

RECLAMATION

Managing Water in the West

Sutter National Wildlife Refuge Lift Station Project

Final Environmental Assessment/ Initial Study (EA 17-26-MP)



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Section 1 Introduction

1.1 Background

The Sutter National Wildlife Refuge (SNWR) was established in 1944 and consists of approximately 2,590 acres in Sutter County about eight miles southwest of Yuba City, California (Figure 1). SNWR was established to provide feeding and nesting areas for migratory birds and alleviate crop depredation. The SNWR, owned and operated by the United States Fish and Wildlife Service (USFWS), is located almost entirely within the Sutter Bypass. The SNWR is the only publicly owned wetland habitat area in the Sutter Basin. Historically, flood flows from the Sacramento River, Butte Creek, and Feather River inundated large portions of the Sutter Basin. However, most of this land has been protected from flooding by levees and has been developed for agricultural production (Burleson et al., 2015). Water is used on the SNWR to maintain wetlands that produce food resources for migratory waterfowl, other migratory birds, and many other wetland dependent species.

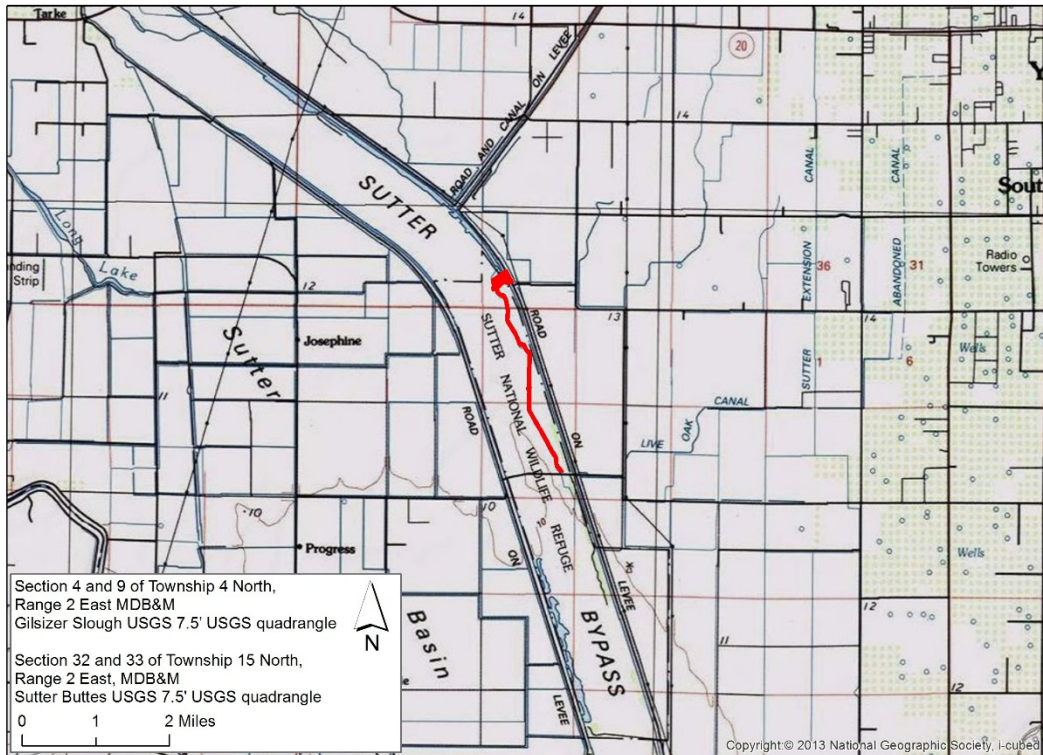
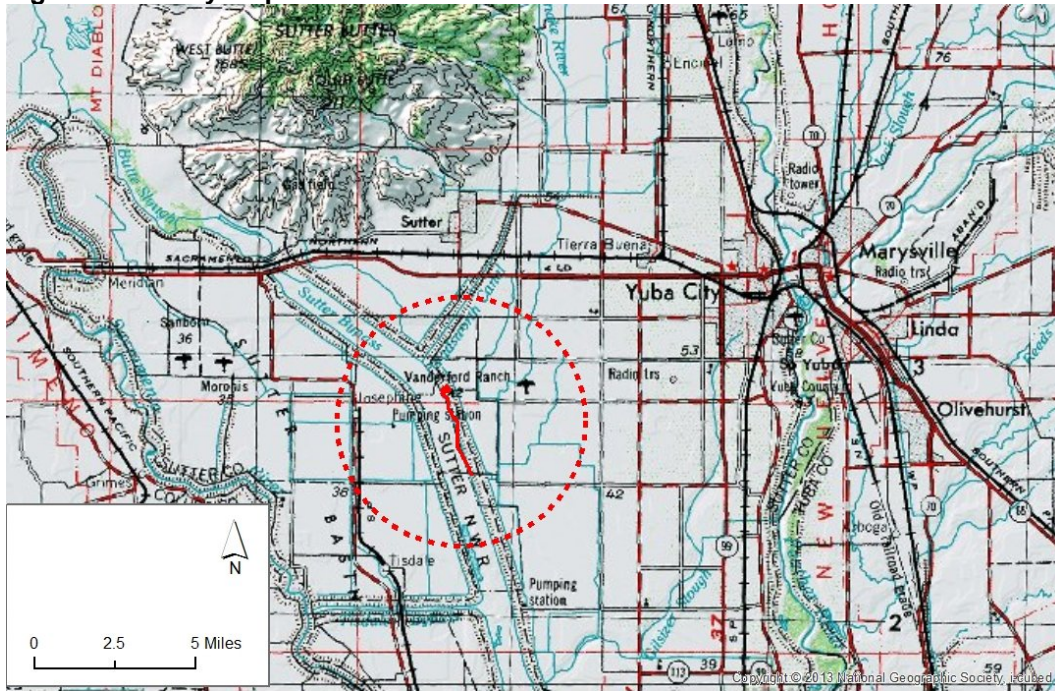
Most water supplies to the SNWR are provided through the Sutter Bypass (2,150-acre portion within the Bypass) or delivered by Sutter Extension Water District (SEWD) (since the SNWR is a landholder in SEWD) to a 440-acre portion outside the Bypass within SEWD boundaries. The SNWR holds two appropriative water rights for flows in the Sutter Bypass, however, these water rights do not have high priority and are not dependable water sources (Burleson et. al, 2015).

The SNWR is also identified under the Central Valley Project Improvement Act (CVPIA) of 1992 and as such is entitled to Central Valley Project (CVP) refuge water supplies. The CVPIA authorizes a maximum of 23,500 acre feet (AF) of Level 2 (L2) water supplies and an additional 6,500 AF of Incremental Level 4 (IL4) water supplies for a total of 30,000 AF of water available for SNWR. To date, The Bureau of Reclamation has not been able to convey refuge water supplies to SNWR, though studies are underway to determine potential mechanisms to convey CVP refuge water supplies to the SNWR.

1.2 Previous Environmental Analysis

The geotechnical investigation work completed in 2016 to support the Proposed Action/Project was previously analyzed in a Categorical Exemption and within Clean Water Act compliance documents. A Biological Opinion was also issued by the USFWS for the geotechnical investigation work in 2016. These documents and the environmental analysis they contain are incorporated by reference into this document.

Figure 1. Vicinity map



Note: the red line shows the extent of the Project Area, including access road

1.3 Need for the Proposed Action/Project and Objectives

The need for the Proposed Action/Project is to provide reliable Level 2 and Incremental Level 4 refuge water supplies to the SNWR in accordance with requirements under Section 3406(d) of the CVPIA. Current SNWR water supplies are taken from the East Borrow Ditch (EBD) via a gravity main canal inlet. This gravity channel can only be used when water surface elevations in the EBD are at or above elevation 38.1 feet. When water elevations are held at levels needed for optimal use of the gravity channel for SNWR, the higher elevations cause seepage of neighboring agricultural fields. The EBD is managed by DWR in a manner that limits the water elevation at Weir No. 2 to avoid this upstream seepage impact. This severely limits the SNWR's ability to divert water during critical habitat management periods and at the rates needed for optimal habitat management. The Proposed Action/Project will alleviate this impairment to the SNWR's water conveyance system, allowing access to its existing water supplies and increase its capacity to receive water supplies required for optimal management of its wetland habitat areas.

The objectives for the Proposed Action/Project are as follows:

- Ensure the SNWR's ability to divert licensed water supplies (including future CVPIA water supplies) from the EBD in order to manage for habitat and wildlife needs;
- Design, permit, construct and operate a screened intake pump facility and associated infrastructure to provide the capability to deliver L2 and IL4 water supply to SNWR as required by CVPIA. The facility will be owned and operated by USFWS; and
- Screen the new intake facility in a manner that meets current National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) fish screen design criteria for screen slot size and approach velocity, or as approved by these two agencies.

1.4 Anticipated Regulatory Requirements and Permits for the Project

The permits and approvals that may be required for the Proposed Action/Project, as well as the regulatory agencies that may rely on this document and the aforementioned permits and/or approvals for consideration, are identified in the following table (Table 1). State and federal agencies will use this document for compliance with NEPA and CEQA, to the extent applicable, to issue necessary federal and state permits and approvals.

**TABLE 1: ANTICIPATED REGULATORY REQUIREMENTS AND PERMITS
FOR PROJECT IMPLEMENTATION**

Agency	Type of Approval
Federal Agencies	
U.S. Bureau of Reclamation	NEPA Lead Agency Funding Approval National Historic Preservation Act Section 106 Lead Agency Federal Endangered Species Act Section 7 Lead Agency
U.S. Army Corps of Engineers	Clean Water Act Section 404 and 408 Permit
U.S. Fish and Wildlife Service	Federal Endangered Species Act compliance (Section 7) NEPA Cooperating Agency
National Marine Fisheries Service	Federal Endangered Species Act compliance (Section 7)
State Agencies	
California Department of Fish & Wildlife	CEQA Lead Agency California Endangered Species Act compliance Streambed Alteration Agreement (Section 1601)
California Natural Resources Agency	Funding Approval
Central Valley Flood Protection Board	Encroachment Permit Temporary and Permanent Easement
Central Valley Regional Water Quality Control Board	National Pollutant Discharge Elimination System General Construction Storm Water Permit (Section 402) Clean Water Act Water Quality Certification (Section 401) General Order for Dewatering and Other Low Threat Discharge to Surface Waters Permit
State Historic Preservation Office	National Historic Preservation Act (Section 106)
State Lands Commission	Encroachment Permit(s)

1.5 Document Structure

To consider environmental impacts of the Proposed Action/Project pursuant to both NEPA and CEQA, Section 3 includes the analysis of possible effects to resources using an initial study checklist adapted from the CEQA Guidelines, Appendix G. Discussion of potential impacts for the No Action Alternative and Proposed Action/Project are addressed in more detail following each checklist section. The CEQA Checklist does not incorporate all resource areas required by NEPA; Section 4 includes NEPA-specific components.

Section 2 Description of Proposed Action/Project

2.1 No Action Alternative

The No Action Alternative would consist of Reclamation and its partners not constructing the SNWR Lift Station to help meet refuge water demands. The delivery of L2 and IL4 refuge water to the SNWR lands would continue to be unreliable due to inadequate surface water conveyance facilities, fluctuating water surface elevations, and fluctuating water availability in the EBD. SNWR would continue to not be able to meet their Section 3406(d) CVPIA water supply requirements and wildlife and habitat management goals due to an inability to utilize regular dependable refuge water supplies for wetland habitat benefits. In addition, the diversion on EBD would remain unscreened and not meet current NMFS and CDFW screening criteria requirements.

2.2 Proposed Action/Project

Reclamation and its partners, USFWS and Ducks Unlimited Inc. (DU), propose to construct the SNWR Lift Station (Proposed Action/Project). The Proposed Action/Project would further the goals and objectives of the Refuge Water Supply Program by improving refuge water availability at the SNWR. The lift station would allow SNWR to divert water from the EBD including when water surface elevations are below 38.1 feet and the current gravity diversion infrastructure is not able to divert water. The lift station would be sized to deliver the maximum refuge water supply demands inside the Bypass but versatile enough to efficiently handle a wide range of flow rates to satisfy diverse wildlife habitat management goals of refuge staff.

The Proposed Action/Project consists of the following elements which are described in more detail below: (1) construction of a pump station (lift station) with 4 vertical-turbine pumps located approximately 200 feet upstream of California Department of Water Resources' (DWR) Weir No. 2 structure and on the west side of the EBD; (2) installation of approximately 700 feet of 54-inch diameter buried pipeline from the proposed pump station to a new concrete distribution box; (3) construction of a new concrete distribution box connected to the new buried pipeline and existing internal SNWR water conveyance facilities; (4) installation of two cylindrical fish screens fitted to the new pump station intakes; (5) improving a maintenance road; and (6) installing infrastructure to supply power to the pump station. The above elements are located on lands owned by the USFWS (SNWR property) and lands owned by the State of California (Sacramento and San Joaquin Drainage District acting by and through the Central Valley Flood Protection Board). See Figures 2 and 3 for the Proposed Action/Project Area.

Figure 2. Proposed Action/Project Area Access

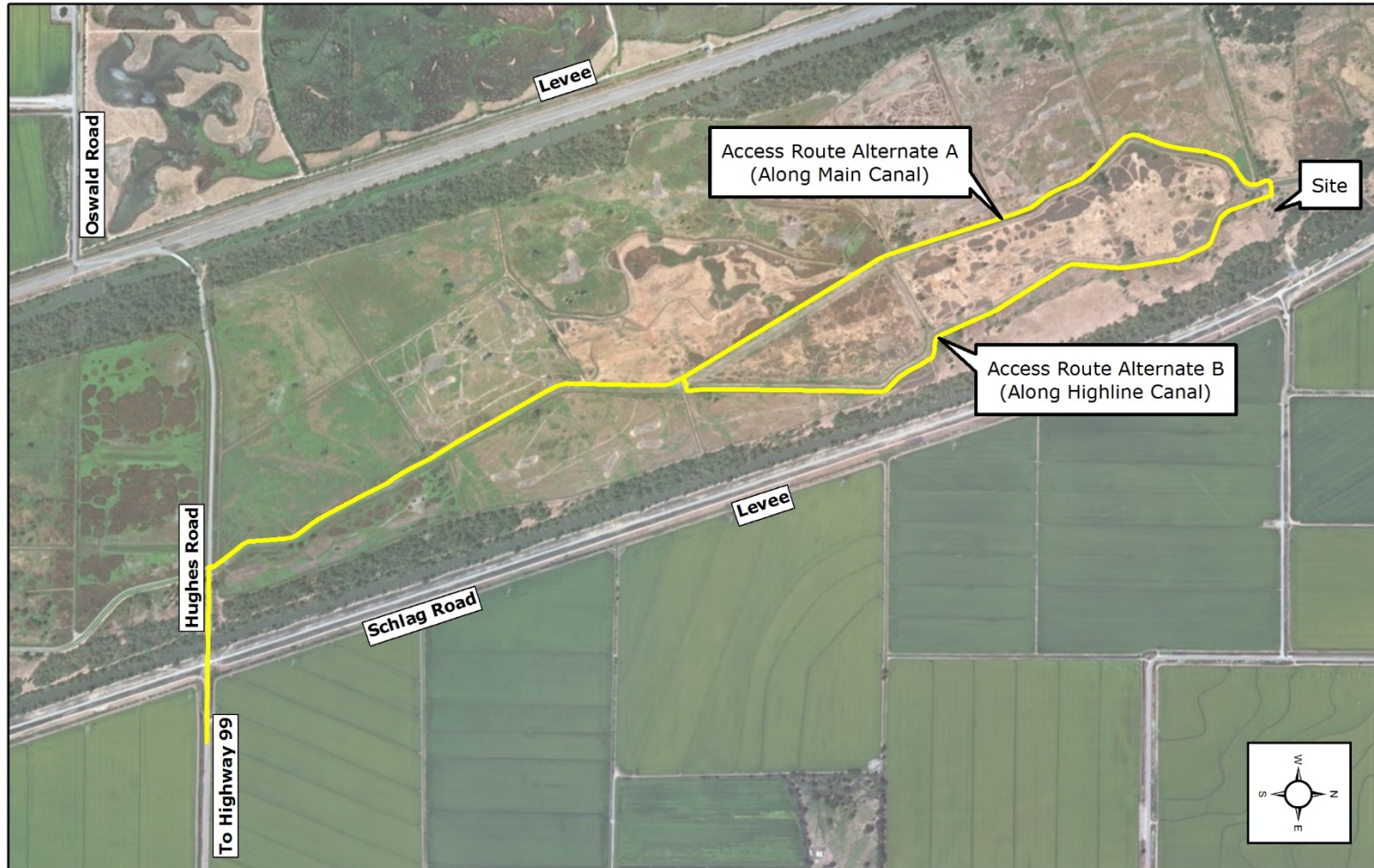
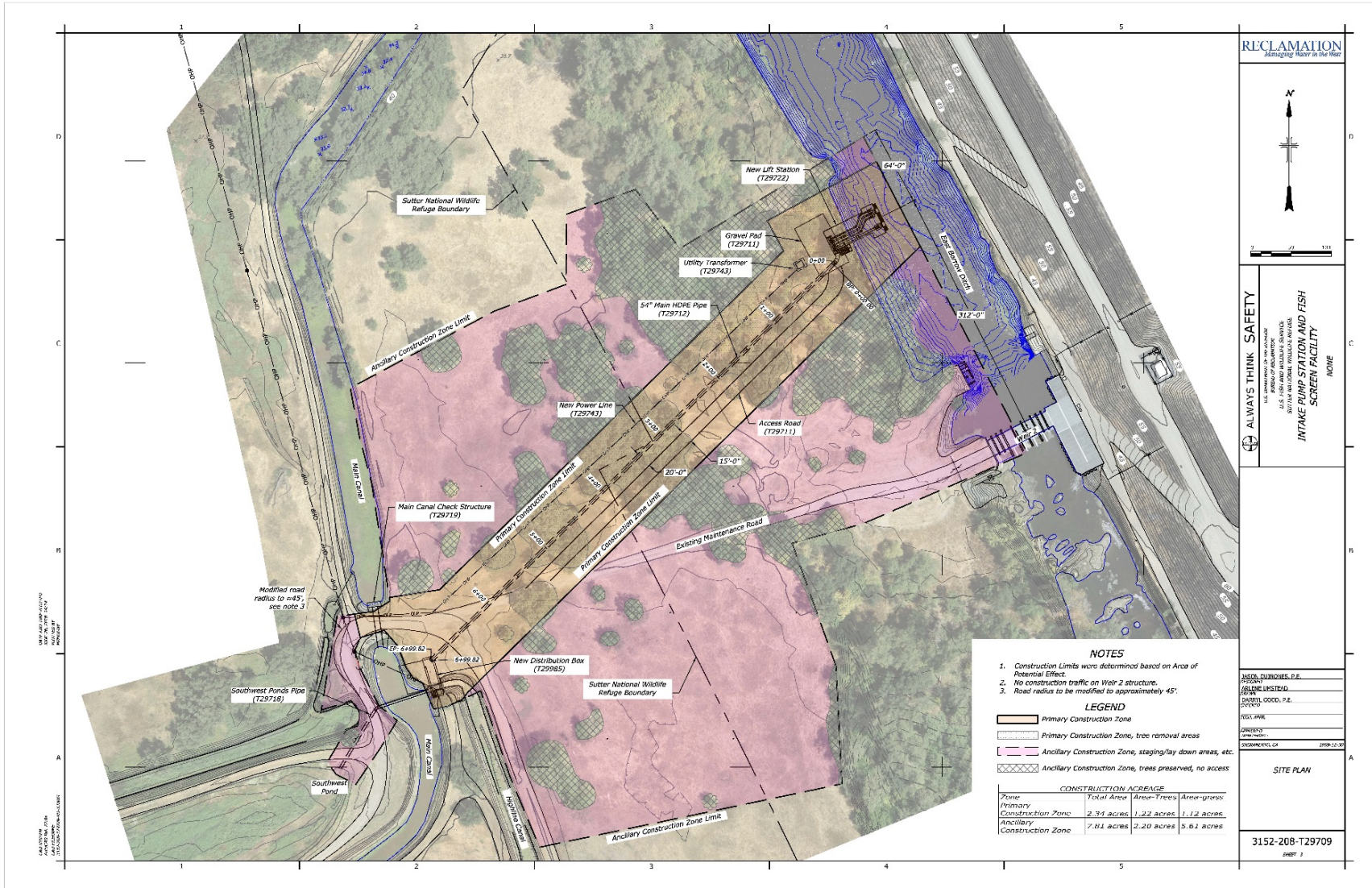


Figure 3. Proposed Action/Project Area



The Proposed Action/Project footprint is as follows:

TABLE 2: PROPOSED ACTION/PROJECT FOOTPRINT				
Zone	Total Area	Waters of the U.S. Area	Trees Area	Non-tree (grass, ruderal) Area
Primary construction zone (<i>permanent impacts</i>)	0.46 acres*	2.34 acres	1.22 acres	1.12 acres
Ancillary construction zone (<i>temporary impacts</i>)	7.81 acres	7.81 acres	2.20 acres	5.61 acres

*Total permanent impacts include new O&M road (0.19 ac), Distribution box/spillway (0.16 ac), check structure (0.01 ac) and gravel pad/platform/concrete pad, staircase, utility transformer and pilings for lift station (0.10 ac)

Lift Station

The Proposed Project, consisting of four vertical turbine intake pumps, will be constructed upstream of DWR’s Weir No. 2 on the EBD. Dewatering during construction will likely be required for trenching and placing of new buried main line pipe and construction of the new concrete diversion box (there will be no dewatering of any waterbodies, only from where groundwater seeps into the construction area). The construction contractor will be required to submit a dewatering plan for approval, and it will likely entail a series of shallow sumps and wells that are strategically placed and operated to bring down the groundwater table sufficiently to allow for construction activities to be performed. The construction contractor will also be responsible for required National Pollutant Discharge Elimination System (NPDES) permitting and reporting for this dewatering system.

