom elevation of the existing pumps and to make sure the pumps are deep enough to prevent cavitation. The contractor would then use a crane and a pile driving hammer to drive four steel piles, one for each corner of the steel framed structure. A pre-fabricated steel platform would then be attached to the four piles along with a walkway to the structure from the bank of the canal. The pumps would be placed on the steel platform and would each feed into an underground 21 inch PVC pipeline that would head directly east. The pipeline alignment would cross RD 108's Drain 7H in the existing road pad, thus avoiding disturbance of the drainage canal. The pipeline alignment would then connect to an existing pipeline under Wilson Bend Road.

Pipeline Alignment - The proposed project would include the installation of new dual 21-inch PVC pipelines that would extend for approximately 2,830 feet (5,660 feet of total pipe), from Wilson Bend Road through a farm field to RD 108's concrete lined Irrigation Lateral 11B Canal. The proposed pipeline alignment would head directly east at a depth of five feet along the north side of the PG&E power pole line, making a 90 degree turn to the south rising to an elevation of three feet under the road pad until intersecting with Irrigation Lateral 11B, where a small discharge box would be installed to dissipate discharge water velocity and avoid splashing.

For installation of the discharge box, the concrete lining in Irrigation Lateral 11B would be saw cut and a section approximately six to eight feet wide would be removed. The new discharge box would be placed in this gap in a liner and then a concrete patch would be used to cover the exposed dirt between the cut liner and the new discharge box.

The pipeline would have a minimum cover of five feet under the actively farmed area to avoid damage from farm operations. With a pipe diameter of 21 inches (24 inches including the pipe bell end), the total trench depth would be seven feet. The top two feet of soil material would be removed with a scraper and then a rectangular trench would be constructed 24 inches wide by five feet deep for each pipeline. The existing field is currently farmed with row crops (tomatoes in 2010 and 2011) and includes a drip irrigation system. The RD 108 would coordinate with the existing landowner to remove and replace approximately 100 rows of the drip tape as part of

construction of the proposed project. The proposed dual 21-inch PVC pipeline would provide a high degree of flexibility to deliver water at a higher pressure for the existing drip systems.

Staging and Disposal Sites - The staging area for equipment would be located adjacent to the farmed field on the east side of Wilson Bend Road. Temporary equipment staging would also occur along the proposed pipeline alignment. Old concrete from Irrigation Lateral 11B would be disposed at an approved waste site authorized to accept concrete waste.

Construction Equipment and Personnel - It is anticipated that an excavator, crane, pile driving hammer, trencher, scraper, rubber wheeled tractor, backhoe, small front-end loader, and a water truck would be used during construction. An estimated three to five workers would be onsite each day during construction. These workers would access the area via regional and local roadways, and would park their vehicles in the staging area. Construction hours would be limited daily from 6:00 a.m. to 6:00 p.m. Monday through Saturday.

Access Routes - Access routes to and from the project area would include Interstate 5, Grimes-Arbuckle Road, Tule Road, County Highway 45, and Wilson Bend Road.

Schedule - Construction of the proposed project would take place in the fall of 2011 (after crops are harvested and Lateral 7J Canal is dewatered; anticipated to be mid to late September) and would last approximately four weeks.

Restoration and Cleanup - Once construction activities are completed, all equipment and excess materials would be transported offsite via the above described access routes. The portions of the irrigation canals that would be disturbed would be restored to pre-project conditions. The staging area would be cleaned of all construction debris and also restored to pre-project conditions.

The Service concurs with your determination that the proposed action may affect but is not likely to adversely affect the snake. The Lateral 7J Canal likely provides suitable aquatic habitat for the snake; however, the upland area surrounding the action area is heavily disturbed and does not provide suitable upland habitat for the snake. The installation of the pipeline is proposed to go through an existing tomato crop, which does not provide suitable upland habitat. Therefore, it is unlikely that the snake would be in the action area during construction for both the installation of the pump and the pipeline because the areas impacted by the proposed action are not suitable upland habitat for the snake.