Individual steel pipe intakes will be constructed for each pump and all intakes will be connected to one of two cylindrical fish screens. The pump size configuration is approximately one pump with 40 cubic feet per second (cfs) capacity, one pump with 20 cfs capacity and two pumps with 10 cfs capacity. This configuration provides the needed flexibility for SNWR to efficiently manage their water. The four intake pumps will be located on an elevated steel platform with the bottom of the platform structure set at elevation 59.8 feet (at the 200 year flood stage level). The platform will house all lift station electronics and controls. Individual pump intakes will discharge into a single steel discharge header that is connected to a 54-inch high-density polyethylene (HDPE) buried pipeline (described below).

The electrical systems of the proposed lift station would include power distribution, motor control, lighting and convenience receptacles, auxiliary systems, and grounding. Power to run the lift station will be provided via an extension of the existing 12.47 kilovolt (kV) Pacific Gas and Electrical Company (PG&E) distribution lines on the SNWR currently powering an existing lift pump near the proposed distribution box location. Approximately 800 feet of new electrical distribution line, an additional distribution line pole, and a new pole and transformer at the lift station would likely be required. The 12.47 kV would be transformed at the lift station to 480 volts by a transformer. The new lift station electric power loading is estimated to be in the range of 650 to 850 horsepower. In addition, PG&E will decommission the existing point of delivery that will include removal of the existing overhead pole mounted transformer and wood power pole.

The lift station would be fitted with a lighting system for safety and operation while refuge staff are at the facility. The elevated platform (accessible by stairs and a locked gate) will be enclosed by an eight-foot tall fence. Lighting designs will minimize direct lighting onto the EBD water surface to protect against potential predation of threatened/listed fish species. Lighting designs and proposed operations and maintenance (O&M) will be reviewed by regulatory agencies for approval.

Buried Pipeline and Concrete Distribution Box

The approximately 700-foot long, 54-inch buried pipeline installation will involve clearing and grubbing and temporary excavation within the primary construction zone (Figure 3). The pipeline will be buried such that a minimum of three feet of cover above the top of the pipe is provided from the finished ground surface elevation. Pipe material will be (HDPE). A concrete distribution box will be constructed with three outfalls that allow flexible distribution of water to various SNWR canals via existing internal SNWR conveyance facilities. Rip rap will be placed along the west bank of the Main Canal, across from the new distribution box. The area is approximately 45 feet long by 18 feet wide by 1.5 feet deep (810 square feet and 45 CY) of 6- to 9-inch size 0 rip rap. It will be placed on the Main Canal slope across from the distribution box.

Portions of the backfilled pipeline alignment will be planted with appropriate ground cover according to the SNWR managers and biologists. The pipeline alignment will also include a new gravel O&M road to access the new lift station facilities. Buried pipeline and concrete distribution box work will take place while water is present in the EBD but not when the bypass is flooded. Dewatering will likely be required during construction and will be performed by a contractor per approved designs, best practices and permits. Appropriate regulatory agencies will review and comment on the construction contractor's proposed dewatering plan. A coffer dam in the EBD is not anticipated for this construction work.

Fish Screen Intake Structure

The lift station intakes will be fitted with two 48-inch diameter cylindrical fish screens designed for a maximum approach velocity of 0.33 feet per second (fps) in accordance with National Marine Fisheries Service (NMFS) and CDFW fish screen design criteria for the key fish species of concern at the project site: Central Valley steelhead (federally listed as threatened), winter-run Chinook salmon (federally and state-listed as endangered), spring-run Chinook salmon (federally and state-listed as threatened), fall-run Chinook salmon (not listed), late fall-run Chinook salmon (not listed) and green sturgeon (federally listed as threatened). Maximum lift station diversions would not exceed 80 cfs and is in accordance with CVPIA water supply allocations and terms of SNWR's water right licenses. Timing of diversion and terms of the existing water rights would not change under the Proposed Action/Project. The footprint of the elevated platform structure and fish screens within the EBD (to top of bank) is approximately 0.04 acres (1,700 square feet). The majority of the structure in this footprint is above elevation 54.0 (100-year flood event stage). The cross-sectional area of the elevated platform structure and fish screens within the EBD (to top of bank) is 0.011 acres (500 square feet).

The cylindrical screens are manufactured of stainless steel wedge-wire with 1.75 millimeter slot openings and, due to their cylindrical geometry, are able to economize the size of the overall screen structure. The cylindrical geometry allows the full circumference of the intake screen to accept flow, maximizing the area of the intake and minimizing the overall screen size. The screen cylinders are equipped with interior and exterior cleaning systems (mechanical brushes) which are effective at removing accumulated debris on the screen surfaces.

Cylindrical screens attach directly to the intake bowls of the vertical turbine pumps, eliminating the need for a sump structure to house the pump column and support the fish screen system. There is a single wet well for all four pumps. This allows some of the pumps to be under maintenance without impacting the others ability to pull water. The cylindrical screens would be supported on individual pile-supported vertical steel frames. A rail system would be constructed above the pump column to allow the screen to be retracted using a cable and winch system (electronically powered and controlled) to facilitate maintenance and repair.

Flow approach velocity, normal to the screen face, shall be a maximum of 0.33 fps. Velocity is based on the gross screen area less the area of major structural supports. Screens must be configured to keep transport velocity either constant or increasing through the screen area. Screen panels will be designed to ensure at least 27 percent open area across the entire screen surface. Submerged cylinder screens will be located a minimum of three feet below the normal operating water surface elevation. The screens are to be designed to meet operational criteria during minimum and maximum flows in the canal.

Maintenance Road

The Proposed Action/Project area will be accessed via either the existing access road within the SNWR that parallels the main canal (Figure 2) or via another existing access road within the refuge that parallels the Hi-Line Canal (Figure 2). As noted in Figure 2, Alternative B would need to be enhanced for construction equipment and as such, excess spoil material (approximately 280 cubic yards) excavated from the project area and not used to backfill the new buried pipeline, will be utilized by the SNWR for standard O&M road and internal levee maintenance/repair needs. Road enhancement would be on top of the existing road (a width of approximately 12 feet) and for a distance of approximately 6,180 feet, depending on how much material is needed in areas. No spoils will be placed within wetlands or canals.

Construction Details

Construction activities are expected to begin in fall/winter 2019. Approximately 18 months are needed to complete the construction work activities. Activities will be staged in a manner to minimize impacts to species. For example, tree clearing activities within the pipeline alignment will be performed outside the bird nesting window (September 1 through March 1), in-water construction activities will be performed during a time when listed fish species will not be impacted (July 1 through October 31) and giant garter snake (GGS) are active (May through October), and construction activities adjacent to managed wetlands and ponds will be restricted when waterfowl are using these areas (October 1 through March 1). DU and its construction contractor and potential subcontractors will employ standard best management practices during construction to avoid and minimize water quality impacts including turbidity, sedimentation, etc. and will work with SNWR biologists regarding construction windows. Construction site access is available from the south via an existing access road beginning at Hughes Road. Additionally, there is potential construction site access from the north via an existing access road and an EBD bridge crossing approximately 0.6 miles to the north. Means and methods will not be prescribed to the construction contractor, but an estimated project phasing may include the following tasks/sequencing:

Tree clearing activities

- Removal of trees (primarily oaks) within pipeline alignment, powerline corridor, and lift station footprint and disposal of those materials outside of the Bypass (a total of 1.22 acres of trees will be permanently impacted)

Mobilization

- Establishment and preparation of staging areas
- Placement of work trailer, if necessary
- Placement of gravel/ballast, if necessary
- Establishment of temporary power, if necessary
- Delivery of equipment and material to the work site (front end loaders, pile driving equipment, cranes, dump/haul truck, man-lifts, excavator with bucket, bulldozer, compaction equipment, motor grader, etc.)
- Survey and setting of benchmarks submittal review for survey, various materials, safety, means and methods, etc.

Dewatering

- Installation of dewatering system if necessary (sumps, wells, discharge piping, monitoring devices, pumps, electrical controls, etc.)
- Operation and monitoring of dewatering system (per submittals and applicable permits)
- Decommissioning and removal of dewatering system per specs and permits when no longer needed

Distribution box construction

- Survey and site preparation (clearing and grubbing)
- Excavation of site
- Forming, rebar placement and connections (main pipeline)
- Placement of concrete
- Final site work around box (placement of riprap, grading, etc.)

Main pipeline installation

- Survey and site preparation (clearing and grubbing)
- Excavation and preparation of trench (e.g., placement of bedding material)
- Placement and connection of pipe (fused HDPE)
- Connection to concrete distribution box and steel pipe manifold
- Backfill and compaction of pipeline
- Final site work along pipeline alignment (grading, O&M road installation, revegetation etc.)

Lift station installation

- Survey and site preparation (clearing and grubbing, topography work)
- Installation of piles on EBD embankment
- Installation of steel platform and fish screen guides
- Installation of pumps, motors, electrical equipment and controls
- Installation of steel pipe intake and steel header, connection of main line pipe
- Extension of electrical power to the pump station and maintenance platform
- Connection of electrical components
- Installation of fish screens
- Testing of all equipment

Demobilization

- Site remediation per specifications and permits, including on-site habitat revegetation/restoration
- Removal of applicable equipment and material

Miscellaneous items

- As-built designs
- Hydraulic analysis of fish screens
- Design close out reports
- Habitat compensation/mitigation, as required

Geotechnical Considerations

A geotechnical investigation of the project site was completed in 2016, and was utilized to prepare the geotechnical report titled: *Sutter National Wildlife Refuge, East Borrow Ditch Lift Station, 2016 Geologic Investigation Report, Sutter County, California* (Jan 2017). This Geotechnical Report is incorporated into this project description by reference as it covers the same area of potential effect as the Proposed Action/Project. No additional geotechnical fieldwork is anticipated for completion of final design of the Proposed Action/Project.

Environmental Protection Measures

- 1) Work will be conducted when Sutter Bypass is not being used to bypass flood waters.
- 2) Ground disturbing activities will not occur within 24 hours of a qualifying rain event (more than 0.25 inches in a 24-hr period) in order to avoid turbidity impacts.
- 3) Soil disturbance will be minimized by using mats (or similar measures) for heavy equipment when the ground is soft.
- 4) Work will be stopped immediately in areas where earthwork exposes human remains, historic artifacts, or prehistoric resources and the appropriate regulatory agencies will be notified for guidance on how to proceed, pursuant to the requirements of the Section 106 permit.
- 5) Where practical, excess spoils will be placed on existing road and internal levees for maintenance/repair needs during the giant garter snake active period (May through October).
- 6) Project staging activities will occur greater than 30 feet from the EBD and the Main and Hi-Line Canals.
- 7) A USFWS/CDFW-qualified biologist will conduct pre-construction surveys for special-status species, as required for compliance with the Federal and State Endangered Species Acts and the various project permits.
- 8) A biological monitor will inspect the site prior to work beginning each day and will be present during construction activities to reduce or avoid impacts on special-status species and other biological resources.
- 9) Refer to the Biological Resources section later in this document for specific mitigation measures for giant garter snakes (GGs 1-10), yellow-billed cuckoo, Swainson's hawk and other migratory birds and raptors (YBCU 1-3 and SWHA 1-2), special-status fish species (FISH 1-3), western pond turtle (WPT-1), western red bat (WRB-1), and waters of the U.S. (WOUS-1) to avoid potential impacts to these special-status species and waters of the U.S.
- 10) Plant surveys will be conducted prior to construction to ensure that no listed plant species are within the area of all construction activities (RPS-1).
- 11) Access into and out of the SNWR will be limited to two locations along existing dirt roads, minimizing interference with wetlands and waters of the U.S. Use of these two routes will be at the discretion of the contractor.
- 12) Post construction re-contouring and restoration efforts in the SNWR will be done within 30 days of construction activity completion if feasible for planting, and coordinated with the USFWS.

- 13) The Proposed Project/Action is designed to minimize and avoid impacts in the Proposed Project/Action area. Much of the project footprint (including construction staging and access) is located on unvegetated or previously-disturbed areas. Additionally, temporal or spatial avoidance measures were incorporated into the project to minimize short and long-term impacts to biological resources including: minimization of the project footprint (spatial impacts); minimum construction period (temporal impacts); minimization of disturbance to riverine and riparian habitat; minimize direct habitat loss during project design and construction; and revegetation of areas of disturbed soil.
- 14) Refer to the Tribal Cultural Resources section later in this document for specific mitigation measures (TCR 1-2) to avoid potential impacts to these resources.

2.3 Operation and Maintenance

The USFWS would be responsible for the O&M activities of the proposed project facilities as described below.

Lift Station Operation and Maintenance Activities

When diverting, the pumps would be operated to maintain a constant flow rate through the system to the concrete distribution box. Water will then be diverted out of the concrete distribution box into the existing SNWR water conveyance facilities via manual gate structures or stop logs. An overflow will be incorporated into the concrete distribution box that would spill into the main SNWR conveyance structure to avoid overtopping and erosion around the concrete distribution box.

Pumps will be equipped with electronic timers that allow SNWR staff to better control when and how water is delivered to efficiently divert water to benefit wildlife. Flows at the lift station will be measured via an electronic measurement and data collection device such that hourly measurements can be made and stored for reporting requirements. Pumps would be accessed weekly for inspection and maintenance during operation. Pumps would be removed every 10 years for inspection and repair if needed.

The lift station will be accessed by SNWR operators via existing and acquired rights of way along the alignment of the proposed buried pipeline. An access road will be maintained along the alignment of the buried pipeline similar to the existing access road maintained to the DWR Weir No. 2 structure, which is a gravel road at or slightly above the existing ground surface. Access to the elevated platform that houses pumps, motors, electronics and controls will be accessible via a metal staircase.

Gate, lighting and fencing along the lift station platform would be inspected annually and repaired as needed.

PG&E Facility Operation and Maintenance Activities

PG&E will own and maintain all new power conveyance facilities and equipment. It is anticipated that any O&M activities will follow PG&E established standards and best practices.

Fish Screen Intake Operation and Maintenance Activities

It is anticipated that SNWR personnel would visit the intake site four to five times per week during operations for general inspection of equipment and site security. The intake screens will be equipped with a cleaning system that includes a brush mechanism driven by an electric drive unit. The speed of the brush would be controlled by an electric drive unit. The local control panel would allow operation and testing of the brush assembly.

The starting, stopping, and operating time of the cleaning would be adjustable and possible through a pre-determined schedule.

It is anticipated that intake screen maintenance would be performed at least annually during times when the associated pumps are not required to deliver refuge water. For inspection, the screens will be retracted to the level of the elevated platform. At times the screens may need to be removed for repair. The screens would be removed utilizing a crane operating from the stable embankment. The intakes would be capped when the screens are retracted or removed.

Buried Pipeline Operation and Maintenance Activities

The buried 54-inch HDPE pipeline will be accessed via the concrete distribution box inlet, as necessary, for inspection and maintenance regarding sediment, integrity of fused pipe joints, egging of pipe, etc. Dewatering of the pipeline will be performed prior to this inspection.

Concrete Distribution Box Maintenance Activities

The concrete distribution box will be designed to allow SNWR equipment access for efficient sediment removal. The concrete distribution box will be accessed annually for inspection and sediment removal as needed. The concrete distribution box will be accessible via existing access roads owned and maintained by the SNWR.

Collapsible metal guardrails will be installed where sheer edges with a height over 4 feet are located along the concrete distribution box (at or near inlet and outlets). Guardrails will be collapsed prior to flood events in the Sutter Bypass and inspected upon erecting after flood events. The distribution box will be designed to allow for wildlife to escape via the Main Canal overflow.

Gravity Channel Maintenance Activities

Operations and maintenance of the existing gravity channel will only change in that the use of this channel may be reduced with the availability of the new lift station. The cost of operating the lift station is such that if able, SNWR would prefer to continue using the gravity channel; therefore, if water elevations are appropriate and it is not a risk to fish due to being unscreened, this channel would be used rather than the lift station, with approval of fisheries agencies.

Section 3 Environmental Setting & Evaluation of Environmental Impacts

To satisfy the need to consider environmental impacts of the Proposed Action/Project Alternative pursuant to both NEPA and CEQA, possible effects to resources were analyzed using an initial study checklist adapted from the CEQA Guidelines Appendix G. The factors that were determined to be particularly relevant to the Proposed Action/Project are addressed in more detail following each listed resource; resources that would not be affected are briefly discussed. Unless more specifically defined in a resource section, the general project area analyzed is within the Project activity footprint.

The No Action Alternative reflects future conditions without the Proposed Action/Project and serves as a basis of comparison for determining potential effects to the human environment. For purposes of analysis, the No Action Alternative is the same as status quo.