This concludes the Service's review of the proposed South Steiner Pump and Pipeline project. No further action pursuant to the Act is necessary unless the proposed project description or action area changes to the extent that a federally-listed species could be adversely affected. If adverse effects occur, our not likely to adversely affect concurrence is no longer valid and the BOR will be required to initiate formal consultation with the Service under the Act.

If you have any questions regarding the proposed South Steiner Pump and Pipeline project, please contact Jason Hanni, Fish and Wildlife Biologist, or Kellie Berry, Chief, Sacramento Valley Division at (916) 414-6645.

APPENDIX C

SHPO CONSULTATION

United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

IN REPLY REFER TO:
MP-153
ENV-3.00

SEP 23 2011

CERTIFIED - RETURN RECEIPT REQUESTED

Mr. Milford Wayne Donaldson
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, California 95816

Subject: National Historic Preservation Act (NHPA) Section 106 Compliance for the Reclamation District 108 (RD 108) South Steiner Pumps and Pipeline Project, Colusa County, California (Project No. 11-NCAO-124)

Dear Mr. Donaldson:

The Bureau of Reclamation is initiating consultation under Section 106 of the NHPA and is seeking your concurrence with a finding of no adverse effect to historic properties for an irrigation pump and pipeline installation project within RD 108, which is located on the west side of the Sacramento River in southern Colusa County, California (see Figure 1 in the enclosed report). This project will be paid for in part through Reclamation grant funding associated with the Anadromous Fish Screen Program via the Family Water Alliance Small Screen Program. The use of Federal funds for this project constitutes an undertaking as defined in Section 301(7) of the NHPA (16 U.S.C. 470), as amended. Reclamation is consulting with you concerning this undertaking pursuant to the regulations at 36 CFR Part 800 that implement Section 106 of the NHPA.

The purpose of the proposed project is to facilitate the movement of water from the Wilkins Slough Pumping Plant and Fish Screen Facility through the existing Irrigation Lateral 7J Canal (Lateral 7J) to the existing Irrigation Lateral 11B Canal (Lateral 11B) for delivery to local agriculture fields. The project is necessary because the South Steiner Pumping Plant (SSPP), the facility that previously pumped water into Lateral 11B, is slated to be abandoned in place by RD 108 due to ongoing siltation problems produced by upstream bank erosion in the Sacramento River. The project will involve the placement of two pumps within the east end of Lateral 7J and the installation of a 2,830-foot long, 21-inch diameter dual PVC pipeline from the new pumps in Lateral 7J to a new discharge box located where the new pipeline will intersect with Lateral 11B. Between Lateral 7J and Lateral 11B the pipeline will cross agriculture fields, buried in a 24-inch wide trench excavated to a depth of up to 7.0 feet. The trench will be backfilled with removed spoils following pipeline installation. Other than disabling the existing pumping system within the SSPP, no physical changes are slated to occur to that facility.

The project is located in sec. 11 and 12, T.13 N., R.1 E., Mount Diablo Meridian, as depicted on the Kirkville U.S. Geological Survey topographic quadrangle (Figure 1 in enclosed). Reclamation has determined that the area of potential effects (APE) for this undertaking consists of the portions of the Lateral 7J and Lateral 11B prisms where the pumps and discharge box will be installed plus the entire pipeline alignment between those two water conveyance features. The APE also includes a 25-foot-wide buffer zone extending from either side of the pipeline centerline and other activity areas within which all staging and construction will occur. The APE amounts to approximately 3.8 acres in total (see Figure 4 in enclosed report).

Pursuant to 36 CFR Part 800.3(f)(2) and 36 CFR Part 800.4(a)(4), Reclamation contacted the Colusa Indian Community, Cortina Band of Indians, Enterprise Rancheria, Paskenta Band of Nomlaki Indians, and Yocha Dehe Wintun Nation via correspondence dated July 26, 2011, requesting their assistance in the identification of properties of religious and cultural significance in the project area. In correspondence dated August 16, 2011, the Yocha Dehe Wintun Nation responded to Reclamation's request, indicating they would not be submitting comments and that the project area is specific to the Cachil Band of Wintun Indians, otherwise known as the Colusa Indian Community. To date, no other tribal responses have been received by Reclamation.

Other efforts to identify historic properties within the APE were conducted by HDR, a private consulting firm hired by RD 108 to coordinate the environmental and cultural resources compliance for the project. These efforts included doing background research, conducting a records search, contacting the California Native American Heritage Commission (NAHC), and performing a pedestrian survey of the APE. The results of these efforts are presented in the enclosed report titled *Cultural Resources Survey for the South Steiner Pumps and Pipeline Project, Colusa County, California* (Tilton 2011).

Briefly, no prehistoric cultural materials, archaeological sites, or Native American Sacred Lands were identified during the records search or the pedestrian survey of the APE or through the information provided to HDR by the NAHC. HDR identifies the possibility of subsurface cultural deposits within the APE as very low due to extensive disturbances, including repeated flooding, of this landform. In the unlikely event that previously unknown cultural resources are encountered during project implementation, RD 108 and Reclamation will follow the post-review discoveries process as outlined at 36 CFR § 800.13.

Two historic-era water conveyance features were identified through HDR's background research and pedestrian survey. These are Lateral 7J and Lateral 11B, which are both components of the RD 108 irrigation water distribution system. Lateral 7J was constructed in the 1920s or 1930s as a component of the Wilkins Slough system. Lateral 11B, which is a component of RD 108's South Steiner irrigation system, was constructed sometime around 1956 to convey water for irrigation from the SSPP, which was moved to its current location at that time. Both cultural resources were formally recorded by HDR using DPR 523 forms (Appendix D in Tilton 2011). The limited nature and scope of the project precludes a comprehensive eligibility evaluation of Lateral 7J and Lateral 11B. However, for the purposes of the present undertaking, and based on the available information related to their age, purpose, and history of use (see discussions in Tilton 2011), Reclamation is assuming National Register of Historic Places (NRHP) eligibility

(under Criteria A) for the both Lateral 7J and Lateral 11B, on the local level, for their association with the development of irrigation and agriculture in Colusa County and the Sacramento Valley. Installation of the pumps at Lateral 7J and the discharge box at Lateral 11B are compatible with the historic and current usage of these features and will not adversely affect any of the characteristics that would make them eligible for listing on the NRHP.

Based on the above information, Reclamation has determined that the proposed undertaking will result in no adverse effect to historic properties pursuant to 36 CFR Part 800.5(b). Reclamation invites your comments on our delineation of the APE and our assumption of NRHP eligibility for Lateral 7J and Lateral 11B. We also request your concurrence with our finding of no adverse effect to historic properties. If you have any questions or concerns regarding this undertaking, please contact Ms. Joanne Goodsell, Archaeologist, at 916-978-5499 or jgoodsell@usbr.gov. Thank you for your consideration.

Sincerely,

Anastasia T. Leigh
Acting Regional Environmental Officer

Enclosure

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
1725 23rd Street, Suite 100
SACRAMENTO, CA 95816-7100
(916) 445-7000 Fax: (916) 445-7053
calshpo@parks.ca.gov
www.ohp.parks.ca.gov

October 04, 2011

Reply in Reference To: **BUR1109026A**

Anastasia Leigh - Acting Regional Environmental Officer
United States Department of the Interior
Bureau of Reclamation, Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825-1898

Re: Section 106 Compliance for the *Reclamation District 108 (RD 108) South Steiner Pumps and Pipeline Project, Colusa County, California* (Project No. 11-NCAO-124)

Dear Ms. Leigh:

Thank you for consulting pursuant to 36 CFR Part 800 (as amended 8-05-04) regulations implementing Section 106 of the National Historic Preservation Act (NHPA). As lead Federal agency for the above cited Undertaking, the Bureau of Reclamation (BUR) is seeking concurrence on (1) the delineation of the Area of Potential Effect (APE); (2) the assumption of NRHP eligibility for Lateral 7J and Lateral 11B, and (3) a finding of "*No Adverse Effect*" pursuant to 36 CFR Part 800.5(b).