3.1 Aesthetics

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

Proposed Action/Project

a) and b) **No Impact:** The Proposed Action/Project area is not within a scenic vista or highway. The scenic character of the Proposed Action/Project area is defined by the Main, Hi-Line and East Borrow canals and by the riparian and open grassy areas. The general public could see the lift station looking to the east from McClatchy Road; the view from the west would be on SNWR property in a restricted area, so the public would not view the lift station from that direction. Removal of riparian vegetation will be limited to the immediate construction areas and a small area of shaded riverine habitat at the lift station. Staging areas are characterized by mostly ruderal vegetation and weedy herbaceous species. Again, these areas are not open to the public.

c) and d) **Less Than Significant Impact:** There is no permanent nighttime lighting as part of the Proposed Action/Project; lighting of the area will occur only if staff is on site and manually turn on. In addition, no lighting will be directed at the water, only on platform as needed for work.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
<p>II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through e) **No Impact:** There are no agricultural or forestry resources that would be impacted as there are none within the Proposed Project area’s scope.

3.3 Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through c) **Less Than Significant Impact:** The Proposed Action/Project lies within the Feather River Air Quality Management District (FRAQMD) of the Sacramento Valley Air Basin (SVAB). The FRAQMD includes Sutter and Yuba Counties. Air basins share a common “air shed”, the boundaries of which are defined by surrounding topography and meteorology. Although mixing between adjacent air basins inevitably occurs, air quality conditions are relatively uniform within a given air basin.

The U.S. Environmental Protection Agency (USEPA) developed air quality standards, known as National and California ambient air quality standards (NAAQS), for criteria air pollutants. Criteria air pollutants consist of carbon monoxide, ozone (volatile organic compounds [VOC] or reactive organic gas [ROG] are ozone precursors), sulfur dioxide, nitrogen dioxide, inhalable particulate matter between 2.5 and 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), and lead. Section 110(a) of the Clean Air Act (42 U.S.C. 7401(a)) requires states to develop plans, known as State Implementation Plans (SIPs), that describe how they will attain NAAQS. Section 176(c) of the Clean Air Act (42 U.S.C. 7506(c)) requires that any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP before the action is otherwise approved. The USEPA promulgated the General Conformity Rule to ensure that such federal actions are consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS for criteria air pollutants and achieving expeditious attainment of those standards. If an action does not conform to the SIP, the Federal agency must submit a conformity determination to the USEPA, State and local air pollution control agencies, and to the public. The general conformity regulations apply to a proposed Federal action in a non-attainment or maintenance area if the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutant caused by a proposed action exceed certain emissions thresholds, thus requiring the Federal agency to make a conformity determination. Federal actions that are exempt from the General Conformity Regulations include, but are not limited to, actions with associated emissions clearly at or below specified (*de minimis*) levels and activities covered under transportation conformity (USEPA 2016).

A comparative analysis was used to demonstrate Federal conformity with NAAQS. The RD [Reclamation District No.] 2035/Woodland Davis Clean Water Agency Joint Intake and Fish Screen Final Initial Study/Environmental Assessment (October 2012) analyzed the potential affects to air quality of a project similar in nature and within the same air basin, but where the activities were much greater in magnitude. The air quality analysis in the RD 2035 EA and Finding of No Significant Impact are hereby incorporated by reference for comparison to the Proposed Action/Project. The RD 2035 analysis resulted in a determination that the RD 2035 project would not require general conformity analysis since project emissions fell below federal general conformity *de minimis* thresholds for all criteria pollutants.

The RD 2035 project included the construction of a 400 cfs pump station on the Sacramento River, resulting in more ground disturbing activities, material hauling, and equipment emissions than the Proposed Action/Project. Therefore, emissions from the Proposed Action/Project would also be expected to fall below the *de minimis* thresholds. Calculated emissions from that project were estimated using Urban Emissions Model (URBEMIS 2007). Since the RD 2035 FONSI was signed, URBEMIS 2007 has been replaced with the California Emissions Estimator Model® (CalEEMod). However, this does not pose an issue with comparison as both estimating tools are California specific and cover the SVAB. Additionally, CalEEMod assumes the use of “cleaner,” newer equipment (less polluting), therefore, estimates using URBEMIS result in a conservative result compared to CalEEMod.

d) and e) **No Impact:** There would be no pollutants or objectionable odors resulting from the Proposed Action/Project, therefore, there would be no impact.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IV. 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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) and d) **Less Than Significant With Mitigation:** The Proposed Project is designed to minimize and avoid impacts to biological resources. Some of the project footprint (including construction staging and access) is located on unvegetated or previously-disturbed areas. Additionally, temporal or spatial avoidance measures were incorporated into the project to minimize short and long-term impacts to biological resources (see Project Description species-specific measures listed below by species).

Special-status Wildlife Species

Federal and state special-status species were identified through a search of the USFWS IPaC and California Natural Diversity Database (CNDDDB), queried on February 20 and March 7, 2018, respectively, for the Tisdale Weir and surrounding USGS 7.5 minute quadrangles (Meridian, Sutter Buttes, Sutter, Grimes, Gilsizer Slough, Dunnigan, Kirkville, and Sutter Causeway; see Table 3 below). Habitat requirements for each species were compared with habitat features in the Proposed Action/Project area to determine if the species has potential to be found in the area. If potential habitat is present or the species was actually found in surveys, potential impacts due to the project were assessed and mitigation measures proposed. It is anticipated that adverse impacts to biological resources will be less than significant with mitigation and conservation measures incorporated into the project as described below and within the Project Description.

For the purpose of this EA/IS, special-status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the federal Endangered Species Act; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA); animals designated as “Species of Special Concern,” “Fully Protected,” or “Watch List” by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, and 4.

Based on information from the CNDDDB (CDFW 2018), 49 special-status species were identified for analysis within the study area, including: six fish species; two reptile species; and 14 bird species; and 13 plant species. Special-status plants and animals, their listing status, habitats, and potential to occur within the study area are presented in Table 3. The potential for each species to occur within the project site was evaluated with consideration of site-specific conditions. Based on that evaluation, the potential for each species to occur was evaluated using the following categories:

- **None** indicates that suitable habitat for the species is absent in the action area, the local range for the species is restricted to areas outside of the action area, and/or the species is extirpated in this region.
- **Not Expected** indicates that suitable habitat or key habitat elements may be present in the action area, but may be of poor quality or isolated from the nearest extant occurrences. Habitat suitability refers to factors such as elevation, soil chemistry and type, vegetation communities, microhabitats, and the quality of habitats present with regard to the needs of species.
- **Possible** indicates the presence in the action area of suitable habitat or key habitat elements that potentially support the species.
- **Present** indicates the target species was either observed directly or its presence was confirmed by diagnostic signs (i.e. tracks, scat, burrows, carcasses, castings, prey remains, etc.) during field investigations.

Table 3 Special-status Species Potentially Occurring in the Proposed Action/Project Area

Common Name	Scientific Name	Federal/ State Status	Species and/or Habitat Known to Occur in Project Area	Potential Impact to Species
BIRDS				
American peregrine falcon	<i>Falco peregrinus anatum</i>	--/FP	None	Not expected
Bank swallow	<i>Riparia riparia</i>	--/ST	None	Not expected
Burrowing owl	<i>Athene cunicularia</i>	--/SSC	None	Not expected
California black rail	<i>Laterallus jamaicensis coturniculus</i>	--/ST	None	None
Cooper's hawk	<i>Accipiter cooperii</i>	--/SSC	Possible	Possible
Greater sandhill crane	<i>Grus canadensis tabida</i>	--/ST	None	None
Least Bittern	<i>Ixobrychus exilis</i>	--/SSC	None	None
Mountain plover	<i>Charadrius montanus</i>	--/SSC	None	None
Northern harrier	<i>Circus cyaneus</i>	--/SSC	Possible	Possible
Song sparrow	<i>Melospiza melodia</i>	--/SSC	Possible	Possible
Swainson's hawk	<i>Buteo swainsoni</i>	--/ST	Possible	Likely
Tri-colored blackbird	<i>Agelaius tricolor</i>	--/SC (E)	Possible	Possible
White-tailed kite	<i>Elanus leucurus</i>	--/FP	Possible	Possible
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT/SE	Possible	Possible
REPTILES				
Giant garter snake	<i>Thamnophis gigas</i>	FT/ST	Possible	Likely
Western pond turtle	<i>Emys marmorata</i>	--/SSC	Possible	Likely
San Joaquin coachwhip	<i>Masticophis flagellum ruddocki</i>	--/SSC	None	None
AMPHIBIANS				
California red-legged frog	<i>Rana draytonii</i>	FT/--	None	None
California tiger salamander	<i>Ambystoma californiense</i>	FT/--	None	None
Foothill yellow-legged frog	<i>Rana boylei</i>	--/SC (T)	None	None

Common Name	Scientific Name	Federal/ State Status	Species and/or Habitat Known to Occur in Area	Potential Impact to Species
FISHES				
Central Valley steelhead (and Critical Habitat)	<i>Oncorhynchus mykiss</i>	FT/--	Present	Possible
Delta smelt	<i>Hypomesus transpacificus</i>	FT/SE	None	None
Fall/Late Fall-run chinook salmon (and Critical Habitat)	<i>Oncorhynchus tshawytscha</i>	--/SSC	Present	Possible
Hardhead	<i>Mylopharodon conocephalus</i>	--/SSC	Possible	Possible
Sacramento hitch	<i>Lavinia exilicauda exilicauda</i>	--/SSC	Possible	Possible
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	--/SSC	Present	Possible
Southern DPS green sturgeon (and Critical Habitat)	<i>Acipenser medirostris</i>	FT/SSC	Possible	Possible
Spring-run chinook salmon (and Critical Habitat)	<i>Oncorhynchus tshawytscha</i>	FT/ST	Present	Possible
White sturgeon	<i>Acipenser transmontanus</i>	--/SSC	Possible	Possible
Winter-run chinook salmon (and Critical Habitat)	<i>Oncorhynchus tshawytscha</i>	FE/SE	Possible	Possible
INSECTS				
Valley elderberry longhorn beetle	<i>Desmocerus californicus</i>	FT/--	None	Not expected
CRUSTACEANS				
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	FT/--	None	None
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	FE/--	None	None
PLANTS				
Baker's navarretia	<i>Navarretia leucocephala ssp. bakeri</i>	--/Rare 1B.1	Possible	Possible

Common Name	Scientific Name	Federal/ State Status	Species and/or Habitat Known to Occur in Area	Potential Impact to Species
Colusa layia	<i>Layia septentrionalis</i>	--/Rare 1B.2	Not Expected	None
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>Coulteri</i>	--/Rare 1B.1	None	None
Ferris' milk-vetch	<i>Astragalus tener</i> var. <i>ferrisiae</i>	--/Rare 1B.1	None	None
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	FE/SE	None	None
Heartscale	<i>Atriplex cordulata</i> var. <i>cordulata</i>	--/Rare 1B.2	Not expected	None
Northern California black walnut	<i>Juglans hindsii</i>	--/Rare 1B.1	Possible	Possible
Palmate-bracted salty bird's-beak	<i>Chloropyron palmatum</i>	FE/SE	None	None
Recurved larkspur	<i>Delphinium recurvatum</i>	--/Rare 1B.2	Not expected	None
San Joaquin spearscale	<i>Extriplex joaquinana</i>	None/ Rare 1B.2	Not expected	None
Veiny monardella	<i>Monardella venosa</i>	None/ Rare 1B.1	Not expected	None
Woolly rose-mallow	<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	None/ Rare 1B.2	Possible	Possible
Wright's trichocoronis	<i>Trichocoronis wrightii</i> var. <i>wrightii</i>	None/ Rare 2B.1	Possible	Possible
MAMMALS				
Marysville California kangaroo rat	<i>Dipodomys californicus eximius</i>	--/ SSC	None	None
Pallid bat	<i>Antrozous pallidus</i>	--/ SSC	None	None
Western mastiff bat	<i>Eumops perotis californicus</i>	--/ SSC	None	None
Western red bat	<i>Lasiurus blossevillii</i>	--/ SSC	Possible	Possible
<p>Key:</p> <p>FE: federally listed endangered ST: state listed threatened SE: state listed endangered FT: federally listed threatened FP: California fully-protected species SC: state candidate for listing SSC: California species of concern Rare 1B: CA Native Plant Society List 1: Rare, threatened, or endangered plants in CA and elsewhere Rare 2B: CA Native Plant Society List 2: Rare, threatened, or endangered plants in CA but more common elsewhere</p>				

Giant Garter Snake

The Proposed Project/Action Area within the Sutter Basin, is identified as a "snake population unit" in the June 2012 snake 5-year review (Service 2012). The closest known occurrence of the snake in the CNDDDB is approximately one mile southwest of the action area, along the west levee road (Service 2016). Two additional occurrences are just over three miles to the southeast, along irrigation ditches within and adjacent to the SNWR. Refuge staff has not reported any GGS sighting within the action area.

Most of the Proposed Project/Action Area is managed by SNWR for waterfowl and is seasonally flooded (typically September through February) to provide migratory and nesting habitat. Due to annual flooding, most of the Proposed Project/Action Area is not suitable for year round GGS occupation. Ditches within the SNWR may have water in them at any time, but are used specifically for moving water to ponds within the refuge and are not watered as habitat. Should GGS be present within the upland areas adjacent to ditches in the Proposed Project/Action Area during flooding, they would likely move to find higher ground so as not to be affected by water going through the ditches. The Proposed Project/Action Area supports areas of open water (varying seasonally) with emergent vegetation. Potential prey species for GGS, including small fish and frogs, are common in these areas. The EBD can act as a travel pathway between wetland areas that provide suitable escape cover and foraging habitat. Due to the presence of shallow fresh water habitat in the EBD, potential GGS predators (warm water fish species such as bass) are common within the Proposed Project/Action Area.

GGS are unlikely to be found within the Proposed Project/Action Area because banks have little terrestrial vegetation for cover, dense riparian overstory provides few basking sites, and the area is frequently flooded during the inactive season (November – April). Outside of the Sutter Bypass, within close proximity to the Proposed Project/Action Area, there is suitable GGS habitat composed of a permanently flooded irrigation ditch that has abundant herbaceous emergent vegetation, adjacent uplands, no riparian overstory, and is adjacent to cultivated rice fields.

Reclamation has determined that the Proposed Action/Project *may affect, and is likely to adversely affect* GGS. All work adjacent to potential GGS habitat is planned to occur during the snake's active season. Although the Proposed Project/Action Area is within a floodplain and GGS could use the area for dispersal, woody riparian vegetation covers the ground for a distance of at least 30 feet of the EBD, and therefore it is unlikely that GGS would disperse through this area. The woody riparian vegetation does not provide the escape cover and foraging habitat that GGS typically use (Reclamation 2017). Because work will occur during the active season, typically when snakes are using aquatic habitat, it is unlikely that construction activities will result in take of GGS.

The following mitigation measures for GGS would reduce impacts to less than significant:

- GGS-1: Ground disturbing activities along the canals would occur during the GGS active season (May through October) to avoid take of GGS burrowing in canals or staged construction materials.
- GGS-2: Twenty-four hours prior to the commencement of construction activities, the construction area will be surveyed for GGS by a USFWS/CDFW-approved monitoring biologist to determine if GGS are likely to be present. The monitoring biologist will advise work crews on areas to be avoided to avoid effects to GGS. If the monitoring biologist determines GGS are likely in the area, construction will be delayed and USFWS and CDFW will both be notified. The construction area will be re-inspected by the monitoring biologist whenever a lapse in construction activity of two weeks or greater has occurred. The monitoring biologist will provide USFWS and CDFW with a written report that adequately documents the monitoring efforts within 24 hours of commencement of construction activities. During construction, the monitoring biologist will immediately report to both USFWS and CDFW any direct encounters between the snake, project workers, and their equipment whereby incidental take in the form of harassment, harm, injury, or mortality occurs. If a GGS is encountered but unharmed within the construction area, all work will cease, and the animal will be allowed to leave the area on its own. Injured GGS must be cared for by a licensed veterinarian or other qualified person(s), such as the USFWS/CDFW-approved monitoring biologist. Dead GGS must be sealed in a re-sealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service and CDFW regarding the disposition of the dead specimen. Contacts will be the Chief of the Sacramento Valley Division of the Endangered Species Program at the USFWS Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6631, as well as CDFW (916) 358-2842. If the encounter occurs after normal working hours, the monitoring biologist shall contact the USFWS and CDFW at the earliest possible opportunity the next working day. USFWS and CDFW will immediately respond to the monitoring biologist to provide further guidance before work continues;
- GGS-3: A Worker Environmental Awareness Training Program for construction personnel will be conducted by a USFWS/CDFW-approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. Interpretation will be provided for non-English speaking workers and the same instruction provided for any new workers prior to performing work on site. The training will include information regarding the appearance, biology, distribution and habitat needs of any special-status species that may be present, legal protections for those species, and penalties for violations and project-specific protective measures;
- GGS-4: During construction, stockpiling of construction materials, portable equipment, vehicles and supplies will be restricted to designated construction staging areas and all operations will be confined to the minimal area necessary, as designated on the engineering plans;
- GGS-5: Project-related vehicles will observe a 15-mph speed limit within construction areas;

- GGS-6: Once construction is completed, all construction debris will be removed and wherever feasible, disturbed areas will be restored. Restoration will be coordinated with refuge staff to ensure that refuge management goals are reflected. A photo documentation report showing pre- and post-project area conditions will be submitted to USFWS and CDFW one month after the implementation of the restoration;
- GGS-7: Project staging activities will remain greater than 30 feet from the EBD and the Main and Hi-Line Canals;
- GGS-8: Temporary impacts to approximately 1.74 acres of potential upland GGS habitat as a result of placing spoil piles on the existing levee access road (Alternative Access road). Temporary impacts to GGS habitat will be mitigated by purchasing credits at an approved GGS mitigation bank at a 0.5:1 replacement ratio for a total of 0.87 acres. Permanent impacts to approximately 0.09 acres of potential upland GGS habitat as a result of placing rip rap along the west bank of the Main Canal, across from the new distribution box. Permanent impacts to GGS habitat during the active season will be mitigated by purchasing credits at an approved GGS mitigation bank at a 3:1 replacement ratio for a total of 0.27 acres;
- GGS-9: Dewatered areas (within the Main Canal) will remain dry and absent of aquatic prey for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, USFWS and CDFW will be contacted to determine what additional measures may be necessary to minimize effects to GGS; and
- GGS-10: Prior to October 1 and after dewatering, high visibility fencing will be erected around the Main Canal to identify and protect these areas from encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing shall be inspected by the contractor before the start of each work day and maintained by the contractor until completion of the project. Fencing will be established in the uplands immediately adjacent to aquatic snake habitat and extending up to 200 feet from construction activities. GGS exclusionary fencing will be buried at least six inches below the ground to prevent snakes from attempting to burrow or move under the fence.

Yellow-billed Cuckoo

The Proposed Project/Action Area is located within one of the most regularly occupied sites in the Sacramento Valley (Service 2014). Critical habitat has not yet been designated for YBCU at the time of writing this document. Refuge staff conducted YBCU surveys in 2000 and 2015. In 2000, they encountered an estimated eight individuals. The survey route was developed to sample all potential YBCU habitat within SNWR (riparian strips along the East and West Borrow Ditches). Seven of the eight birds were detected along the West Borrow Ditch and one was detected along the East Borrow Ditch, with the majority of those located on the north half of the refuge, north of Hughes Road (south of the action area). The survey conducted in 2015 was along the West Borrow Ditch only and between one and four individuals were detected north of Hughes Road, though the biologist conducting the survey felt this may have been just one individual following the call-playback (M. Peters, pers. comm. April 2018). YBCU nesting has been known to occur along the West Borrow Ditch (approximately 0.75 miles from the action area) in an area of riparian cover of over 400 acres. The Proposed Project/Action Area would be within foraging distance for a breeding pair during the breeding season (Reclamation 2017). The amount of trees within the Proposed Project/Action Area being directly affected is 1.22 acres, which is too small to support nesting YBCU (Federal Register, 2001), but could be suitable for

foraging habitat. Patch size in the Proposed Project/Action Area is smaller than YBCU require and more suitable habitat is available within the SNWR, further south of the Proposed Project/Action Area.

YBCU rarely nest at sites less than 50 acres and sites less than 37 acres are considered unsuitable habitat (Laymon and Halterman, 1989). The optimal size of habitat patches for YBCU are generally greater than 200 acres in extent and have dense canopy closure and high foliage volume of willows (*Salix* sp.) and cottonwoods (*Populus* sp.) and thus provide adequate space for foraging and nesting. The Proposed Project/Action Area is at the northern extent of a strip of riparian woodland that is approximately 275 feet wide. The Proposed Project/Action Area is separated from the rest of the strip by about 200 feet of open area and is approximately five acres.

Reclamation has determined that the Proposed Action/Project *may affect, but is not likely to adversely affect* the YBCU. Suitable nesting habitat exists for the YBCU south and west of the Proposed Project/Action Area, in other areas of the SNWR, therefore, the Proposed Project/Action Area is considered potential foraging habitat. The amount of suitable riparian habitat within the project footprint is limited to a corridor about 100 feet wide adjacent to the EBD, yet the YBCU requires relatively large (more than 20 hectares), contiguous patches of multilayered riparian habitat for nesting. Construction noise and activity have the potential to harass any YBCUs that may be foraging within the project footprint during project actions; however, there is approximately 390 acres of wooded riparian habitat within the SNWR alone that could be used for foraging during construction. A qualified biologist will make an initial site visit prior to beginning construction to survey for YBCUs within the vicinity of the project footprint and where suitable habitat is present.

The following mitigation measures for YBCU would reduce impacts to less than significant:

- YBCU-1: The Proposed Action/Project will result in the removal of approximately 2.20 acres of mature woody vegetation (primarily oaks) and Shaded Riverine Aquatic habitat (SRA). Removal of trees shall be conducted from September 1 through March 1 outside the YBCU nesting season to avoid disturbance to YBCU during other construction activities;
- YBCU-2: Within 24 hours prior to the commencement of construction activities, the Proposed Action/Project area will be surveyed for YBCU by a USFWS/CDFW-approved biologist. The Proposed Action/Project area will be re-inspected by the monitoring biologist whenever a lapse in construction activity of two weeks or greater has occurred; and
- YBCU-3: If any YBCU are observed to be nesting (not just foraging), all work will cease and the animal will be allowed to leave the area on its own. The USFWS/CDFW-approved biologist will be immediately contacted to provide further guidance before work continues.

Western pond turtle

Western pond turtles (WPT) have been observed in the EBD, and the upland areas within the Bypass provide suitable nesting habitat; however, frequent flooding and disturbance from routine maintenance activities may substantially reduce nest success if hatchlings over-winter in the nest (DWR 2008). The mostly grass-covered bypass levees may provide more successful nesting habitat, especially the south-facing slopes. This species may also inhabit the larger irrigation ditches near the spoil areas. Western pond turtles may be directly and indirectly adversely affected by the proposed project.

The following mitigation measures for WPT would reduce impacts to less than significant:

- WPT-1: In-water work will be avoided to the extent practicable. In cases where this is unavoidable, a biological monitor will survey the sites before work commences. If WPTs are found, efforts will be made to move them to suitable habitat outside the disturbance area.

Swainson's hawk

Swainson's hawks (SWHA) are known to nest in the large trees along the inside levee toes and toe drains of the Tisdale Bypass and EBD of the Sutter Bypass (DWR 2008). Because Swainson's hawks could potentially nest near the project area, a pre-construction survey will be completed 15 days prior to construction will be implemented to protect nesting hawks. If nests are observed within ¼ mile of the project area, CDFW will be contacted to implement protective measures including buffers. This species could potentially be impacted by construction activities, although the likelihood that a take will occur is minimal.

The following mitigation measures for SWHA would reduce impacts to less than significant:

- SWHA-1: Surveys for SWHA will be conducted 15 days prior to construction and again if there is a lapse in work for 15 days. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting SWHA are detected, buffers will be established around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active raptor nests will be 500 feet for non-listed raptors, unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting raptors. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until a qualified CDFW biologist has determined that young have fledged and are no longer reliant upon the nest or parental care for survival.
- SWHA-2: If construction occurs between February 1 and August 31, surveys will be conducted for nesting raptors in accordance with established CDFW raptor survey protocols. See YBCU-1 regarding tree removal which also applies to SWHA.

Migratory Birds

Potential habitat exists for Cooper's hawk, Northern harrier and white-tailed kite within the area that cannot be avoided. Pre-project surveys will be conducted and protective measures will be implemented. Equipment noise from project activities has potential to disturb nesting or foraging migratory birds, however, the impacts are expected to be minimal. To prevent impacts to migratory birds, avoidance and minimization measures will be implemented as described in SHWA 1-2 and YBCU 1-3.

Special-status Fish Species

The following special-status fish species are considered to have at least some potential to occur within the region or have been recorded historically in the project area: green sturgeon, Central Valley steelhead, Central Valley spring-run Chinook salmon, winter-run Chinook salmon, fall/late-fall run Chinook salmon, and Sacramento splittail (DWR 2008). Although spring-run Chinook salmon and Central Valley steelhead adults use the lower Butte Creek system, which is hydrologically connected to EBD, in the winter months for upstream migration to spawning habitat, the greatest use of this area is by the juveniles of all anadromous salmonid species as they emigrate to the ocean either as fry (30-40 millimeters [mm]) or yearlings (80-150 mm). When the Sacramento River floods during the winter, juvenile salmonids emigrating downstream are pushed into the SNWR where they rear, eventually leaving the SNWR as the water level

drops and waters warm. The majority of juvenile salmonids of the species of concern leave the lower Butte Creek system by mid-May, but some do not leave until late-June. CDFW has stated that no or few salmonids pass through the Sutter Bypass from July 1 through September 30 and that while juvenile salmonids do emigrate through the Sutter Bypass in October and November, the number of fish is relatively small (Burlison 2015). As such, the safest window for construction work in the SNWR is July 1 through October 31 so as not to impact any special-status fish species. Should this be an insufficient time for the construction, an extended work window may be possible (in consultation with NMFS and CDFW).

Green Sturgeon

The green sturgeon is listed as threatened by NMFS and is listed as a Species of Special Concern (SSC) by CDFW. Green sturgeon occur in the Sacramento, Klamath, and Rogue rivers. Historically, spawning in the Sacramento River may have extended up into its three major branches: the Little Sacramento River, the Pit River System, and the McCloud River. Spawning may also have occurred in the Feather River. Loss of habitat in river reaches blocked by dams is the primary factor in this species' decline. Shasta and Keswick Dam on the Sacramento River and Oroville Dam on the Feather River block access to historical spawning and rearing areas, restricting spawning and rearing to the Sacramento River downstream of Keswick Dam. Other factors contributing to the species' decline include degradation of habitat conditions, entrainment in water diversions, and over-harvest.

Critical habitat for the Southern DPS of North American green sturgeon was designated on October 9, 2009 (74 FR 52345), and includes the Sacramento River from the Sacramento I-Street Bridge upstream to Keswick Dam, including the waters encompassed by the Yolo Bypass and the Sutter Bypass areas and the lower American River from the confluence with the mainstem Sacramento River to State Route 160 bridge over the American River. Although there are no spawning populations of green sturgeon in Sutter Bypass, their presence in the Bypass is likely because of the connection to the Sacramento River during high flows.

Central Valley Steelhead

The Central Valley steelhead, listed as threatened by NMFS historically inhabited large and small streams throughout the Sacramento-San Joaquin watershed. Currently populations are found in the Sacramento River and its tributaries and the Cosumnes and Mokelumne Rivers. Loss of habitat in river reaches blocked by dams is the primary factor in this species' decline. Below dams, steelhead populations are affected by varying flow conditions, high summer and fall water temperature, and entrainment losses at unscreened diversions.

Steelhead use the project area as rearing habitat and as a migration corridor to and from spawning grounds in Butte Creek and other tributaries. They are present within the Butte Creek System year-round, either as juveniles rearing or migrating downstream or as adults migrating upstream or downstream. Although there are only limited observations, steelhead are thought to ascend Butte Creek in the late-fall and winter where they proceed to spawn in both the mainstem and tributaries (DWR 2008). Spawning takes place through the winter and into spring (generally December through April). There is very little information regarding the numbers of steelhead in Butte Creek. Estimating production of steelhead in Butte Creek is complicated because of its hydrologic connections with the Sacramento River. Adult steelhead have been captured in Butte Creek during CDFW trapping efforts for juvenile spring-run salmon, and the Sutter Bypass is

known to be used as rearing habitat by juveniles (DWR 2008). In the Sacramento River, juvenile steelhead migrate to the ocean in spring and early summer, with peak migration through the Delta in March and April (DWR 2008).

Critical Habitat for Central Valley steelhead is designated as all river reaches accessible to listed steelhead in the Sacramento and San Joaquin Rivers and their tributaries in California, river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, all waters of San Pablo Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge (Federal Register 2001).

Central Valley Spring-run Chinook Salmon

Central Valley spring-run Chinook salmon is listed as threatened by NMFS and CDFW. This run of Chinook salmon historically inhabited large and small streams throughout the Sacramento-San Joaquin watershed. Spring-run Chinook salmon have been completely extirpated in the San Joaquin drainage. Currently spawning populations are consistently found only in Butte, Deer, and Mill Creeks, which are tributaries to the Sacramento River (DWR 2008). Recent restoration efforts have opened up habitat in Big Chico Creek, but currently this is considered a remnant non-sustaining population and is not used as a population trend indicator (DWR 2008). Loss of habitat in river reaches blocked by dams is the primary factor in this species decline. Other factors contributing to the decline include degradation of habitat conditions, entrainment in water diversions, and over-harvest. Adult spring-run Chinook salmon migrate up the Sacramento River to upstream spawning areas from February through June. Adults seek deep holding pools to over-summer and spawn when water temperatures begin to cool in mid-September. Juveniles emerge from the gravel as early as late November.

Spring-run Chinook salmon juveniles migrate downstream primarily from December through February, entering the Sacramento River either through the Butte Slough Outfall or through the Sutter Bypass. Life history investigations have shown that many juveniles entering the Sutter Bypass remain there for several weeks: the average passage time from January through April for fish that were marked just below the spawning grounds and recaptured in the Sutter Bypass near its confluence with the Sacramento River was 46 days during the 2003-2004 season (DWR 2008), supporting the value of the Sutter Bypass as a nursery for spring-run Chinook salmon.

Critical Habitat for spring-run Chinook salmon is designated as all river reaches accessible to listed Chinook salmon in the Sacramento River and its tributaries in California, river reaches and estuarine areas of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, and all waters of San Pablo Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge (Federal Register 2001).

Central Valley Fall/Late-Fall Run Chinook Salmon

The Central Valley fall/late fall-run Chinook salmon is a candidate for listing by NMFS and has been designated a species of special concern by CDFW. This run of Chinook salmon historically inhabited the entire Sacramento-San Joaquin watershed. Currently populations are found in the Sacramento River and its tributaries and the Cosumnes and Mokelumne Rivers. Loss of habitat in river reaches blocked by dams is the primary factor in this species decline. Below dams, populations are affected by varying flow conditions, alteration of stream flows, high summer and fall water temperature, over-harvest, and entrainment losses at unscreened diversions. No Critical Habitat has been designated for fall/late fall-run Chinook salmon.

Sacramento River Winter-run Chinook Salmon

The winter-run Chinook salmon is listed as endangered by NMFS and CDFW. This run of Chinook salmon historically spawned in the upper reaches of the Sacramento River and its major tributaries, the McCloud and Pit Rivers. Shasta and Keswick Dam block access to historical spawning and rearing areas, restricting spawning and rearing to the Sacramento River downstream of Keswick Dam. Impedance of migration and predation below the Red Bluff Diversion Dam, deterioration of water temperatures below Keswick Dam, and entrainment losses at unscreened diversions are the primary factors in this species' decline. Winter-run adults migrate through the Delta and into the Sacramento River in winter and early spring and spawn in the mainstem Sacramento River and Battle Creek during late spring and early summer (DWR 2008).

Critical Habitat for winter-run Chinook salmon is designated as the Sacramento River from Keswick Dam, Shasta county (River Mile 302) to Chipps Island (River Mile 0) at the westward margin of the Sacramento-San Joaquin Delta, all waters from Chipps Island westward to Carquinez Bridge, including Honker Bay, Grizzly Bay, Suisun Bay, and Carquinez Strait, and all waters of San Pablo Bay (north of the San Francisco/Oakland Bay Bridge) from San Pablo Bay to the Golden Gate Bridge (Federal Register 2001).

Sutter Bypass does not contain spawning populations of Sacramento River Winter-run Chinook salmon. Sacramento River flows in excess of approximately 22,000 cubic feet per second (cfs) are diverted into the lower Butte Sink and Sutter Bypass via overflows from the Tisdale, Colusa, and Moulton weirs (DWR 2008). During these flows, the Sutter Bypass functions as a migratory corridor for juvenile winter-run Chinook salmon (DWR 2008).

Sacramento Splittail

Sacramento splittail is listed as a species of special concern by CDFW. Splittail are found primarily in the Delta, Suisun Bay, Suisun Marsh, and Napa Marsh. During wet years, they may migrate as far upstream as Red Bluff Diversion Dam (Moyle 2002). Historically, they ranged throughout the Sacramento and San Joaquin Rivers and their tributaries. They have disappeared from much of these waterways because of dams, diversions or drastically altered habitat.

The Sutter Bypass offers good spawning habitat for splittail when it is flooded for several weeks in March and April. When these conditions occur, an abundance of juvenile splittail can be expected in the Sutter Bypass through the spring (DWR 2008).

Hardhead

Hardhead is listed as a California Species of Concern. Hardhead are typically found in small to large streams in a low to mid-elevation environment as well as lakes or reservoirs. Within a stream hardhead tend to prefer warmer temperatures than salmonids and they are often found associated with pikeminnows and suckers. Hardhead spawn in the spring around April-May, though spawning may take place as late as August. Hardhead are found within the Sacramento River watershed, including Sutter Bypass. (<http://calfish.ucdavis.edu/species/?uid=37&ds=241>)

Sacramento hitch

Sacramento hitch is listed as a California Species of Concern. Hitch are most often found in slow warm water, including lakes and quiet stretches of rivers. Hitch are sometimes found in cool and clear, low-gradient streams, hiding among aquatic vegetation in sandy runs or pools. They are the most heat tolerant of the native Central Valley fishes and can withstand water temperatures greater than 30°C under some conditions. Spawning typically happens in the tributaries to lakes and rivers, and may begin as early as February and end as late as July. Sacramento hitch are found within the Sacramento River watershed, including Sutter Bypass. (<http://calfish.ucdavis.edu/species/?uid=38&ds=241>).

White sturgeon

White sturgeon is listed as a California Species of Concern. White sturgeon are anadromous fish that spend most of their lives within an estuary, usually returning to freshwater only to spawn. The sturgeon begin migrating in streams during winter, with large peak flows triggering the spawning between February and early June. Fish biologists believe the white sturgeon pick deep swift water areas to spawn such as riffles or pools with rock and gravel substrate. White sturgeon are found within the Sacramento River watershed, including Sutter Bypass. (<http://calfish.ucdavis.edu/species/?ds=241&uid=113>)

Potential Impacts to Special-status Fish Species

All previously described listed fish species have similar life histories, biological and habitat requirements, with the main difference being the time of year when each of these species, as juveniles or adults, will migrate to and from the ocean. Although the timing of migration is different, all listed fish species use the Sutter Bypass as a migratory corridor. The potential environmental consequences resulting from construction of the Proposed Action are expected to be similar for Central Valley winter-run Chinook salmon, Central Valley spring-run Chinook salmon, Central Valley steelhead, the Southern DPS of North American green sturgeon and Sacramento splittail, hardhead, Sacramento hitch, and white sturgeon.

Impact pile driving has the potential to injure, kill, or alter behavior of fish. Pile driving in EBD will occur sometime between July 1 and October 31 and would be temporary (taking approximately one to two days to complete). The month of May coincides with the tail end of the spring-run Chinook adult migration and the juvenile Chinook out-migration for spring-run and fall/late-fall run. Pile driving could potentially delay adult spring-run during upstream migration or delay juvenile fall-run and spring-run during their out migration, but the majority of the spring-run adult population is expected to be upstream of the EBD in Butte Creek at that time. There is also potential to delay fall-run Chinook during the upstream migration in October, but pile driving is expected to be completed by October. Reclamation will abide by the requirements of the Biological Opinion for the Proposed Action, which will be issued by NMFS. Impacts due to impact pile driving will also be minimized by requiring that the contractor implement best management practices, such as those described in the Caltrans Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (2009) or other measures.

The fish screens are designed to prevent salmon fry and larger fish from entering the pumps. There would be a temporary adverse modification of critical habitat for Chinook, steelhead and sturgeon during construction as sound from pile driving would be higher than ambient in the EBD. This would occur only during pile driving, be limited in duration, and only during daylight hours. Conditions would return to baseline once pile driving was complete. Regardless, this would be considered a temporary adverse modification of designated critical habitat.

The following mitigation measures for fish would reduce impacts to less than significant:

- FISH-1: Contractor shall perform any in-water construction activities between July 1 and October 31 to avoid impacting fish during migratory periods. When in-water work is conducted, a qualified biologist shall be present during such work to monitor construction activities and ensure compliance with mitigation requirements and permit terms and conditions.
- FISH-2: Pipe pile shall only be driven by vibratory or non-impact methods (hydraulic) that result in sound pressures below threshold levels (see Effects Analysis) to the extent practical, but may be finished with the diesel hammer as needed to reach required tip elevation. Pile driving equipment will start at low power levels and strike frequency to minimize sound pressure levels harmful to fish and allow fish in the area to move away. A minimum of a 15-minute break between each pile installation will allow fish within the action area to move. Affected fish should only be temporarily impacted.
- FISH-3: Permanent impacts to approximately 0.03 acres of SRA habitat as a result of putting piles to support the fish screen structure in the EBD will be mitigated by purchasing credits at an approved SRA habitat mitigation bank at a 3:1 replacement ratio.

Special-status Plant Species

Baker's navarretia

Baker's navarretia (*Navarretia leucocephala* ssp. *Bakeri*) is an annual herb that is native to California and is endemic to California. Communities include yellow pine forest, Northern oak woodland, foothill woodland, valley grassland, freshwater wetlands and wetland-riparian. Habitat includes meadows, vernal pools and wetlands. Blooming period is from April to July.

Northern California black walnut

Northern California black walnut (*Juglans hindsii*) grows in riparian woodlands, either in mono-species stands, or mixed with California oak species (*Quercus* spp.) and Fremont cottonwood (*Populus fremontii*) trees. The historical range of *Juglans hindsii* is from the San Joaquin Valley and Sacramento Valley to the Inner Northern California Coast Ranges and San Francisco Bay Area, in Northern California.

Woolly rose mallow

Woolly rose mallow (*Hibiscus lasiocarpus*) grows along freshwater river banks and marshes. Often found in rip rap on sides of levees, marshes and swamps (freshwater). While it has been found in the Sutter Bypass and potential habitat is present adjacent to both project sites, no individuals have been found in the project area during past botanical surveys. Blooming period is from June to September.

Wright's trichocoronis

Wright's trichocoronis (*Trichocoronis wrightii* var. *wrightii*) can be found in freshwater wetlands, wetland-riparian, riparian, meadows, marsh and vernal pools. Can bloom anywhere from May to September.

Potential Impacts to Special-status Plant Species

The following mitigation measures for plants would reduce impacts to less than significant:

- RPS-1: Rare Plant Survey. A pre-construction plant survey shall be performed during the appropriate blooming period for all State listed and special-status plants with potential to occur within the project site. If the survey results are negative, no further action by the Permittee is needed. If the survey finds that any State listed or special-status plants are present, the Permittee will consult with CDFW on the appropriate action prior to continuing project activities with the potential to impact the plants.

Special-status Mammal Species

Western Red Bat

The western red bat (WRB) is a state species of concern and is locally common in some areas of California, occurring from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. Roosting habitat includes forests and woodlands from sea level up through mixed conifer forests. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Preferred roost sites are protected from above, open below, and located above dark ground-cover. Feeds over a wide variety of habitat including grasslands shrublands, open woodlands and forests, and croplands.

Potential Impacts to Special-status Mammal Species

The following mitigation measures for WRB would reduce impacts to less than significant:

- WRB-1: A pre-construction survey for roosting sites for WRB shall be performed prior to tree removal or trimming activities. If the survey results are negative, no further action by the Permittee is needed. If the survey finds that any WRB roosting sites are present, the Permittee will consult with CDFW on the appropriate action prior to continuing tree removal or trimming activities with the potential to impact the species.

b) and c) **Less Than Significant With Mitigation:** A U.S. Army Corps of Engineers Section 404 Permit will be obtained for the discharge of materials into waters of the U.S. (WOUS) within the Proposed Action/Project area. The footprint of the elevated platform structure, gravel pad and fish screens within the EBD (to top of bank) is approximately 0.1 acre. Twenty-eight 12-inch diameter steel pipe piles will be driven into the EBD for the fish screen structure. The majority of the structure in this footprint is above elevation 54.0 (100-year flood event stage). The cross-sectional area of the elevated platform structure and fish screens within the EBD (to top of bank) is 0.011 acres (500 square feet). A permanent O&M road will be placed adjacent to the pipeline, permanently impacting 0.19 acres of wetland and the distribution box/spillway will permanently impact 0.16 acre of wetland. Approximately 280 cubic yards of excavated spoils generated during construction of the lift station, pipeline/O&M road, and distribution box will be used to improve existing O&M road conditions along Hi-line Canal within SNWR lands. These repairs will occur on an internal levee road currently maintained by the NWR and will include filling low spots and filling areas affected by erosion outside wetlands, but still within the OHWM of Sutter Bypass. There is no anticipated net fill within the primary construction zone; the net estimated 280 cubic yards of spoils removed from the primary construction zone will be placed on the existing O&M maintenance road within the SNWR. Any temporary spoils stockpiled would be within the primary construction zone.

A total of 0.46 acres of WOUS will be permanently impacted within the primary construction zone (as a result of the permanent O&M road, distribution box/spillway and lift station /fish screen structure).

The following mitigation measures for WOUS would reduce impacts to less than significant:

- WOUS-1: Permanent impacts to WOUS as a result of the Proposed Action/Project will be mitigated through purchases of mitigation credits to offset impacts and reduce the level of impacts to less than significant in accordance with the U.S. Army Corps of Engineers Section 404 permit.

e) and f) **No Impact:** The Proposed Action/Project would not interfere with any local ordinances, Habitat Conservation Plans or Natural Community Conservation Plans.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES: Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Public Resources Code §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Public Resources Code §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Cultural resource is a broad term that includes prehistoric, historic-era, architectural, and traditional cultural properties. Cultural resources that meet criteria for listing on the California Register of Historical Resources (CRHR) (defined at 14 CCR § 15064.5[a]) are called “historical resources” and cultural resources that meet the criteria for listing on the National Register of Historic Places (NRHP) (defined at 36 CFR § 60.4) are called “historic properties.” While the CRHR and NRHP significance criteria are similar, NRHP is given precedence in this analysis because cultural resources eligible for the NRHP are also eligible for inclusion in the CRHR, but the reverse is not necessarily true (PRC 5024.1[c]). Employing the Federal standards will fulfill both Federal and State requirements for cultural resources.

Federal agencies are required to consider the effects of their actions on historic properties pursuant to Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800. Federal agencies must complete the Section 106 process when an undertaking has the potential to cause effects on historic properties. The Section 106 process is consultative and involves defining an area of potential effects (APE), identifying historic properties within the APE, assessing the effects of the undertaking on historic properties by applying the criteria of adverse effect [36 CFR § 800.5(a)], and resolving adverse effects, if needed, through measures negotiated and documented in memorandum of agreement with consulting parties.

Reclamation uses information obtained through the Section 106 process to inform its analysis of impacts to cultural resources under NEPA. Typically, an undertaking found to have no effect on historic properties under Section 106 would also constitute an action resulting in no significant impacts to cultural resources under NEPA. Correspondingly, if an undertaking will result in an adverse effect under Section 106, measures agreed upon to avoid, minimize, or mitigate that adverse effect through the Section 106 process are considered sufficient to mitigate impacts to cultural resources under NEPA.

For the current undertaking, Reclamation conducted archival research, a records search through the Northeast Information Center of the California Historical Resources Information System, and a pedestrian survey of the area of potential effects. Three structures—Bridge EL-5 Pilings, the EBD, and Weir #2—were identified through the records search as previously recorded cultural resources within the current APE. All three of these resources previously had been determined not eligible for the NRHP with State Historic Preservation Officer (SHPO) consensus. Another resource—an existing booster pump—was identified and recorded by Reclamation during the pedestrian survey. This structure was built in 1953 as a separate system to distribute water from the EBD to the internal Sutter NWR water distribution system. Based on several considerations, Reclamation determined the likelihood of encountering intact buried cultural resources within the APE to be very low.

a) through d) **No Impact:** For the current undertaking only, Reclamation treated the existing SNWR internal water distribution system, including the Main Canal and Hi-Line Canal, as eligible for listing on the NRHP. The existing booster pump was determined not eligible for listing as it does not meet any of the criteria for eligibility. Installing a lift station and pipelines to connect to the existing SNWR water distribution system will not adversely affect any of the characteristics of the Main Canal and Hi-Line Canal that would make that system eligible for NRHP listing. This project is consistent with the purpose of the SNWR to provide migratory bird habitat and consistent with the use of water distribution facilities within the SNWR. No other cultural resources will be impacted by construction of this project.

Based on the above information, Reclamation determined that the proposed undertaking would result in no adverse effect to historic properties pursuant to 36 CFR § 800.5(b). Reclamation consulted with and received concurrence from the California SHPO on this finding of no adverse effect. The Proposed Action/Project will result in no significant impacts to cultural resources. In the event of any post-review discovery of historic properties, the procedures outlined at 36 CFR § 800.13 would be followed. As the project is on lands under the jurisdiction of the USFWS, the inadvertent discovery of Native American human remains during project implementation would be subject to the requirements of the Native American Graves Protection and Repatriation Act, as implemented by USFWS.

3.6 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VI. GEOLOGY AND SOILS: Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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a), b), d) and e) **No Impact:** The nearest fault zones exhibiting historic displacement (activity within the last 200 years) to the Proposed Action/Project area are the Concord-Green Valley, Marsh Creek-Greenville, and Hayward fault zones, located approximately 60 miles west, 80 miles west, and 90 miles southwest of the project area, respectively (Reclamation 2017). Other active faults within 70 miles of the Project area are the Dunnigan Hills (Zamora), West Napa, Healdsburg-Rodgers Creek, and San Andreas.

A seismically-active, concealed (blind) fold and thrust fault belt situated within the Coast Range-Central Valley (CRCV) Geomorphic Boundary is located approximately 50 miles west of the Project area. Earthquakes associated with this fault system include the 6.1 magnitude (Mw) Kettleman Hills and 6.5 (Mw) Coalinga events (Reclamation 2017).

The Proposed Action/Project area could experience the effects of a major earthquake from one of the active or potentially active faults located within 70 miles of the site. The four major hazards associated with earthquakes are fault surface rupture (ground displacement), ground motion (or ground shaking), ground failure (e.g., liquefaction), and differential settlement, slope instability, and land subsidence.

The California Geological Survey has determined the probability of earthquake occurrences and their associated peak ground accelerations throughout the State of California. The seismic hazard assessment determines the earthquake hazard that geologists and seismologists agree could occur in California. Current maps produced by the California Geological Survey are based on 10 percent exceedance in 50 years.

The Concord-Green Valley and Marsh Creek-Greenville fault zones are the closest active faults zoned under the Alquist-Priolo Earthquake Fault Zoning Act to the region and are situated approximately 60 to 80 miles southwest of the Proposed Action/Project area. The Proposed Action/Project is neither located within, nor crosses, a delineated Alquist-Priolo Earthquake Fault Zone. Therefore, the risk of surface fault rupture within the Project area is considered low (Reclamation 2017). The project is not located on expansive soils.

c) **Less Than Significant:** The Proposed Action/Project area is in the Sacramento Valley, a wide alluvial plain. Soils found in the area within and adjacent to the project site are predominantly alluvial silt and clay loams. The Proposed Action/Project is not in a seismically active area and is not near any known faults, and therefore will not expose people to rupture of earthquake fault, strong seismic ground shaking, seismic-related ground failure, or landslides. Construction and staging will temporarily disturb soil in the project area. Best Management Practices will be followed for erosion control, and levee banks, streambeds and adjacent uplands disturbed by construction vehicles, constructed ramps will be reseeded with an appropriate seed mix or otherwise treated to reduce erosion and/or siltation. The geology and soils at the project site will not become unstable as a result of the project.

3.7 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS: Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Proposed Action/Project

a) and b) **Less Than Significant Impact:** State law defines greenhouse gases (GHG) to include hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. These latter GHG compounds are usually emitted in industrial processes, and therefore not applicable to the Proposed Action/Project. As with the discussion of air quality impacts previously, a comparative analysis was used to identify potential impacts to GHG. The RD 2035/Woodland Davis Clean Water Agency Joint Intake and Fish Screen Final Initial Study/Environmental Assessment (October 2012) analyzed the potential affects to GHG of a project similar in nature and within the same air basin, but where the activities were much greater in magnitude. The GHG analysis in the RD 2035 EA and Finding of No Significant Impact are hereby incorporated by reference for comparison to the Proposed Action/Project. The RD 2035 analysis resulted in a determination that the RD 2035 project would not result in impacts to GHG. Therefore, the Proposed Action/Project would not conflict with any local regulations pertaining to GHGs. Based upon the analysis of Criteria A, B, C and D presented above, the Proposed Action/Project would not result in a cumulatively considerable increase in GHG emissions such that the project would impair the State's ability to implement AB 32. This impact would be less-than-significant.

3.8 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
VIII. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) and b) **Less Than Significant Impact:** Land use within the majority of the project/action area consists primarily of rural land and agricultural uses, but also includes local county roadways and a railroad. Past and present use of hazardous materials typical to agricultural production include agricultural fertilizers, pesticides, herbicides, and fuels. Because the land use in the project/action area has not significantly changed in the last 50 years, historic hazardous materials use was likely similar to present day hazardous materials use, however, current regulatory restrictions have limited the use and control of many substances.

Construction, welding and other areas where spark-producing equipment will be used will be cleared of dried vegetation or other materials that could serve as fire fuel. Any construction equipment that normally includes a spark arrester will be equipped with an arrester in good working order. All construction-related hazardous materials will be transported, stored, and handled in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the state and federal Departments of Transportation, CVRWQCB, Sutter County, the local Fire District and other appropriate fire districts, among others as appropriate. A Hazardous Materials Management Plan (or equivalent) will be prepared and/or followed to provide specific emergency response protocols for the accidental release or threatened release of hazardous materials used as part of the construction.

c) through h) **No Impact:** There are no hazardous sites, schools or airports in the vicinity of the Proposed Project area. The Proposed Project would not interfere with emergency response or evacuation plans nor would it result in increased risk of wildfires.

3.9 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: : Would the project:				
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY: : Would the project:				
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through g), i) and j) **No Impact:** The Proposed Action/Project will not violate any water quality standards nor will it interfere with groundwater in the area. The Proposed Action/Project will not alter existing drainage patterns in the area, resulting in increased flooding, siltation or erosion nor will it create runoff or degrade water quality in the area. There is no housing within the Proposed Project area. The Proposed Action/Project would not expose people or structures to flooding as a result of levee or dam failure and there is no risk of inundation by seiche, tsunami or mudflows.

h) **Less Than Significant Impact:** The Sutter Bypass flows south to Fremont Weir and into the Yolo Bypass, eventually flowing into the Sacramento-San Joaquin Delta. The U.S. Geological Survey (USGS) and CDFW maintained gages in the bypass in the past with data collection ending in the 1980s. This gage data covers flow conditions in the north end of the bypass and in Tisdale Bypass during the 1955 and 1963 events, but does not offer much else in terms of stage height and flow for conditions within the study area (Reclamation 2017).

The USACE recurrence interval plot for Sutter Bypass indicates that the 1986 event was a 30-year event. The USACE estimated that the 1986 event generated 155,000 cfs (47-foot stage) in the Sutter Bypass at Tisdale Bypass, which is below the 180,000 cfs (48.2-foot stage) design flow capacity for that location. The ordinary high water mark (OHWM) would thus be expected to be below 47 feet msl. (Reclamation 2017)

A draft technical report prepared by a consulting firm in 2013 to calibrate a 2-D flood model, estimated the channel flow in the Sutter Bypass for the 1997 and 2006 flood events (MWH, 2013). In January 1997, flow in the bypass at Tisdale Bypass was approximately 150,000 cfs and a stage of 47 feet. In January 2006, flow was approximately 130,000 cfs and at a stage of approximately 46.8 feet. (Reclamation 2017)

The new lift station is comprised of an elevated steel platform supported by piles. The profile length of the structure (perpendicular to the flow of water in the bypass) is approximately 70 feet. Between the Design Water Surface Elevation (DWSE) of El. 51.0 and average operating water surface elevation in the EBD of El. 37.74, this translates to a blockage area of approximately 930 square feet (assuming pile spacing less than 10 feet or complete blockage). There are no floating elements or gangways associated with this structure.

The cross-sectional length of the bypass at this location is approximately 4,000 feet. Between a DWSE of El. 51.0 and average operating water surface elevation in the EBD of El. 37.74, this translates to an approximate cross-sectional flow area of 53,040 square feet. The estimated blockage of the new lift station within this cross section is then 1.75%. Though the blockage of the structure exceeds the 1% USACE threshold, additional project features will likely reduce the overall blockage in the bypass and should be considered. Using a similar estimation method as above, the trees along a 600 linear foot section of the alignment (assuming distances of less than 10 feet, or complete blockage) represent approximately 7,956 square feet of blockage area that will be removed. Finally, the SNWR currently utilizes a small elevated lift station on the refuge to pump water into their conveyance facilities. This structure will be removed as part of the project, and with an estimated length of 10 feet perpendicular to bypass flows, presents an estimated 132 square feet of blockage that will be removed. Considering the removal of trees and existing lift station structure, it estimated that the project provides a net benefit in terms of removal of flow blockages within the Sutter Bypass.

3.10 Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING: Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through c) **No Impact:** The Proposed Project is within a National Wildlife Refuge and would not impact any communities or land use plans. There are no habitat or natural community conservation plans in the area.

3.11 Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XI. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through b) **No Impact:** There are no known mineral resources in the area, therefore, there is no impact as a result of the Proposed Action/Project.

3.12 Noise

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XII. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through c) **No Impact:** There would be no generation of noise levels exceeding standards as part of the Proposed Action/Project. Noise currently occurs in the Proposed Action/Project area due to the presence of the current pump and Weir 2 and the new pumps will not generate noise in excess of what is already occurring in the area.

d) **Less Than Significant Impact:** Construction activities will generate some noise due to the increased presence of construction equipment and personnel, however the increase would be less than significant.

e) through f) **No Impact:** There are no airports or airstrips in the area, therefore, there would be no impact as a result of the Proposed Project.

3.13 Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIII. 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through c) **No Impact:** The Proposed Project would not impact population or housing as it is within the National Wildlife Refuge.

3.14 Public Services

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XIV. PUBLIC SERVICES:

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

Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) **No Impact:** The Proposed Project would not impact public services.

3.15 Recreation

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XV. 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through b) **No Impact:** The Proposed Project would not impact recreation as this part of the SNWR is not open to recreational use. Recreational activities are allowed on other areas of the refuge and long-term positive impacts as a result of the Proposed Action/Project are anticipated due to a more reliable water supply, improved wildlife habitat, and more habitat being available for public hunting in the fall/winter. There are no neighborhood or regional parks/facilities in the area.

3.16 Transportation/Traffic

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION/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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) and b) **Less Than Significant Impact:** Sutter County is primarily a rural area with people and businesses concentrated in several small to medium-sized communities, including the Yuba City, Live Oak, Sutter and Meridian. The roadway network that would be used for the project is in Sutter County, near the city of Sutter and Yuba City. The transportation system in the region is composed of an interconnected network of state, county, and city roadways. There are no local transit systems or delineated pedestrian and bicycle facilities near the project area.

Regional access to the project area is provided primarily by California State Route 99 (SR 99). SR 99 is located east of project area and serves as a major route connecting the Sacramento Valley north to south. Oswald Road, Schlag Road and Hughes Road are county roads that provide immediate access to the project site. The local roadways support light rural farm traffic

Construction of the Proposed Action/Project would intermittently and temporarily generate increases in vehicle trips by construction workers and construction vehicles on area roadways over the duration of project construction activities. Construction activities will not result in any temporary reduction in the number of, or the available width of, travel lanes on roads adjacent to construction activities, resulting in short-term traffic delays for vehicles traveling past the construction zones. Construction activities will not require temporary closure of road segment, or resulting disruption to access for adjacent land uses or streets for general traffic or emergency vehicles.

Construction activities would generate short-term increases in vehicle trips by construction workers and construction vehicles on area roadways to and from construction areas. Construction generated traffic would be temporary and therefore would not result in any long-term degradation in operating conditions or level of service (LOS) on any local or regional roadways. The primary off-site impacts from the movement of construction trucks, primarily any materials hauling trucks, would include short-term and intermittent lessening of roadway capacities due to slower movements and larger turning radii of the trucks compared to passenger vehicles. Because these vehicles are similar to existing rural agricultural vehicles that are common in the areas, and because their use will be limited use, construction activities associated with the Proposed Project/Action would have no impact on existing traffic and capacity on local or regional roadways.

c) through f) **No Impact:** The Proposed Action/Project would not increase safety concerns relating to traffic, nor would it result in changes for emergency access.

3.17 Tribal Cultural Resources

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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XVII. TRIBAL CULTURAL RESOURCES: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- | | | | | |
|---|--------------------------|-------------------------------------|--------------------------|-------------------------------------|
| a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Proposed Action/Project

a) **No Impact:** Reclamation uses information obtained through the Section 106 process to inform its analysis of impacts to tribal cultural resources under NEPA. Typically, an undertaking found to have no effect on historic properties under Section 106 would also constitute an action resulting in no significant impacts to cultural resources under NEPA. Correspondingly, if an undertaking will result in an adverse effect under Section 106, measures agreed upon to avoid, minimize, or mitigate that adverse effect through the Section 106 process are considered sufficient to mitigate impacts to cultural resources under NEPA.

For the current undertaking, Reclamation conducted archival research, a records search through the Northeast Information Center of the California Historical Resources Information System, and a pedestrian survey of the area of potential effects. Reclamation sent letters to the United Auburn Indian Community of the Auburn Rancheria (UAIC), Enterprise Rancheria of Maidu Indians, Mooretown Rancheria of Maidu Indians, and the Maidu Band of Strawberry Valley Rancheria inviting their participation in the Section 106 process. The UAIC requested copies of cultural resource inventory reports and other environmental documents and notification regarding any Native American cultural resources of which Reclamation may be aware. A copy of the cultural resources inventory report prepared by Reclamation was provided to UAIC as requested.

CDFW sent a request to the Native American Heritage Commission (NAHC) for a search of the Sacred Lands File and a list of tribes that may be affiliated with the Project area. The NAHC performed a record search of the Sacred Lands File: the results were negative. A list of Native American tribes who may have knowledge of cultural resources in the project area were provided.

b) Less than Significant Impact with Mitigation: On May 29, 2018, CDFW mailed notification letters to its list of California Native American tribes that have requested an opportunity for CEQA consultation with CDFW and NAHC's list. These were the Mechoopda Indian Tribe of the Chico Rancheria, Middletown Rancheria, UAIC, Mooretown Rancheria of Maidu Indians, Strawberry Valley Rancheria, and Estom Yumeka Maidu Tribe of the Enterprise Rancheria. The letters included a description of the Project, a list of potential impacts to natural resources, and invited consultation pursuant to CEQA PRC 21080.3.1(b) and CDFW's Tribal Communication and Consultation Policy.

UAIC requested consultation with CDFW due to Tribal Cultural Resources (TCR) within the vicinity of the project area. CDFW responded to UAIC's request for consultation on June 19, 2018.

The following mitigation for TCR would reduce impacts to less than significant.

- TCR-1: A paid tribal monitor shall be present during ground disturbing activities to identify tribal cultural resources as they are uncovered.
- TCR-2: If a tribal cultural resource is encountered during construction activity, all work within 100 feet of the discovery area will stop, and further work will avoid disturbing the tribal cultural resources. Tribal representatives shall be contacted immediately and consulted with to determine appropriate and respectful treatment of the find.

If avoidance of work at the tribal resource is not feasible, the responsible federal agency will consult with tribal representatives and interested parties on the appropriate action prior to continuing project activities.

3.18 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XVIII. UTILITIES AND SERVICE SYSTEMS: Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Proposed Action/Project

a) through g) **No Impact:** The SNWR is predominantly within the Sutter Bypass and consists of wetland impoundments with some riparian and grassland habitat. The existing land use is for waterfowl breeding and wintering habitat, and general conservation.

3.19 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XIX. 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, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Proposed Action

a) Less Than Significant With Mitigation: The project has a less than significant impact with mitigation. Potential impacts to biological resources are expected to occur during the construction of the project which will be avoided or mitigated until the impacts are less than significant. Temporary impacts would be avoided by limiting the construction window, pre-construction surveys, and monitoring to minimize effects to biological resources. A USFWS/CDFW biologist would be consulted if avoidance of impacting biological resources is not possible. Upon completion of construction, water diversion will be screened to fully mitigate impacts to fish.

Permanent impacts of approximately 2.34 acres of potential upland GGS habitat, mature woody riparian vegetation and SRA habitat will be mitigated by purchasing mitigation credits at a mitigation bank. Permanent impacts of 0.46 acres to WOUS will be mitigated by purchasing mitigation credits at a mitigation bank.

b) No Impact: The project does not cause a cumulative impact due to past, current, or probable future projects. The prior geotechnical investigation in 2016 and current 2-year water supply study do not cause a significant cumulative impact as they do not have the same impact and therefore would not contribute to the temporary or permanent impacts identified for this project.

The project would allow for the future delivery of an additional 6,500 AF of IL4 water supplies above the historical 23,500 AF L2 water supply. A 2015 SNWR Water Supply Study identified two potential surface water conveyance alternatives: the existing conveyance through the Sutter Extension Water District Canal System and supply from the Sacramento River via Reclamation District 1004. No decision has been made in choosing any of these identified IL4 water conveyance alternatives.

c) **Less Than Significant Impact:** The project will cause intermittent and temporary impacts from increases in vehicle trips by construction workers and construction vehicles in rural area roadways for the duration of project construction activities. Impact to traffic and noise would be similar to existing rural agricultural vehicles that are common in the areas, and because their use will be limited use, construction activities associated with the project would have less than significant impact on existing traffic and capacity on local or regional roadways.

All construction-related hazardous materials will be transported, stored, and handled in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the state and federal Departments of Transportation, CVRWQCB, Sutter County, the local Fire District and other appropriate fire districts, among others as appropriate. A Hazardous Materials Management Plan (or equivalent) will be prepared and/or followed to provide specific emergency response protocols for the accidental release or threatened release of hazardous materials used as part of the construction.

No permanent adverse environmental effects on human beings are expected to occur, either directly or indirectly, as a result of the project.

Section 4 Other Federal Environmental Compliance Requirements

4.1 Indian Sacred Sites and Indian Trust Assets

Indian Trust Assets (ITA) are legal interests in assets that are held in trust by the United States for federally recognized Indian tribes or individuals. There are no Indian reservations, rancherias or allotments in the project area. The nearest Indian Trust Asset is the Cachil DeHe Band of Wintun Indians of the Colusa Indian Community, about 17 miles to the northwest of the project site. Based on the nature of the planned work it does not appear to be in an area that will impact Indian hunting or fishing resources or water rights nor is the proposed activity on actual Indian lands. It is reasonable to assume that the Proposed Action/Project will not have any impacts on ITAs.

Executive Order 13007 (May 24, 1996) requires Federal agencies to protect and preserve Indian religious practices on Federal lands through accommodating access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoiding adversely affecting the physical integrity of such sacred sites. Executive Order 13007 is applicable to sacred sites identified by Federally-recognized Indian tribes on Federal land. No Sacred Sites have been identified on project lands. Reclamation requested information under Executive Order 13007 in Section 106 coordination letters to federally recognized tribes and no Sacred Sites were identified.

4.2 Environmental Justice

Executive Order 12898 requires each Federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. Reclamation has not identified adverse human health or environmental effects on any population as a result of implementing the Proposed Action/Project. Therefore, implementing the Proposed Action/Project could not have a significant or disproportionately negative impact on low-income or minority individuals within the Proposed Action/Project area.

4.3 Consultation and Coordination

Reclamation and/or CDFW coordinated with the State Water Resources Control Board, Central Valley Flood Protection Board, California Department of Water Resources, USFWS, U.S. Army Corps of Engineers (USACE), California SHPO, and tribes in the preparation of this EA/IS. Reclamation coordinated with the USFWS, NMFS and CDFW on the federal and state-listed species. Separate Biological Assessments were submitted to USFWS and NMFS in March 2018.

Reclamation has been designated as the lead federal agency for NEPA by USACE and USFWS. The USACE's and USFWS's actions of issuing the Section 404 permit and ESA consultations will be covered by Reclamation's Section 106 and Section 7 consultations.

Section 5 Public Review/Comments

The EA/IS was made available for public review for a 45-day period between June 29 and August 13, 2018. Four comment letters were received from the following entities: Central Valley Regional Water Quality Control Board, Central Valley Flood Protection Board, Middletown Rancheria Tribal Historic Preservation Department, and United Auburn Indian Community of the Auburn Rancheria (Attachment A). Two of the letters simply acknowledged receipt of the EA/IS for review and restated their agency's permit requirements. Middletown Rancheria indicated they have no specific concerns with the project but wished to be contacted if evidence of Native American habitation sites is found during project implementation. The United Auburn Indian Community provided comments related to Tribal Cultural Resources, which are defined in California PRC § 21074, and recommended mitigation measures specific to CEQA and AB 52 compliance, which have been included in the Mitigation and Monitoring Reporting Plan (Attachment B).

Section 6 References

- Bureau of Reclamation. 2017. Aquatic Resources Delineation, Sutter Lift Station Project. October 2017.
- Categorical Exclusion for Sutter National Wildlife Refuge Geotechnical Investigation. 2016. March 2016.
- RD 2035/Woodland Davis Clean Water Agency Joint Intake and Fish Screen Project. 2012. Environmental Assessment/Initial Study and Finding of No Significant Impact. October 2012.
- Burleson Consulting, Inc., RMC Water and Environment and Wood Rodgers (in association with U.S. Department of the Interior Bureau of Reclamation Mid Pacific region Sacramento Office). *Sutter National Wildlife Refuge Water Supply Conveyance Study*. January 2015.
- Federal Register. 66 FR 38611–38626. “Endangered and Threatened Wildlife and Plants; 12-Month Finding for a Petition to List the Yellow-billed Cuckoo (*Coccyzus americanus*) in the Western Continental United States.” July 25, 2001
- California Department of Water Resources. 2008. Mitigated Negative Declaration and Initial Study for the Sutter Bypass East Borrow Canal Water Control Structures Project. June 2008.
- Biological Assessment for the Sutter Bypass East Borrow Canal Water Control Structures Project, Sutter County, CA. 2008. Prepared by Department of Water Resources, Division of Planning and Local Assistance for Department of Water Resources, Division of Flood Management. May 2008.

**ATTACHMENT A
COMMENT LETTERS**



MIWOK United Auburn Indian Community
MAIDU of the Auburn Rancheria

Gene Whitehouse
Chairman

John L. Williams
Vice Chairman

Calvin Moman
Secretary

Jason Camp
Treasurer

Gabe Cayton
Council Member

CONFIDENTIAL

Pursuant to state and Federal Law: contains site locations and tribal ceremonial and religious use information

August 13, 2018

Shelly Hatleberg
Mid-Pacific Regional Office
US Bureau of Reclamation
Federal Office Building
2800 Cottage Way
Sacramento CA 95825-1898

Re: United Auburn Indian Community Comments on the Notice of Availability for the Draft Environmental Assessment/Initial Study for the Sutter National Wildlife Refuge Lift Station Project

Dear Ms. Hatleberg:

This comment letter on the Notice of Availability for the Draft Environmental Assessment/Initial (EA/IS) Study for the Sutter National Wildlife Refuge Lift Station Project is sent on behalf of the United Auburn Indian Community ("Tribe"). It is based upon information in the project record, consultation between the Tribe, the U.S. Bureau of Reclamation (USBR), and the California Department of Fish and Wildlife (CDFW), as well as data gathered by the UAIC Tribal Historic Preservation Office, which has been formally designated by the National Park Service. This comment letter focuses on the appropriate scope of analysis in the EA/IS as well as alternatives to the project. This letter also underscores the Tribe's interest in the identification and preservation of sanctified tribal cemeteries, cultural landscapes, sacred sites, historic properties, and other Tribal Cultural Resources that may be adversely impacted by the proposed action.

Cultural Affiliation

The United Auburn Indian Community is comprised of Miwok and Southern Maidu (Nisenan) people who are traditionally and culturally affiliated with the geographic area within your agency's geographic area of jurisdiction. The Tribe's area of geographic traditional and cultural affiliation encompasses all of Amador, El Dorado, Nevada, Placer, Sacramento, Sutter and Yuba counties, as well as portions of Butte, Plumas, San Joaquin, Sierra, Solano and Yolo counties; which includes the project area.

Cultural Resources in the proposed Sutter National Wildlife Refuge Lift Station Project

The proposed Sutter National Wildlife Refuge Lift Station Project is near known tribal cultural resources. Additionally, the proposed project area may include cultural landscapes, cultural sites, and sacred places whose boundaries have not been adequately located or defined. For that reason, surveys by tribal representatives, interviews with landowners, and additional geotechnical or geo-archaeological testing may be necessary to confirm the boundaries of Tribal Cultural Resources within the project area. Unless it is confirmed through these methods that no such sites exist, it is the Tribe's view that the project may have significant environmental and cultural impacts that would cause substantial adverse effects on the Tribe as a community, as well as its religious and traditional practices.

AB 52

The proposed EA/IS falls after the July 2015 cut-off for AB 52 consultation, and the Tribe has requested that it be notified of projects within its Geographic Area of Traditional and Cultural Affiliation for which the USBR or CDFW is the lead agency under CEQA. On 5/31/2018, the Tribe received a request for AB 52 consultation. On 6/12/2018, UAIC responded (via e-mail) to the AB 52 letter to request consultation for the project, and request GIS SHP files and a copy of the record search. At that time, the Tribe also confirmed that Tribal Cultural Resources are present within the vicinity of the project area, and recommended specific mitigation measures to address these tribal cultural resources. Those recommendations included the following:

- UAIC tribal representatives should be allowed to observe and participate in all cultural resource surveys, including initial pedestrian surveys for the project.
- If tribal cultural resources are identified within the project area, paid tribal monitors must be present for all ground disturbing activities.
- Subsurface testing and data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.
- Additional information about the nature and location of the Tribal Cultural Resources should be obtained via a records search request of the UAIC Tribal Historical Resources Information System (THRIS). Please let us know if you are interested in this record search, and we will send over a copy of the program description and the associated fees.
- Tribal cultural resources must be preserved in place and avoided whenever possible.

The CDFW Tribal Liaison informed us that our requested mitigation measures would be incorporated into the draft EA/IS, however they are not included in the version of the EA/IS that is currently available online. We reiterate our request to include the mitigation measures listed above in the EA/IS to ensure that Tribal Cultural Resources are protected. Specifically, the draft EA/IS mitigated for impacts to tribal cultural resources via TCR-1 (tribal monitoring) and TCR-2 (procedures for the discovery of cultural resources), which were reviewed and approved by both UAIC and CDFW representatives.

EA/IS Contents

Because the project area may contain Tribal Cultural Resources, the Tribe has a keen interest that the EA/IS be complete and adequately investigate all the issues related to tribal concern.

Accordingly, below are items the Tribe respectfully requests be studied in an EA/IS should the applicants choose to try to move forward with their proposal.

Native American Consultation

The EA/IS should reflect that your agency is consulting with the UAIC for this project, and that Tribal Cultural Resources are present within the project vicinity. The Tribe will be consulting independently as a sovereign nation.

Tribal Views on Human Remains, Grave Goods and Tribal Cemeteries

The Tribe's view on human remains, grave goods and tribal cemeteries should be included in the EA/IS. Those views are that human remains, grave goods, and tribal cemeteries should be preserved in place with no disturbance, invasive testing or destructive analysis and testing. This view extends to ex situ, disarticulated or disturbed human remains (including cremations) as well as sacred objects, objects of cultural patrimony, grave goods and burial soils. Public Resources Code section 5097.98 (b)(2)(d) (1) and (2) supports that view in defining Native American human remains to include inhumation or cremation, and remains in any state of decomposition or skeletal completeness. Intact burials of interest to archaeologists therefore are only one kind of legally covered burial. A reference to Public Resources Code section 5097.98 (b)(2)(d) (1) and (2) should be included in the section on human remains, grave goods, and tribal cemeteries.

More generally, the EA/IS for the Sutter National Wildlife Refuge Lift Station Project should acknowledge that cemeteries, regardless of whether they are disturbed, should be avoided and preserved in place whenever possible.

Second, the EA/IS should acknowledge the Most Likely Descendant's role in identifying appropriate treatment for burials and cemeteries. This view is supported by caselaw. See, *People v. Van Horn* (1990) 218 Cal.App.4d 1378 (in disagreement about whether burial related objects were to be treated as grave goods by Indians or scientific artifacts by archaeologists, court held the statute clearly gives the choice of preservation or reburial to Native Americans and the Legislature did not intend to give archaeologists any statutory powers with respect to Native American burials). Mitigation measures in the EA/IS should be clear that the MLD has the authority to identify appropriate treatment for the entire cemetery site, rather than just the burials. Such treatment could be archaeological evaluation, but that decision should be at the MLD's discretion.

The Tribe's views on the culturally-appropriate treatment of ancestral human remains and grave goods, as well as AB52 authority and guidance, should be included in the EA/IS and any technical studies that support that document. Some of these views may need to be placed into a confidential section of the EA/IS and confidential part of the project administrative record pursuant to Government Code sections 6254.10, 625(r), CEQA Guidelines section 15120(d) and *Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal.App.4th 200. Should there be any questions about this, my staff are happy to discuss this with you.

Prior Investigation

Thank you for providing a copy of the pedestrian survey that was completed in 2015 for this project. Please continue to provide copies of all cultural resources reports and environmental

sections. The Tribe requests to be invited to participate in the inventory, evaluation, assessment, finding of effect and treatment implementation process.

History of the Project Area and Cumulative Impacts

The EA/IS should explore the history of the project area, including its significance to the Native American community. The EA/IS must also examine the cumulative impacts of this project, including prior impacts that occurred because of other development within the project area.

The EA/IS should examine the effects that erosion may have on tribal cemeteries, cultural landscapes, sacred sites, historic properties, and other Tribal Cultural Resources from water release and other factors that may cause water level variability.

Visual Impacts

Visual and aesthetic resources are a component of tribal values and can contribute to a site's significance. Visual simulations from and towards the project area from key viewpoints selected through consultation with the Tribe should be performed and included in the EA/IS. Impacts to setting and context for the area and tribal practices must also be considered.

Finally, we request consultation regarding any art or designs that will be incorporated into the project so that they may reflect the areas traditional tribal art design elements.

Biological and Natural Resources

The project APE may contain biological and natural resources which are a component of traditional ecological knowledge and are important to the Tribe. The Biological section of the EA/IS should specify substantial impacts (if any) to Native plants and important species such as salmon and treat them as impacts to Tribal Cultural Resources. These aspects of the cultural property must be considered in the EA/IS and in the eligibility determinations.

Noise, Light and Privacy

If tribal cemeteries, cultural landscapes, sacred sites, historic properties, and other Tribal Cultural Resources are identified, the EA/IS must analyze the project's noise and light impacts relative to sites as well as whether the proposed use would adversely impact the intangible, physical or metaphysical cultural use of the sites or affect the privacy of tribal members who use them for cultural, religious, or ceremonial purposes.

Vibration and Compression

This construction of roads, houses and utilities described can affect subsurface cultural materials in more ways than excavation. Vibration and compression must also be studied in the EA/IS for the potential of construction, maintenance or residential equipment to damage tribal cemeteries, cultural landscapes, sacred sites, historic properties, and other Tribal Cultural Resources that remain in the ground.

Export, Fill, Borrow and Disposal Locations Must be Considered

Any fill must be certified clean, meaning not coming from a historic site or containing archaeological materials or human remains.

Land Use Restrictions

When tribal cemeteries are identified, land use restrictions should be put in place to prevent activities that would now or later in time adversely impact the resources. These restrictions on property use must be enforceable.

Public Land

Please provide a map showing any public land in or near the project property. This would include any public easements. Please clearly show and mark any fee acquisition, permanent or temporary rights of way and permanent or temporary easements and indicate whether all these areas have been surveyed with qualified Native American Monitor participation. Such acquisitions would trigger public lands analysis under Public Resources Code sections 5097.9, 5097.97. Please note that the NAHC is the state trustee agency for resources of tribal concern and as such must receive copies of any environmental documents prepared.

Alternatives to the Project

One or more onsite alternatives that would minimize impacts to Tribal Cultural Resources, areas of high or moderate cultural sensitivity, and with appropriate buffers should be studied in the EA/IS. This could be termed a Tribal Cultural Resource Avoidance Alternative. Additional alternative locations or designs for limiting site impacts and micro siting any development must be considered in the EA/IS given CEQA's preference for avoidance. See *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48 (CEQA documents must explain why preservation in place was rejected in favor of other forms of mitigation).

If a conservation easement or other protective conveyance is considered, tribal views on appropriate management must be solicited, as well as considerations of endowment for long term management. In general, the Tribe would want tribal cemetery areas to be secured from public access. Tribal concerns could be addressed in a Memorandum of Agreement between USBR and the Tribe. The Tribe is available to consult about this.

Tribal Monitors for Investigations

The Tribe has found that tribal cultural resources are often encountered during geotechnical or soils work and therefore requests that paid tribal monitors be required any time ground disturbing studies or surveys are being conducted - even before project approval.

Mitigation Measure Development

The Tribe appreciates that CDFW and USBR consulted with the Tribe on mitigation measures prior to the preparation of the EA/IS. The Tribe particularly notes its concerns with aspects of archaeological monitoring and data recovery protocols which it considers to be an adverse effect that cannot be mitigated: the Tribe does not consider data recovery, curation and testing/analysis

to be appropriate for tribal cemeteries or sacred sites. Please ensure that the mitigation measures submitted by the Tribe pursuant to AB 52 consultation are included in the EA/IS. Also, please notify the Tribe of any proposed changes to the mitigation measures for Cultural Resources or Tribal Cultural Resources.

Finally, post-approval technical studies often result in otherwise avoidable impacts and improperly deferred mitigation. The Tribe requests that all such studies be completed prior to the EA/IS being released. Additionally, the Tribe requests to review and comment on the Mitigation Monitoring and Reporting Program for the Sutter National Wildlife Refuge Lift Station Project.

Conclusion

The United Auburn Indian Community appreciates the opportunity to comment on the EA/IS and the ongoing discussion regarding appropriate mitigation measures for the project. We look forward to consulting with USBR and CDFW on the proposed Sutter National Wildlife Refuge Lift Station Project and potential options for preservation that would not adversely impact the sanctified cemeteries, cultural landscapes, sacred sites, historic properties, and other Tribal Cultural Resources in the area. Please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com if you have any questions or to schedule those consultations. And please place my office on the list of persons to receive any environmental documents and notices of public hearings for the project.

Sincerely,



Gene Whitehouse
Chairman

Attachment:

UAIC October 30, 2015 letter to the USBR Requesting AB 52 Notification

cc: California Department of Fish and Wildlife
Matthew Moore, UAIC Tribal Historic Preservation Officer
Marcos Guerrero, UAIC Cultural Resource Manager



MIWOK United Auburn Indian Community
 MAIDU of the Auburn Rancheria

Gene Whitehouse
 Chairman

John L. Williams
 Vice Chairman

Danny Rey
 Secretary

Brenda Adams
 Treasurer

Calvin Moman
 Council Member

November 23, 2015

California Department of Fish and Wildlife, Environmental Services Division Representative
 1416 Ninth Street, 13th Floor
 Sacramento, CA 95814

RE: AB 52 Notification Request, California Environmental Quality Act Public Resources Code section 21080.3, subd. (b) Request for Formal Notification of Proposed Projects within the United Auburn Indian Community (UAIC) of the Auburn Rancheria's Geographic Area of Traditional and Cultural Affiliation

Dear California Department of Fish and Wildlife, Environmental Services Division Representative:

In accordance with Public Resources Code Section 21080.3.1, subd. (b), The United Auburn Indian Community (UAIC) of the Auburn Rancheria, which is traditionally and culturally affiliated with a geographic area within your agency's geographic area of jurisdiction, requests formal notice of and information on proposed projects for which your agency will serve as a lead agency under the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq.

Enclosed with this letter is a copy of a map that depicts the ancestral territory that the UAIC is traditionally and culturally affiliated with. UAIC's traditionally and culturally affiliated geographic area is supported by, and has been developed through, multiple lines of evidence including oral tradition, history, ethnography, geography, linguistic, kinship, biology, archaeology, anthropology, folklore, other relevant information and expert opinion, and Congressional action through the Auburn Indian Restoration Act of 1994 (H.R. 4228 [103rd]).

Pursuant to Public Resources Code section 21080.3.1, subd. (b), and until further notice, we hereby designate the following person as the tribe's lead contact person for purposes of receiving notices of proposed projects from your agency:

Lead Contact:
 Gene Whitehouse,
 Chairman
 10720 Indian Hill Road
 Auburn, CA 95603
 916-883-2320

Copies to:
Jason Camp
Tribal Historic Preservation Officer
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2320
jcamp@auburnrancheria.com

Marcos Guerrero
Cultural Resources Manager
10720 Indian Hill Road
Auburn, CA 95603
(530) 883-2364
mguerrero@auburnrancheria.com

We request that all notices be sent via certified U.S. Mail with return receipt and that your notices specify a lead contact person for your agency. Following receipt and review of the information your agency provides, within the 30-day period outlined in Public Resources Code section 21080.3.1, subd. (d), the UAIC may request consultation, as defined by Public Resources Code section 21080.3.1, subd. (b), pursuant to Public Resources Code section 21080.3.2 to discuss issues including the type of environmental review to be conducted, project alternatives, significant effects of the project and mitigation measures for any project impacts (direct, indirect and cumulative) a specific project may cause to tribal cultural resources.

For your information, UAIC's policy is to be present during project cultural resource surveys, including initial pedestrian surveys, to identify tribal cultural resources. UAIC's policy is also to be provided all existing cultural resource assessments, including the request for and results of any records search that may have been conducted prior to the initial survey or consultation meeting. Finally, UAIC's general policy is preservation in place and avoidance of tribal cultural resources, and any subsurface testing or data recovery must not occur without first consulting with UAIC and receiving UAIC's written consent.

We recommend that your agency retain this correspondence in your permanent files. If you have any questions or need additional information, please contact Marcos Guerrero, Cultural Resources Manager, at (530) 883-2364 or by email at mguerrero@auburnrancheria.com.

Sincerely,



Gene Whitehouse,
Chairman

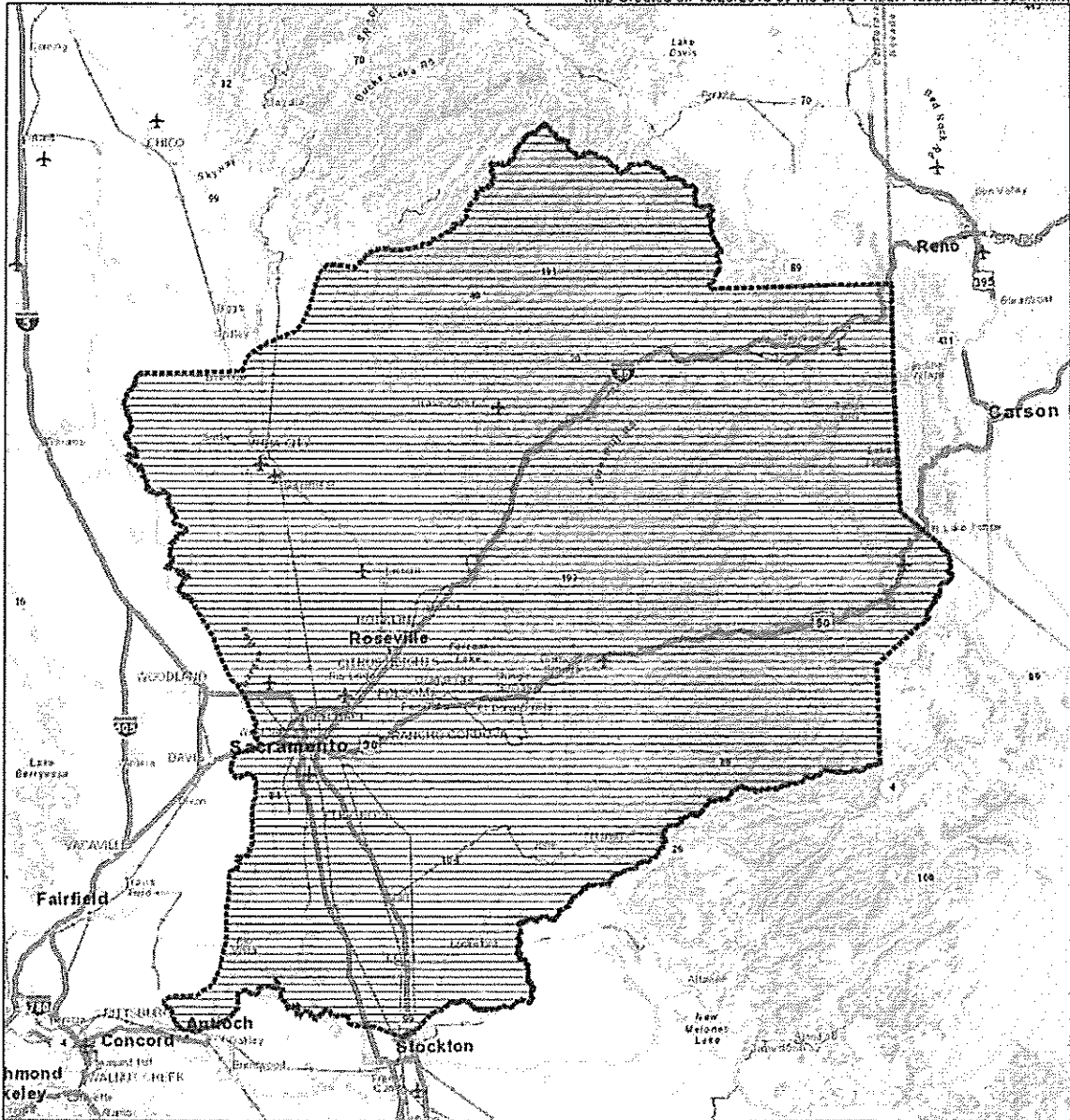
CC: Jason Camp, THPO
Marcos Guerrero, CRM
Cynthia Gomez, NAHC

UAIC Geographic Area of Traditional and Cultural Affiliation


(for the purposes of California AB 52)

This area includes all of Amador, El Dorado, Nevada, Placer, Sacramento, Sutter and Yuba counties as well as portions of Butte, Plumas, San Joaquin, Sierra, Solano, and Yolo counties.

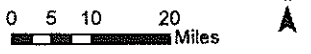
Map Created on 10/28/2015 by the UAIC Tribal Preservation Department



Legend

 UAIC Geographic Area of Traditional and Cultural Affiliation*

* The UAIC Geographic Area of Traditional and Cultural Affiliation boundary line is dashed to indicate that the boundary may change as affiliated resources are discovered or added, for example Valley and Sierra Miwok territory extends farther south.



This map is no substitute for direct consultation with UAIC prior to considering any proposed project or commencing any archaeological activities in or around sensitive areas.

Note: While we make every effort to identify Tribal Cultural Resources that exist within the UAIC Geographic Area of Traditional and Cultural Affiliation, it is highly probable that there are additional, older sites that we have not yet identified due to restricted access or other reasons or that agricultural or construction activities have distributed burials and cultural materials beyond the previously known boundaries of these sites. Even if these materials are in a disturbed condition, they still retain cultural value to UAIC and should be respected and protected. Because of this, thorough survey with a qualified Native American Monitor to confirm site boundaries and search for unknown sites is critical. This survey should be conducted after consultation with the Tribe and prior to the final determination of the type of environmental document to be used.

*Middletown Rancheria
Tribal Historic Preservation Department
P.O. Box 1035
Middletown, CA 95461*

July 19, 2018

Via Electronic Mail

Ms. Shelly Hatleberg
Department of Fish and Wildlife
1812 9th Street
Sacramento, CA 95811

Re: Sutter National Wildlife Refuge Lift Station Project

Dear Ms. Hatleberg:

The Middletown Rancheria (Tribe) is in receipt of your letter dated June 29th, 2018 regarding the Sutter National Wildlife Refuge Lift Station Project.

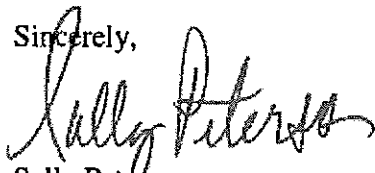
Though we have no specific comments at this time, should any new information or evidence of human habitation be found as the project progresses, we request that all work cease and that you contract us immediately. We do have a process to protect such important and sacred resources.

Thank you for the opportunity to provide comments to the above referenced project. The Tribe looks forward to continuing to be a part of the Department's process.

Nothing herein should be construed to be a waiver of or limitation of any of the Tribe's rights in law, in equity, or otherwise. All rights, claims and remedies are specifically reserved.

Should you have any questions, please do not hesitate to contact me.

Sincerely,



Sally Peterson
Tribal Vice-Chairwoman

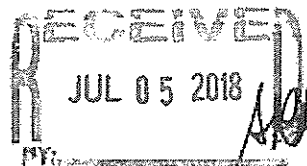
Phone (707) 987-3670 ext #15
1307

Fax (707) 987-9091



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Wildlife Branch
1812 9th St.
Sacramento, CA 95811
www.wildlife.ca.gov

EDMUND G. BROWN, Jr., Governor
CHARLTON H. BONHAM, Director



June 29, 2018

**NOTICE OF AVAILABILITY FOR PUBLIC REVIEW
PURSUANT TO CALIFORNIA ENVIRONMENTAL QUALITY ACT SECTION 21092**

Draft Environmental Study/Initial Study for the Sutter National Wildlife Refuge Lift Station Project. The document will be available for review for 45 days until Aug. 13, 2018. Comments can be sent to Shelly Hatleberg at shatleberg@usbr.gov.

U.S. Bureau of Reclamation (Reclamation) and California Department of Fish and Wildlife are lead federal and state agencies for National Environmental Policy Act and California Environmental Quality Act, respectively. Reclamation and its partners, U.S. Fish and Wildlife Service and Ducks Unlimited Inc., propose to construct the Sutter National Wildlife Refuge (SNWR) Lift Station (Proposed Project). The Proposed Project would further the goals and objectives of the CVPIA Refuge Water Supply Program by improving refuge water availability and capacity for Level 2 and Incremental Level 4 water supplies at the SNWR.

The proposed project consists of the following elements: (1) construction of a lift station with four vertical-turbine pumps located approximately 200 feet upstream of California Department of Water Resources' Weir No. 2 structure and on the west side of the East Borrow Ditch; (2) installation of approximately 700 feet of 54-inch diameter buried pipeline from the proposed pump station to a new concrete distribution box; (3) construction of a new concrete distribution box connected to the new buried pipeline and existing internal refuge water conveyance facilities; (4) installation of two cylindrical fish screens fitted to the new pump station intakes; (5) improving internal maintenance roads; and (6) installing infrastructure to supply power to the pump station. The above elements are located on lands owned by the USFWS and the state of California.

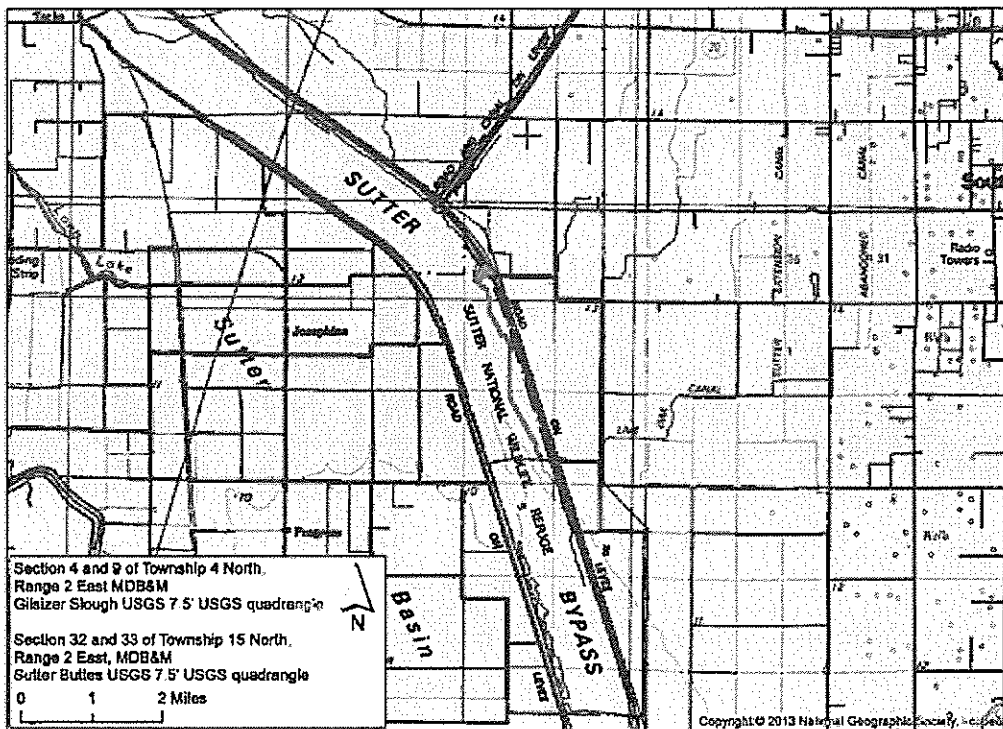
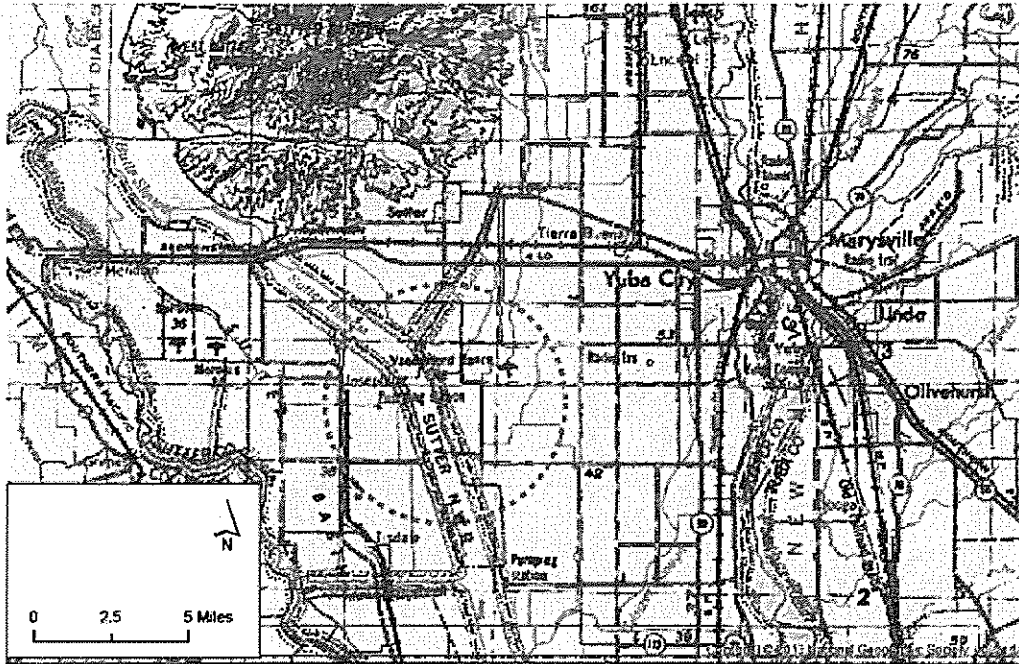
The project has the potential to significantly impact biological resources and tribal cultural resources which may include: loss of habitat, take of special status species, and disturbance of tribal cultural resources.

The document is available at:

https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=33421,
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=159676>, and

For questions on the project or to request hard copies of the document, please contact Shelly Hatleberg by email or at (916) 978-5050 (TTY 800-877-8339), or Jeffrey Shu by email at Jeffrey.Shu@wildlife.ca.gov or at (916) 445-8572.

Sutter National Wildlife Refuge Lift Station Project Area Map



Note: the red line shows the extent of the Project Area, including access road



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH



KEN ALEX
DIRECTOR

July 31, 2018

Jeffrey Shu
Fish & Wildlife (HQ) Environmental Services
1812 9th St
Sacramento, CA 95811

Subject: Sutter National Wildlife Refuge Lift Station Project
SCH#: 2018062073

Dear Jeffrey Shu:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on July 30, 2018, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

"A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2018062073
Project Title Sutter National Wildlife Refuge Lift Station Project
Lead Agency Fish & Wildlife (HQ) Environmental Services

Type MND Mitigated Negative Declaration
Description US Bureau of Reclamation and CDFW are lead federal and state agencies for NEPA and CEQA, respectively. Reclamation and its partners, US Fish and Wildlife Service and Ducks Unlimited Inc., propose to construct the Sutter National Wildlife Refuge Lift Station Project. The proposed project would further the goals and objectives of the CVPIA Refuge Water Supply Program by improving refuge water availability and capacity for level 2 and incremental level 4 water supplies at the SNWR.

Lead Agency Contact

Name Jeffrey Shu
Agency Fish & Wildlife (HQ) Environmental Services
Phone 916-445-8572 **Fax**
email
Address 1812 9th St
City Sacramento **State** CA **Zip** 95811

Project Location

County Sutter
City Yuba City
Region
Lat / Long 39° 06' 09.8" N / 121° 45' 33.4" W

Cross Streets

Parcel No.

Township	Range	Section	Base
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Proximity to:

Highways

Airports

Railways

Waterways Sutter Bypass

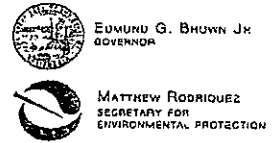
Schools

Land Use PLU: waterfowl breeding and wintering habitat, and general conservation

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Minerals; Noise; Other Issues; Population/Housing Balance; Public Services; Recreation/Parks; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Central Valley Flood Protection Board; Department of Parks and Recreation; Department of Water Resources; Caltrans, District 3 N; State Water Resources Control Board, Division of Water Quality; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Toxic Substances Control; Delta Protection Commission; Delta Stewardship Council; Native American Heritage Commission

Date Received 06/29/2018 **Start of Review** 06/29/2018 **End of Review** 07/30/2018



Central Valley Regional Water Quality Control Board
Governor's Office of Planning & Research

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23 July 2018

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STATE CLEARINGHOUSE

Jeffrey Shu
Department of Fish and Wildlife
1812 9th Street
Sacramento, CA 95811

CERTIFIED MAIL
91 7199 9991 7039 6992 5994

**COMMENTS TO REQUEST FOR REVIEW FOR THE MITIGATED NEGATIVE
DECLARATION, SUTTER NATIONAL WILDLIFE REFUGE LIFT STATION PROJECT,
SCH# 2018062073, SUTTER COUNTY**

Pursuant to the State Clearinghouse's 29 June 2018 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Mitigated Negative Declaration* for the Sutter National Wildlife Refuge Lift Station Project, located in Sutter County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases,

KARL E. LONGLEY ScD, P.E., CHAIR | PATRICK PULUPA, ESQ., EXECUTIVE OFFICER

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley

the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues.

For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/.

Antidegradation Considerations

All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Policy is available on page IV-15.01 at:
http://www.waterboards.ca.gov/centralvalleywater_issues/basin_plans/sacsjr.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan

(SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml.

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/.

For more information on the Phase II MS4 permit and who it applies to, visit the State Water Resources Control Board at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 2014-0057-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

Waste Discharge Requirements – Discharges to Waters of the State

If USACOE determines that only non-jurisdictional waters of the State (i.e., “non-federal” waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/help/business_help/permit2.shtml.

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Risk General Order) 2003-0003 or the Central Valley Water Board’s Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Risk Waiver)

R5-2013-0145. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Risk General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Risk Waiver and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2013-0145_res.pdf

Regulatory Compliance for Commercially Irrigated Agriculture

If the property will be used for commercial irrigated agricultural, the discharger will be required to obtain regulatory coverage under the Irrigated Lands Regulatory Program. There are two options to comply:

1. **Obtain Coverage Under a Coalition Group.** Join the local Coalition Group that supports land owners with the implementation of the Irrigated Lands Regulatory Program. The Coalition Group conducts water quality monitoring and reporting to the Central Valley Water Board on behalf of its growers. The Coalition Groups charge an annual membership fee, which varies by Coalition Group. To find the Coalition Group in your area, visit the Central Valley Water Board's website at: http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/for_growers/apply_coalition_group/index.shtml or contact water board staff at (916) 464-4611 or via email at IrrLands@waterboards.ca.gov.
2. **Obtain Coverage Under the General Waste Discharge Requirements for Individual Growers, General Order R5-2013-0100.** Dischargers not participating in a third-party group (Coalition) are regulated individually. Depending on the specific site conditions, growers may be required to monitor runoff from their property, install monitoring wells, and submit a notice of intent, farm plan, and other action plans regarding their actions to comply with their General Order. Yearly costs would include State administrative fees (for example, annual fees for farm sizes from 10-100 acres are currently \$1,084 + \$6.70/Acre); the cost to prepare annual monitoring reports; and water quality monitoring costs. To enroll as an Individual Discharger under the Irrigated Lands Regulatory Program, call the Central Valley Water Board phone line at (916) 464-4611 or e-mail board staff at IrrLands@waterboards.ca.gov.

Low or Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Dewatering and Other Low Threat Discharges to Surface Waters* (Low Threat General Order) or the General Order for *Limited Threat Discharges of Treated/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Water*

(Limited Threat General Order). A complete application must be submitted to the Central Valley Water Board to obtain coverage under these General NPDES permits.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0074.pdf

For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2013-0073.pdf

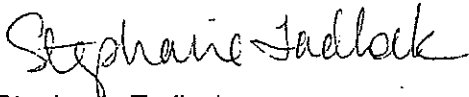
NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit.

For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/help/business_help/permit3.shtml

If you have questions regarding these comments, please contact me at (916) 464-4644 or Stephanie.Tadlock@waterboards.ca.gov.



Stephanie Tadlock
Senior Environmental Scientist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Ste. 170
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682



July 11, 2018

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Governor's Office of Planning & Research

JUL 19 2018

STATE CLEARINGHOUSE

Mr. Jeffrey Shu
Department of Fish and Wildlife
1812 9th Street
Sacramento, California 95811

Subject: Sutter National Wildlife Refuge Lift Station Project,
Mitigated Negative Declaration, SCH Number: 2018062073

Location: Sutter County

Dear Mr. Shu,

Central Valley Flood Protection Board (Board) staff has reviewed the subject document and provides the following comments:

The proposed project is within the Sutter Bypass, a regulated stream under Board jurisdiction, and may require a Board permit prior to construction.

The Board's jurisdiction covers the entire Central Valley including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins south of the San Joaquin River.

Under authorities granted by California Water Code and Public Resources Code statutes, the Board enforces its Title 23, California Code of Regulations (Title 23) for the construction, maintenance, and protection of adopted plans of flood control, including the federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways.

Pursuant to Title 23, Section 6 a Board permit is required prior to working within the Board's jurisdiction for the placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment, excavation, the planting, or removal of vegetation, and any repair or maintenance that involves cutting into the levee.

Permits may also be required to bring existing works that predate permitting into compliance with Title 23, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the works has not been clearly established or ownership and use have been revised.

Mr. Jeffrey Shu
July 11, 2018
Page 2 of 2

Other federal (including U.S. Army Corps of Engineers Section 10 and 404 regulatory permits), State and local agency permits may be required and are the applicant's responsibility to obtain.

Board permit applications and Title 23 regulations are available on our website at <http://www.cvfpb.ca.gov/>. Maps of the Board's jurisdiction are also available from the California Department of Water Resources website at <http://gis.bam.water.ca.gov/bam/>.

Please contact James Herota at (916) 574-0651, or via email at James.Herota@CVFlood.ca.gov if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrea Buckley". The signature is fluid and cursive, with the first name "Andrea" and last name "Buckley" clearly distinguishable.

Andrea Buckley
Environmental Services and Land Management Branch Chief

cc: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044

ATTACHMENT B
MITIGATION MONITORING AND REPORTING PLAN

Sutter National Wildlife Refuge Lift Station Project Mitigation Monitoring and Reporting Plan

Pre-construction			
Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	USFWS/CDFW	Avoid	<p>GGs-2: Twenty-four hours prior to the commencement of construction activities, the construction area will be surveyed for GGS by a USFWS/CDFW-approved monitoring biologist to determine if GGS are likely to be present. The monitoring biologist will advise work crews on areas to be avoided to avoid effects to GGS. If the monitoring biologist determines GGS are likely in the area, construction will be delayed and USFWS and CDFW will both be notified. The construction area will be re-inspected by the monitoring biologist whenever a lapse in construction activity of two weeks or greater has occurred. The monitoring biologist will provide USFWS and CDFW with a written report that adequately documents the monitoring efforts within 24 hours of commencement of construction activities. During construction, the monitoring biologist will immediately report to both USFWS and CDFG any direct encounters between the snake, project workers, and their equipment whereby incidental take in the form of harassment, harm, injury, or mortality occurs. If a GGS is encountered but unharmed within the construction area, all work will cease, and the animal will be allowed to leave the area on its own. Injured GGS must be cared for by a licensed veterinarian or other qualified person(s), such as the USFWS/CDFW-approved monitoring biologist. Dead GGS must be sealed in a re-sealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service and CDFW regarding the disposition of the dead specimen. Contacts will be the Chief of the Sacramento Valley Division of the Endangered Species Program at the USFWS Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6631, as well as CDFW (916) 358-2842. If the encounter occurs after normal working hours, the monitoring biologist shall contact the USFWS and CDFW at the earliest possible opportunity the next working day. USFWS and CDFW will immediately respond to the monitoring biologist to provide further guidance before work continues.</p>

Biological Resources	USFWS/CDFW	Avoid	GGG-7:	Project staging activities will remain greater than 30 feet from the EBD and the Main and Hi-Line Canals.
Biological Resources	USFWS/CDFW	Minimize	GGG-9:	Dewatered areas (within the Main Canal) will remain dry and absent of aquatic prey for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, USFWS and CDFW will be contacted to determine what additional measures may be necessary to minimize effects to GGS.

Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	USFWS/CDFW	Minimize	GG-10: Prior to October 1 and after dewatering, high visibility fencing will be erected around the Main Canal to identify and protect these areas from encroachment of personnel and equipment. These areas will be avoided by all construction personnel. The fencing shall be inspected by the contractor before the start of each work day and maintained by the contractor until completion of the project. Fencing will be established in the uplands immediately adjacent to aquatic snake habitat and extending up to 200 feet from construction activities. GGS exclusionary fencing will be buried at least six inches below the ground to prevent snakes from attempting to burrow or move under the fence.
Biological Resources	USFWS/CDFW	Avoid	YBCU-2: Within 24 hours prior to the commencement of construction activities, the Proposed Action/Project area will be surveyed for YBCU by a USFWS/CDFW-approved biologist. The Proposed Action/Project area will be re-inspected by the monitoring biologist whenever a lapse in construction activity of two weeks or greater has occurred.
Biological Resources	CDFW	Avoid	WPT-1: In-water work will be avoided to the extent practicable. In cases where this is unavoidable, a biological monitor will survey the sites before work commences. If WPTs are found, efforts will be made to move them to suitable habitat outside the disturbance area.
Biological Resources	CDFW	Minimize	SWHA-1: Surveys for SWHA will be conducted 15 days prior to construction and again if there is a lapse in work for 15 days. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting SWHA are detected, buffers will be established around nests that are sufficient to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers around active raptor nests will be 500 feet for non-listed raptors, unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting raptors. Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity. Buffers will be maintained until a qualified CDFW biologist has determined that young have fledged and are no longer reliant upon the nest or parental care for survival.

Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	CDFW	Minimize	SWHA-2: If construction occurs between February 1 and August 31, surveys will be conducted for nesting raptors in accordance with established CDFW raptor survey protocols. See YBCU-1 regarding tree removal which also applies to SWHA.
Biological Resources	CDFW	Minimize	RPS-1: Rare Plant Survey. A pre-construction plant survey shall be performed during the appropriate blooming period for all State listed and special-status plants with potential to occur within the project site. If the survey results are negative, no further action by the Permittee is needed. If the survey finds that any State listed, or special-status plants are present, the Permittee will consult with CDFW on the appropriate action prior to continuing project activities with the potential to impact the plants.
Biological Resources	CDFW	Avoid	WRB-1: A pre-construction survey for roosting sites for WRB shall be performed prior to tree removal or trimming activities. If the survey results are negative, no further action by the Permittee is needed. If the survey finds that any WRB roosting sites are present, the Permittee will consult with CDFW on the appropriate action prior to conducting tree removal or trimming activities with the potential to impact the species.

Construction			
Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	USFWS/CDFW	Avoid	GGG-1: Ground disturbing activities along the canals would occur during the GGS active season (May through October) to avoid take of GGS burrowing in canals or staged construction materials.
Biological Resources	USFWS/CDFW	Avoid	GGG-3: A Worker Environmental Awareness Training Program for construction personnel will be conducted by a USFWS/CDFW-approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. Interpretation will be provided for non-English speaking workers and the same instruction provided for any new workers prior to performing work on site. The training will include information regarding the appearance, biology, distribution and habitat needs of any special-status species that may be present, legal protections for those species, and penalties for violations and project-specific protective measures.
Biological Resources	USFWS/CDFW	Avoid	GGG-4: During construction, stockpiling of construction materials, portable equipment, vehicles and supplies will be restricted to designated construction staging areas and all operations will be confined to the minimal area necessary, as designated on the engineering plans.
Biological Resources	USFWS/CDFW	Minimize	GGG-5: Project-related vehicles will observe a 15-mph speed limit within construction areas and when accessing the construction area through Sutter NWR.
Biological Resources	USFWS/CDFW	Avoid	YBCU-1: The Proposed Action/Project will result in the removal of approximately 2.20 acres of mature woody vegetation (primarily oaks) and Shaded Riverine Aquatic habitat (SRA). Removal of trees shall be conducted from September 1 through March 1 outside the YBCU nesting season to avoid disturbance to YBCU during other construction activities.
Biological Resources	USFWS/CDFW	Avoid	YBCU-3: If any YBCU are observed to be nesting (not just foraging), all work will cease and the animal will be allowed to leave the area on its own. The USFWS/CDFW-approved biologist will be immediately contacted to provide further guidance before work continues.

Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	USFWS/CDFW	Avoid	FISH-1: Contractor shall perform any in-water construction activities between July 1 and October 31 to avoid impacting fish during migratory periods. When in-water work is conducted, a qualified biologist shall be present during such work to monitor construction activities and ensure compliance with mitigation requirements and permit terms and conditions.
Biological Resources	USFWS/CDFW	Minimize	FISH-2: Pipe pile shall only be driven by vibratory or non-impact methods (hydraulic) that result in sound pressures below threshold levels (see Effects Analysis) to the extent practical, but may be finished with the diesel hammer as needed to reach required tip elevation. Pile driving equipment will start at low power levels and strike frequency to minimize sound pressure levels harmful to fish and allow fish in the area to move away. A minimum of a 15-minute break between each pile installation will allow fish within the action area to move. Affected fish should only be temporarily impacted.
Tribal Cultural Resources	CDFW	Avoid	TCR-1: A paid tribal monitor shall be present during ground disturbing activities to identify tribal cultural resources if they are uncovered.
Tribal Cultural Resources	CDFW	Avoid	TCR-2: If a tribal cultural resource is encountered during construction activity, all work within 100 feet of the discovery area will stop, and further work will avoid disturbing the tribal cultural resources. Tribal representatives shall be contacted immediately and consulted with to determine appropriate and respectful treatment of the find.

Post-construction			
Impact	Monitoring Responsibility	Mitigation Type	Implementation Measure
Biological Resources	USFWS/CDFW	Rectify	GG5-6: Once construction is completed, all construction debris will be removed and wherever feasible, disturbed areas will be restored. Restoration will be coordinated with refuge staff to ensure that refuge management goals are reflected. A photo documentation report showing pre- and post-project area conditions will be submitted to USFWS and CDFW one month after the implementation of the restoration.
Biological Resources	USFWS/CDFW	Compensate	GG5-8: Temporary impacts to approximately 1.74 acres of potential upland GGS habitat as a result of placing spoil piles on the existing levee access road (Alternative Access road). Impacts to GGS habitat will be mitigated by purchasing credits at an approved GGS mitigation bank at a 0.5:1 replacement ratio. Permanent impacts to approximately 0.09 acres of potential upland GGS habitat as a result of placing rip rap along the west bank of the Main Canal, across from the new distribution box. Permanent impacts to GGS habitat during the active season will be mitigated by purchasing credits at an approved GGS mitigation bank at a 3:1 replacement ratio.
Biological Resources	USFWS/CDFW	Compensate	FISH-3: Permanent impacts to approximately 0.03 acres of SRA habitat as a result of putting piles to support the fish screen structure in the EBD will be mitigated by purchasing credits at an approved SRA habitat mitigation bank at a 3:1 replacement ratio.
Biological Resources	USACE	Compensate	WOUS-1: Permanent and temporary impacts to WOUS as a result of the Proposed Action/Project will be mitigated through purchases of mitigation credits to offset impacts and reduce the level of impacts to less than significant in accordance with the U.S. Army Corps of Engineers Section 404 permit.

Mitigation Type - These describe how the mitigation measures are designed to address impacts

Avoid	Avoid the impact by not taking certain action or parts of an action.
Minimize	Minimize impacts by limiting the degree or magnitude of the action and its implementation. May also include avoidance measures.
Rectify	Rectify the impact by repairing, habilitating, or restoring the affected environment.
Reduce or Eliminate	Reduce or eliminate the impact over time through preservation and maintenance during the life of the action.
Compensate	Compensate for the impact by replacing or providing substitute resource or environments.