The BUR is providing partial funding to the *South Steiner Pumps and Pipeline Project* to facilitate the transfer of water from the Wilkens Slough Pumping Plant and Fish Screen Facility through the existing Lateral 7J and Lateral 11B irrigation canals. Proposed work will consist of (1) installing two pumps on a pre-fabricated steel platform at the eastern terminus of the Lateral 7J canal, (2) installing a water discharge box in the Lateral 11B canal, and (3) digging a 24-in wide by 7-ft deep trench between the two locations for installing 2,830-ft of 21-in diameter PVC pipe. Encompassing approximately 3.8-acres in southern Colusa County, the Undertaking APE is described as the construction footprints of the water pumps, discharge box, and PVC pipe trench; with the latter augmented by a 50-ft wide buffer to accommodate project construction and staging.

Largely completed by HDR Engineering, Inc., resource identification work consisted of a Northwest Information Center (NWIC) search, Native American (NA) consultation, field-survey, and completion of DPR 523 site-records. Native American consultation involved HDR Engineering acquiring a sacred lands and list of 14 contacts from the Native American Heritage Commission (NAHC), and the BUR consulting with the *Colusa Indian Community*, *Cortina Band of Indians*, *Paskenta Band of Nomlaki Indians*, *Yocha Dehe Wintun Nation*, and the *Enterprise Rancheria*. With the exception of the latter group who was not included in the NAHC list; these parties appear to represent all but four of the contacts identified by the commission as evidenced by the attached list. The above work identified the following two cultural resource sites "within" the Undertaking APE:

- **HDR-LAT 7J (Lateral 7J)** - the site is a 1.5-mile long by 12-ft wide circa 1920s or 1930s earthen banked irrigation canal in which 50-ft are located "within" the far western margin of the Undertaking APE. The site is a functioning component of Reclamation District (RD) 108. The BUR is treating the canal as eligible under Criterion A for purposes of the current Undertaking only.

- **HDR-LAT 11B (Lateral 11B)** - the site is a 1.25-mile long circa 1950s concrete lined irrigation canal in which 50-ft are located "within" the far eastern margin of the Undertaking APE. The site is a functioning component of RD 108. As above, the BUR is treating the canal as eligible under Criterion A for purposes of the current Undertaking only.

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Based on a review of your letter report and cultural resources study titled *Cultural Resources Survey for the South Steiner Pumps and Pipeline Project, Colusa County, California* prepared by HDR Engineering, Inc., (2011); I have the following comments:

1. Pursuant to 36 CFR Parts 800.4(a)(1), I find the APE description inconsistent with Federal regulations as it did not include the area extant of the circa 1920s-1930s HDR-LAT 7J and the circa 1950s HDR-LAT 11B irrigation canals. Please be advised that whenever a Federal undertaking is implemented within the physical boundary of a historic property the Undertaking APE should include the property extant as well as any districts to which it contributes.

2. Pursuant to 36 CFR Part 800.4(b)(1), I find the *Level of Effort* completed for identifying historic properties in the Undertaking APE appropriate but with the following remark. Please be advised the BUR should consult with all parties identified on the NAHC contacts list prior to project implementation.

3. Given a full evaluation of the HDR-LAT 7J and HDR-LAT 11B irrigation canals are outside the scope of the current Undertaking, I have no objections to the BUR's assumption of eligibility under Criterion A for purposes of the current Undertaking only.

4. Based on the above comments, I concur with the finding of "*No Adverse Effect*, pursuant to 36 CFR Part 800.5(b), as proposed project work at the HDR-LAT 7J and HDR-LAT 11B sites is consistent with the use of a functioning water system.

5. Please be advised that under certain circumstances, such as an unanticipated discovery or a change in project description, the BUR may have additional future responsibilities for the Undertaking under 36 CFR Part 800.

Thank you for considering historic properties as part of your project planning. Please contact Jeff Brooke of my staff at (916) 445-7003 or jbrooke@parks.ca.gov if you have any questions or concerns regarding the above project review.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer