

PUBLIC REVIEW DRAFT
INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION

for the

DECKER ISLAND ELECTRICAL CROSSING
OF HORSESHOE BEND
in Solano and Sacramento Counties

March 14, 2014

WALLACE

Environmental Consulting, Inc

Prepared for:

RECLAMATION DISTRICT #341
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

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NEGATIVE DECLARATION

Lead Agency:
RECLAMATION DISTRICT 341
(SHERMAN ISLAND)
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

PROJECT NAME:

Decker Island Electrical Crossing of Horseshoe Bend

PROJECT PROPONENT

Decker Island, LLC
4060 Campus Drive, Suite 100
Newport Beach, CA 92660

LEAD AGENCY:

Reclamation District 341
(Sherman Island)
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

PROJECT LOCATION:

The project site is linear corridor connecting Sherman Island near State Route (SR) 160 and Decker Island; the project corridor will be 15 feet, or less, in width depending on the construction method selected. The site is approximately 4 river miles south of Rio Vista along SR 160 and is located in both Solano and Sacramento Counties. The project site is located in an unsectionalized area, a portion of T3N, R2E, MDBM. The decimal latitude and longitude of the approximate center of the project site are 38.098679N and -121.708102W.

PROJECT DESCRIPTION:

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

ENVIRONMENTAL DETERMINATION:

The Lead Agency has prepared an Initial Study, following, which considers the potential environmental effects of the proposed project. The Initial Study shows that there is no substantial evidence, in light of the whole record before the Lead Agency, that the project may have a potentially significant effect on the environment, provided that the following mitigation measures are included in the project.

BIOLOGICAL RESOURCES MITIGATION MEASURES

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts special-status species:

BIO-1 In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS)

BIO-2 If construction commences between February 1 and August 31, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors' active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG's 1994 Staff Report regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

BIO-3 A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material

- BIO-4 Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above
- BIO-5 Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the buffer area will be delayed until hatching is complete and the young have left the nest site.
- BIO-6 Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.
- BIO-7 A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program will be Swainson's hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.
- BIO-8 Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.

CULTURAL RESOURCES MITIGATION MEASURES

- CU-1 If any subsurface cultural resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified archaeologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant impacts to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery, and the proponent shall be responsible for

retaining a qualified archaeologist and for implementing recommended mitigation measures.

CU-2. If human remains are encountered at any time during project construction, all construction activity in the vicinity of the encounter shall cease, and the County Coroner and RD 341 shall be notified immediately. The Coroner will contact the Native American Heritage Commission if the remains have been identified as being of Native American descent. The proponent, under the direction of RD 341, shall implement the requirements of the CEQA Guidelines, which detail steps to be taken when human remains are found to be of Native American origin. The proponent shall also retain a qualified archaeologist to evaluate the archaeological implications of the find and recommend any mitigation measures needed to reduce any potentially significant effects to a less than significant level under CEQA. The proponent, under the direction of RD 341, shall implement those recommendations.

CU-3. If any paleontological resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified paleontologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant effects to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery; the proponent shall be responsible for retaining a qualified paleontologist and for implementing recommended mitigation measures, under the direction of RD 341.

Therefore, the Lead Agency proposes to adopt a Mitigated Negative Declaration for the project, in accordance with the provisions of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines.

Juan Mercado, Reclamation District 341

Date

Project Brief

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation on Decker Island via a buried electrical cable. The 1,100-foot cable will cross approximately 800 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

Project Baseline, Setting and Background

DI currently operates an aggregate and fill material extraction, handling and loading facility on Decker Island. Exported materials are transported by barge for use in construction work in and around the California Delta, and the San Francisco Bay Area. DI currently produces approximately 700,000 tons of material annually. Assuming increasing demand for its products over time, annual production is expected to reach 2 million tons/year; however, the potential for DI expansion will depend on uncertain long-term market conditions.

DI operates under a Use Permit (U-09-08) and Reclamation Plan (RP-09-01) issued by Solano County in 2010; over the permitted 30-year life of the project, as much as 55 million tons of material may be extracted. Solano County prepared and adopted an Initial Study/Mitigated Negative Declaration (IS/MND), completing the CEQA environmental review for the existing DI facilities, before approving the Use Permit and Reclamation Plan.

The Solano County IS/MND addressed all aspects of existing and planned future DI operations on Decker Island, including materials mining, handling and export, and the required reclamation of mined lands. The IS/MND noted that the operation's electrical needs would be met by diesel generators in the short-term but that a connection to PG&E facilities would be made as soon as it could be constructed. The potential environmental effects of providing electrical service to DI within the Solano County permit area on Decker Island were addressed by the IS/MND. The potential environmental effects of the proposed Horseshoe Bend river crossing were not addressed in the IS/MND. Those potential environmental effects are addressed by this document.

Purpose of the Initial Study

The California Environmental Quality Act (CEQA) requires that public agencies document and consider the potential environmental effects of any agency actions that meet CEQA's definition of a "project;" briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project includes the agency's direct activities and activities that involve public agency approvals or funding. Guidelines for an agency's implementation of CEQA are found in the "CEQA Guidelines" (Title 14, Chapter 3 of the California Code of Regulations). The proposed project will require several permits and approvals from state and federal agencies with jurisdiction over the Sacramento River and its environs. Because the project involves modifications to a levee operated and maintained by Reclamation District 341 (RD341), an encroachment permit from RD341 is required. In the course of reviewing the project for a permit, RD341 agreed to be the Lead Agency for the project. Thus, RD341 is the Lead Agency for the project and is responsible for environmental review under CEQA.

Provided that a project is not found to be exempt from CEQA, the first step in the Lead Agency's evaluation of the potential environmental effects of the project is the preparation of an Initial Study. The purpose of an Initial Study is to determine whether the project would involve "significant" environmental effects as defined by CEQA and to describe feasible mitigation measures that would be necessary to avoid the significant effects or reduce them to a less than significant level. In the event that the Initial Study does not identify significant effects, or identifies mitigation measures that would reduce all of the significant effects of the project to a less than significant level, the agency may prepare a Negative Declaration. If this is not the case, the Lead Agency must prepare an Environmental Impact Report (EIR); the agency may also decide to proceed directly with the preparation of an EIR without preparation of an Initial Study.

The Decker Island Electrical Crossing is a "project" as defined by CEQA and is not CEQA-exempt. RD 341 has determined that the project involves the potential for significant environmental effects. The purpose of this Initial Study is to describe the proposed project, briefly describe the environmental setting of the project, discuss the potential environmental effects of the project, identifying any potentially significant environmental effects, and identify mitigation measures needed to reduce the potentially significant environmental effects of the project to a less than significant level.

Scope of Initial Study

This Initial Study evaluates the project's potential to result in "significant" environmental effects, as defined by CEQA, in the following issue areas. Where there are feasible mitigation measures that would avoid or reduce significant effects, they are identified, and the level of significance of the environmental effect, with the application of the mitigation measure(s) is identified.

Aesthetics
Agricultural Resources

Air Quality
Biological Resources
Cultural Resources
Geology and Soils
Greenhouse Gas Emissions
Hazards and Hazardous Materials
Hydrology and Water Quality
Land Use and Planning
Mineral Resources
Noise
Population and Housing
Public Services
Recreation
Transportation/Traffic
Utilities and Service Systems
Mandatory Findings of Significance

Environmental Evaluation Checklist Terminology

The potential environmental effects of the proposed project are evaluated in the following Environmental Evaluation Checklist. The checklist includes a list of environmental considerations against which the project is evaluated. For each question, the lead agency determines whether the project would involve: 1) No Impact, 2) a Less Than Significant Impact, 3) a Less Than Significant Impact With Mitigation Incorporated, or 4) a Potentially Significant Impact.

A Potentially Significant Impact occurs when there is substantial evidence that the project would involve a substantial adverse change to the physical environment, i.e. that the environmental effect may be significant, and mitigation measures have not been defined that would reduce the impact to a less than significant level. If there are one or more Potentially Significant Impact entries in the Initial Study, an EIR is required.

A Less Than Significant Impact occurs when the project would involve effects on a particular resource, but there is no substantial evidence that the project would involve a substantial adverse change to the physical environment – a significant environmental effect - and no mitigation measures are required.

An environmental effect that is Less Than Significant With Mitigation Incorporated is a Potentially Significant Impact that can be avoided or reduced to a less than significant level with the application of proposed mitigation measures, and the proponent agrees to implement the mitigation measures.

A determination of No Impact is self-explanatory.

Project Brief

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation on Decker Island via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

Project Location

The project site is an approximately 15 foot-wide linear corridor within which the proposed electrical cable will be installed. The corridor extends from an upland area on Sherman Island near State Route (SR) 160 across Horseshoe Bend to an existing access road on the eastern shore of Decker Island. The entire project is approximately 1,100 feet in length.

Horseshoe Bend is an approximately 3 mile-long side channel of the Sacramento River that extends up to a mile east of the 3,000-foot-wide Sacramento River Deep Water Shipping Channel that borders Decker Island on the west. The project site is approximately 4 river miles south of the SR 12 crossing of the Sacramento River at Rio Vista. The eastern terminus of the project is approximately 4.3 miles south of SR 12 along SR 160. The general location of the project site is shown on Figures 1 through 3.

The project site located in both Solano and Sacramento Counties; the County boundary is the approximate center of Horseshoe Bend at the proposed crossing. The project site is located in an unsectionalized area, a portion of T3N, R2E, MDBM. The decimal latitude and longitude of the approximate center of the project site are 38.098679N and -121.708102W.

Consideration of Alternatives

The proposed project involves direct burial of the proposed electrical cable across Horseshoe Bend to Decker Island. The proposed crossing method was selected as the option with the least potential environmental effects and acceptable costs after evaluation of a range of crossing options. The options considered included: 1) bottom-laid cable; 2) an overhead crossing from Sherman to Decker Island; 3) a conduit bridge from Sherman to Decker Island; 4) directional drilling under Horseshoe Bend; and 5) alternative crossing locations.

The relative feasibility and potential environmental effects of these options are described below.

Bottom-Laid Cable. Placement and anchoring of the cable on the channel bottom be the simplest and least expensive of the crossing options. This option was, however, dismissed by the U.S. Army Corps of Engineers and Coast Guard as unacceptable due to the potential for anchor drag hazards from recreational boating. Horseshoe Bend sustains heavy recreational boating and anchorage use since the area is sheltered from the prevailing, strong westerly winds. Therefore, this option is considered infeasible.

Overhead Line. An overhead line crossing of Horseshoe Bend would have the advantage of avoiding in-channel disturbance and related environmental effects but would involve increased potential for bird strike and adverse aesthetic effects for residents and recreational users of the area. The extreme costs of overhead line construction, however, make this option infeasible. In order to construct the 800-foot span and provide the required clearance for navigation, a 80+-foot guyed steel tower would be needed on Sherman Island, and a slightly shorter tower on Decker Island. Due to the relative instability of soils on Sherman Island, foundation structures 30 to 40 feet deep would be needed to provide adequate support for the tower. Landowners contacted by the applicant opposed this option and were not willing to make land available for towers or guys. Therefore, this option is considered infeasible.

Bridge. The proponent considered the option of constructing a bridge over Horseshoe Bend to carry the electrical cable. To accommodate recreational boating, the bridge would require either sufficient clearance height or a mechanical system to allow safe river traffic passage. A bridge would be expensive to construct and operate. In-channel bridge construction could have potentially significant effects on biological resources and water quality and have potentially significant post-construction effects on aquatic organisms, recreation and aesthetics. This option is considered economically infeasible and more environmentally damaging than the Project.

Directional Drilling. The proponent considered the use of directional drilling to make the channel crossing, but this option was rejected as infeasible. In order to provide the required clearance of 75 feet below the bottom of the Sherman Island protective levee, the directional drilling site on Sherman Island would need to be set back several hundred feet from the shoreline, as would the receiving location on Decker Island. The proponent was unable to identify property on Sherman Island that would be available for mobilization of a directional drilling operation. On Decker Island the set-back receiving location would substantially restrict permitted future mining. If the required clearance could be achieved, RD 341 has concerns that the project could nonetheless result in leakage of river water into and along the bore that could result in failure of the Sherman Island levee and flooding of the island. Due to the flood water storage capacity of the Island, such an event would have potentially significant effects on the hydrology and water quality of the lower Delta as well as on the operation of the Central Valley and State Water Project facilities in the south Delta. The additional engineering and construction costs of prevention, and of ongoing inspection and maintenance are considered prohibitive.

Alternative Locations. In addition to the project site, only one other location offers private land access to Horseshoe Bend and would provide feasible access to Decker Island. The alternative site is along Sherman Island Road, west of SR 160. The applicants were unsuccessful in reaching acceptable terms with the landowners for purchase of access rights. From an engineering standpoint, this site is less desirable than the project site; existing PG&E facilities are located on the levee, and the underlying soils are substantially less stable than those at the project site. The required crossing distance at this site is approximately 100 feet longer than at the proposed site, which would result in additional aquatic habitat effects. The alternative would involve increased potential for impacts on three special-status plants (Delta mudwort, Suisun marsh aster, and Mason's lilaeopsis), which have been recorded in the California Natural Diversity Data Base on this part of Sherman Island. Potential occurrences of these species are mapped continuously along the shoreline. Completion of the Decker Island portion of the alternative alignment would involve increased potential for impacts on riparian vegetation and near-shore emergent wetland vegetation that may also support special-status plants.

Future Electrical Supply Improvements

The Project will allow DI to reduce or eliminate the use of existing diesel generators and take advantage of PG&E electrical capacity of approximately one megawatt available from its existing distribution system on Sherman Island. DI's proposed cable crossing to Decker Island will include sufficient capacity to accommodate additional electrical demand for Decker Island that may be needed to handle permitted future increases in production.

Currently, PG&E facilities on Sherman Island have the capacity to provide the approximately one megawatt of electrical power needed to meet DI's existing needs. In order to provide electrical supply beyond this existing capacity, the PG&E distribution system on Sherman Island will need to be upgraded or reconstructed. Neither DI nor PG&E have made or expect to make any commitment to the required improvements in the near future, and no engineering plans, specifications or cost estimates have been prepared by either entity. The need for and feasibility of expanded electrical supply will be determined by future market conditions, and neither DI nor PG&E will consider a major improvement project that is not supported by existing use and projected demand.

The possibility that there may be future improvements to the PG&E distribution system is identified in this document in the interests of "full disclosure" required by CEQA. However, these potential improvements are not considered a part of the proposed project and are not subject to environmental review in this document. The improvements are not related to any known near-term need, and they are not in any way defined as to type, size or location. These potential future improvements are not an activity that is being undertaken or approved and therefore does not constitute a "project" or portion of a project under CEQA. The potential environmental effects that might result from these possible future improvements are therefore considered "speculative" pursuant to the CEQA Guidelines (Section 15145) and are not addressed further in this document.

Project Entitlements

The Sherman Island Reclamation District (RD341) is the CEQA lead agency for the project. An encroachment permit from RD341 is necessary for this project. RD341's role will be to permit and endorse the proposed crossing of the Sherman Island levee once it is satisfied that its levee facility will not be compromised.

Project construction and operation will also require permits and approvals from federal and state agencies, as summarized below:

US Army Corps of Engineers (USACOE). Section 10, Rivers and Harbors Act, for work in navigable waters, and Section 404, Clean Water Act, for dredging and/or placement of fill in a Water of the United States. Corps approval will include the required endorsement from US Coast Guard.

California Department of Fish and Wildlife (CDFW). Fish and Game Code Section 1600 Streambed Alteration Agreement for work in the bed and/or banks of a state-regulated waterway.

California Regional Water Quality Control Board. Water Quality Certification under Section 401 of the Clean Water Act (required in connection with USACOE Permit).

Central Valley Flood Protection Board (CVFPB). Encroachment Permit for work on and near regulated streams, including levees.

California State Lands Commission. Lease for proposed use of State Lands (river channel).

Project Details

The proposed project will connect the existing DI facilities to existing PG&E power lines located along SR 160 on Sherman Island, east of Horseshoe Bend. The primary project component is a buried 3 to 4-inch diameter cable composed of several electrical conductors; the cable will be anchored at junction boxes at either end of the river crossing. In upland portions of the project site, the proposed cable will be buried a minimum of 3 feet below the ground surface; within the river channel, the cable will be buried a minimum of 5 feet below the channel bottom. The total length of the project is approximately 1,065 feet; the approximate length of the proposed cable segments is as follows:

115 feet	PG&E connection to river channel
890 feet	River channel
60 feet	River channel to Decker Island vault box

The eastern end of the cable will terminate at an underground box vault to be installed adjacent to an existing overhead PG&E electrical pole line west of SR 160 on Sherman Island. The project will require the installation of a total of five new poles approximately 45 feet in height at this location in order to

accommodate a meter and other required electrical equipment, and to transition from overhead to underground equipment. The western terminus of the cable will be a box vault to be installed on DI property, approximately 60 feet from the shoreline.

The proposed project will be constructed during summer 2014. The estimated time required to construct the project is approximately 2 weeks. In-water work will likely be completed in 100- to 200-foot sections, or longer sections depending on field conditions and construction scheduling.

Cable burial in upland areas will be accomplished with conventional equipment, such as excavator or backhoe. Soil will be removed from the trench and placed in the adjacent area; the cable bed will be prepared, the cable will be laid, and the trench will be backfilled with compacted native material and revegetated. The construction width of disturbance will be 15 feet or less, depending on the construction method. The maximum upland area of disturbance will be approximately 2,625 square feet, or about 0.06 acres.

The placement of the cable in the Sherman Island levee will be consistent with the standards set forth in the encroachment permit issued by RD341. Cable burial across the Sherman Island levee will require removal of existing paving along the Sherman Island levee road, and of existing rip-rap along the water-side levee slope and then trenching to bury the cable. Following construction, the roadbed grade will be restored with aggregate base material; rip-rap removed from the levee slope will be set aside during construction and replaced.

Cable embedment in the river channel will involve use of a barge-mounted long-reach excavator or clamshell bucket equipment. Sediment will be removed from the trench and placed on the down-current side of the trench. The cable will be laid in the trench from a barge and may be stabilized with netting and/or ballast until the trench is backfilled. The trench will be backfilled using the excavation equipment; backfill material will consist of the sidecast sediment topped with a 4 to 12-inch layer of approximately 3-inch rock. Trench width will vary based on the consolidation of the channel bottom materials; in areas with poor consolidation, the trench slopes may need to be laid back to achieve the required burial depth. The average disturbed area in the channel portion of the project using the excavator or clamshell bucket construction method is not expected to exceed the proposed easement width of 15 feet; the maximum in-water area of disturbance will be 13,350 square feet or about 0.3 acres.

Embedment of the cable may also be accomplished with a jetting sled. With this method, hydraulic jets mounted on a skid-supported cable guide will cut the cable burial trench. The cable will simultaneously be fed through the guide, laid and buried in a single pass; additional hydraulic jets will bury the cable and partially refill the trench with excavated sediment; backfill will be completed with a 4 to 12-inch layer of approximately 3-inch rock. Hydraulic pressure, power supply and system control will be provided by an umbilical line connecting the sled to an accompanying support barge. The jetting sled will be operated continuously until the submarine portion of the cable burial is complete, with an estimated construction period for this portion of the work of 2-3 24-hour

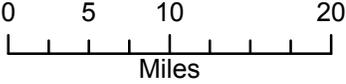
shifts. The embedment will be inspected at approximately 100-foot intervals by divers following the jet sled.



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

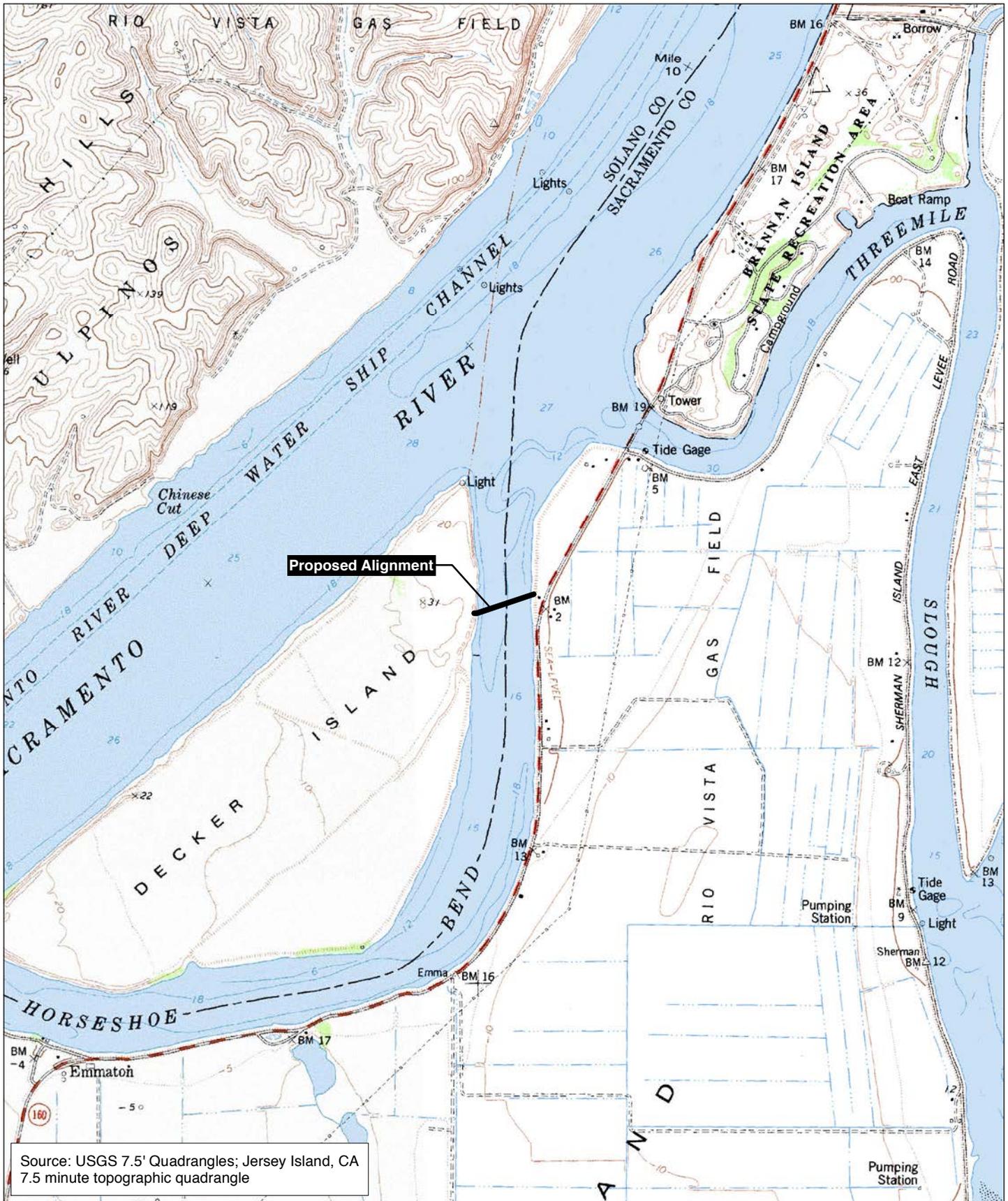
Figure 1

Map Date: January 2014



PROJECT VICINITY

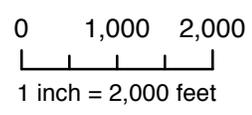
Decker Island
Solano and Sacramento
Counties, CA



Source: USGS 7.5' Quadrangles; Jersey Island, CA
7.5 minute topographic quadrangle

Figure 2

Map Date: January 2014



Project Location

Decker Island
Solano and Sacramento
Counties, CA

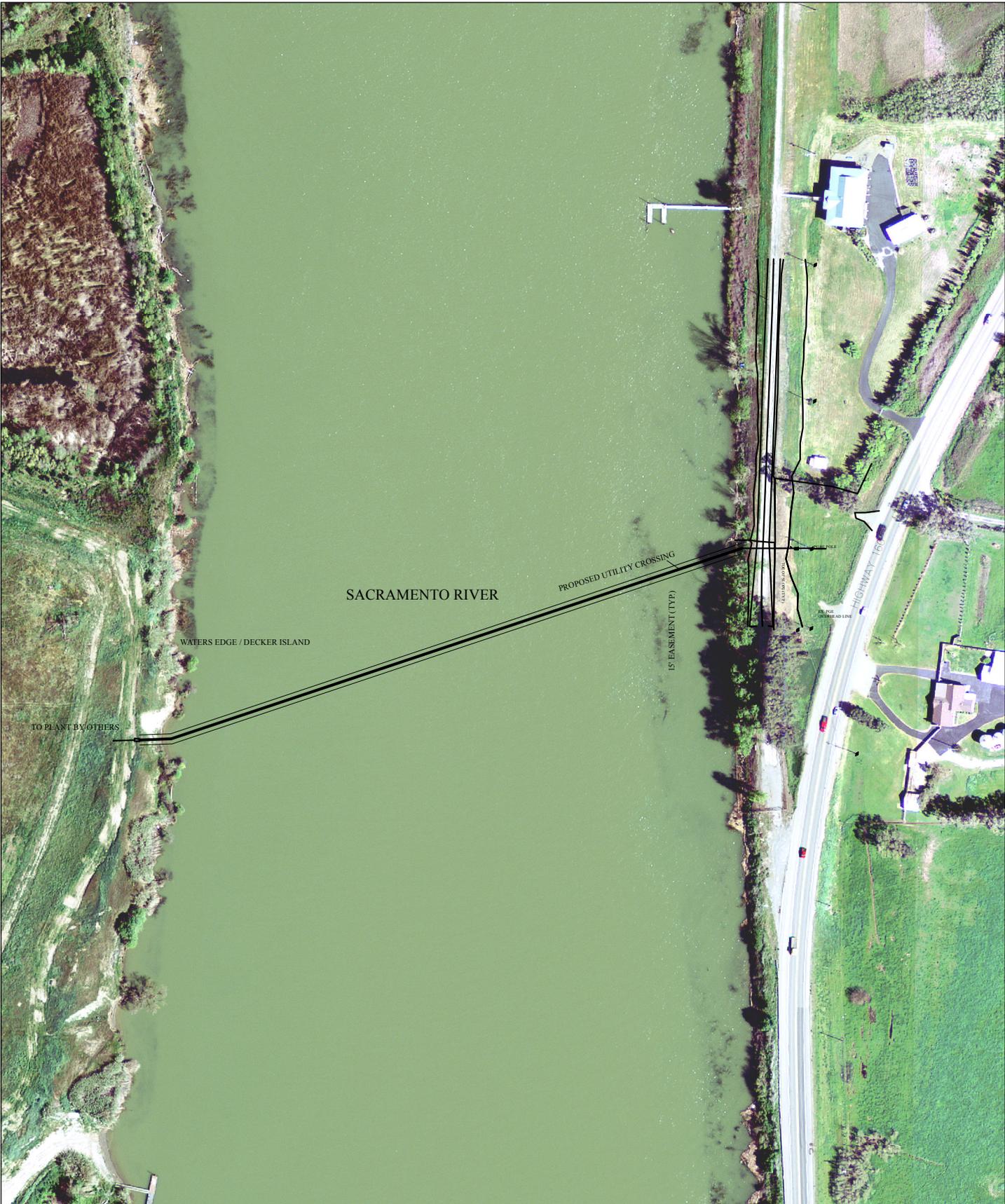
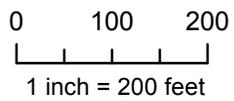


Figure 3

Map Date: January 2014



Aerial: USGS (April 9, 2011)

Aerial Photograph

Decker Island

*Solano and Sacramento
Counties, CA*

Chapter 3.0

Environmental Checklist / Initial Study

3.1 SUMMARY OF ENVIRONMENTAL EFFECTS

The environmental factors checked below will be subject to potentially significant environmental effects as a result of this project, as discussed in the following environmental checklist. Proposed mitigation measures, to which the proponent has agreed, will reduce all of these potential effects to a less than significant level.

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems
- Mandatory Findings of Significance

3.2 LEAD AGENCY DETERMINATION:

On the basis of this initial evaluation:

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

- ✘ I find that although the proposed project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

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

I find that the proposed project **MAY** have a "potentially significant

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

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

Juan Mercado
Reclamation District 341

Date

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

The foregoing environmental determination is based on the evaluation of the potential environmental effects of the proposed project, as documented in the following checklist and supporting documentation. The checklist has been prepared in accordance with the following requirements:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where the analysis(es) are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated", describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats.
9. The explanation of each issue should identify:
 - a. the significance criteria or threshold, if any, used to evaluate each question; and
 - b. the mitigation measure identified, if any, to reduce the impact to less than significance

3.4 ENVIRONMENTAL CHECKLIST AND NARRATIVE

3.4.1 AESTHETICS

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

NARRATIVE EXPLANATION

Environmental Setting

The project site is a 15-foot-wide corridor that crosses Horseshoe Bend, a branch of the Sacramento River, the riverbanks and the Sherman Island levee. The majority, approximately 890 lineal feet, of the project site is open water; a band of sparse emergent vegetation is located in a shallow area adjacent to Sherman Island.

The western 60 feet of the project site is the eastern shore area of Decker Island, which is a narrow sandy beach and an approximately 25-foot high bluff populated with ruderal grasses and Himalaya berry vines. A narrow band of riparian vegetation is located along the shoreline north and south of, but not within, the project site.

The eastern 115 feet of the alignment crosses the Sherman Island levee and adjacent land area. The western, waterside levee bank is covered with rip-rap and is vegetated with cottonwood trees and associated riparian groundcover; vegetation along the levee, and in all portions of the project site, is discussed in more detail in Section 4, Biological Resources. The former Sherman Island Levee Road, an approximately 25-foot-wide paved section, occupies the top of the levee. The levee's landside slope is vegetated with ruderal grasses.

As discussed in Section 15 Recreation, the Sacramento River and its environs are outdoor recreation resources of statewide importance that support heavy multi-seasonal use for boating, fishing, wind sports and other active and passive recreation. Recreational values are in large part dependent on the aesthetic value of the surrounding environment. The river corridor is preserved and managed by local, state and federal agencies to maintain these values. The project site is a component of and contributor to an important aesthetic resource and is therefore aesthetically sensitive. Sacramento County identifies the shoreline of Horseshoe Bend as a Scenic Corridor.

The easternmost 50 feet of the project alignment on the landside of the Sherman Island levee is visible from SR 160. SR 160 is a State- and Sacramento County-designated Scenic Highway. Agriculture, river views, recreational use and other open space values contribute to the scenic qualities reflected in the designation. The project area is designated as a Priority 1 Open Space in the Open Space Element of the Sacramento County General Plan because the project area has five contributing factors, including “Habitat,” “Natural Resources,” “Recreation,” “Agricultural” and “Rivers and Streams.” Only four contributing factors are necessary to be considered Priority 1. The visibility of this portion of the project site to passing motorists is fleeting; at an assumed travel speed of 55 miles per hour, views of the approximately 200-foot-wide open area surrounding the project alignment are available for about 2.5 seconds. Cottonwood and blue gum trees adjacent to the project site are the principal distinguishing aesthetic features in this area; these trees would not be affected by the project.

Potentially-affected viewer groups include recreational users of the river and motorists on SR 160, which passes the eastern terminus of the project at a distance of approximately 90 feet. The Sherman Island levee, between the river and the highway, obstructs views east from the river and west from the highway. Recreational use of Horseshoe Bend in the project vicinity includes boating and fishing; the Decker Island shoreline area is a popular anchorage, because the island provides shelter from the prevailing northwesterly winds. Recreational usage of this area is considered relatively heavy but is not specifically quantified; anchorage and overnight users have extended exposure to aesthetic conditions in the area.

Decker Island is uninhabited except for employees of DI Aggregates; all DI activities are currently located in the western portion of the Island. There are two existing residences in the project vicinity. One is adjacent to the east bank of Horseshoe Bend, approximately 500 feet north of the project site, has views of the project alignment as it crosses the river but no views of the eastern on-land portion of the project, which is screened from view by existing tree plantings. The second residence is located east across SR 160 and has views of the portion of the project site east of the Sherman Island levee.

There is no existing night lighting in the project vicinity other than security lighting on the Sherman Island residence north of the project.

Environmental Impacts and Mitigation Measures

- a) The project will not involve any interference with or permanent or long-term changes to scenic vistas in the project area. Most proposed project facilities will be below ground or under water and, following construction, will not be visible. A total of 5 wooden electrical poles will be installed at the eastern project terminus near SR 160; these poles will be visible from the highway but would be obscured from water views by the Sherman Island levee and existing tree growth along the levee and shoreline. Electrical poles are ubiquitous in the project area; views for travelers along SR 160, and for the existing residence east of the highway, will not be significantly affected. The 0.06 acres of

disturbed land associated with project excavation will be revegetated and will not contribute to any long-term aesthetic changes. The project will have no effect on access to or availability of scenic vistas.

The proposed project will involve temporary construction effects on aesthetics along the 15-foot-wide cable corridor. For recreational users in open water areas in Horseshoe Bend, and the Sherman Island residence with open water views, the aesthetic effects of construction will consist of the presence of a barge, barges or other watercraft in the open water section of the project, and of conventional construction equipment, materials and stockpiled soils in the land portions of the project, over a period of as much as two weeks. Recreational boaters in close proximity to the in-channel portion of project construction may see short-lived turbid water.

All of the potential construction effects of the project will be short-lived. Disturbed areas will be revegetated. Following the completion of construction and revegetation of disturbed areas, the project site will be indistinguishable from surrounding lands and waters. As a result, the project's potential effects on scenic vistas will be less than significant.

- b) The project will not involve any substantial damage to scenic resources. As discussed in "a)" above, the project will not involve any substantial long-term effect on the lands and waters making up the project site. The project will not remove any trees, rock outcroppings, historical structures or any other landscape features that might constitute potential scenic resources. Existing cottonwood and blue gum trees on Sherman Island will not be affected. The project has been sited to avoid all tree removal.
- c) As noted in "a" above, the project will involve minor temporary disturbance and therefore minor short-term degradation of the visual character and quality of the land portions of the project site; these effects will be less than significant during construction and eliminated by revegetation following completion of construction. The project will not involve any long-term degradation of visual character or quality.
- d) The project will not involve any new lighting and therefore no effect on light, glare and nighttime views in the project area.

SOURCES

Sacramento County, Community Planning and Development Department.
General Plan, Circulation Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department.
General Plan, Open Space Element. Amended November 9, 2011.

Site observations. October – December, 2013, Wallace Environmental.

3.4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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 forestland to non-forest use?				X

NARRATIVE EXPLANATION

Environmental Setting

The majority of the proposed project site is the existing waterway known as Horseshoe Bend, a branch of the Sacramento River. There is no agriculture or forestry use of this portion of the site.

The western 60 feet of the project is located on the eastern shore of Decker Island in Solano County. Decker Island is not currently in agricultural use but has been used for agricultural purposes in the past, most recently for cattle and goat grazing; until the 1940s the island was farmed for dry-land barley.

The Solano County Important Farmland Map classifies most of Decker Island, including the project site, as “Grazing Land.” The existing materials handling facility is classified as “Other Land.” Lands in both classifications are not considered “important” farmlands. Most of the DI ownership on Decker Island is under Williamson Act contracts; however, the parcel that includes the project site (APN #0090-210-050) is not under a Williamson Act contract.

The eastern 115 feet of the project site is located on and near the Sherman Island levee; this small parcel of land is not subject to agricultural use. The Sacramento County Important Farmland Map classifies most of Sherman Island in the project

vicinity as “Prime Farmland;” the project site and its immediate vicinity are classified as “Farmland of Local Importance.” Farmland of Local Importance is also not considered “important” farmland. The Sherman Island portion of the project is not under a Williamson Act contract.

As discussed in Section 3.4.10 Land Use, the respective County general plans do not designate any portion of the project site for agricultural use. Mining is considered an allowable and compatible use in the agricultural zoning of Decker Island.

There are no forestlands, or lands designated or zoned for forestry purposes, on or near the project site.

Environmental Impacts and Mitigation Measures

- a) The project will not result in any conversion of “important farmlands” - i.e. Prime Farmland, Unique Farmland or Farmland of Statewide Importance - to nonagricultural use. There are no such lands within or adjacent to the project site. The project will result in construction phase disturbance of the site but no long-term effects on the soils or agricultural suitability of any portion of the project site.
- b) The project is consistent with existing Solano and Sacramento County general plan designations and zoning as described in Section 3.4.10 Land Use. No portion of the project site is designated or zoned exclusively for agricultural use; mining is an allowable use within the agricultural zoning of Decker Island. No portion of the project site is subject to a Williamson Act contract. The project will involve no conflict with agricultural zoning or a Williamson Act contract.
- c,d) The project will not involve any conflicts with or loss of forestland, timberland or lands designated or zoned for these purposes. No such lands exist on or near the project site.
- e) The project will not involve any conflict with or adverse effect on the ongoing and continued use of agricultural land in the project vicinity. The project will not facilitate development or conversion of surrounding lands, other than the permitted mineral resource development on Decker Island. Therefore, the project will not contribute directly or indirectly to conversion of off-site farmland. The project will have no effect on potential for conversion of forestland to non-forest use.

SOURCES

California Department of Conservation. Sacramento County Important Farmland 2010. Accessed on-line January 18, 2013 at <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/>

California Department of Conservation. Solano County Important Farmland 2010. Accessed on-line January 14, 2013 at <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/>

Sacramento County, Community Planning and Development Department.
 General Plan, Agricultural Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department.
 General Plan, Open Space Element. Amended November 9, 2011.

3.4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?			X	
b) Violate any air quality standard or contribute to an existing or projected air quality violation?			X	
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)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

NARRATIVE EXPLANATION

Environmental Setting

The project is located on the boundary separating Solano and Sacramento County, which is also the border between the Bay Area and Sacramento Air Quality Management Districts (AQMDs). Air quality management under the federal and state Clean Air Acts is the responsibility of the two AQMDs.

The federal and state governments have adopted ambient air quality standards (AAQS) for the primary air pollutants of concern, known as “criteria” air pollutants. Air quality is managed by the AQMDs to attain these standards. Primary standards are established to protect the public health; secondary standards are established to protect the public welfare. Both of the AQMDs are in attainment with the applicable criteria pollutant standards, except standards for ozone, respirable particulate matter (PM10), and fine particulate matter (PM2.5). The AQMDs are considered in non-attainment for these pollutants because the applicable standards are periodically exceeded.

DI’s existing electrical generation operations are an existing source of criteria pollutants as well as GHG emissions, as discussed in Section 3.4.7. Based on DI’s estimated existing fuel consumption for electricity generation and U.S. Environmental Protection Agency (USEPA) emission factors for diesel fuel,

existing electricity generation produces several tons of nitrogen oxides (ozone precursors), PM10 and total organic compounds annually.

Both AQMDs have prepared attainment plans for the non-attainment pollutants. The AQMDs have each adopted local regulations establishing control over air pollutant emissions associated with new stationary sources, land development and other pollutant-generating activities, including specific controls on construction including rules governing dust, asphalt paving and application of coatings.

The federal Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate emissions of and exposure to airborne hazardous air emissions; this is accomplished through the federal Hazardous Air Pollutant (HAP) Program and the State Air Toxics Program. A principal air toxic is diesel particulate matter, which is a component of diesel engine exhaust.

Both AQMDs have adopted guidelines for the analysis of air quality impacts under CEQA and requirements for mitigation of impacts when significant; these guidelines are cited at the end of this section. The guidelines address potential “operational” (long-term) air emissions associated with new stationary air emission sources, indirect sources such as land development and potential short-term emissions associated with construction activities. The guidelines address the range of potential emissions including criteria pollutants, greenhouse gases, air toxics and odors.

Potential project emissions are, in both the BAAQMD and the SMAQMD, to be quantified and compared to CEQA significance thresholds to determine whether the project will or will not involve significant environmental effects. If potential air quality effects are significant, the guidelines specify mitigation measures that must be incorporated into the project. The BAAQMD is unable to recommend significance thresholds as a result of litigation regarding its 2010 CEQA Thresholds of Significance. The adjacent SMAQMD has, however, adopted a construction significance threshold of 85 pounds per day for oxides of nitrogen (NOx), an ozone precursor. The SMAQMD threshold is used to analyze the potential significance of the project’s air quality effects.

As discussed below in the analysis of air quality effects, subsection “a, b”, the project will not generate any operational air emissions, although it will likely result in the reduction of existing DI Aggregates emissions associated with its on-site diesel-powered electrical generation equipment. The new electrical supply obtained from PG&E will reduce or eliminate use of the diesel-powered generators currently used by DI to generate electricity for its existing operations. As a result, the AQMD guidance related to analysis of operational emissions does not apply. Construction-related requirements are discussed in the Environmental Impacts and Mitigation Measures section below.

Environmental Impacts and Mitigation Measures

The two AQMDs differ in their requirements for estimation of project impacts on criteria pollutants, significance thresholds, and impact mitigation. These requirements and the calculation of potential project emissions are shown below. Responses to the more specific checklist questions follow.

In brief, the BAAQMD requires quantification of potential construction emissions for comparison to significance thresholds; for linear projects, the Road Construction Emissions Model (RCEM) is to be used to estimate emissions. The SMAQMD requires a similar procedure for most projects but provides an exemption from emissions calculation if the project site is less than 35 acres. The proposed project will affect a maximum of 0.4 acres, including land and water areas and would qualify for the SMAQMD exemption; nonetheless, potential project emissions are quantified using the RCEM to satisfy the more stringent BAAQMD requirements.

Construction of the proposed project will involve the use of heavy equipment powered by diesel or other internal combustion engines. The RCEM model was used to estimate the pollutant emissions that would result from such equipment use. For the purposes of the model run, the equipment expected to be in use throughout the construction period was assumed to include an excavator, diesel generator set and one “other equipment.” This equipment list was considered “conservative” (over-estimating emissions) with respect to the project. Potential project air emissions of non-attainment criteria pollutants as estimated by the RCEM model are shown in Table 1. The model assumptions, calculations and results are shown in Appendix A.

TABLE 1
ESTIMATED CONSTRUCTION EMISSIONS
DECKER ISLAND ELECTRICAL CROSSING PROJECT
CONSTRUCTION PHASE

Pollutant	SMAQMD Significance Threshold	Emissions (lbs/day)
ROG	NA	3.1
NO _x	85 lbs/day	29.4
PM (Total)	NA	0.31

The BAAQMD does not currently have recommended air quality significance thresholds; the estimated NO_x emissions will be substantially below the SMAQMD significance threshold of 85 lbs/day. As a result, project construction will not have a significant air quality effect associated with emissions of criteria pollutants.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT
DISTRICT
BASIC CONSTRUCTION EMISSION CONTROL PRACTICES

The following practices are considered feasible for controlling fugitive dust from a construction site.

Control of fugitive dust is required by District Rule 403 and enforced by District staff.

Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).

All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations.

Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Lead agencies may add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).

Project construction will be subject to the applicable AQMD rules related to control of construction emissions. In addition, all projects within SMAQMD, including exempt projects, are subject to Basic Construction Emission Control practices, shown below. The BAAQMD has a comparable set of basic standards, which are not required unless the project will have significant air quality effects. The application of the SMAQMD rules to the project will further reduce the already less than significant effects of the project on criteria pollutants.

Project construction activity, including use of the heavy equipment described above and assumed in the RCEM model, will not emit significant amounts of, or pose any human health concerns related to, air toxics. Health concerns related to air toxics are associated with long-term (i.e. decades) exposure to relative high air toxic emissions levels. Residences or schools have relatively long occupancy times and therefore the potential for cumulative exposure to ongoing air toxic emissions. Project construction would involve 2 weeks of construction at relatively low emission rates.

The RCEM model predicts total particulate emissions of 1.3 pounds per day over the 2-week construction period; about 2/3 (0.9 pounds) of this is diesel engine exhaust and the remaining third is fugitive dust, which is not a recognized air toxic. Less than a pound of emissions would be emitted over the span of a work day and dispersed by prevailing winds. The project is in a relatively undeveloped area with only one downwind receptor, approximately 500 feet from the nearest point of the project site. As a result, the project's potential air toxic effects are considered less than significant.

- a,b) The project will not involve any conflict with, or potential to obstruct implementation of, applicable Air Quality Attainment Plans, contribute to or cause violation of any air quality standard, or contribute to any projected future violation of air quality standards. The project will not involve any operational emissions. As described above, estimated project construction air emissions will be minor, short-term and substantially below the applicable significance threshold adopted by the SMAQMD.

After construction, the project will have a net beneficial effect on regional criteria pollutant emissions. Provision of the proposed PG&E electrical supply will result in net reductions in or avoidance of DI use of the diesel generator currently used to operate the its material handling facilities. As a result existing emissions of several tons of criteria pollutants associated with these facilities will be reduced or eliminated annually. The potential reduced emissions each year would greatly exceed the total construction emissions for the project. This would be considered a beneficial effect of the project. Over a short period of time, this benefit will offset any adverse air emission effect associated with project construction.

- c) The project will contribute less than significant amounts of non-attainment criteria pollutants, including ozone precursors (ROG, NOx) and particulate matter to the regional airshed during project construction. These emissions will be short-term and will not involve any substantial long-term contribution to existing non-attainment status of the respective AQMDs for ozone and particulate matter. Project construction emissions will be minor

and not cumulatively considerable.

As discussed in “a,” provision of PG&E electrical supply to the existing DI operation will result in reductions in criteria pollutants presently emitted from the existing diesel generator. This will result in a beneficial effect on regional levels of non-attainment criteria pollutants and will, over time, offset any construction emission contribution to the regional airshed.

- d) The project will not generate any substantial or long-term air emissions that have the potential to affect sensitive receptors outside the project site. Sensitive receptors are limited to a single residence located approximately 500 feet north and cross-wind of the site under the prevailing northwesterly winds. Project emissions, including criteria pollutants and air toxic emissions, will be dispersed over largely-uninhabited agricultural lands to the east and south.
- e) The project does not involve any features that will generate odors during either construction or operation.

SOURCES

Bay Area Air Quality Management District. California Environmental Quality Act, Air Quality Guidelines. Updated May 2012.

Sacramento Air Quality Management District. CEQA Guide to Air Quality Assessment. Updated through October 2013. Accessed on-line at <http://airquality.org/ceqa/ceqaguideupdate.shtml> on January 18, 2014.

U.S. Environmental Protection Agency. [Introduction to AP 42, Volume I, Chapter 3 Stationary Internal Combustion Sources](#). Fifth Edition. January 1995.

U.S. Environmental Protection Agency. Unit Conversions, Emission Factors, and Other Reference Data. November 2004.

3.4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?		X		
b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
d) 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?			X	
e) 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?			X	
f) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
g) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				X

NARRATIVE EXPLANATION

Environmental Setting

Terrestrial Biology

Terrestrial biological resources of the project were evaluated by Moore Biological Consultants in conjunction with the preparation of this Initial Study and documented in Moore’s Biological Assessment (BA) dated February 5, 2014. The BA describes terrestrial biological resources, potential jurisdictional Waters of the U.S. or wetlands, and suitable habitat for or presence of special-status plant and animal species, the project’s potential impacts on these resources, and appropriate avoidance, minimization and mitigation measures for potential impacts. The detailed findings of the BA are shown in their entirety in Appendix B.

Preparation of the BA included a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database for an approximately 240 square mile area surrounding the project site and the United States Fish and Wildlife Service (USFWS) list of Federally Threatened and Endangered species that may occur in or be affected by projects in the same area. Field surveys via boat and on foot were conducted on October 24, October 30 and December 9, 2013, and on January 21, 2014.

Sherman Island consists of land farmed in alfalfa, hay, and other annual crops. The Sherman Island portion of the project site, however, is confined to a levee slope, the paved levee road, and ruderal grassland on the land side of the levee. On the whole, Decker Island is used for grazing and aggregate mining, and a CDFW habitat area at the north tip of the island. The Decker Island portion of the project site includes a sandy beach, steep bank covered primarily with Himalayan blackberry brambles, and ruderal grassland. A list of plant species occurring in these areas is shown in the BA, Appendix B.

In the vicinity of the site, the banks of Decker Island are steep and are vegetated with a narrow and discontinuous band of riparian vegetation dominated by coastal live oak willows and black walnut trees. The island banks also support dense patches of Himalayan blackberry, intermixed with patches of California wild rose and California wild grape. There is, however, no woody riparian vegetation within the project site that will be disturbed by the project. The near-shore areas of Decker Island have vegetation on small islands on a sandy shelf within 20 feet of the shore where the water is a few feet deep. There is no other in-water vegetation adjacent to Decker Island near the project site; habitats transition abruptly from deep open water, to a narrow sandy beach, to the blackberry brambles.

On Sherman Island, there are large Fremont cottonwood trees along the bank, near the waterline, just north and south of the site, but no woody riparian vegetation within areas that will be disturbed. Offshore of Sherman Island, extending 100-150 feet from the bank, there is a sparse patch of tules, and some water hyacinth, an invasive species, in a relatively shallow near-shore area.

No blue elderberry shrubs were observed in or adjacent to the project site.

A limited variety of bird species all common to agricultural areas in the Delta were observed during the site surveys. A list of observed species is shown in Appendix B. A few potential nest trees near the project site may be suitable for nesting raptors and other protected migratory birds, including Swainson's hawk, most notably, the row of large Fremont cottonwoods, and some large eucalyptus trees on Sherman Island. These trees may be used by nesting raptors and songbirds, which may also nest in other in or adjacent to the project site.

A variety of mammals common to agricultural areas are likely occur in the project site, although none were observed during field surveys. Based on habitat types present, a number of common amphibians and reptiles may also use habitats in the project site, but none were observed in the site during the field surveys. A list of potentially-occurring mammal, amphibian and reptile species is shown in Appendix B.

Waters of the U.S. and Wetlands

Waters of the U.S. are navigable waterways, their tributaries and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. Both CDFW and ACOE have jurisdiction over modifications to jurisdictional riverbanks, lakes, stream channels and other wetland features. Issuance of ACOE permits are conditional on issuance of a water quality certification under Section 401 of the Clean Water Act by the Regional Water Quality Control Board.

The only potentially jurisdictional waters of the U.S. or wetlands in or adjacent to the project site is Horseshoe Bend. The elevation of high tide in Horseshoe Bend is the limit of ACOE jurisdiction. At the proposed cable crossing, the banks of both Sherman Island and Decker Island are steep; there are no adjacent wetlands. Horseshoe Bend is a navigable water of the U.S. subject to Section 10 of the River and Harbor Act and Section 404 of the Clean Water Act. This side channel of the Sacramento River also falls under the jurisdiction of CDFW, the California Regional Water Quality Control Board (RWQCB), the State Lands Commission (SLC), and the Central Valley Flood Protection Board (CVFPB). There are no other potentially jurisdictional wetlands or Waters of the U.S. in or near the project site.

Special-Status Plant and Wildlife Species

Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations, other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, species considered rare or endangered under Section 15380 of the CEQA Guidelines, such as species shown on California Native Plant Society (CNPS) Lists 1A, 1B and 2, and other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing.

Moore Biological compiled a list of potentially-occurring special status species and assessed their likelihood of occurrence. This analysis, shown on Table 2 of Appendix B, indicates that the likelihood of occurrence of special-status species in the project site is generally low.

Special Status Plants

Table 2 of Appendix B identifies 25 special-status plants with potential to occur in the project area. Although some of these species may occur in close proximity to the project site, none of these species have been observed or are expected to occur in the immediate vicinity of the proposed cable. Special-status plants generally occur in relatively undisturbed areas and are largely found within unique vegetation communities such as vernal pools, marshes and swamps, and areas with unique soils. The upland grassland habitats on Sherman Island and

Decker Island are routinely mowed, sprayed, and/or grazed to meet levee standards and for fire suppression and do not provide suitable habitat for special-status plants.

Several species of special-status plants listed in Table 2 occur in marshes and swamps or riparian woodlands; none of these species have state or federal listing status. These include Bolander's water hemlock, wooly rose mallow, delta tule pea, Mason's lilaeopsis, delta mudwort, eel-grass pondweed, Sanford's arrowhead, side-flowering skullcap, and Suisun marsh aster. Mason's lilaeopsis, delta tule pea, and delta mudwort are also recorded in the CNDDDB in several locations in the waterways near the site.

Suisun marsh aster was observed on four small near-shore islands 15+/- to 100+/- feet north of the site along the edge of Decker Island. The Suisun marsh aster is growing at and near the water line in association with common verbena, Himalayan blackberry, California wild rose, and California wild grape. Several of the other non-listed species in Table 2 that occur in marsh and swamp habitats may also occur on the small near-shore islands, but are not present within the project site and were not observed during biological field surveys.

Suisun marsh aster is not listed at either the state or federal level but is on CNPS List 1B (CNPS, 2010). CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere. Suisun marsh aster is recorded in the CNDDDB (2013) in several locations within delta waterways within two to three miles of the project site. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the site.

The sandy cove on Decker Island that is crossed by the project does not provide suitable habitat for Suisun marsh aster or any of the other species in Table 2 that occur in marsh and swamp habitats. The opposite shoreline of Sherman Island is shaded and does not provide suitable marsh and swamp habitat required by for Suisun marsh aster or the other identified special-status marsh or swamp species.

Special-Status Wildlife

The potential for intensive use of habitats within the project site by special-status wildlife species is also generally considered low. Of the species identified in Table 2, Swainson's hawk, burrowing owl, tricolored blackbird, and western pond turtle have at least some potential to occur within the project site. Swainson's hawk and other bird species protected by the Migratory Bird Treaty Act and Fish and Game Code of California have potential to occur in or near the site and could be adversely affected by construction activities if they nested in or near the site during construction. If present, western pond turtle could be adversely impacted by project construction. There is no suitable habitat in the project site for the remaining species in Table 3. Appendix B provides detailed life history information for each of the potentially-occurring species.

Swainson's Hawk: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, and their nests during the nesting season (March 1 through September 15). Swainson's

hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August. The CNDDDB (2013) contains numerous records of nesting Swainson's hawks within the search area; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.

No Swainson's hawk nests were located during the surveys, which was conducted during the non-breeding season. The grasslands on Decker Island and croplands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker Island and on Sherman Island in the vicinity of the alignment that could be used by nesting Swainson's hawks.

Burrowing Owl: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, and their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands and scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.

No burrowing owls were observed in the project site. Further no ground squirrels or ground squirrel burrows were observed in or adjacent to the site. The site is well within the species range and burrowing owls may fly over or forage in the site on an occasional basis. It is possible that burrowing owls could nest in or near the site if burrow habitat is available.

Tricolored Blackbird: The tricolored blackbird is a State of California Species of Concern and is also protected by the federal Migratory Bird Treaty Act. Tricolors are colonial nesters requiring very dense stands of emergent wetland vegetation and/or dense thickets of wild rose or blackberries adjacent to open water for nesting. This species is endemic to California. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.

Tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The grasslands on Decker Island and croplands on nearby islands provide foraging habitat for tricolored blackbirds. The blackberry brambles, patches of wild rose, willows, and emergent wetland vegetation along the shore are suitable for nesting and tricolored blackbirds may nest in or near the site during some years. Some blackberry brambles (15+/- feet wide) will be removed during construction but is expected to revegetate rapidly; the project will not cause a permanent loss of potential nesting habitat.

Western Pond Turtle: The western pond turtle is a state species of concern, but is not a listed species at the state or federal level. Western pond turtles are associated with permanent or nearly permanent bodies of water with adequate basking sites such as logs, rocks or open mud banks. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.

No western pond turtles were observed in or near the site. However, the near-shore aquatic habitats and stream banks along Horseshoe Bend provide suitable habitat for western pond turtle. This species may occur in the Horseshoe Bend in the vicinity of the alignment and could potentially nest in sandy areas along the shore of Decker Island.

Critical Habitat for Special-Status Plant and Animal Species

The site is not within any known designated critical habitat for terrestrial species, including critical habitat for California red-legged frog, federally listed vernal pool shrimp, California tiger salamander, valley elderberry longhorn beetle, Delta Green Ground Beetle, Contra Costa wallflower, Contra Costa goldfields, or Antioch dunes evening

Fishery Resources

An assessment of the fishery resources of Horseshoe Bend at the project site and the potential fishery effects of the project was prepared by FISHBIO in conjunction with this Initial Study. A detailed report documenting the FISHBIO assessment is shown in Appendix C. The assessment considered the potentially-occurring fish species, life history information for each species, habitat and substrate conditions in the project vicinity and the timing of project construction. The potentially-occurring special-status species included Central Valley steelhead trout, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, delta smelt, longfin smelt and green sturgeon.

The project site is located in the Sacramento-San Joaquin Delta (Delta), which consists of over 700 miles of sloughs and channels intertwined with 57 leveed island tracts where freshwater from the Sacramento and San Joaquin Rivers combine with saltwater from San Francisco Bay to create the West Coast's largest estuary. Decker Island is approximately 8.0 river miles upstream of the confluence of the Sacramento River and the San Joaquin River.

Horseshoe Bend, a side channel of the Sacramento River, has a mean depth of approximately 11.5 feet at the project site; the channel is shallow adjacent to Sherman Island and reaches a depth of more than 20 feet offshore of Decker Island. The substrate throughout the channel is composed primarily of sand-sized sediment, and the project area is tidally influenced. Emergent vegetation in the project area consists of tules in the shallower areas along the Sherman Island; tule growth is sparse at the proposed project site. The banks of Sherman Island are armored with rip-rap. Decker Island, including the project site, is composed of deposits of dredged material; these non-natural materials do not support native Delta vegetation. The CDFW completed a two-phase, long-term restoration project on the northeastern portion of the island in 2004 known as the Decker Island Enhancement Project (DIEP). The DIEP is located upstream of the project site and outside the area of potential construction effects.

The Delta, the Sacramento River and Horseshoe Bend serve as migratory and/or rearing habitat for several fish species including native, non-native, listed (i.e. federal or state endangered or threatened), and non-listed fish species. FISHBIO compiled a list of species potentially occurring in the project area from recent investigation, proximal studies, and federal and state threatened and endangered species lists, including non-listed and listed species. A table identifying all of the non-listed species considered by FISHBIO is shown in Appendix C, including California Species of Special Concern (SSC). This list is representative of fish species that potentially use Horseshoe Bend habitat during some portion of the year.

FISHBIO obtained a list of endangered or threatened fish species potentially occurring in the project area from the USFWS website and from the CDFW website. These species, together with their listing status is shown in Table 2. The project site is located within Critical Habitat designations for Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt and green sturgeon; the project site is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon.

Each species was evaluated for its potential occurrence during the proposed construction period, and for the potential presence of spawning habitat in the project area. The Sacramento River serves as a migration corridor for both listed (e.g. Central Valley steelhead, Central Valley spring-run Chinook salmon, and Sacramento River winter-run Chinook salmon, green sturgeon) and non-listed (e.g. Central Valley fall/late-fall run Chinook salmon) species traveling upstream to spawn or downstream during juvenile outmigration. According to trawl catches in the Horseshoe Bend side channel, both longfin and delta smelt occur in this area. Juvenile green sturgeon could potentially utilize this area for rearing. A more detailed description for each species is provided in Appendix C.

Table 3 is a graphic illustration of the likelihood of each species of concern to be present, presence of potential habitat, and potential for each species to be impacted by construction over the course of a year. The shaded boxes indicate that the species has the potential to be present, the project area may provide habitat, and/or the project may have potential impacts, in each of the half-month timespan columns; unshaded boxes indicate that the species is not present and

there is no potential for impact. Numbered boxes are explained in the table notes. Although the table indicates that delta smelt and longfin smelt may be present in September and October, these months are within the accepted work window (August 1 – October 31) for these species.

TABLE 2
POTENTIAL ENDANGERED OR THREATENED SPECIES
DECKER ISLAND ELECTRICAL CROSSING PROJECT

Species	Listing Status ¹	Listing Agency
Central Valley steelhead (adult)	FT	USFWS
Central Valley steelhead (juvenile)	FT	USFWS
Central Valley spring-run Chinook salmon (adult)	FT / ST	USFWS / CDFW
Central Valley spring-run Chinook salmon (juvenile)	FT / ST	USFWS / CDFW
Sacramento River winter-run Chinook salmon (adult)	FE / SE	USFWS / CDFW
Sacramento River winter-run Chinook salmon (juvenile)	FE / SE	USFWS / CDFW
Delta smelt (adult)	FT / SE	USFWS / CDFW
Delta smelt (juvenile)	FT / SE	USFWS / CDFW
Longfin smelt (adult)	ST	CDFW
Longfin smelt (juvenile)	ST	CDFW
Green sturgeon (adult)	FT	USFWS
Green sturgeon (juvenile)	FT	USFWS

Notes:

1 Listing status: F = Federal, S = State, T= Threatened, E = Endangered

TABLE 3
 POTENTIAL PRESENCE OF SPECIAL-STATUS FISH SPECIES
 IN THE PROJECT AREA

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
steelhead							1	1	1	1		
Chinook salmon (spring-run)												
Chinook salmon (winter-run)												
delta smelt									2			
longfin smelt									2			
green sturgeon	3	3	3	3	3	3	3	3	3	3	3	3

Notes:

- 1 Adult migration to spawning grounds, area serves as potential migration route but may not serve as primary route since it is a side channel.
- 2 Fish not documented in past five years, but historical data indicated they have occurred in this area.
- 3 Species not documented in the project area but are suggested to inhabit the Delta throughout the year.

Central Valley Steelhead. Central Valley steelhead may be resident or anadromous. Juvenile steelhead migrate from December through May; adults migrate to spawning grounds between July and March with a peak in September and October.

Central Valley Spring-run Chinook Salmon. Spring-run Chinook salmon enter the mainstem Sacramento River in February and March and continue to their upstream spawning streams and the Feather River fish hatchery, where they then hold in deep, cold pools until they spawn. Spawning occurs in gravel beds in late August through October and emergence takes place in March and April. Spring-run Chinook salmon appear to emigrate at two different life stages: fry and yearlings. Fry move between February and June, while the yearling spring-run immigrate October to March, peaking in November. Juvenile spring-run Chinook salmon may leave their natal streams as fry soon after emergence or rear for several months to a year before migrating as smolts or yearlings.

Sacramento River Winter-run Chinook Salmon. Adult winter-run Chinook salmon leave the ocean and migrate through the Delta from November through July. Juvenile winter-run Chinook salmon rear and emigrate in the Sacramento River from July through March. Winter-run salmon smolts may migrate through the Delta and bay to the ocean from December through as late as May. The Sacramento River channel is the main migration route through the Delta.

Delta Smelt. Delta smelt are endemic to the San Francisco Estuary, primarily the lower Delta and Suisun Bay. They usually occupy open, shallow waters, but also occur in the deeper, main channels region where fresh water and brackish water mix. Adult delta smelt begin their migration in September or October towards spawning grounds in the upper Delta. Spawning occurs between December and July in sloughs and channels, peaking in March and April. Trawling results over

the past five years at Decker Island indicate that the last delta smelt of each year is captured in May or June.

Longfin Smelt. Unlike delta smelt, longfin smelt are anadromous and prefer the higher salinities in the San Francisco Estuary for rearing. In fall and winter, longfin smelt yearlings begin to move upstream to primary spawning locations in or near Suisun Bay channel, the Sacramento River channel near Rio Vista, and (at least historically) Suisun Marsh. Larval samples indicate that spawning usually occurs from February to April, but spans November through June (Moyle 2002). Trawl results over the past five years indicate that the last longfin smelt of each year is captured from late March to mid May.

Green Sturgeon. Green sturgeon are found in the lower reaches of large rivers, including the Sacramento–San Joaquin River basin, as well as the upper Sacramento River and the Feather River. Green sturgeon spawn predominantly in the upper Sacramento River. Their spawning period is March to July, with a peak in mid-April to mid-June. Juveniles inhabit the estuary until they are approximately four to six years old, when they migrate to the ocean.

Habitat Conservation Plans. No habitat conservation plans or related conservation plans apply to the project site or vicinity.

Environmental Impacts and Mitigation Measures

- a) Special-Status Plants. The proposed project will have no effect on either listed special-status plant species or their habitats. Habitat for listed special-status plant species does not occur in the project vicinity. See discussion of non-listed plant species in Section “b.”

Swainson’s Hawk. The project has the potential to disturb Swainson’s hawk nesting during construction on and near Sherman Island if construction occurs during the nesting period for the species. A pre-construction survey for Swainson’s hawk nesting, if construction will occur during the nesting season, and modification of construction activities to avoid interference with nesting activities, will reduce this potential effect to a less than significant level. This is identified as a mitigation measure below.

Listed Fish Species. The FISHBIO assessment evaluated the potential impacts of the project on each of the 6 listed fish species that have potential to occur in the project area. Potential impacts considered included direct effects on fish and migration activity, sediment entrainment, and disruption of potential spawning and/or rearing habitat. A detailed discussion of these concerns is shown in the FISHBIO report, Appendix C of this Initial Study, and summarized here.

Based on the FISHBIO assessment, there is little to no potential for project construction activity to result in the direct mortality, harassment of or water quality effects on any protected fish species.

- Review of recent and historical data suggests that protected species will be absent during construction.

Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt, longfin smelt and green sturgeon may be present in Horseshoe Bend in accordance with their life history. The project site is located within Critical Habitat designations for Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt and green sturgeon. The project site is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon. Existing information reviewed by FISHBIO indicated that there is little to no chance of encountering the listed fish species during the proposed August two-week (or less) construction period. This determination was based on the fact that listed fish are generally absent during the time of construction (August). In the event that any of the species are present, they would likely be of large enough size (i.e. adult life stage) to effectively migrate outside of the construction area. Additionally, construction will occur in a side channel of the Sacramento River and will not impact the mainstem Sacramento River, the primary fish movement corridor. As a result, the project as proposed will have less than significant to no effects on the listed species, and no mitigation is necessary.

- Localized effects from construction activity are expected to be negligible and brief.

Turbidity will not be substantially increased and is not expected to reach levels commonly occurring during rainfall events and ship passage along the Sacramento River.

Trenching activity will create a relatively minimal local increase in turbidity. FISHBIO expects increased turbidity to be localized to the middle of the channel where flow velocity is greater and there is a lack of vegetation. The project is small relative to the large-scale maintenance dredging of the Sacramento River Deep Water Ship Channel (SRDWSC), which has occurred annually, between August and December, from 2005-2012. The Army Corps of Engineers determined in its 2011 Draft EIS/EIR on the proposed deepening of the SRDWSC that this 10 million cubic yard, 4-year project will not involve a significant effect on water quality (see Section 3.4.9 Hydrology and Water Quality). Localized increases in turbidity from the project will be much lower and of much shorter duration than those associated with dredging operations and are not expected to adversely affect fish.

- Toxins in the soil are not present in the sediments to be disturbed, based on testing described in in more detail in the FISHBIO report.

Dredging will churn substrate and may expose toxins in the substrate, if present. Sand substrate from nearby dredging operations has been extensively tested for toxicity. Testing results from these nearby projects showed that the sand substrate did not contain toxin levels that exceeded applicable regulatory limits or that were in excess of normal background levels. Therefore, it is not expected that toxins in the sand substrate in the construction zone will exceed regulatory limits. The 2011 USACOE EIS/EIR also analyzed the potential for its project to result in releases of toxins; although some of these metals exceeded Regional Water Quality Control Board Waste Discharge Requirements criteria for sediment governing ACOE dredging activity, the resulting in-water concentrations will not exceed Waste Discharge Requirement criteria.

- FISHBIO concluded on the basis of their analysis that fish habitat in the project area is of degraded quality, and the project will have a small overall footprint.

The project alignment will minimize disturbance of emergent vegetation, and any alteration is expected to revegetate naturally and rapidly. The project is located in the Horseshoe Bend side channel, which is not likely the primary route for migrating fish species.

- b) Special-Status Plant Species. The proposed project will have no effect on potentially-occurring plant species that are identified as sensitive, candidate or otherwise special-status. Although habitat for many of these species occurs in the general project vicinity, the proposed project alignment avoids all potential special-status plant species habitat.

The proposed cable alignment is in relative close proximity to an existing population of Suisun marsh aster, which is located on a series of small islands near the shore of Decker Island. The project alignment has, however, been modified to avoid this population with a minimum 15-foot margin of safety. The nearest islands will need to be marked with highly-visible fencing, and construction workers will be trained to identify marsh aster habitat and other special-status species prior to construction. These requirements are included in the biological mitigation measures below.

Burrowing Owl. Project construction has the potential to disturb burrowing owl nesting if owls are present and if construction occurs during the burrowing owl nesting period. A pre-construction survey for this species, and modification of construction activities to avoid interference with nesting activities, as described in the biological

resource mitigation measures below, will reduce this potential effect to a less than significant level.

Tricolored Blackbird. Project construction will result in the removal of blackberry brambles on Decker Island that may be used for nesting by tricolored blackbirds or other songbirds. A pre-construction survey for nesting tricolored blackbirds or other songbirds, if construction will occur during the nesting season, and modification of construction activities to avoid interference with nesting activities, will reduce this potential effect to a less than significant level. This is identified as a mitigation measure below.

Western Pond Turtle. Western pond turtles may occur on and near the project site and may nest in sandy areas along the shoreline of Decker Island. Project construction has the potential for direct disturbance of western pond turtles and of nesting activity. Pre-construction surveys for turtles and turtle nesting sites, and avoidance of these sites, will reduce this potential effect to a less than significant level. These requirements are contained in the biological resource mitigation measures below.

- c) Sensitive natural communities in the project area consist of woody riparian habitat along the shorelines of Decker Island and Sherman Island. The project alignment has been selected to have no effect on woody riparian vegetation. The project will have no effect on woody riparian vegetation, or on shaded riverine habitat that may be associated with riparian vegetation.
- d) The project will involve temporary construction disturbance of shallow and deep portions of the river channel and shoreline and river bank areas of Decker Island and Sherman Island that are below the high tide (i.e., the limit of U.S. Army Corps of Engineers jurisdiction). These areas are not considered wetlands but are waters of the U.S., and a Section 404 permit will need to be obtained from the U.S. Army Corps of Engineers as required by mitigation measures described below.

Construction effects on the unvegetated river bottom will be restored as a part of the construction process. Project construction will involve temporary disturbance of a sparse tule population located in the shallow area along Sherman Island; FISHBIO indicates that this disturbance naturally and will quickly be repopulated. Upland portions of the project site will be restored to their pre-project condition and revegetated.

Mitigation measures provide that permits will be obtained from the ACOE, which will require consultation with the National Marine Fisheries Service, and the United States Fish and Wildlife Service. The project will also require a Streambed Alteration Agreement from CDFW for the planned work, 401 certification from the Regional Water Quality Control Board and approval of the State Lands Commission. Conditions on or compensation required for permit approval for project

construction will reduce these potential impacts to a less than significant level.

- e) Project construction will involve the operation of one or more barges and excavation equipment in Horseshoe Bend for a period of up to two weeks. The FISHBIO report indicates the project will not have a substantial effect on fish migration or movement. Project construction will occur outside of migration windows for special-status fish, and FISHBIO indicates that there is “little to no chance” of the protected species being present in the project area during the proposed construction period. The fish life stages that might be located in the project vicinity during construction will be large enough to maneuver and avoid construction equipment and turbidity. As a result, the project’s effect on fish migration will be less than significant.

The project will involve the installation of five wooden electrical poles and overhead conductors on Sherman Island. The project will involve no other above-ground structures, fencing or improvements that could obstruct wildlife movement. As a result, the project will have no effect on the movement of wildlife in the project vicinity.

- f) The project is located in an area that is largely outside local regulatory authority but subject to permitting requirements of several state and federal agencies. In any event, the project will not affect any trees, and its effects on biological resources will be temporary and, with mitigation, less than significant.
- g) The project will involve no conflict with any adopted conservation plan. No such plans exist for lands in the project area.

BIOLOGICAL RESOURCE MITIGATION MEASURES

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts special-status species:

- BIO-1 In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with CDFW and National Marine Fisheries Service (NMFS)
- BIO-2 If construction commences between February 1 and August 31, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors’ active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG’s 1994 Staff Report regarding Mitigation for Impacts to Swainson’s Hawks (*Buteo*

swainsoni) in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

- BIO-3 A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material
- BIO-4 Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above
- BIO-5 Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the buffer area will be delayed until hatching is complete and the young have left the nest site.
- BIO-6 Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during

the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.

BIO-7 A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program will be Swainson’s hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.

BIO-8 Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.

SOURCES

FISHBIO. Decker Island Fisheries Impacts. January 24, 2014

Moore Biological Consultants. Baseline Biological Resources Assessment for the Decker Island Electrical Line, Sacramento and Solano Counties, California. February 5, 2014.

3.4.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource?				✗
b) Cause a substantial adverse change in the significance of a unique archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest or best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person)?		✗		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				✗
d) Disturb any human remains, including those interred outside of formal cemeteries?		✗		

NARRATIVE EXPLANATION

Environmental Setting

The project site is composed entirely of previously-disturbed soil material and the open waters of Horseshoe Bend with low cultural resource sensitivity. Decker Island, which was historically marshland adjacent to the Sacramento, has over time been buried under several feet of dredge spoils. The Horseshoe Bend waterway, the historic channel of the Sacramento River, has not supported historic or prehistoric occupation, although prehistoric or historic cultural use might once have occurred along its banks. The Sherman Island portion of the project, however, consists only of the man-made levee, which is composed of fill material, and the adjacent area disturbed during repeated levee construction and repair projects.

A cultural resources record search was obtained from the Northern California Information Center (NCIC) of the California Historical Resources Information System at California State University, Sacramento for areas within a ¼-mile radius of the project. The record search identified several archaeological surveys that had occurred in the vicinity of, and possibly crossing, the project site. These included a survey of Decker Island, including the western terminus of project site, and a survey of lands along the SR 160 corridor. The National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Resources, and California Historical Landmarks do not list any sites within the search radius.

None of the archaeological surveys identified prehistoric resources on or near the project site. A 1994 survey of Decker Island did not identify any archaeological resources in the vicinity of the project site, and the report reaffirmed the origin of the island as resulting from the placement of dredge spoils in a former wetland area adjacent to the Sacramento River.

A 1997 survey report (A Cultural Resources Survey for the Sherman Island Levee Improvement Project, Sacramento County, California) addressed, and may have surveyed, but certainly recorded the entire 18-mile Sherman Island levee. The levee was evaluated for its potential significance under the National Historic Preservation Act. Although the levee might conceivably qualify for listing on the National Register of Historic Places or the California Register of Historical Resources as being associated with reclamation of the Delta, the evaluation found that the levee did not have any distinctive characteristics, or retain sufficient integrity, to make it eligible for listing. As a result, the Sherman Island levee is not considered a historically important or significant resource. The site record was updated in 2005, 2012 and 2013 with the same results.

The project site has low to no potential for discovery of paleontological materials (fossils). The Delta area, including the project site is classified as to its paleontological sensitivity in the Bay-Delta Conservation Plan EIR/EIS (EIR/EIS). The fill materials that comprise the land area of the site (Decker Island, Sherman Island levee) have no potential to yield paleontological materials; the Delta peats and muck that underlie these materials have low

potential; these geologically younger sediments are considered too young to yield scientifically significant paleontological specimens. EIR/EIS Figure 27-3 estimates that the depth to deposits that might yield fossils is more than 30 feet at the project site.

Environmental Impacts and Mitigation Measures

- a) The project would have no effect on significant historic resources. The project would involve excavation across the Sherman Island levee. The Sherman Island levee, which was originally constructed in the 1860s, is the only identified historic resource in the project vicinity. The levee has, however, been evaluated and found not to meet criteria for listing on the National Register of Historic Places or the California Register of Historical Resources. Therefore, the project would have no effect in this issue area.

- b,d) The project site is composed of dredge spoil and levee fill material, and the historic channel of the Sacramento River. These areas have a very low probability of yielding archaeological materials. A cultural resources record search did not identify any archaeological resources, unique archaeological resources, or evidence of potential human burials that could be located on or near the project site. The project unlikely to have any effect on archaeological resources.

Even though archeological resource and human burial records were not identified during the record search, subsurface archeological resources of unknown importance, or human burials, could be present and potentially disturbed during project construction. In this case, the project could result in significant cultural resource effects; the significance of archaeological materials, the nature of human burials, if any, and the need and options for mitigation in accordance with CEQA must be evaluated by a qualified archaeologist. The following cultural resources mitigation measures outline procedures for this contingency. Implementation of these measures will reduce any potential impacts to a less than significant level.

- c) The project site does not contain any known paleontological resources or unique geological features. The materials comprising the project site have no to low potential to yield paleontological resources. It is conceivable that excavation associated with the project could unearth paleontological materials of significance. The establishment of procedures to address paleontological discoveries if they should occur will reduce any potential paleontological effects to a less than significant level. These procedures are set forth in the following mitigation measures.

CULTURAL RESOURCES MITIGATION MEASURES

CU-1 If any subsurface cultural resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified archaeologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant impacts to a less than significant level, in accordance

with CEQA. RD 341 shall be immediately notified of the discovery, and the proponent shall be responsible for retaining a qualified archaeologist and for implementing recommended mitigation measures.

CU-2. If human remains are encountered at any time during project construction, all construction activity in the vicinity of the encounter shall cease, and the County Coroner and RD 341 shall be notified immediately. The Coroner will contact the Native American Heritage Commission if the remains have been identified as being of Native American descent. The proponent, under the direction of RD 341, shall implement the requirements of the CEQA Guidelines, which detail steps to be taken when human remains are found to be of Native American origin. The proponent shall also retain a qualified archaeologist to evaluate the archaeological implications of the find and recommend any mitigation measures needed to reduce any potentially significant effects to a less than significant level under CEQA. The proponent, under the direction of RD 341, shall implement those recommendations.

CU-3. If any paleontological resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified paleontologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant effects to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery; the proponent shall be responsible for retaining a qualified paleontologist and for implementing recommended mitigation measures, under the direction of RD 341.

SOURCES

Cultural Resources Unlimited. A Cultural Resources Survey Report for Mega Sand – Sacramento River Dredging / Decker Island San Mining Facility ADEIR, Solano and Sacramento Counties, California. April, 1994.

Northern California Information Center. Record Search Results for Decker Island T3N/R2E, USGS Jersey Island 7.5' Quad, Sacramento County.

U.S. Department of the Interior, Bureau of Reclamation (Reclamation) and U.S. Department of Fish and Wildlife (USFWS), et. al. Draft Environmental Impact Report / Environmental Impact Statement, Bay Delta Conservation Plan, Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California. November 13, 2013.

3.4.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on strata 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?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

NARRATIVE EXPLANATION

Environmental Setting

The project site and the surrounding Delta islands are located within the alluvial Great (Central) Valley geomorphic province, which is an approximately 450-mile long, and 50 mile-wide sediment-filled trough flanked on the east and west by the Sierra Nevada and Coast Ranges. Sediment deposits within the Great Valley may exceed 30,000 feet in thickness; older marine sedimentary deposits are typically overlain by more recent continental sediments. In most of the Delta, including the project site, these materials consist of fine inorganic sediment and peat developed from accumulated organic material deposited during the Holocene period; the Geologic Map of California describes these materials as Intertidal Deposits.

Historically, both Decker Island and Sherman Island were intertidal marshes. Sherman Island has been successively reclaimed with levees for agricultural use

since the 1860s. Decker Island, originally a tidal marsh extending east from the toe of the Montezuma Hills, has served as a dredge spoil disposal site since construction of the Sacramento Deep Water Ship Channel in the early 1960s, and subsequent deepening and maintenance dredging projects. As a result, materials on Decker Island consist primarily of fine sands that are excessively-drained. The DI-owned portion of Island drains internally from higher elevations or levees along the perimeter. The majority of Sherman Island is protected by the RD 341 levee system and is predominantly in agricultural use.

Bottom sediments in Horseshoe Bend, a side channel of the Sacramento River, are assumed to have grain size composition similar to that of the Sacramento River DWSC. Based on analysis of the Decker Island sediments, which are accumulated Sacramento River dredge spoil materials, the Horseshoe Bend bottom sediments are expected to consist predominantly of fine sands with some fraction of silt and clay materials.

The California Geological Survey has mapped faults, fault traces and relative fault activity levels in the project region. These faults are concentrated along the western and eastern margins of the Central Valley, including several faults in the east Bay Area with historical activity, and additional faults with geologically-recent (Late Quaternary) activity. The nearest of these faults is approximately 20 miles to the southwest. Further to the east, faults have been mapped in the Sierra Nevada foothills that have had geologically-recent activity.

In the immediate project vicinity, the State has mapped the alignment of the Midland Fault approximately 4 miles east of the project site, and the Rio Vista fault a few hundred feet west of the project site. Both the Midland and the Rio Vista faults are concealed (no surface evidence) and are not known to have had geologically-recent activity. There are no mapped faults, fault traces or Alquist-Priolo fault zones located at the project site.

Due to its proximity to the active east Bay Area faults, the project site and vicinity are subject to substantial seismic shaking hazards. The City of Rio Vista is mapped in seismic risk zone 4 (major risk and damage and near major fault zones) on a scale ranging from 0 (no risk) to 4. The Sacramento County General Plan Safety Element indicates that the water-saturated alluvial materials of the Delta typically pose liquefaction problems.

The Safety Element also indicates that there is credible potential for seiches that could overtop and damage levees; in the same document, the Delta is identified as being subject to subsidence at an estimated 3 inches per year due largely to peat oxidation, although subsidence in the areas of Sherman Island northeast of the site is attributed to oil and gas withdrawal. Expansive soils are associated with clay soils of the Delta island interiors; the primarily coarse materials of the project site are not considered expansive.

Soils in the land portions of the project site are classified by the USDA Natural Resources Conservation Service as follows:

Decker Island. Tujunga fine sand, an excessively drained soil.

Sherman Island. Egbert clay, a poorly-drained soils that consists of clay upper horizons over silty clay loam subsoil.

Environmental Impacts and Mitigation Measures

- a) The proposed project is not exposed to fault rupture hazards; there are no known faults that directly affect the project site. Being located in seismic risk zone 4, the project is exposed to strong seismic ground shaking hazards and, due to the saturated soils of the area, to seismically-induced ground failure, including liquefaction. The proposed electrical cable, being inherently flexible, is not sensitive to seismic shaking; engineering design of the project will in any event minimize the potential for shaking damage. There are no landslide risks at or near the project site.
- b) The project will involve localized disturbance of project site soils as the cable bundle trench is opened and backfilled after placement of the cable. The extent of soils disturbance will amount to no more than 0.1 acres. The disturbance area consists almost entirely of previously-disturbed materials (i.e. dredge spoil, levee fill), and as a result the project will have incidental to no impacts on topsoil. The cable trench and disturbed area will be revegetated after construction, which will reduce potential erosion to a less than significant level.
- c) See discussion “a)”
- d) The easternmost portion of the project may be located on expansive soil. However, as discussed in “a”, the cable bundle is inherently flexible and not subject to substantial damage from soil expansion/contraction.
- e) The project does not involve any sewage generation or on-site wastewater disposal systems and therefore will not involve any effect in this issue area.

SOURCES

California Department of Conservation. 2010 Fault Activity Map of California.

Viewed on-line April 5, 2013 at

<http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>

California Department of Conservation. Geologic Map of the Sacramento Quadrangle. Regional Geologic Maps 1:250,000. Viewed on-line January 21, 2014 at

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Natural Resources Conservation Service. Custom Soil Resource Report for Sacramento County, California, and Solano County, California, Decker Island Electrical Crossing (for the project site). January 21, 2014.

3.4.7 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				✗
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✗

NARRATIVE EXPLANATION

Environmental Setting

Human-generated emissions greenhouse gases (GHGs) are understood to be a cumulatively important cause of global climate change. Global climate change is a subject of increasing scientific and public concern, and for government action. Increasing levels of atmospheric GHGs that trap heat and lead to a variety of effects, including increasing ambient temperature, changes in patterns and intensity of weather, and various secondary effects resulting from those changes, including potential effects on public health and safety.

California’s AB 32, the Global Warming Solutions Act, identifies global climate change as a “serious threat to the economic well-being, public health, natural resources and the environment of California.” As a result, global climate change, and GHG emissions that contribute to it, are issues that need to be considered under CEQA. GHGs include carbon dioxide (CO₂), the most abundant GHG, as well as methane, nitrous oxide and other gases, each of which have GHG “potential,” the ability to influence climate change, that is several times that of CO₂. GHG emissions result from combustion of carbon-based fuels; major GHG sources in California include transportation (40.7%), electric power generation (20.5%), industrial (20.5%), agriculture and forestry (8.3%) and others (8.3%).

The State of California is actively engaged in developing and implementing strategies for reducing GHG emissions. State programs for GHG reduction include a regional cap-and-trade program, industrial and emission control technologies, alternative energy generation technologies, advanced energy conservation in lighting, heating, cooling and ventilation, reduced-carbon fuels, hybrid and electric vehicles, and other vehicle mileage reduction programs. Using these and other strategies, the State’s Global Climate Change Scoping Plan, adopted in December 2008, proposes to achieve a 29% reduction in projected business-as-usual emission levels for 2020.

PG&E provides gas and electricity to most of northern California. As a generator and purchaser of electrical power, PG&E is directly and indirectly an emitter of greenhouse gases. PG&E supports AB 32 and is involved in a range of actions to reduce GHG emissions, including ongoing energy efficiency programs, acquisition and development of renewable energy capability and reducing emissions of high-potential GHGs such as sulfur hexafluoride. PG&E is active in reporting its GHG emissions to the California Climate Action Registry, the California Air Resources Board and the USEPA. PG&E's most-recently verified GHG emissions rate is 445 pounds per megawatt-hour (MWh) of electricity.

PG&E's GHG emissions efficiency can be expected to increase over time. This would result from the utility's various efforts to reduce GHG and increases in its renewable energy portfolio. PG&E's 2012 power mix included 19% qualifying renewable energy sources; the State requires that the renewable share be increased to 33% by the end of 2020.

DI's existing electrical generation operations are a source of GHG emissions. The US Environmental Protection Agency (USEPA) estimates that GHG emissions from diesel electrical generation amount to approximately 23 pounds per gallon of diesel fuel. DI estimates its 2013 diesel fuel consumption for electricity generation at approximately 42,000 gallons; fuel consumption results in emissions of approximately 483 US tons, or 438 metric tons, of GHG annually.

By virtue of its location adjacent to the Sacramento River, DI product is delivered to construction sites by barge. Barge delivery is substantially more efficient compared to the alternative of delivering DI product by truck. A national study co-sponsored by the U.S. Department of Transportation indicates that a barge can transport 576 ton-miles (1 ton transported 1 mile) per gallon of fuel; this is compared to 413 ton-miles per gallon for transportation by rail and 155 ton-miles per gallon by truck. Pollutant and GHG emissions per gallon are comparable for all three modes. Barge delivery involves substantial relative reductions in air emissions, including GHGs, as compared to an equivalent amount of product transported by truck.

Environmental Impacts and Mitigation Measures

- a) The project will generate greenhouse gases during project construction. As discussed and detailed in Section 3.4.3 Air Quality, project construction will involve the use of several pieces of heavy equipment over a construction period of up to two weeks. The RCEM model used to calculate potential air pollution emissions in Section 3.4.3 was also used to estimate the potential GHG emissions associated with project construction; model results are shown in Appendix A. These emissions are estimated at below 10 metric tons of CO₂ equivalent per year (MT/yr of CO₂e). Construction GHG emissions will be temporary and substantially offset by net GHG emission reductions associated with shifting the DI power supply from existing diesel generators to the PG&E system.

Shifting the DI electricity source to the PG&E system will have a beneficial net effect on regional GHG emissions that will extend over a period of at least several years. This potential benefit is quantified below on the basis of 1) comparison of the relative GHG emissions of diesel generators and the PG&E system per unit of electricity, and 2) on the basis of GHG emissions reductions associated with discontinuation or reduction of DI's use of diesel generators.

GHG Per Unit of Electricity. According to the USEPA, diesel generation of electricity results in typical GHG emissions of 1.54 pounds of CO₂ per kilowatt-hour of electricity, or 1,540 pounds per MWh. PG&E's existing GHG emission rate per MWh is 455 pounds per MWh, approximately 30% of the GHG emissions of diesel generators per MWh. Conversion of the DI operation to the PG&E system will result in a 70% reduction in DI's existing GHG emissions from electricity generation.

GHG Emission from Reduced Diesel Fuel Consumption. As described above, DI's GHG emissions from diesel electricity generation amount to 438 metric tons at a rate of 23 pounds of GHG per gallon of diesel fuel. Based on the above percentage reduction of 70%, DI's existing GHG emissions would be reduced by approximately 307 metric tons annually. Over a 10-year period, this would amount to a cumulative reduction of up to 3,000 metric tons of GHG emissions, assuming continuation of DI's existing level of operation. Avoiding a single year of DI diesel generator operation would result in a reduction in GHG emissions that is more than 30 times the estimated total GHG emissions produced by constructing the project. Over a period of years, the net reduction would be much higher.

The proposed electrical cable is capable of accommodating up to 5 megawatts of electrical load, of supporting expanded future operations on Decker Island, and of generating consequent additional savings in potential future GHG emissions that would otherwise be associated with generation of electricity using diesel generators.

The project will involve less than 10 metric tons of GHG emissions from project construction, but the project will result in ongoing and direct and indirect reductions in net GHG emissions associated with the DI Aggregates operation of more than 300 metric ton per year. The project will indirectly support continuation and future expansion of GHG emission avoidance associated with the use of barges instead of trucks for product delivery. As a result, the project will have a beneficial effect on GHG emissions.

- b) The project will not involve any known conflict with any adopted plan, policy or regulation for reducing GHG emissions. The project will involve minor GHG emissions during construction and enable substantial reduction in existing GHG emissions from existing industry. As a result of State regulation of the electrical industry, and PG&E efforts to comply with AB 32, project-related GHG emissions per unit

of electrical power consumption will be further reduced over time.

SOURCES

California Air Resources Board. Climate Change Scoping Plan – a framework for change. December 2008.

Pacific Gas and Electric. Clean Energy Solutions. Web site accessed January 28, 2014 at <http://www.pge.com/en/about/environment/pge/cleanenergy/index.page>.

Pacific Gas and Electric. Fighting Climate Change. Web site accessed January 28, 2014 at <http://www.pge.com/about/environment/pge/climate/>.

U.S. Environmental Protection Agency. Sector Strategies: Potential for Reducing Greenhouse Gas Emissions in the Construction Sector. February 2009.

3.4.8 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
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?				X
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?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X

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?

NARRATIVE EXPLANATION

Environmental Setting

The project site consists of the channel of Horseshoe Bend, the adjacent shoreline of Decker Island, the levee protecting Sherman Island from flooding and the adjacent inland area. Decker Island consists of dredge spoil deposits and is used periodically for livestock grazing.

On Sherman Island, the project crosses the former Sherman Island Levee Road; SR 160 is located 90 feet east of the eastern project terminus. An existing residence is located approximately 500 feet north of the site and immediately east of the Sherman Island levee. Another residence and a group of farm-related structures is located southeast of the site, across SR 160. Agriculture is the prevailing land use of Sherman Island in the project area.

SR 160 supports substantial truck traffic, approximately 10% of the average annual daily traffic of 12,200 vehicles per day reported in Section 16 Transportation; truck traffic on this state highway likely supports regular transportation of hazardous materials. Bulk hazardous materials may occasionally be transported by barge or ship along the Sacramento Deep Water Shipping Channel to the west of Decker Island. There are no railroads, airports or other major transportation facilities in the project vicinity that could present hazards to or influence safety at the project site.

Existing electrical lines in the project vicinity consist of overhead electrical distribution lines along SR 160. There are no very high-voltage electrical transmission lines that might generate substantial electromagnetic fields (EMFs) within, adjacent to or crossing the project site. The nearest such facility crosses Sherman Island in a north-south direction approximately 1,200 feet east of SR 160.

Hazardous materials consist of substances that may cause or contribute to serious illness or mortality, or pose a substantial hazard to human health or the environment when they are not treated, stored, transported or disposed properly. Hazardous wastes are hazardous materials that no longer have a practical use. Although not classified strictly as hazardous materials, petroleum products also involve health and environmental contamination concerns.

Under Government Code Section 65962.5, the Department of Toxic Substances Control (DTSC) is required annually to report information related to hazardous waste disposal, and hazardous substance release, sites that require State action to the California Secretary for Resources. This information is known collectively as the "Cortese List." The Cortese List excludes sites where response actions have been completed and no operation or maintenance activities are required. The

Cortese List is contained in the DTSC's Envirostor, an on-line database. Envirostor lists several sites in Solano and Sacramento Counties. However, none of these sites are located at or in the vicinity of the project site.

GeoTracker is an additional on-line database maintained by the State Water Resources Control Board. Geotracker lists waste discharges to land and releases of hazardous substances from underground storage tanks. The database contains data on Leaking Underground Fuel Tanks (LUFT), Cleanup Program Sites (spills, leaks), military underground storage tank sites, landfills, and underground storage tank permits.

There are no Geotracker sites within a mile of the project site. Geotracker lists a PG&E-owned (natural gas) Dehydration Station, which is approximately one mile south of the project site along SR 160. This site is undergoing remediation and monitoring under the State Cleanup Program (Case #SL185952955). A 2013 monitoring report for the site indicates that the concentrations of most monitored constituents are stable or abating.

There are no schools within ¼ mile of the project site. The project site is not within an airport land use plan area, and there are no public or public-use airports within two miles of the site. There are no airstrips in the project vicinity. The site is not exposed to or a potential contributor to aviation-related hazards.

The project area consists primarily of vacant dredge spoil area, maintained levee and agricultural land. There are no substantial wildland fire hazards in the project area.

Environmental Impacts and Mitigation Measures

- a) Project construction will involve the use of petroleum fuels for internal combustion construction equipment, including excavators, barges, tugs and other watercraft. Construction materials will consist largely of the inert electrical cable, rock and other materials used to secure the cable as the channel crossing is completed. Existing regulations and permit requirements include precautions to avoid fuel spills to land or water. Anticipated transportation and use of hazardous materials associated with project construction will involve a less than significant hazard to the public and the environment.

Project operation will not involve any hazardous material transportation or use.

- b) The project will not involve routine use of any hazardous materials, or operations that have the potential for upset, accident or environmental release of air toxics or hazardous waste.
- c) Other than as described for the construction process in "a," the project will not involve any potential air emissions of hazardous materials, substances or waste. The project site is not within ¼ mile of any existing school. Section 3.4.5 Biological resources evaluates the potential for project construction to release toxic materials from bottom

sediments into the waters of Horseshoe Bend and finds that the project would not have an adverse water quality effect.

- d) The California Department of Toxic Substances Control ENVIROSTOR database does not list any sites in the project vicinity. As a result, there are no sites on or near the project site that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The project will not expose members of the public to any area of known environmental contamination on land. Section 3.4.5 Biological Resources evaluates the potential for project construction to release toxic materials from bottom sediments into the waters of Horseshoe Bend and finds that the project would not have an adverse water quality effect. The project will have no effect in this issue area.
- e,f) The project site is not within an airport land use plan area, and there are no public or public-use airports within two miles of the site. The site is not exposed to, or a potential contributor to, aviation-related hazards. The project will have no effect in this issue area.
- g) The project will not involve any substantial hindrance to emergency response or evacuation during either construction or operation. The project will not involve work within or affecting any public road or other air or land transportation system. During construction, the project will briefly limit recreational boat traffic in Horseshoe Bend, but not prevent evacuation of the area, as alternative routes be available north and south of Decker Island.
- h) There is no substantial wildland fire risk in the project vicinity. Proposed improvements will be buried and not subject to substantial damage in the event of fire.

SOURCES

California Department of Toxic Substances Control. ENVIROSTOR Hazardous Waste and Substances and Sites List. Accessed January 21, 2014 at: http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&report_type=CORTESE&site_type=CSITES,ERAP,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST

Parsons. 2013 Annual Monitoring Report, PG&E Sherman Island Dehydrator Station, Sacramento County, California. October 2013.

State Water Resources Control Board. Geotracker Database. Accessed January 21, 2014 at: <http://geotracker.waterboards.ca.gov/>

3.4.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
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)?				X
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?			X	
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?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems?				X
f) 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?				X
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
h) 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?				X
i) Inundation by seiche, tsunami, or mudflow?				X

NARRATIVE EXPLANATION

Environmental Setting

Decker Island and Horseshoe Bend are located in the western portion of the Sacramento-San Joaquin Delta. The Delta comprises a large network of river channels and smaller sloughs and is connected to the San Francisco Bay through Suisun Bay and the Carquinez Strait. During flow tides, the direction of the flow is into the Delta and the river stage increases; during ebb tides, the river water

flows out of the Delta and the river stage falls. As for much of the Delta, water flow rates, directions, and levels are complex. The Sacramento and San Joaquin Rivers are the principal contributors to fresh waters entering the Delta. The hydrology and water quality of Horseshoe Bend, a side channel of the Sacramento River Deep Water Shipping Channel (SRDWSC), are closely tied to conditions in the SRDWSC.

Sacramento River hydrology and water quality is described in detail in the U.S. Army Corps of Engineers' 2011 Draft Supplemental EIS/Subsequent EIR on the Sacramento River Deep Water Ship Channel deepening project. Near the project site, the Sacramento River is tidally-influenced; the tidal effect depends on the height and timing of ocean tides and variations in inflow from upstream watersheds and storage facilities. At Threemile Slough just north of the project site, the mean tidal range is 3.01 feet, increasing to 4.05 feet during Spring tides. The river current generally follows the tidal motion, flowing upstream with the flood tide and downstream with the ebb tide. The current velocity is a relatively constant 2-3 feet per second except during the winter months when the tidal influence is overpowered by storm water inflow. Current velocity and direction may also be influenced by pumping at the State Water Project and Central Valley Project plants in the south Delta.

Sacramento County is responsible for floodplain management using Flood Insurance Rate Maps (FIRMs) provided by the Federal Emergency Management Agency (FEMA). According to the FIRMs for the project area, Decker Island is not subject to flooding; with the exception of the CDFW wetland site in the northern portion of the island, the entire island is located above the 100-year flood elevation. Despite its levee protection, Sherman Island is mapped by FEMA as being located within the 100-year floodplain; the portions of the island nearest the site are designated Zone AE on the FIRM. Horseshoe Bend is a Central Valley Flood Protection Board Designated Floodway.

Existing water quality conditions at the project site are described based on detailed sampling and analysis by the USACOE in their 2011 EIS/EIR on proposed deepening of the Sacramento River Deep Water Ship Channel. A 2009 water quality sampling effort quantified baseline water quality parameters (pH, temperature, turbidity, DO, and salinity) at sampling stations immediately above and below the project site on the SRDWSC. The 2009 sampling found the following mean values:

pH range	7-8
Temperature	59 degrees F
Turbidity	35-93 NTU
DO	10+ mg/l
Salinity	140 ppm

The study noted that nutrient levels contribute to algae and invasive species growth, but nutrient levels were not quantified.

In their technical study of the project's potential fishery impacts, FISHBIO reported (Appendix C) that the turbidity of Sacramento River is "highly variable and can increase substantially during storm events, ship passages, and in-channel

activities such as dredging. Based on trawl survey data, typical background turbidity in the Sacramento DWSC can range from 8.6 to 44.4 NTU but can increase to a high of 192 NTU immediately after a ship's passage and 200 NTU during rainfall events. The fisheries literature indicates that turbidity greater than 4,000 milligrams per liter are required to adversely affect salmonids.

The CVRWQCB has listed pollutants for which water quality in the western portion of the Delta is considered impaired under Clean Water Act Section 303(d):

Chlorpyrifos	Agriculture Urban Runoff/Storm Sewers
DDT	Agriculture
Diazinon	Agriculture Urban Runoff/Storm Sewers
Electrical Conductivity	Agriculture
Group A Pesticides	Agriculture
Mercury	Resource Extraction

The USACOE analyzed more than 120 bulk sediment samples, including numerous samples in the project vicinity, and concluded that heavy metals of concern, including arsenic, chromium and nickel, were at regional background levels and consistent with sampling conducted as part of past maintenance dredging efforts, which have been routinely approved by the Central Valley Regional Water Quality Control Board (CVRWQCB).

The project area is within the Sacramento Valley Groundwater Basin, and the Solano Sub-Basin. The land surface elevation of the Delta islands, including Sherman Island, is typically below the elevation of the surrounding Delta channels. As the surface and groundwaters are hydraulically closely connected, groundwater levels are typically at or near the surface. The agricultural islands are developed with drainage and pumping systems to remove groundwater from the root zone.

Environmental Impacts and Mitigation Measures

- a) The project will involve the disturbance of bottom sediments as the cable trench is excavated and then backfilled. A portion of the sediments will be temporarily suspended in the water column and will then resettle to the bottom; the amount, time of suspension and area affected will vary based on the current and size distribution of the material.

FISHBIO reported that the California Regional Water Quality Control Board – Central Valley Region estimated the downstream increase in total suspended solids downstream of dredging activities to be approximately 10%; similarly, the USACOE found, in its analysis of maintenance dredging of the San Joaquin River, that background turbidity levels would not change greatly.

Potential water quality impacts of much larger-scale dredging were evaluated by the USACOE in their environmental impact analysis of the Sacramento River Deep Water Shipping Channel (SRDWSC) deepening

project. In this analysis, resuspension rates were found to range from less than 0.1% to 5%, depending on the nature of the dredging equipment and the coarseness of the bottom sediment. Larger sediment plumes will occur in the waters closest to the dredging, but sediment plume sizes will decrease exponentially with distance from the dredging site, vertically and horizontally. The USACOE analysis found that planned dredging of up to 10 million cubic yards of sediment on a 24-hour, 7 day per week schedule over a period of six months, will not have a significant effect on water quality; more specifically, the USACOE dredging project will not involve any exceedence of the Waste Discharge Requirements (WDRs) issued by the CVRWQCB in 2001 for maintenance dredging of the SRDWSC. The proposed project would involve localized effects of relatively short duration, and substantially less disturbance, than would be with maintenance dredging operations. As a result, the project will not involve any discharges could substantially affect surface water quality, water quality standards or waste discharge requirements and will have a less than significant effect on turbidity.

Excavation and backfill of the cable trench also has the potential to release any water quality constituents of concern that may be contained in the bottom sediments, with potential effects aquatic species generally as well as special-status species. The USACOE analyzed the potential for its project to result in releases of heavy metals; although some of these metals exceeded WDR criteria for sediment, in-water concentrations will not exceed WDR criteria. FISHBIO reported that extensive toxicity testing of sediments from nearby dredging operations showed that the sandy bottom sediments did not contain toxin levels that were in excess of applicable regulatory limits or normal background levels. As a result, the project will not cause the release of water quality constituents of concern.

- b) The project involves relatively shallow excavation and replacement of existing sediments on Decker Island and Sherman Island, and of saturated sediments in Horseshoe Bend. Trench excavation, cable installation and trench backfill with the native materials will have no temporary or permanent effect on groundwater or groundwater recharge mechanisms.
- c) The project will involve temporary excavation of soil in upland areas of Decker Island and Sherman Island. These materials will be replaced in the trench, compacted and revegetated following construction. This excavation work will not result in any change in drainage pattern or any substantial potential for erosion.

The crossing of Horseshoe Bend will temporarily remove and replace sandy bottom sediments. Temporary opening of the trench will not result in any change in flow patterns in Horseshoe Bend; materials returned to the trench will be stabilized with a layer of rock, preventing any substantial erosion.

- d) As noted in “c” above, the project will not result in any substantial changes in the channel of Horseshoe Bend. The project will not construct any new impervious areas or alter the infiltration capacity of existing soils in the land areas of the site. As a result, the project will make no substantial contribution to storm water runoff from the project site or to flooding on or near the project site.
- e) As noted in “d” above, the project will not result in any substantial increase in storm water runoff. There are no existing or planned storm water drainage systems in the project area.
- f) The project does not involve housing and therefore will not place housing in a flood hazard area.
- g) The project will place an electrical cable beneath the channel bottom surface of Horseshoe Bend. After installation, the channel bottom surface will be restored to its pre-project configuration. The project will not place or construct any structures that will impede or redirect flood flows.
- h) The project does not involve any improvements that will be exposed to potential flood damage, or that will expose people to flooding. The proposed electrical cable will be buried below the channel bottom and isolated from potential flooding damage.
- i) The proposed electrical cable will be buried and is not at risk of damage from inundation.

SOURCES

Central Valley Regional Water Quality Control Board. Clean Water Act Sections 305(b) and 303(d) Integrated Report for the Central Valley Region, Final Staff Report. September 2009.

Federal Emergency Management Agency. Flood Insurance Rate Maps for Solano and Sacramento Counties, Map #s 06095C0730E (May 4, 2009) and 06067C0680H (August 16, 2012). Accessed January 21, 2014.

Sacramento County General Plan. Safety Element Background to the 1993 General Plan As Amended (portions updated to November 9, 2011).

U.S. Army Corps of Engineers, San Francisco District and Port of West Sacramento. Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report. Sacramento River Deep Water Ship Channel. February 2011.

U.S. Department of the Interior, et. al. Draft Environmental Impact Report / Environmental Impact Statement, Bay Delta Conservation Plan, Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California. Chapter 7 Groundwater. December 2013.

3.4.10 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				✗
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				✗
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?				✗

NARRATIVE EXPLANATION

Environmental Setting

The project site consists of the shoreline of Decker Island, the waters of Horseshoe Bend, the Sherman Island levee and lands immediately adjacent to the levee. The Decker Island portion of the site is presently unused but has periodically been in agricultural use, primarily livestock grazing. Horseshoe Bend is a public water resource that is extensively used for recreation, as discussed in more detail in Section 3.15 Recreation; Horseshoe Bend is not subject to local land use regulation. Sherman Island is primarily in agricultural use; the project site, however, consists of the Sherman Island levee, the former Sherman Island levee road, and vacant unused land immediately adjacent to the levee on the inland side.

The project vicinity is largely unpopulated. Decker Island has no resident population, and residential development on Sherman Island in the project vicinity consists of a single residence located approximately 500 feet north of the project. There is no established community in the vicinity of the project site; the nearest established community is the City of Rio Vista, located approximately 4 miles north of the site. Solano County and Sacramento County have land use jurisdiction over the western and eastern portions of project site, respectively.

The Solano County General Plan designates Decker Island for Agriculture. The existing DI Aggregates operation is allowable under the existing zoning of Agricultural A-160, subject to obtaining a Use Permit; the County has issued Use Permit #U-09-08 and Reclamation Plan #RP-09-01 for the existing operation. The extension of PG&E electrical supply to DI Aggregates was anticipated during the issuance of the existing Solano County permits.

The Sacramento County General Plan designates the majority of Sherman Island as Agricultural Cropland. The Horseshoe Bend shoreline, including the levee, inland area west of SR 160 and the project site, is designated Recreation. This area is zoned Agricultural AG-80 (80-acre minimum parcel size).

There are no habitat conservation plans or other conservation plans that are applicable to the project site or vicinity. A habitat conservation plan is in preparation for Solano County; a public review draft of this plan is expected to be released in Summer 2014. A habitat conservation plan is also being prepared for the southern Sacramento County area, but the plan area does not include the project site.

Environmental Impacts and Mitigation Measures

- a) The project will have no adverse effect on established communities. There are no established communities in the vicinity of the site.
- b) The project will involve no conflict with applicable land use plans or zoning. The proposed project is consistent with existing General Plan designations and zoning for the project site and surroundings.
- c) The project will not involve any conflict with habitat conservation plans. There are no habitat conservation plans or other conservation plans that are applicable to the project site or vicinity.

SOURCES

Lee, Chris. Director of Environmental Compliance, Permitting, and Habitat Conservation. Solano County Water Agency. E-mail January 24, 2014.

Sacramento County, Community Planning and Development Department. General Plan, Land Use Diagram. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department. Sacramento County Zoning Map. Accessed January 24, 2014 at http://generalmap.gis.saccounty.net/JSViewer/county_portal.aspx#

Sacramento County, Community Planning and Development Department. South Sacramento County Habitat Conservation Plan web site. Accessed January 24, 2014 at <http://www.per.saccounty.net/PlansandProjectsInProgress/Pages/SSHCPPlan.aspx>

Solano County Code. Chapter 28, Zoning Regulations, Table 28.21A Table of Allowed Uses for the Exclusive Agricultural District. Accessed January 24, 2014 at <http://www.co.solano.ca.us/civicax/filebank/blobdload.aspx?blobid=12826>

Solano County General Plan. General Plan Land Use Diagram. November 4, 2008

3.4.11 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?				✗
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✗

NARRATIVE EXPLANATION

Environmental Setting

The mineral resource development potential of lands in the counties are classified by the State Geologist in accordance with the California Mineral Land Classification System. The classifications include:

- MRZ-1 Areas of No Mineral Resource Significance
- MRZ-2 Areas of Identified Mineral Resource Significance
- MRZ-3 Areas of Undetermined Mineral Resource Significance
- MRZ-4 Areas of Unknown Mineral Resource Significance

The project site is not located in a designated MRZ-2 area in either Solano County or Sacramento County. Although Decker Island is an active mineral development, the island is not mapped as an MRZ-2 area in the Solano County General Plan. The island is not designated as a locally-important or otherwise important mineral resource development site.

There are no oil, gas or geothermal fields located on or adjacent to the project site. The portions of Sherman Island located north and east of the site are mapped as being a part of the Rio Vista Gas Field.

There are no other known oil, gas or other mineral resources in the project vicinity.

Environmental Impacts and Mitigation Measures

- a) The project is not located in an area classified as MRZ-2. Project development will have no adverse effect on the availability of State-designated mineral resources.
- b) The project will not result in the loss of availability of any known, locally-important mineral resource site. No such sites are identified in the respective county general plans.

SOURCES

California Department of Conservation. Oil, Gas and Geothermal Fields in California. 2001.

Solano County General Plan. Chapter 4 Resources. Accessed at http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp on January 14, 2014.

Sacramento County General Plan. Conservation Element, Mineral Resources Background Report. Accessed at <http://www.per.saccounty.net/PlansandProjectsInProgress/Documents/General%20Plan%202030/Conservation%20Element%20Background.pdf> on January 14, 2014.

3.4.12 NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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?				X
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?				X

NARRATIVE EXPLANATION

Environmental Setting

Noise is defined as “unwanted sound,” usually measured in A-weighted decibels, which generally represent community sensitivity. Noise levels may be described in a number of ways, including, among others: “ambient” noise, the prevailing background noise level; the “average” or equivalent sound level (Leq); and the

Day-Night Average Noise Level (Ldn), which considers the higher community sensitivity to noise during the night hours.

“Sensitive receptors” are land uses that are particular sensitive to noise, including residential uses and excluding industry and mining. There are two residences located in the general vicinity of the eastern terminus of the project, both in Sacramento County; one residence, approximately 500 feet north of the project site, would be exposed to noise from most of the project site; the second residence, approximately 500 feet east of the site across SR 160, would be exposed to noise from activity on the portion of the project site east of the Sherman Island levee.

Acceptable noise criteria are established the Noise Element of the Sacramento General Plan 2030. Noise standards for Solano County are not considered as there are no sensitive receptors that could be subject to noise impacts from the project. Noise associated with construction activities is required to adhere to Sacramento County Code Section 6.68.090 when construction occurs near certain land uses, primarily areas of urban and suburban residential development. The zoning districts on and surrounding the project site are not subject to these regulations. The Noise Element establishes standards for non-transportation noise sources during day and night periods as follows:

Day	L50/Lmax = 55/75
Night	L50/Lmax = 50/70

Ambient noise levels in areas of Sacramento County that are comparable to the project site (i.e. rural agricultural areas along the Sacramento River) were measured in conjunction with preparation of the Noise Element of the General Plan; Ldn (Day-Night Average Noise) levels were identified at approximately 55 dBA in these areas. There are few major noise sources in the project vicinity; traffic on State Route (SR) 160 is a relatively consistent source of noise; agriculture, and marine and recreational boat traffic on the Sacramento River and Horseshoe Bend, are intermittent sources of noise.

The existing average annual daily traffic level of approximately 12,200 vehicles per day generates substantial noise only in the vicinity of the roadway but does contribute to background noise levels in more distant areas; a nomograph included in Sacramento County General Plan Noise Element predicts that the 65 dBA contour line for existing SR 160 traffic is located less than 100 feet from the roadway.

The prevailing agricultural use of lands on Sherman Island involves intermittent noise during the use of heavy and light equipment for field preparation, planting and harvesting. Periodic weed and pest control activity may involve additional equipment use and/or aerial overflights. This is not a consistent noise source.

Marine traffic along the Sacramento River is an occasional noise source for land uses along the banks of the shipping channel. Due to distance and the shielding effect of the island, marine traffic is not a substantial source of noise at the project site.

Recreational boat traffic can result in substantial noise varying with the type of boat being used in the area. The Sacramento County General Plan Noise Element indicates that noise from “power boats” may reach a maximum of 80-86 dBA along the shoreline. Noise contributions from other boat traffic (i.e. cruising, fishing) will be substantially lower.

DI currently operates a construction material extraction, handling and shipping facility. DI operations are presently confined to the western portion of Decker Island, approximately 4,000 feet southwest of the project. Although the DI facilities generate substantial noise in the immediate vicinity during operations, these operations are barely audible at the eastern edge of the island or within the project site. There are intermittent DI Aggregate operations in the vicinity of the project site.

There are no manufacturing facilities, railroads, airports, airstrips or other noise-generating land uses in the project vicinity.

Environmental Impacts and Mitigation Measures

- a,d) Construction of the project using a barge-mounted excavator or clam-shell dredge will generate short-term construction noise along the project alignment and potential for exposure of recreationists using Horseshoe Bend and two nearby residences to noise levels in excess of Sacramento County standards. There are no other sensitive receptors in the project vicinity.

Excavator, dredge and/or jetting sled operations will involve noise that can reach maximum levels of up to 89 dBA at 50 feet from the construction site. Considering a noise dropoff rate of 6 dBA for each doubling of distance, the typical noise level at the nearest part of the project would be an estimated 68.7 dB, which is below the County’s maximum nighttime noise standard for residential uses of 70 dB; at the furthest point of the project, the construction noise level would be an estimated 61.1 dB, also below the night and day standards. Construction noise generated by the project will occur daily for up to two weeks.

Project construction will not result in significant noise effects at the one nearby residence, including effects during the more sensitive nighttime period. The predicted noise levels outdoor noise levels are below County standards. These levels will be further reduced in interior areas; standard residential construction is able to reduce outdoor noise levels by 25 dB or more with windows closed. Resulting interior noise levels would not exceed 43.7 dB, which is below the U.S. Department of Housing and Urban Development interior noise standard of 45 dB.

Construction noise will be below standards, temporary, short-term and therefore not significant.

- b) Heavy construction equipment can result in groundborne vibration, described in vibration decibels (VdB) can range to over 90 VdB for

heavy tracked equipment; potential vibration levels for the planned excavation equipment in relatively soft materials will be lower. At the nearest potential receptor, a residence approximately 500 feet north of the project site, accounting for a dropoff rate comparable to airborne noise, the maximum potential vibration will be less than 75 VdB, which is an impact threshold defined by the Federal Transit Administration for vibration events that occur between 30-70 times per day. This is considered a less than significant effect.

- c) The project will not cause any increase in ambient noise levels in the project vicinity. The proposed electrical crossing will not generate any noise that exceeds existing background levels.
- d) The project will generate temporary, short-term construction noise that will exceed existing ambient noise levels. This noise increase is not considered significant. See discussion of item "a."
- e) The project is not located within an airport land use plan area, or within 2 miles of a public use airport. The nearest public use airport is in Rio Vista, approximately 6 miles north of the project site. The project will not expose people to aircraft operations noise.
- f) The project is not located near a private airstrip and will not expose people to noise generated by airstrips.

SOURCES

Federal Transit Administration, Office of Planning and Environment. Transit Noise and Vibration Impact Assessment. Report No.: FTA-VA-90-1003-06. May 2006.

Sacramento County Code. Section 6.68.090(e).

Sacramento County, Community Planning and Development Department. General Plan, Noise Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department. General Plan, Noise Element, Appendix A Existing and Future Noise Environments Report. Amended November 9, 2011.

3.4.13 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✗
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✗
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✗

NARRATIVE EXPLANATION

Environmental Setting

The proposed project is located in rural and relatively lightly populated sections of Solano and Sacramento County. According to the California Department of Finance (CDOF), the estimated January 1, 2013 population of Solano County was 418,387; an estimated 154,111 housing units existed at that time. The CDOF estimated population of Sacramento County was 1,445,806, with an estimated total of 559,806 housing units in the County.

Land use in the nearby portions of both counties is predominantly agricultural with very low housing and population density. General plan and zoning documents for both counties designate the project area for agricultural and resource management uses (see Section 3.10 Land Use).

There are no housing units within the project site and few in the project vicinity; two nearby residence on Sherman Island is approximately 500 feet north of the east project terminus. The next nearest residence is approximately 0.5 miles northeast of the project near Threemile Slough.

Environmental Impacts and Mitigation Measures

- a) The project will not involve any direct or indirect effect on population growth. The project will not add or remove existing housing units, displace planned residential development, or have an effect on population growth.

The project will provide an alternative power supply to existing mining development and will not contribute indirectly to population growth or housing development.

- b,c) There are no existing housing units within the proposed project site or that could be substantially affected by the project. Project development will not cause displacement of any existing population or housing.

SOURCES

California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2013 with 2010 Census Benchmark. January 1, 2013. Accessed January 14, 2014.

3.4.14 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

NARRATIVE EXPLANATION

Environmental Setting

The Montezuma Fire Protection District provides fire protection service on the Solano County portion of the project from its station at 21 N 4th St, Rio Vista., Fire protection service in Sacramento County is provided by the Delta Fire Protection District from its station at 350 Main Street in Rio Vista; the District provides contract services to the City of Rio Vista.

Law enforcement services for the project site are provided by the respective county Sheriff’s Departments. Besides customary on-land services, the Sheriffs operate marine patrol program that address recreational and commercial boat traffic on the waters of each county. Additional marine law enforcement is provided by the U.S. Coast Guard, which maintains a regular patrol in the Rio Vista area from its base at 900 Beach Drive in Rio Vista. The California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service, have additional law enforcement responsibilities related to the natural resources of the Delta waterways.

The proposed project site is located within the River Delta Unified School District, which serves residents of both Solano and Sacramento Counties. The District’s nearest schools, which include elementary, middle and high schools, are located in the City of Rio Vista. There are no school facilities located near the proposed project site.

Both counties provide parks and recreation services in the unincorporated areas. The Solano County Parks and Recreation operates several regional parks, several facilities in Rio Vista, and water-related facilities including fishing access and boat launch facilities. The nearest of these facilities is Sandy Beach County Park, which provides river access, camping and other facilities; Sandy Beach is located on the Sacramento River just south of Rio Vista, approximately 3.2 miles north of the project site.

Sacramento County operates several regional parks including facilities in the Delta. The nearest of these is Sherman Island Regional Park, which provides camping facilities and water access for boats, fishing, wind surfing and kite boarding. This park is located approximately 3.5 miles southwest of the site.

More broadly, the majority of recreational use in the project vicinity consists of watercraft on the Sacramento River and other Delta waterways. These resources are addressed Section 3.15, Recreation.

Environmental Impacts and Mitigation Measures

- a) The project will involve direct burial and ongoing use of electrical cable. Use of construction equipment on land would involve incidental, short-term potential fire risk and need for emergency services. The project would not affect public access or recreational use of the project vicinity lands or waters. Following construction, the project would involve no increase in fire risk or potential demand for fire or emergency services from the respective fire districts.
- b) Project construction would involve encroachment into recreational waters and incidental short-term potential to generate water-based law enforcement demand. Following construction, the project will involve no effect on the Sheriff's responsibilities in either of the two counties.
- c) The project will have no direct or indirect effect on schools. There are no school facilities in the project vicinity that could be subject to physical effects. The project will not cause an increase or decrease in the general population or in student populations.
- d) The project will have no direct or indirect effect on park facilities. There are no park facilities in the project vicinity that could be subject to physical effects. The project will not cause an increase or decrease in population or in park demands.

The project will involve minor and short-term effects on recreational use of Horseshoe Bend; these potential effects are explored in Section 3.15 Recreation.

SOURCES

Web sites for the agencies discussed in the Environmental Setting section, all accessed January 14, 2014, are as follows:

<http://www.montezumafiredistrict.com/>

http://www.saclafco.org/ServiceProviders/Documents/atozlistings/sac_006817.pdf

<http://www.co.solano.ca.us/depts/sheriff/>

<http://www.sacsheriff.com/>

<http://riverdelta.org/>

<http://www.regionalparks.saccounty.net/Parks/RegionalParksDetails/Pages/default.aspx>

<http://www.regionalparks.saccounty.net/Parks/SacramentoRiverandDelta/Pages/default.aspx>

3.4.15 RECREATION

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
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?				X

NARRATIVE EXPLANATION

Environmental Setting

Environmental setting information related to county and city parks is discussed in Section 14, Public Services. This section addresses regional natural resource recreational resources of the Sacramento-San Joaquin Delta, the Sacramento River, the project site and vicinity.

The project site includes the waters and bank areas of Horseshoe Bend, a branch of the Sacramento River. These waters are extensively used for water-related recreation including boating, fishing and wind sports.

The Delta Protection Commission in conjunction with the California Department of Parks and Recreation and the Department of Boating and Waterways conducted the 1997 Sacramento-San Joaquin Delta Recreation Survey. The survey identified a wide range of water-based recreational activities including:

- Fishing and hunting
- Cruising, sailing, canoeing, kayaking and personal water craft
- House boating, swimming and boat camping
- Water skiing, wind surfing and kite boarding

The lower Sacramento-San Joaquin River area, identified as Zone D in the survey, was the most popular of the various Delta zones, ranking first in boat launching, sailing, fishing, water-skiing, swimming and sleeping on board a boat. There are more than 50 marinas. Brannan Island State Park, just north of the project site, provides a large number of picnicking and camping facilities and what the survey terms a “very large boat launch facility.”

Horseshoe Bend attracts a substantial amount of recreational use. Located off of the main shipping channel and on the lee side of Decker Island, the channel is a popular anchorage.

Environmental Impacts and Mitigation Measures

- a) The project will not increase the use of any recreational facility, including use of the waters of Horseshoe Bend. Project construction will involve localized and temporary limitation of recreational boating use of the immediate vicinity of construction activity, which represents a small percentage of the available water recreation area in Horseshoe Bend. As a result, the project’s effect on recreational facilities will be less than significant.
- b) The project does not include any recreational facilities and will have no effect on demand for recreational facilities.

3.4.16 TRANSPORTATION/TRAFFIC

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
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?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in				X

location that results in substantial safety risks?

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? X

e) Result in inadequate emergency access? X

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? X

NARRATIVE EXPLANATION

Environmental Setting

Transportation facilities in the project vicinity include highway SR 160 for automobiles and trucks, Horseshoe Bend for recreational boat traffic, and the Sacramento Deep Water Ship Channel west of Decker Island for commercial marine traffic.

SR 160 on Sherman Island in Sacramento County is a primary State highway connecting Sacramento with Antioch, Pittsburg and other urbanized areas of northern Contra Costa County. Locally, SR 160 serves Rio Vista via the intersecting SR 12, which connects Lodi with Fairfield at Interstate 80 in the west. In the vicinity of the project site SR 160 is a wide two-lane road with continuous shoulders. No passing is allowed in the site vicinity. Caltrans records for 2012 indicate that the average annual daily traffic (AADT) on SR 160 north of the Antioch bridge is 12,200 vehicles per day; peak hour traffic is estimated at 1,150 vehicles per hour.

There are no other public roads or highways on or near the site. On Decker Island, an existing dirt road accesses the western terminus of the project. The former Sherman Island Levee Road crosses the project site near its eastern terminus. Other roads in the area are agricultural access roads.

The Sacramento River Deep Water Ship Channel west of Decker Island accommodates commercial marine traffic carrying bulk and general cargo to and from the Port of West Sacramento. The Port reported 58 vessel calls in 2011 and projects gradual growth to more than twice this level by 2053. Additional commercial traffic includes tugboat and barge movements, including two barge loads per day originating at DI Aggregates. DI Aggregates workers are also transported to the Island by boat from Rio Vista. Commercial marine traffic does not utilize Horseshoe Bend.

Both the Deep Water Ship Channel and Horseshoe Bend are used extensively for recreational boating and related uses. Additional detail on recreational use is provided in Section 15 Recreation.

There are no railroads, airports or other major transportation facilities in the vicinity of the project. An existing public transit system provides service from the City of Rio Vista; the Rio Vista Delta Breeze provides daily service between Rio Vista, Antioch and the Pittsburg/Bay Point BART station via SR 160.

Relatively wide shoulders along SR 160 provide for bicycle use. Beside the highway shoulders, there are no pedestrian sidewalks in the project area.

Environmental Impacts and Mitigation Measures

- a) During construction of the easternmost portion of the project on Sherman Island, the project will involve very minor construction traffic to and from the project site along SR 160. Total construction traffic in this area is not expected to exceed 20 vehicle trips to and from the site each day. The project will have no substantial effect on highway operation or involve any potential conflict with an applicable transportation-related plan, ordinance or policy. As described in Section 3.10 Land Use, the project is consistent with existing, planned and approved land uses for the project area.

Barge and barge-mounted construction equipment operation in Horseshoe Bend during the construction period of up to two weeks will involve a minor impediment to the movement of recreational boats, wind- and paddle-craft along the channel. Construction equipment is not expected to prohibit free passage of recreational boats along Horseshoe Bend. The project will require permits from the US Army Corps of Engineers and an endorsement from the US Coast Guard. Conformance with permit conditions minimizing applicable navigation hazard requirements will reduce any potential impacts on recreational boating safety to a less than significant level.

- b) As discussed under item “a,” the project would have no substantial effect on SR 160 traffic operations. Therefore, the project will have no effect on existing congestion management plans for Sacramento County.
- c) There are no airports in the project vicinity. The project will have no effect on airport facilities or operations and therefore no effect on existing air traffic patterns.
- d) The project will have no effect on vehicular transportation facilities or on the movement of vehicles, including farm equipment, along roadway in the project vicinity. Installation of the proposed cable at the recommended minimum depth of five feet below the channel bottom will avoid any potential anchor drag effects.
- e) The project will not affect access along SR 160 or Horseshoe Bend, to properties along those alignments routes, or access to and from Decker Island. Therefore, the project will have no effect on emergency access.
- f) The project will have no effect on transit, bicycle or pedestrian facilities. As a result, the project will involve no potential conflict with any adopted transportation plan addressing planned transit, bicycle or pedestrian facilities.

SOURCES

Caltrans. 2012 Traffic Counts on State Highways. Accessed at <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm> on January 20, 2014.

City of Rio Vista Transit Services. Delta Breeze Schedule. Accessed at <http://www.riovistacity.com/transit/schedule.htm>, January 20, 2014.

Sacramento County, Community Planning and Development Department. General Plan, Circulation Element. Amended November 9, 2011.

U.S. Army Corps of Engineers, San Francisco District and Port of West Sacramento. Draft Supplemental Environmental Impact Statement/ Subsequent Environmental Impact Report. Sacramento River Deep Water Ship Channel. February 2011.

3.4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Are sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Has the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state and local statutes and regulations related to solid waste?				X

NARRATIVE EXPLANATION

Environmental Setting

The proposed project site is located in rural portions of Solano and Sacramento Counties. Organized domestic water, sewage collection, sewage treatment and storm drainage services are not available in the project area, either on Decker Island or Sherman Island. Water supply and sewage disposal are provided by individual landowners on-site, as needed to support individual land uses. Storm drainage for Sherman Island is provided internally by ditch and pumping systems operated by the Reclamation District 341. Decker Island drains internally and has no existing drainage system.

Electrical supply in the project vicinity is provided by Pacific Gas and Electric (PG&E). A PG&E electrical distribution line is located along the west side of SR 160 in the vicinity of the easterly project terminus. Power supply for Decker Island would be obtained from this line. A very high voltage electrical transmission line supported on steel lattice towers is located approximately 0.25 miles east of SR 160.

There is no domestic natural gas service in the project vicinity. A PG&E gas transmission line passes through Sherman Island approximately 0.5 miles south and southeast of the project site.

Sacramento County Waste Management and Recycling provides source-separated waste collection service to the unincorporated area. The County's State-permitted Kiefer Road landfill is currently 250 acres but is permitted up to 660 acres in size. The County indicates that the landfill will be able to serve the regional waste disposal needs for many years to come.

Environmental Impacts and Mitigation Measures

- a) The project will not generate wastewater or otherwise affect systems subject to Regional Water Quality Control Board wastewater treatment requirements.
- b) The project will not generate wastewater or require water service. No new water or wastewater facilities will be constructed or needed in conjunction with the project.
- c) The project will not generate any substantial new storm runoff or need for storm water disposal systems. No new storm water facilities will be constructed or needed in conjunction with the project.
- d) The project will not require water service or in any way affect existing available water supplies.
- e) As noted above, the project will not generate wastewater or place wastewater treatment demand on any wastewater treatment provider.
- f) The project will not generate any substantial volume of solid waste in

either construction or operation and would have no effect on the capacity of available waste disposal sites.

- g) The project will comply with any applicable statutes and regulations related to solid waste.

SOURCES

Pacific Gas and Electric. Gas Transmission System Pipeline Map. Accessed at <http://www.pge.com/safety/systemworks/gas/transmissionpipelines/> on January 20, 2014.

Sacramento County Waste Management and Recycling. Web site accessed at <http://www.wmr.saccounty.net/Pages/Kiefer-Landfill.aspx> on January 20, 2014.

3.4.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

NARRATIVE EXPLANATION

(a) Impacts on Biological and Cultural Resources

Finding (a) is checked as “Less than Significant with Mitigation Incorporated” on the basis of the project’s potential biological and cultural resource impacts, described in Sections 3.4 and 3.5, respectively. Potentially significant environmental effects were identified in these issue areas, but all of the potentially significant effects will be reduced to a less than significant level with mitigation measures that will be incorporated into the project.

(b) Cumulative Project Impacts

As described in this Initial Study, the potential environmental effects of the project will either be less than significant, or the project will have no impact at all, when compared to the baseline. Where the project involves potentially significant effects, these effects would be reduced to a less than significant level with proposed mitigation measures.

The potential environmental effects identified in this Initial Study have been considered in conjunction with each other as to their potential to generate other potentially significant effects. The various potential environmental effects of the project will not combine to generate any potentially significant cumulative effects. There are no other known, similar projects with which the project might combine to produce cumulative impacts.

(c) Other Substantial Effects on Human Beings

This Initial Study has considered the potential environmental effects of the project in the discrete issue areas outlined in the CEQA Environmental Checklist. During the environmental analysis, the potential for the project to result in substantial effects on human beings in these issue areas, as well as the potential for substantial effects on human beings to occur outside of these issue areas, was considered, and no other such effects were identified.

APPENDIX A
AIR QUALITY MODEL RESULTS

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Decker Island Electrical Crossing										
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	1.9	10.7	17.6	3.0	1.0	2.0	1.3	0.9	0.4	1,951.1
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	1.9	10.7	17.6	3.0	1.0	2.0	1.3	0.9	0.4	1,951.1
Total (tons/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	10.7

Notes: Project Start Year -> 2014
 Project Length (months) -> 1
 Total Project Area (acres) -> 0
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Decker Island Electrical Crossing										
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	0.9	4.9	8.0	1.4	0.5	0.9	0.6	0.4	0.2	886.9
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	0.9	4.9	8.0	1.4	0.5	0.9	0.6	0.4	0.2	886.9
Total (megagrams/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.7

Notes: Project Start Year -> 2014
 Project Length (months) -> 1
 Total Project Area (hectares) -> 0
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Decker Island Electrical Crossing	
Construction Start Year	2014	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	0.50	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.20	miles
Total Project Area	0.40	acres
Maximum Area Disturbed/Day	0.10	acres
Water Trucks Used?	2	1. Yes 2. No
Soil Imported	0.00	yd ³ /day
Soil Exported	0.00	yd ³ /day
Average Truck Capacity	20	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of	Program	2005		2006		2007	
	Construction Months	Calculated Months		%		%		%
Grubbing/Land Clearing	0.00	0.05	0.00		0.00		0.00	
Grading/Excavation	0.00	0.20	0.00		0.00		0.00	
Drainage/Utilities/Sub-Grade	0.50	0.18	0.00		0.00		0.00	
Paving	0.00	0.08	0.00		0.00		0.00	
Totals	0.50	0.50						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions		User Override of				
User Input		Soil Hauling Defaults	Default Values			
Miles/round trip			30			
Round trips/day			0			
Vehicle miles traveled/day (calculated)			0			
Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per construction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions		User Override of Worker				
		Commute Default Values	Default Values			
Miles/ one-way trip			20			
One-way trips/day			2			
No. of employees: Grubbing/Land Clearing	0.00		4			
No. of employees: Grading/Excavation	0.00		16			
No. of employees: Drainage/Utilities/Sub-Grade	6.00		14			
No. of employees: Paving	0.00		10			
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Paving (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Paving (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Drainage/Utilities/Sub-Grade	0.112	0.142	1.304	0.025	0.011	236.904
Tons per const. Period - Drain/Util/Sub-Grade	0.001	0.001	0.007	0.000	0.000	1.303
Pounds per day - Paving	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Paving	0.000	0.000	0.000	0.000	0.000	0.000
tons per construction period	0.001	0.001	0.007	0.000	0.000	1.303

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values			
	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Day	Miles Traveled/Day			
Grubbing/Land Clearing - Exhaust		0		0			
Grading/Excavation - Exhaust		0		0			
Drainage/Utilities/Subgrade		0		0			
	ROG	NOx	CO	PM10	PM2.5	CO2	
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	
Emission rate - Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.28	10.43	1.26	0.25	0.18	1713.35	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00	
Pound per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	
Pound per day - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00	

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0	0.0	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.1	2.0	0.0	0.4	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing		Default Number of Vehicles	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0
		Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0

Grading/Excavation	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grading	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Drainage/Utilities/Subgrade Override of Default Number of Vehicles	Default Number of Vehicles Program-estimate		ROG	CO	NOx	PM10	PM2.5	CO2
			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Excavators	0.45	2.79	5.10	0.25	0.23	572.77
	1	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Generator Sets	0.62	3.03	4.40	0.33	0.30	487.07
	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
1.00		Other Construction Equipment	0.74	3.60	8.01	0.42	0.39	654.37
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage	pounds per day	1.8	9.4	17.5	1.0	0.9	1714.2
	Drainage	tons per phase	0.0	0.1	0.1	0.0	0.0	9.4

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.1	0.0	0.0	9.4

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment	Default Values		Default Values
	Horsepower	Hours/day	
Aerial Lifts	63	8	
Air Compressors	106	8	
Bore/Drill Rigs	206	8	
Cement and Mortar Mixers	10	8	
Concrete/Industrial Saws	64	8	
Cranes	226	8	
Crawler Tractors	208	8	
Crushing/Proc. Equipment	142	8	
Excavators	163	8	
Forklifts	89	8	
Generator Sets	66	8	
Graders	175	8	
Off-Highway Tractors	123	8	
Off-Highway Trucks	400	8	
Other Construction Equipment	172	8	
Other General Industrial Equipment	88	8	
Other Material Handling Equipment	167	8	
Pavers	126	8	
Paving Equipment	131	8	
Plate Compactors	8	8	
Pressure Washers	26	8	
Pumps	53	8	
Rollers	81	8	
Rough Terrain Forklifts	100	8	
Rubber Tired Dozers	255	8	
Rubber Tired Loaders	200	8	
Scrapers	362	8	
Signal Boards	20	8	
Skid Steer Loaders	65	8	
Surfacing Equipment	254	8	
Sweepers/Scrubbers	64	8	
Tractors/Loaders/Backhoes	98	8	
Trenchers	81	8	
Welders	45	8	

0

END OF DATA ENTRY SHEET

APPENDIX B
TERRESTRIAL BIOLOGICAL ASSESSMENT

MOORE BIOLOGICAL CONSULTANTS

February 5, 2014

Mr. Pat Brown

Decker Island L.L.C.

12275 El Camino Real, Ste. 110

San Diego, California 92130

Subject: BASELINE BIOLOGICAL RESOURCES ASSESSMENT FOR THE
DECKER ISLAND ELECTRICAL LINE, SACRAMENTO AND
SOLANO COUNTIES, CALIFORNIA

Dear Pat:

Thank you for asking Moore Biological Consultants to prepare the Biological Assessment (BA) addressing the potential impacts of the proposed project to terrestrial biological resources. Our work involved documenting terrestrial biological resources, identifying potentially jurisdictional Waters of the U.S. or wetlands, searching for suitable habitat for or presence of special-status species in the project site, assessing potential project impacts to these resources, and developing appropriate avoidance and minimization measures. This BA supplements an analysis of project impacts to fish resources (FishBio, 2014).

Project Overview

The project extends from Sherman Island to Decker Island, spanning the Sacramento County and Solano County line (Figures 1 and 2). Decker Island LLC (DI) currently extracts, handles, and ships aggregate and fill materials from Decker Island. The proposed project will extend electrical supply from existing PG&E lines on Sherman Island to Decker Island. The purpose of the project is to provide reliable electrical power to replace the present power supply of standalone diesel-powered electrical generators.



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

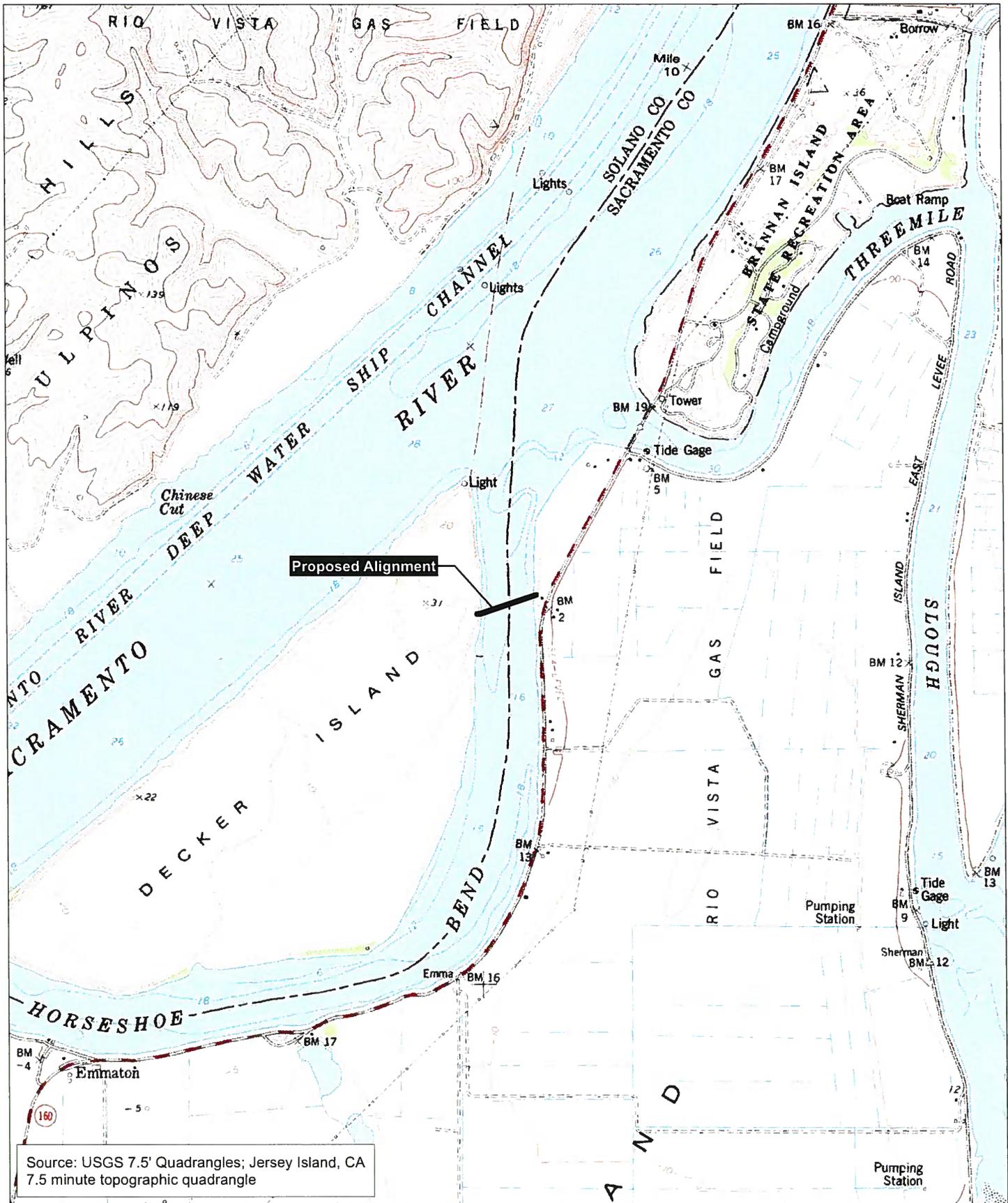
Figure 1

Moore Biological
Consultants



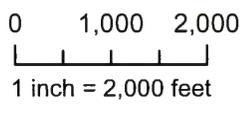
PROJECT VICINITY

Decker Island
Solano and Sacramento
Counties, CA



Source: USGS 7.5' Quadrangles; Jersey Island, CA
7.5 minute topographic quadrangle

Figure 2
Moore Biological
Consultants



Project Location

Decker Island
Solano and Sacramento
Counties, CA

The project involves installing a cable from an upland area on Sherman Island near State Route (SR) 160 across Horseshoe Bend to an existing access road on the eastern shore of Decker Island (Figure 3). The entire project is approximately 1,100 feet in length. The project site consists of an approximately 15 foot-wide linear corridor within which the proposed cable would be installed. All construction disturbance will be temporary and will occur in the 15-foot wide corridor. Habitat conditions in the site are expected to be comparable to existing conditions following construction.

The primary project component is a 3 to 4-inch diameter cable composed of several electrical conductors, which would be anchored at junction boxes at either end of the river crossing. In upland portions of the project site, the proposed cable would be buried a minimum of 3 feet below the ground surface; within the river channel, the cable would be buried a minimum of 5 feet below the channel bottom. The eastern end of the cable would terminate at a box vault to be installed adjacent to an existing PG&E electrical pole line. The western terminus of the cable would be a box vault to be installed on DI property, approximately 75 feet from the shoreline.

Cable burial in upland areas will be accomplished with excavator or backhoe. Soil will be removed from the trench and placed in the adjacent area; the cable bed will be prepared, the cable will be laid, and the trench will be backfilled with compacted native material. Cable burial across the Sherman Island levee will require removal of existing paving along the levee road, and removal of existing rip-rap along the water-side levee slope. Following construction, the roadbed grade will be restored with aggregate base material; rip-rap removed from the levee slope will be set aside during construction and replaced.

Cable burial in the river channel will be accomplished using either a barge-mounted long-reach excavator or clamshell bucket equipment or a jetting sled. If a barge-mounted long-reach excavator or clamshell bucket is utilized, sediment will be removed from the trench and stockpiled on the down-current side of the

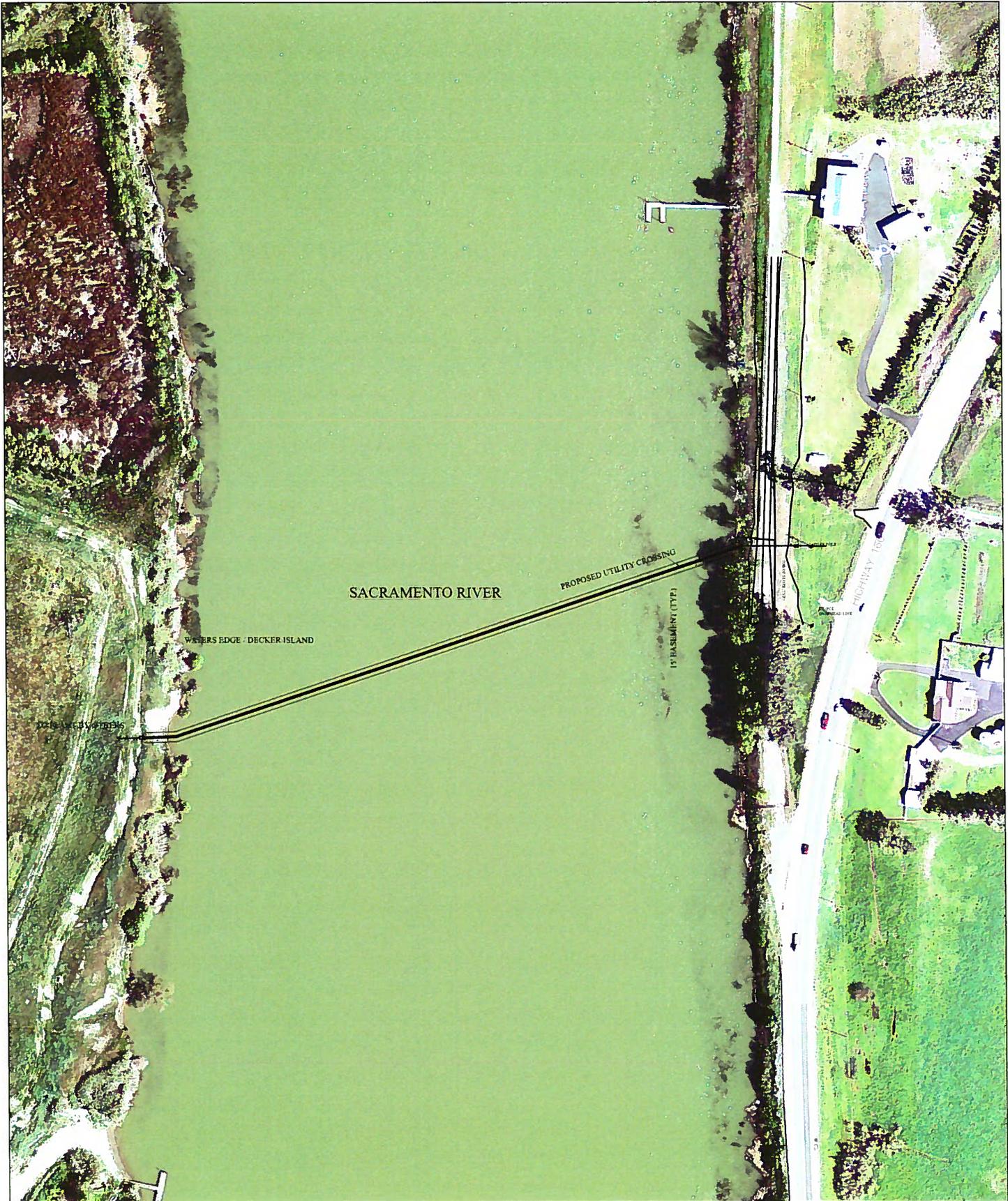
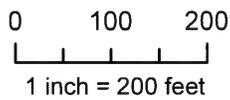


Figure 3

Moore Biological
Consultants



Aerial: USGS (April 9, 2011)

Aerial Photograph

Decker Island
Solano and Sacramento
Counties, CA

trench. The cable will be laid in the trench from the barge and the trench will then be backfilled using the excavation equipment. The backfill material will consist of the sidecast sediment topped with a layer of 3-inch rock. The average disturbed area in the channel portion of the project is not expected to exceed the proposed easement width of 15 feet. The maximum in-water area of disturbance will be 12,750 ft² (0.3+/- acres). If a barge-mounted long-reach excavator or clamshell bucket is utilized, the duration of in-water construction will be approximately 2 weeks.

Burial of the cable may also be accomplished with a jetting sled. With this method, hydraulic jets mounted on a skid-supported cable guide will cut the cable burial trench. The cable bundle would simultaneously be fed through the guide, laid and buried in a single pass; additional hydraulic jets would bury the cable and partially refill the trench with excavated sediment; backfill will be completed with a layer of 3-inch rock. Hydraulic pressure, power supply, and system control would be provided by an umbilical line connecting the sled to an accompanying support barge. The jetting sled would be operated continuously until the submarine portion of the cable burial is complete, with an estimated construction period for this portion of the work of 2 to 3 24-hour shifts.

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB, 2013). As the site is in the northwest portion of the USGS 7.5-minute Jersey Island topographic quadrangle, the CNDDDB search encompassed the Jersey Island quadrangle, and also the Rio Vista, Birds Landing, and Antioch North quadrangles, which are situated to the north and west. This CNDDDB search area is approximately 240 square miles surrounding the project site. The United States Fish and Wildlife Service (USFWS) list of Federally Threatened and Endangered species that may occur in or be affected by projects in these same

topographic quadrangles was also reviewed (Appendix A). This information was used to identify special-status wildlife and plant species that have been previously documented in the project vicinity or have the potential to occur based on suitable habitat and geographical distribution. Additionally, the CNDDDB also depicts the locations of sensitive habitats.

Field surveys were conducted on October 24 and 30, and December 9, 2013, and January 21, 2014. The surveys were accomplished via boat and on foot and consisted of making observations of habitat conditions, and noting surrounding land uses, general habitat types, and plant and wildlife species. The surveys included an assessment of the project site for potentially jurisdictional Waters of the U.S. (a term that includes wetlands) as defined by the U.S. Army Corps of Engineers (ACOE, 1987; 2008), and a search for special-status species, and suitable habitat for special-status species (e.g., blue elderberry shrubs, vernal pools). Additionally, trees within and near the work areas were assessed for the potential use by nesting raptors, especially Swainson's hawk (*Buteo swainsoni*). The upland portions of the site were searched for burrowing owls (*Athene cunicularia*) or burrows with evidence of occupancy by burrowing owls.

Results

GENERAL SETTING: The project site spans the boundary of Solano County and Sacramento County, California (Figure 1). The project site is located in unnumbered Sections within Township 3 North, Range 2 East MDBM of the USGS 7.5-minute Jersey Island topographic quadrangle (Figure 2). Project site elevations range from approximately 25 feet below to 25 feet above mean sea level. Surrounding land uses are primarily agricultural, with very widely scattered residences, barns, and shops.

HABITAT CONDITIONS: Sherman Island consists of leveled irrigated cropland that is primarily farmed in alfalfa, hay, and other annual crops. On Sherman Island,

the project site encompasses a levee slope, paved levee road, and ruderal grassland on the land side of the levee (Figure 3 and photographs in Appendix B). Decker Island is used for grazing and aggregate mining; there is a CDFW habitat area at the north tip of the island. On Decker Island, the project site encompasses a sandy beach, steep bank covered primarily with Himalayan blackberry (*Rubus discolor*) brambles, and ruderal grassland.

VEGETATION: California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describes the vegetation along the Sherman Island levee slopes and the body of Decker Island. Grasses including Bermuda grass (*Cynodon dactylon*), oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), and foxtail barley (*Hordeum murinum*) are dominant grass species. Other grassland species such as fennel (*Foeniculum vulgare*), bull thistle (*Cirsium vulgare*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), and filaree (*Erodium botrys*) are intermixed with the grasses. Table 1 is a list of plant species observed in and adjacent to the site.

In the vicinity of the site, the banks of Decker Island are steep and are vegetated with a narrow and discontinuous band of riparian vegetation. Coastal live oak (*Quercus agrifolia*), willows (*Salix* spp.), and black walnut (*Juglans californicus*) are the dominant trees. The banks of the island also support dense patches of Himalayan blackberry, intermixed with patches of California wild rose (*Rosa californica*), and California wild grape (*Vitis californicus*). There are trees north and south of the site on Decker Island, but no woody riparian vegetation within areas that will be disturbed (i.e., the 15-foot wide corridor).

On Sherman Island there are large Fremont cottonwood (*Populus fremontii*) trees along the bank near the waterline on just north and south of the site, but no woody riparian vegetation within areas that will be disturbed (i.e., the 15-foot wide corridor). All of the woody riparian vegetation will remain and the project will not result in removal of trees or the associated shaded loss or shaded aquatic riverine habitat.

TABLE 1
PLANT SPECIES OBSERVED IN AND NEAR THE SITE

<i>Amsinckia menziesii</i>	rancher's fireweed
<i>Arundo donax</i>	giant reed
<i>Avena</i> sp.	oat
<i>Baccharis pilularis</i>	coyote brush
<i>Brassica nigra</i>	black mustard
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	soft chess brome
<i>Centaurea solstitialis</i>	yellow star-thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Convolvulus arvensis</i>	morning glory
<i>Cynodon dactylon</i>	Bermuda grass
<i>Distichlis spicata</i>	saltgrass
<i>Eichhornia crassipes</i>	water hyacinth
<i>Epilobium brachycarpum</i>	fireweed
<i>Eremocarpus setigerus</i>	dove weed
<i>Erodium botrys</i>	filaree
<i>Eucalyptus</i> sp.	blue gum
<i>Foeniculum vulgare</i>	fennel
<i>Heterotheca grandiflora</i>	telegraph weed
<i>Hordeum marinum</i>	Mediterranean barley
<i>Hordeum murinum</i>	foxtail barley
<i>Lactuca serriola</i>	prickly lettuce
<i>Lepidium latifolium</i>	perennial pepperweed
<i>Lolium perenne</i>	perennial ryegrass
<i>Malva neglecta</i>	common mallow
<i>Populus fremontii</i>	Fremont cottonwood
<i>Quercus agrifolia</i>	coastal live oak

TABLE 1 (Continued)
PLANT SPECIES OBSERVED IN AND NEAR THE SITE

<i>Rosa californica</i>	California wild rose
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rumex crispus</i>	curly dock
<i>Salix</i> spp.	willow
<i>Scirpus acutus</i>	tule
<i>Verbena hastata</i>	common verbena
<i>Vitis californicus</i>	California wild grape

There is a patch of sparse tules (*Scirpus acutus*) and some water hyacinth (*Eichhornia crassipes*) on a shallow near-shore area approximately 100 to 150 feet from the bank of Sherman Island (Figure 3 and photographs in Appendix B). Near-shore areas adjacent to Decker Island are deeper; in-water vegetation is primarily on small islands on a sandy shelf within 20 feet of the shore where the water is a few feet deep. There is no in-water vegetation adjacent to Decker Island near the west tip of alignment; habitats transition abruptly from deep open water, to a narrow sandy beach, to the blackberry brambles.

No blue elderberry (*Sambucus mexicana*) shrubs were observed in or adjacent to the project site.

WILDLIFE: A limited variety of bird species were observed during the site surveys; all of these are common to agricultural areas in the delta. Birds observed in the project site include turkey vulture (*Cathartes aura*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), great egret (*Casmerodias albus*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), rock dove (*Columba livia*), northern mockingbird (*Mimus polyglottos*), western scrub jay

(*Aphelocoma coerulescens*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), Brewer's blackbird (*Euphagus cyanocephalus*), and house sparrow (*Passer domesticus*).

There are a few potential nest trees near the project site that may be suitable for nesting raptors and other protected migratory birds, including Swainson's hawk. Most notably, there is a row of large Fremont cottonwoods and some large blue gums (*Eucalyptus* sp.) on Sherman Island; future use of these trees by nesting raptors is possible. Further, it is considered likely that songbirds nest within trees, shrubs, and grassland habitats in or adjacent to the project site each year.

A variety of mammals common to agricultural areas likely occur in the project site. While no mammals were observed, sign of raccoon (*Procyon lotor*) was observed on Decker Island. Coyote (*Canis latrans*), black-tailed hare (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), and opossum (*Didelphis virginiana*) are expected to occur on Sherman Island. Mine personnel on Decker Island have observed Norway rats (*Rattus norvegicus*) on the island, but have not observed coyotes or any other mammals.

Based on habitat types present, a number of common amphibians and reptiles may use habitats in the project site. However, no reptiles or amphibians were observed in the site during the field surveys. The project site provides suitable for pacific chorus frog (*Pseudacris regilla*) and bullfrog (*Rana catesbeiana*). Reptiles including western fence lizard (*Sceloporus occidentalis*), Gilbert's skink (*Eumeces gilbertii*), and western terrestrial garter snake (*Thamnophis elegans*) are expected to occur at the project site.

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill

materials into any waters of the U.S., including wetlands. Both CDFW and ACOE have jurisdiction over modifications to jurisdictional riverbanks, lakes, stream channels and other wetland features.

“Waters of the U.S.”, as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their tributaries. In tidal waters, the limit of federal jurisdiction is high tide. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the “ordinary high water mark”. The ordinary high water mark is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

The only potentially jurisdictional Waters of the U.S. or wetlands in or adjacent to the project site is Horseshoe Bend. The elevation of high tide in Horseshoe Bend is the limit of ACOE jurisdiction. At the proposed cable crossing, the banks of both Sherman Island and Decker Island are steep; there are no adjacent wetlands.

Horseshoe Bend is a navigable Water of the U.S. subject to Section 10 of the River and Harbor Act as well as Section 404 of the Clean Water Act. This side channel of the Sacramento River also falls under the jurisdiction of CDFW, the California Regional Water Quality Control Board (RWQCB), the State Lands Commission (SLC), and the Central Valley Flood Protection Board (CVFPB).

Beyond Horseshoe Bend, no other potentially jurisdictional wetlands or Waters of the U.S. were observed in or near the project site. On Decker Island and Sherman Island, the project site is situated entirely in upland grassland and ruderal habitats. There are no lakes, ponds, vernal pools, seasonal wetlands, seeps, marshes, agricultural wetlands, or wetlands of any other type within or immediately adjacent to the project site.

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

Special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The presence of species with legal protection under the Endangered Species Act often represents a major constraint to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species.

Special-status plants are those, which are designated rare, threatened, or endangered, and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California by the California Native Plant Society (CNPS, 2010). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of

adequate information to permit listing or rejection for state or federal status, such as those included on List 3 in the CNPS Inventory.

The likelihood of occurrence of listed, candidate, and other special-status species in the work areas is generally low. Table 2 provides a summary of the listing status and habitat requirements of special-status species that have been documented in the greater project vicinity or for which there is potentially suitable habitat in the greater project vicinity. This table also includes an assessment of the likelihood of occurrence of each of these species within the project site.

SPECIAL-STATUS PLANTS: Twenty-five (25) special-status plants were identified from the CNDDDB (2013) search and USFWS Species List (Table 2). Although some of these species may occur in close proximity to the project site, none of these species have been observed or are expected to occur in the immediate vicinity of the proposed cable. Special-status plants generally occur in relatively undisturbed areas and are largely found within unique vegetation communities such as vernal pools, marshes and swamps, and areas with unique soils. The upland grassland habitats on Sherman Island and Decker Island are routinely mowed, sprayed, and/or grazed for fire suppression. These highly disturbed upland grasslands do not provide suitable habitat for special-status plants.

Several species of special-status plants listed in Table 2 occur in marshes and swamps or riparian woodlands. These include Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*), wooly rose mallow (*Hibiscus lasiocarpus*), delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), delta mudwort (*Limosella australis*), eel-grass pondweed (*Potamogeton zosteriformis*), Sanford's arrowhead (*Sagittaria sanfordii*), side-flowering skullcap (*Scutellaria lateriflora*), and Suisun marsh aster (*Symphotrichum lentum*).

Suisun marsh aster was observed on four small near-shore islands 15+/- to 100+/- feet north of the site along the edge of Decker Island (Figure 4 and photographs in Appendix B). The Suisun marsh aster is growing at and near the

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
PLANTS						
Alkali milk-vetch	<i>Astragalus tener</i> <i>var. tener</i>	None	None	1B	Alkali playas and vernal pools.	Unlikely: the project site does not contain suitable habitat for this species. The nearest occurrence of alkali milk vetch in the CNDDDB (2013) search area is approximately 11.5 miles northwest of the project site.
Heartscale	<i>Atriplex cordulata</i>	None	None	1B	Valley and foothill grassland, chenopod scrub	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for heartscale. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 11 miles northwest of the site.
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	None	None	1B	Chenopod scrub, alkali meadow, valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of San Joaquin spearscale in the CNDDDB (2013) search area is approximately 4.5 miles northeast of the project site.
Big tarplant	<i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	None	None	1B	Valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of big tarplant in the CNDDDB (2013) search area is approximately 9.5 miles southwest of the site.
Round-leaved filaree	<i>California macrophyllum</i>	None	None	2	Cismontane woodland and valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for round-leaved filaree. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Pappose tarplant	<i>Centromadia parryi</i> ssp. <i>parryi</i>	None	None	1B	Coastal salt marsh, coastal prairie, meadows and seeps, vernal mesic valley and foothill grassland; often in alkaline soils.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for pappose tarplant. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles northwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Soft bird's-beak	<i>Cordylanthus mollis</i> ssp. <i>mollis</i>	E	Rare	1B	Coastal salt marsh	Unlikely: the site does not contain suitable coastal salt marsh habitat for this species. The nearest occurrence of soft bird's-beak in the CNDDDB (2013) search area is approximately 12 miles northwest of the site.
Bolander's water hemlock	<i>Cicuta maculata</i> var. <i>bolanderi</i>	None	None	2	Fresh or brackish water marshes.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Bolander's water hemlock, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Bolander's water hemlock. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Hoover's cryptantha	<i>Cryptantha hooveri</i>	None	None	1B	Inland dunes; sandy areas in valley and foothill grasslands.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for Hoover's cryptantha. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles southwest of the site.
Dwarf downingia	<i>Downingia pusilla</i>	None	None	2	Vernal pools.	Unlikely: there are no vernal pools or seasonal wetlands in the site. The nearest occurrence of dwarf downingia in the CNDDDB (2013) search area is approximately 9 miles west of the site.
Antioch Dunes buckwheat	<i>Eriogonum nudum</i> var. <i>psychicola</i>	None	None	1B	Inland dunes.	Unlikely: there is no suitable habitat for Antioch Dunes buckwheat in the site. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Mt. Diablo buckwheat	<i>Eriogonum truncatum</i>	None	None	1A	Chaparral, coastal scrub, valley and foothill grassland	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Mt. Diablo Buckwheat in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Contra Costa wallflower	<i>Erysimum capitatum</i> ssp. <i>angustatum</i>	E	E	1B	Inland dunes.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for Contra Costa wallflower. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 9.5 miles southwest of the site. The site is not in designated critical habitat for Contra Costa wallflower (CFR, 1990a).
Diamond-petaled California poppy	<i>Eschscholzia rhombipetala</i>	None	None	1B	Valley and foothill grasslands, alkaline, clay slopes and flats.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species; no alkaline or clay soils were observed in the site. The nearest occurrence of diamond-petaled California poppy in the CNDDDB (2013) search area is approximately 9 miles southwest of the site.
Fragrant fritillary	<i>Fritillaria liliacea</i>	None	None	1B	Coastal scrub, valley and foothill grassland and coastal prairie; often on serpentine soils.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species; there are no serpentine soils in the site. The nearest occurrence of fragrant fritillary in the CNDDDB (2013) search area is approximately 8.5 miles northwest of the site.
Woolly rose mallow	<i>Hibiscus lasiocarpus</i>	None	None	2	Freshwater marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may provide suitable habitat for woolly rose mallow, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for woolly rose mallow. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 3.5 miles northeast of the site.
Carquinez goldenbush	<i>Isocoma arguta</i>	None	None	1B	Valley and foothill grasslands.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Carquinez goldenbush in the CNDDDB (2013) search area is approximately 9 miles northwest of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Northern California black walnut	<i>Juglans hindsii</i>	None	None	1B	Riparian forest and woodlands along the Sacramento River.	Unlikely: no northern California black walnuts were observed in the site. This species is recorded as having occurred along the Sacramento River between Freeport and Rio Vista, however the CNDDDB (2013) describes this population as extirpated.
Contra Costa goldfields	<i>Lasthenia conjugens</i>	E	None	1B	Valley and foothill grassland within vernal pools and swales.	Unlikely: the site does not provide suitable habitat for Contra Costa goldfields. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles southwest of the site. The site is not in designated critical habitat for Contra Costa goldfields (USFWS, 2005a).
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	None	None	1B	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Delta tule pea, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Delta tule pea. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, with the closest record in the search area approximately 3 miles southeast of the project site.
Mason's lilaepsis	<i>Lilaeopsis masonii</i>	None	R	1B	Marshes, swamps and riparian scrub.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Mason's lilaepsis, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Mason's lilaepsis. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, including the Sacramento River just west of the site (along the west edge of Decker Island) and along the north edge of Sherman Island a few miles south of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Delta mudwort	<i>Limosella australis</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Delta mudwort, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Delta mudwort. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, including the Sacramento River just northwest of the site (near the north tip of Decker Island) and along the south edge of Decker Island a few miles south of the site.
Baker's navarretia	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	None	None	1B	Vernal pools and swales within a variety of vegetation communities.	Unlikely: there are no vernal pools or swales in the site. The closest documented occurrence of Baker's navarretia in the CNDDDB (2013) search area is approximately 12 miles northwest of the site.
Colusa grass	<i>Neostapfia colusana</i>	T	E	1B	Large, deep vernal pools; blooms May - August.	Unlikely: there are no vernal pools or seasonal wetlands in the site. There are no occurrences of Colusa grass in the CNDDDB (2013) search area.
Antioch dunes evening primrose	<i>Oenothera deltooides</i> ssp. <i>howellii</i>	E	E	1B	Interior dunes in the Delta region.	Unlikely: there is no dune habitat in the site for this species. The nearest occurrence of Antioch dunes evening primrose in the CNDDDB (2013) search area is approximately 6.5 miles southwest of the site. The site is not in designated critical habitat for Antioch dunes evening primrose (CFR, 1990b).
Bearded popcorn-flower	<i>Plagiobothrys hystriculus</i>	None	None	1B	Vernal pools, valley and foothill grassland.	Unlikely: the site does not provide suitable habitat for this species. The nearest occurrence of bearded popcorn-flower in the CNDDDB (2013) search area is approximately 7.5 miles northwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status 1	State Status 2	CNPS List 3	Habitat	Potential for Occurrence in the Work Areas
Eel-grass pondweed	<i>Potamogeton zosteriformis</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for this species, the sandy cove does not provide suitable habitat for eel-grass pondweed. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for this species. The nearest occurrence of eel-grass pondweed in the CNDDB (2013) search area is approximately 4.5 miles southeast of the site.
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	None	None	1B	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Sanford's arrowhead, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Sanford's arrowhead. The nearest occurrence of this species in the CNDDB (2013) search area is approximately 10.5 miles northeast of the site.
Side-flowering skullcap	<i>Scutellaria lateriflora</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for side-flowering skullcap, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for side-flowering skullcap. The nearest occurrence of this species in the CNDDB (2013) search area is approximately 5 miles northeast of the site.
Keck's checkerbloom	<i>Sidalcea keckii</i>	E	None	1B	Cismontane woodland, valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Keck's checkerbloom in the CNDDB (2013) search area is approximately 9 miles northwest of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Suisun marsh aster	<i>Symphotrichum lentum</i>	None	None	1B	Marshes and swamps.	Unlikely: Suisun marsh aster occurs on the near-shore islands just north of the site along the edge of Decker Island. However, the sandy cove where the alignment is proposed does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Suisun marsh aster. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the project site.
WILDLIFE						
Birds						
Swainson's hawk	<i>Buteo swainsoni</i>	None	T	N/A	Breeds in stands of tall trees in open areas. Requires adjacent suitable foraging habitats such as grasslands or alfalfa fields supporting rodents.	Low: the grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker island and on Sherman Island in the vicinity of the alignment. There are many records of nesting Swainson's hawks in the project vicinity; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	None	T	N/A	Mainly inhabits salt marshes bordering larger bays.	Unlikely: while they may nest in regional delta waterways, the river banks and near-shore areas do not provide suitable habitat for California black rail. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 7 miles southwest of the project site.
Bank swallow	<i>Riparia riparia</i>	None	T	N/A	Nests colonially in riparian habitats; requires vertical banks and cliffs with fine-textured soils.	Unlikely: there is no suitable nesting habitat for bank swallows in the project site. The only occurrence of this species in the CNDDDB (2013) search area is at Brannan Island State Recreational Area, approximately 2 miles northeast of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Burrowing owl	<i>Athene cunicularia</i>	None	SC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Low: no burrowing owls, ground squirrels, or ground squirrel burrows were observed in or near the site. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.
Tricolored blackbird	<i>Agelaius tricolor</i>	None	SC	N/A	Open water and protected nesting substrate, usually cattails and riparian scrub.	Moderate: tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.
Mountain plover	<i>Charadrius montanus</i>	None	None	SC	Winter migrant that forages and stages in short grasslands and grazed or newly plowed fields.	Unlikely: mountain plover may fly over or forage in the site during winter and spring migration; this species is not known to nest in this area. The nearest occurrence of mountain plover in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.
Suisun song sparrow (Modesto population)	<i>Melospiza melodia</i>	None	SC	N/A	Brackish water marshes. Inhabits cattails, tules, and tangles bordering sloughs.	Unlikely: Suisun song sparrow may fly over or forage in the site on occasion. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 0.5 miles northwest of the site.
Suisun song sparrow	<i>Melospiza melodia maxillaris</i>	None	SC	N/A	Brackish water marshes in and near Suisun Bay. Inhabits cattails, tules, and tangles bordering sloughs.	Unlikely: Suisun song sparrow may fly over or forage in the site on occasion. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 7.5 miles southwest of the site.
California least tern	<i>Sturnula antillarum browni</i>	E	E	N/A	Estuaries and bays; nests on exposed tidal flats or beaches.	Unlikely: the site does not provide suitable habitat for California least tern. There are no occurrences of this species in the CNDDDB (2013) search area.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status 1	State Status 2	CNPS List 3	Habitat	Potential for Occurrence in the Work Areas
Saltmarsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	None	None	N/A	San Francisco Bay fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging	Unlikely: the site does not provide suitable habitat for saltmarsh common yellowthroat. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 6 miles southwest of the site.
Mammals						
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	T	N/A	Inhabits open, dry grasslands and scrublands with loose textured soils.	Unlikely: grasslands in and near the site provide potentially suitable habitat for San Joaquin kit fox. However, the site is well north of the range of this species. There are no occurrences of this species in the CNDDDB (2013) search area.
Salt-marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E	E	N/A	Saline emergent wetlands dominated by pickleweed.	Unlikely: the site does not provide suitable habitat for salt-marsh harvest mouse. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 6.5 miles southwest of the site.
Western red bat	<i>Lasiurus blossevillii</i>	None	SC	N/A	Roosts in trees in a wide variety of habitats between the coast western Sierra Nevada mountains.	Unlikely: there is suitable roosting habitat for western red bat in the trees along the river banks, but there are no trees in the site. This species may fly over, forage, or roost near the site on occasion. The nearest occurrence of western red bat in the CNDDDB (2013) search area is approximately 5 miles northeast of the site.
Reptiles & Amphibians						
Giant garter snake	<i>Thamnophis gigas</i>	T	T	N/A	Freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches, primarily for dispersal or migration.	Unlikely: Horseshoe Bend provides poor quality habitat for giant garter snake, which are generally absent from larger rivers. The nearest occurrence of this species recorded in the CNDDDB (2013) search area is approximately 1.5 miles south of the project site. The validity of this occurrence is questionable as the CNDDDB ranks it as "poor", and the record is a visual observation of a large snake (about 5 feet long) crossing the road, and not a specimen in-hand.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
California red-legged frog	<i>Rana aurora draytonii</i>	T	SC	N/A	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Unlikely: there is no suitable aquatic habitat for California red-legged frog in or near the project site. California red-legged frog is presumed extinct on the floor of the Central Valley of California. There are no recorded occurrences of this species in the CNDDDB (2013) search area. The project site is not within designated critical habitat for California red-legged frog (USFWS, 2006).
Western pond turtle	<i>Emys marmorata</i>	None	SC	N/A	Ponds, marshes, streams, and ditches with emergent aquatic vegetation and basking areas.	Low: the near-shore aquatic habitats and stream banks provide suitable habitat for western pond turtle. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	None	SC	N/A	Sandy or loose loamy soils under sparse vegetation.	Unlikely: the river banks do not provide suitable habitat for silvery legless lizard. This species is also not known to occur in the area; the nearest occurrences of this species in the CNDDDB (2013) search area are in Antioch, approximately 7 to 8 miles southwest of the site.
California tiger salamander	<i>Ambystoma californiense</i>	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) and grassland/ woodland habitats with summer refugia (i.e., burrows).	Unlikely: There is no suitable habitat within or near the project site for California tiger salamander. This species occurs in the transitional bands between the valley floor and foothills and is not known to occur on delta islands. The nearest occurrence of California tiger salamander in the CNDDDB (2013) search area is approximately 14 miles northwest of the project site. The site is not within designated critical habitat for California tiger salamander (USFWS, 2005b).
Invertebrates						
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	None	N/A	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely: there are no blue elderberry shrubs in or adjacent to the site. There are no occurrences of valley elderberry longhorn beetle recorded in the CNDDDB (2013) in the search area. The site is not within designated critical habitat for valley elderberry longhorn beetle (USFWS 1980a).

TABLE 2

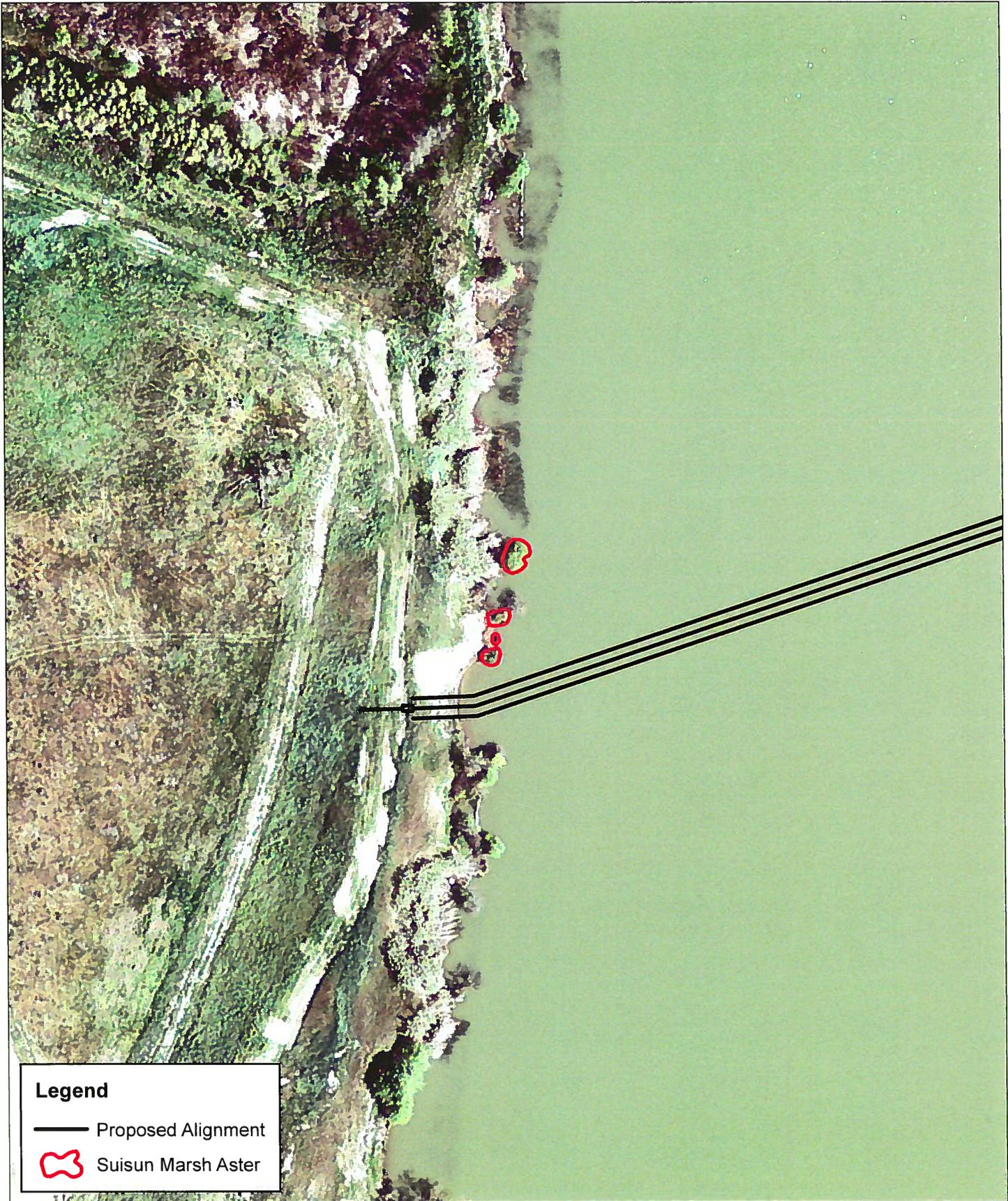
SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of vernal pool fairy shrimp in the CNDDDB (2013) search area is approximately 11 miles northwest of the project site. The site is not within designated critical habitat for vernal pool fairy shrimp (USFWS 2005a).
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of Conservancy fairy shrimp in the CNDDDB (2013) search area is approximately 9 miles west of the project site. The site is not within designated critical habitat for Conservancy fairy shrimp (USFWS 2005a).
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of vernal pool tadpole shrimp in the CNDDDB (2013) search area is approximately 9 miles west of the project site. The site is not within designated critical habitat for vernal pool tadpole shrimp (USFWS 2005a).
Delta green ground beetle	<i>Elaphrus viridis</i>	T	None	N/A	Margins of vernal pools in grasslands.	Unlikely: there are no vernal pools in or near the site. There are no occurrences of delta green ground beetle recorded in the CNDDDB (2013) in the search area. The site is not within designated critical habitat for Delta green ground beetle (USFWS 1980b).
Lange's metalmark butterfly	<i>Apodemia mormo langei</i>	E	None	N/A	Inhabits stabilized dunes along the San Joaquin River.	Unlikely: there is no dune habitat in the project site. The closest occurrence of Lange's metalmark butterfly in the CNDDDB (2013) search area is approximately 6 miles southwest of the site.

1 T= Threatened; E = Endangered.

2 T = Threatened; E = Endangered; R = Rare; SC=State of California Species of Special Concern

3 CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere; List 2 includes plants that are rare, threatened or endangered in California but are more common elsewhere.



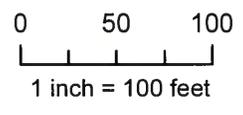
Legend

— Proposed Alignment

 Suisun Marsh Aster

Figure 4

Moore Biological
Consultants



Aerial: USGS (April 9, 2011)

Suisun Marsh Aster

Decker Island
Solano and Sacramento
Counties, CA

Map Date: January 2014

water line in association with common verbena (*Verbena hastata*), Himalayan blackberry, California wild rose, and California wild grape.

Suisun marsh aster is not listed at either the state or federal level but is on CNPS List 1B (CNPS, 2010). CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere. Suisun marsh aster is recorded in the CNDDDB (2013) in several locations within delta waterways within two to three miles of the project site. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the site.

Mason's lilaeopsis, delta tule pea, and delta mudwort are also recorded in the CNDDDB (2013) in several locations in the waterways near the site. These species, along with the other species in Table 2 that occur in marsh and swamp habitats, may also occur on the small near-shore islands just north of the site along the edge of Decker Island.

The sandy cove where the alignment is proposed does not provide suitable habitat for Suisun marsh aster or any of the other species in Table 2 that occur in marsh and swamp habitats. The shoreline of Sherman Island is shaded and does not provide suitable marsh and swamp habitat required by for Suisun marsh aster or other marsh or swamp species.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the project site by special-status wildlife species is also generally considered low. Of the species identified in Table 2, Swainson's hawk, burrowing owl, tricolored blackbird, and western pond turtle have at least some potential to occur within the project site. Swainson's hawk and other bird species protected by the Migratory Bird Treaty Act and Fish and Game Code of California have potential to occur in or near the site and could be adversely affected by construction activities if they nested in or near the site during construction. If present, western pond turtle could be adversely impacted by project construction. There is no suitable habitat in the project site for the remaining species in Table 2.

SWAINSON'S HAWK: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15).

Swainson's hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August. The CNDDDB (2013) contains numerous records of nesting Swainson's hawks within the search area; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.

No Swainson's hawk nests were located during the surveys, which was conducted during the non-breeding season. The grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker Island and on Sherman Island in the vicinity of the alignment that could be used by nesting Swainson's hawks.

BURROWING OWL: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, as well as their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands as well as scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.

No burrowing owls were observed in the project site. Further no ground squirrels or ground squirrel burrows were observed in or adjacent to the site. The site is well within the species range and burrowing owls may fly over or forage in the site on an occasional basis. It is possible that burrowing owls could nest in or near the site if burrow habitat is available.

TRICOLORED BLACKBIRD: The tricolored blackbird is a State of California Species of Concern and is also protected by the federal Migratory Bird Treaty Act. Tricolors are colonial nesters requiring very dense stands of emergent wetland vegetation and/or dense thickets of wild rose or blackberries adjacent to open water for nesting. This species is endemic to California. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.

Tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for this species. The blackberry brambles, patches of wild rose, willows, and emergent wetland vegetation along the banks of Decker Island are suitable for nesting and tricolored blackbirds may nest in or near the site during some years. Some blackberry brambles (15+/- feet wide) would be removed during construction but would be expected to revegetate rapidly; the project will not cause a permanent loss of potential nesting habitat.

WESTERN POND TURTLE: The western pond turtle is a state species of concern, but is not a listed species at the state or federal level. Western pond turtles are associated with permanent or nearly permanent bodies of water with adequate basking sites such as logs, rocks or open mud banks. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.

No western pond turtles were observed in or near the site. However, the near-shore aquatic habitats and stream banks along Horseshoe Bend provide suitable habitat for western pond turtle. This species may occur in the Horseshoe Bend in the vicinity of the alignment and could potentially nest in sandy areas along the shore of Decker Island.

CRITICAL HABITAT: The site is not within designated critical habitat for California red-legged frog (USFWS, 2006), federally listed vernal pool shrimp (USFWS, 2005a), California tiger salamander (USFWS, 2005a), valley elderberry longhorn beetle (USFWS, 1980), Delta Green Ground Beetle (USFWS, 1980), Contra Costa wallflower (CFR, 1990a), Contra Costa goldfields (USFWS, 2005a), or Antioch dunes evening primrose (CFR, 1990b).

Avoidance and Minimization Measures

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts to jurisdictional Waters of the U.S. and wetlands, special-status species, and potential or actual habitats of special-status species:

- Disturbance in Waters of the U.S. will be limited to minimal amount to accomplish the work and shall occur within the 15-foot corridor. The under-water construction shall minimize potential entrainment of

sediment by sidecasting excavated material immediately adjacent to the trench and not bringing it up through the water column.

- In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with CDFW and National Marine Fisheries Service (NMFS).
- Standard construction best management practices (BMPs) shall be employed to minimize dust, erosion, and potential sedimentation. These BMPs may also include use of water trucks, compaction of soil, re-seeding disturbed areas, and implementation of other erosion control measures such as silt fences, straw wattles, or hay bales.
- Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.
- A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material.
- If construction commences between February 1 and August, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the

beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors' active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG's 1994 Staff Report regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

- Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be

necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above.

- Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.
- Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the 50-foot buffer area will be delayed until hatching is complete and the young have left the nest site.
- A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program

will be Swainson's hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.

The collective implementation of these measures as a part of the project will assure the protection of sensitive habitat and species and the maintenance of biological functions and values.

Thank you, again, for asking Moore Biological Consultants to assist with the project. Please feel free to call me at (209) 745-1159 with any questions.

Sincerely,



Diane S. Moore, M.S.
Principal Biologist

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for Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*). Designated in Federal Register notice 43:39044; August 31, 1978.

CFR. 1999b. Title 50. Volume 1 - Wildlife and Fisheries. Section 17.96 - Critical habitat-plants. Designation of critical habitat for Antioch dunes evening primrose (*Oenothera deltoides* var. *howellii*). Designated in Federal Register notice 43:39042; August 31, 1978.

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USFWS (United States Fish and Wildlife Service). 1980b. Endangered and Threatened Wildlife and Plants; Listing the Delta Green Ground Beetle as a Threatened Species with Critical Habitat; Final Rule. Federal Register Vol. 45, No. 155, August 8, 1980, pp. 52807 – 52810.

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Appendix A

CNDDDB Summary Report and Exhibits

USFWS Species List

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020			G2G3	S2	SC
2 <i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
3 <i>Anniella pulchra pulchra</i> silvery legless lizard	ARACC01012			G3G4T3T4 Q	S3	SC
4 <i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle	IICOL49020			G1	S1	
5 <i>Anthicus sacramento</i> Sacramento anthicid beetle	IICOL49010			G1	S1	
6 <i>Apodemia mormo langei</i> Lange's metalmark butterfly	IILEPH7012	Endangered		G5T1	S1	
7 <i>Archoplites interruptus</i> Sacramento perch	AFCQB07010			G2G3	S1	SC
8 <i>Ardea herodias</i> great blue heron	ABNGA04010			G5	S4	
9 <i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2
10 <i>Athene cunicularia</i> burrowing owl	ABNSB10010			G4	S2	SC
11 <i>Atriplex cordulata var. cordulata</i> heartscale	PDCHE040B0			G3T2	S2	1B.2
12 <i>Atriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
13 <i>Blepharizonia plumosa</i> big tarplant	PDAST1C011			G2	S2	1B.1
14 <i>Branchinecta conservatio</i> Conservancy fairy shrimp	ICBRA03010	Endangered		G1	S1	
15 <i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
16 <i>Branchinecta mesovallensis</i> midvalley fairy shrimp	ICBRA03150			G2	S2	
17 <i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070		Threatened	G5	S2	
18 <i>California macrophylla</i> round-leaved filaree	PDGER01070			G2	S2	1B.1
19 <i>Centromadia parryi ssp. parryi</i> pappose tarplant	PDAST4R0P2			G3T1	S1	1B.2
20 <i>Charadrius montanus</i> mountain plover	ABNNB03100			G3	S2?	SC
21 <i>Chloropyron molle ssp. molle</i> soft bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
22 <i>Cicuta maculata var. bolanderi</i> Bolander's water-hemlock	PDAP10M051			G5T3T4	S2	2B.1
23 <i>Coastal Brackish Marsh</i>	CTT52200CA			G2	S2.1	

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

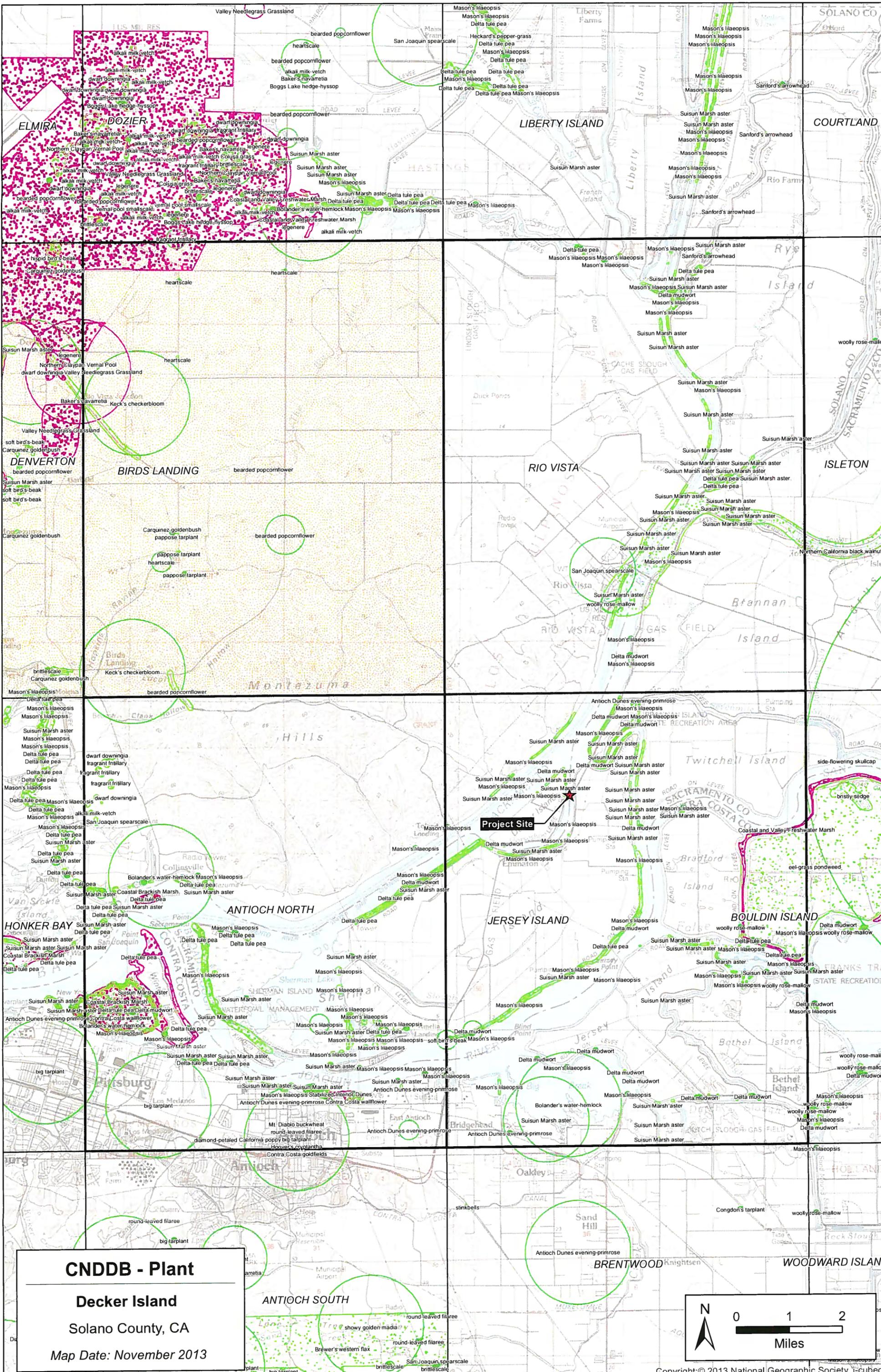
Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 <i>Coastal and Valley Freshwater Marsh</i>	CTT52410CA			G3	S2.1	
25 <i>Coelus gracilis</i> San Joaquin dune beetle	IICOL4A020			G1	S1	
26 <i>Cryptantha hooveri</i> Hoover's cryptantha	PDBOR0A190			GH	SH	1A
27 <i>Downingia pusilla</i> dwarf downingia	PDCAM060C0			G2	S2	2B.2
28 <i>Efferia antiochi</i> Antioch efferian robberfly	IIDIP07010			G1G3	S1S3	
29 <i>Elanus leucurus</i> white-tailed kite	ABNKC06010			G5	S3	
30 <i>Emys marmorata</i> western pond turtle	ARAAD02030			G3G4	S3	SC
31 <i>Eriogonum nudum var. psychicola</i> Antioch Dunes buckwheat	PDPGN0849Q			G5T1	S1	1B.1
32 <i>Eriogonum truncatum</i> Mt. Diablo buckwheat	PDPGN085Z0			G2	S2	1B.1
33 <i>Erysimum capitatum var. angustatum</i> Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
34 <i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	PDPAP0A0D0			G1	S1	1B.1
35 <i>Eucerceris ruficeps</i> redheaded sphecid wasp	IIHYM18010			G1G3	S1S2	
36 <i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0			G2	S2	1B.2
37 <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2	SC
38 <i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	PDMAL0H0R3			G5T2	S2	1B.2
39 <i>Hygrotus curvipes</i> curved-foot hygrotus diving beetle	IICOL38030			G1	S1	
40 <i>Hypomesus transpacificus</i> Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
41 <i>Idiostatus middlekauffi</i> Middlekauff's shieldback katydid	IIORT31010			G1G2	S1	
42 <i>Isocoma arguta</i> Carquinez goldenbush	PDAST57050			G1	S1	1B.1
43 <i>Juglans hindsii</i> Northern California black walnut	PDJUG02040			G1	S1	1B.1
44 <i>Lasiurus blossevillii</i> western red bat	AMACC05060			G5	S3?	SC
45 <i>Lasiurus cinereus</i> hoary bat	AMACC05030			G5	S4?	
46 <i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
47 <i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041		Threatened	G4T1	S1	

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48 <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	PDFAB250D2			G5T2	S2.2	1B.2
49 <i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3	
50 <i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAPI19030		Rare	G2	S2	1B.1
51 <i>Limosella australis</i> Delta mudwort	PDSCR10050			G4G5	S2	2B.1
52 <i>Linderiella occidentalis</i> California linderiella	ICBRA06010			G3	S2S3	
53 <i>Melospiza melodia</i> song sparrow ("Modesto" population)	ABPBXA3010			G5	S3?	SC
54 <i>Melospiza melodia maxillaris</i> Suisun song sparrow	ABPBXA301K			G5T2	S2	SC
55 <i>Metapogon hurdi</i> Hurd's metapogon robberfly	IIDIP08010			G1G3	S1S3	
56 <i>Myrmosula pacifica</i> Antioch multilid wasp	IIHYM15010			GH	SH	
57 <i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	PDPLM0C0E1			G4T2	S2	1B.1
58 <i>Northern Claypan Vernal Pool</i>	CTT44120CA			G1	S1.1	
59 <i>Oenothera deltoides</i> ssp. <i>howellii</i> Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
60 <i>Perdita scitula antiochensis</i> Antioch andrenid bee	IIHYM01031			G1T1	S1	
61 <i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020			G5	S3	
62 <i>Philanthus nasalis</i> Antioch specid wasp	IIHYM20010			G1	S1	
63 <i>Plagiobothrys hystriculus</i> bearded popcornflower	PDBOR0V0H0			G2	S2	1B.1
64 <i>Potamogeton zosteriformis</i> eel-grass pondweed	PMPOT03160			G5	S2.2?	2B.2
65 <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
66 <i>Riparia riparia</i> bank swallow	ABPAU08010		Threatened	G5	S2S3	
67 <i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0			G3	S3	1B.2
68 <i>Scutellaria lateriflora</i> side-flowering skullcap	PDLAM1U0Q0			G5	S1	2B.2
69 <i>Sidalcea keckii</i> Keck's checkerbloom	PDMAL110D0	Endangered		G1	S1	1B.1
70 <i>Sphecodogastra antiochensis</i> Antioch Dunes halcitiid bee	IIHYM78010			G1	S1	
71 <i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010		Threatened	G5	S1	SC

California Department of Fish and Game
 Natural Diversity Database
 Selected Elements by Scientific Name - Portrait

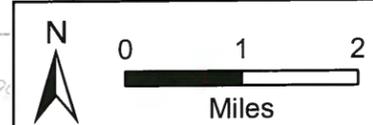
Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
72 <i>Stabilized Interior Dunes</i>	CTT23100CA			G1	S1.1	
73 <i>Symphotrichum lentum</i> Suisun Marsh aster	PDASTE8470			G2	S2	1B.2
74 <i>Thamnophis gigas</i> giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3	
75 <i>Valley Needlegrass Grassland</i>	CTT42110CA			G3	S3.1	

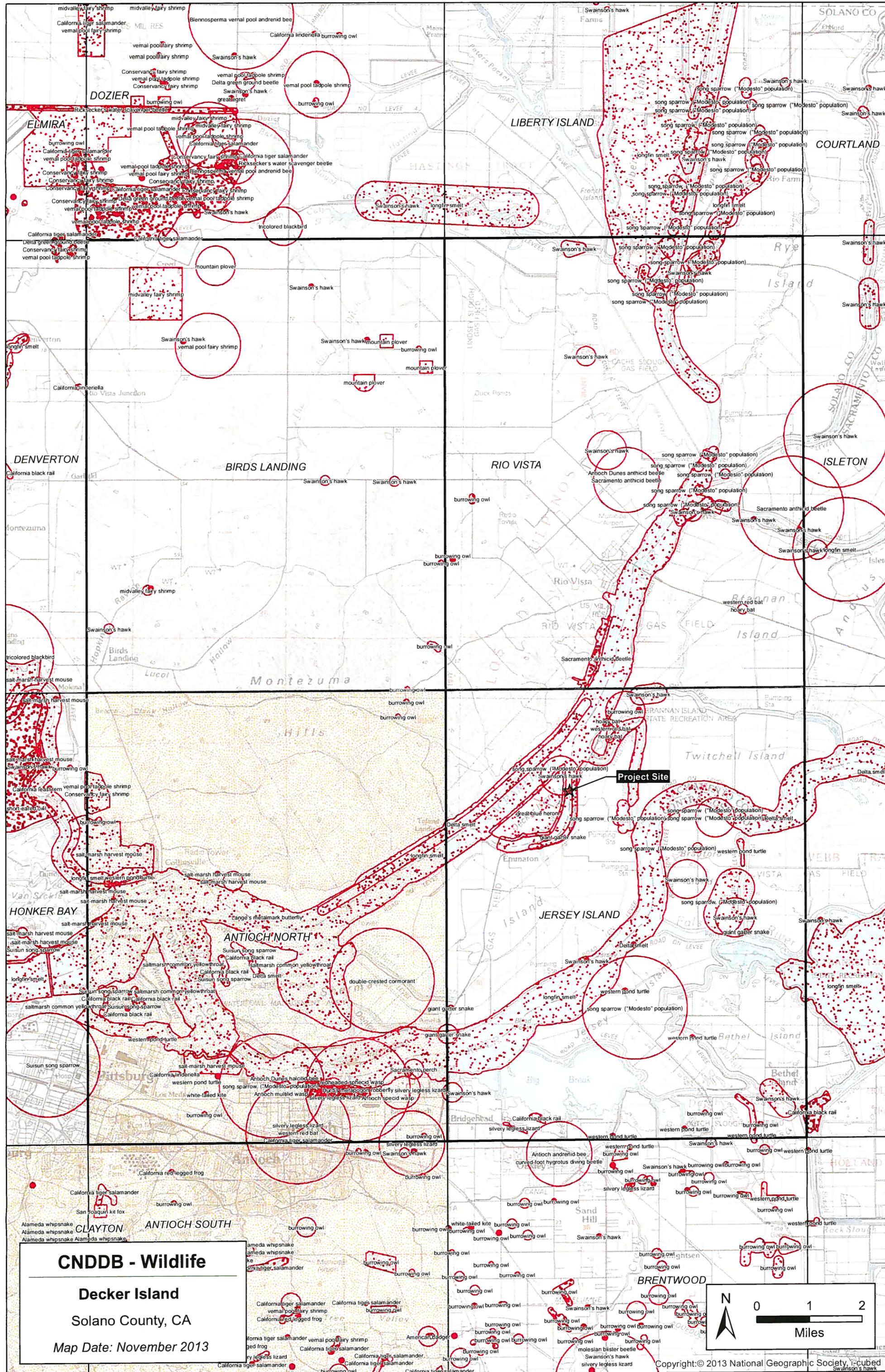


CNDDDB - Plant

Decker Island
Solano County, CA

Map Date: November 2013

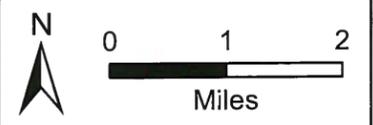




CNDDDB - Wildlife

Decker Island
Solano County, CA

Map Date: November 2013



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

Document Number: 140124061802

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Apodemia mormo langei*
Lange's metalmark butterfly (E)
- Branchinecta conservatio*
Conservancy fairy shrimp (E)
- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Elaphrus viridis*
delta green ground beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
- Rana draytonii*
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Erysimum capitatum ssp. angustatum
Contra Costa wallflower (E)
Critical Habitat, Contra Costa wallflower (X)

Lasthenia conjugens
Contra Costa goldfields (E)

Neostapfia colusana
Colusa grass (T)

Oenothera deltooides ssp. howellii
Antioch Dunes evening-primrose (E)
Critical habitat, Antioch Dunes evening-primrose (X)

Sidalcea keckii
Keck's checker-mallow (=checkerbloom) (E)

Quads Containing Listed, Proposed or Candidate Species:

RIO VISTA (480B)
JERSEY ISLAND (480C)
BIRDS LANDING (481A)
ANTIOCH NORTH (481D)

County Lists

No county species lists requested.

Key:

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

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

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

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

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

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

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

Plants

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

Surveying

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

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

Your Responsibilities Under the Endangered Species Act

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

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

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

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

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

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

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

Critical Habitat

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

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

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

Candidate Species

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

Species of Concern

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

Wetlands

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

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 24, 2014.

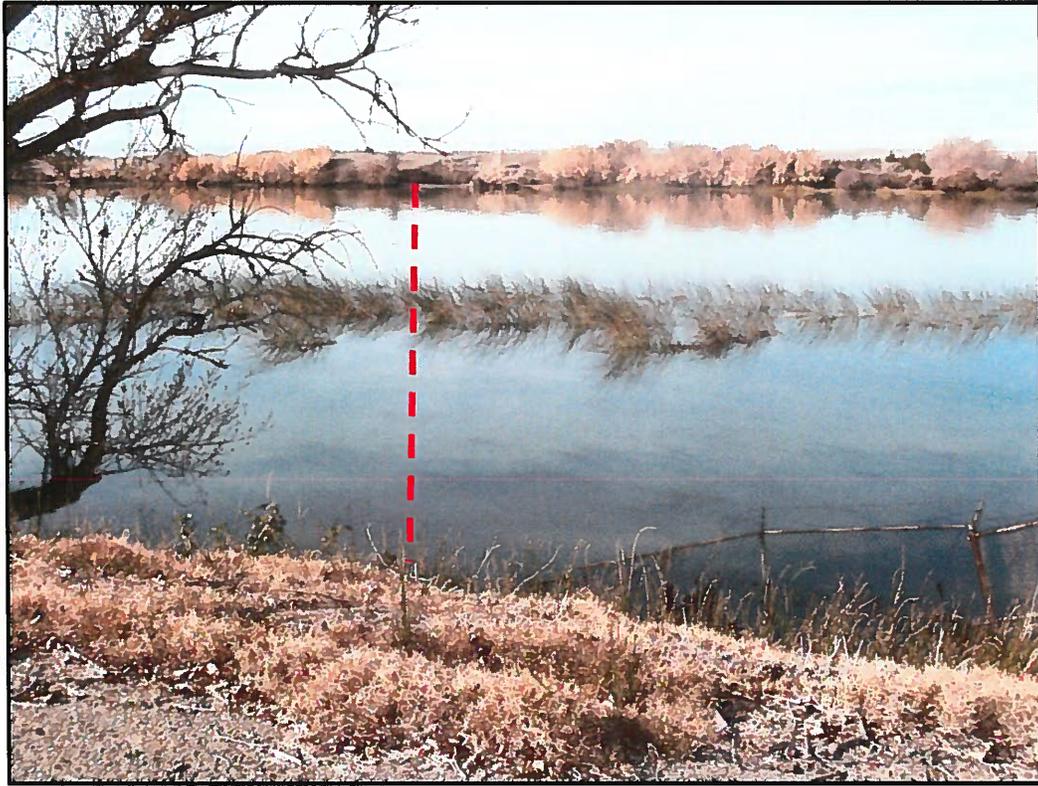
Appendix B
Photographs



Proposed alignment as viewed from Decker Island, looking east; 10/30/13.



Bank on Decker Island where the cable bundle will descend down to the river; 10/30/13.
Note the stake on the top of the bank is the same stake in the top photograph.



Looking along the proposed alignment from Sherman Island toward Decker Island; 01/21/14.



Levee bank on Sherman Island where the cable bundle will descend down to the river; 01/21/14.
Note that the alignment is in the foreground, on the near side of the fence where there are no trees.



Near-shore islands near Decker Island supporting Suisun Marsh aster, looking southwest; 10/24/13. The alignment will ascend the bank in the blackberries in the cove south of the near-shore islands.



Ruderal grassland area on the land side of the levee on Sherman Island, looking northwest; 01/21/14.

Appendix C

Federally Designated Critical Habitat

APPENDIX C
AQUATIC BIOLOGICAL ASSESSMENT

Decker Island Project

Fisheries Impacts



Submitted To:

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Moore Biological Consultants

Prepared By:

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January 24, 2014

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1.0 Introduction

D.I. Aggregate Management LLC owns approximately 473 acres on Decker Island where they conduct mining operations. The remaining area of Decker Island is owned by the California Department of Fish and Wildlife (approximately 34 acres at the northeastern tip) and the Port of Sacramento (approximately 130 acres on the eastern side). Currently, all power on the island is generated on the island from local generators. In addition, fuel must be shipped over to the island because there is no permanent local power source (i.e. utility line). This usage of fuel is both inefficient and transitioning to utility-based transmission will reduce emissions and improve overall conditions in proximity of the island.

The Decker Island Project consists of the installation of an underground utility line spanning approximately 850 feet across the Horseshoe Bend side channel. The utility line will be installed perpendicular to the side channel. Construction will entail trenching (i.e. long reach excavator or clamshell bucket mounted on a barge), temporary side casting of the sand sized substrate, direct burial of electrical cable, and backfill of the side castings. This project will be conducted in August and construction is expected to last approximately two weeks. Potential negative impacts from construction activities were evaluated against all federally and/or state listed (i.e. endangered or threatened) species (e.g. Central Valley steelhead trout, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, delta smelt, longfin smelt, green sturgeon) that may be present in the area. All life histories for each species above and their spatiotemporal distribution were evaluated in regards to potential impacts from construction activities. In addition, presence of potential habitat at the construction site was also evaluated.

Trenching during construction is expected to create a relatively minimal local increase in turbidity and minor impact to localized vegetation. Trenching will entrain sand substrate and therefore increase turbidity. Increased turbidity is expected to be localized to the middle of the channel where flow velocity is greater and there is a lack of vegetation. Large scale dredging of the Sacramento River (i.e. Sacramento Deep Water Ship Channel) occurs annually throughout this area and was conducted between August and December 2005-2012. Dredging may also churn substrate and expose toxins in the substrate. Sand substrate from nearby dredging operations has been extensively tested for toxicity. Testing results from these nearby projects showed that the sand substrate did not contain toxin levels in exceedance of applicable regulatory limits or were in excess of normal background levels (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013); therefore, it is expected for the sand substrate in the construction zone to not exceed regulatory limits. Assuming similar emergent vegetation distribution at the time of construction (observed during a site visit, October 24, 2013), the trenching path will minimize any impacts to emergent vegetation because the construction site will pass through an area with sparse emergent vegetation.

Review of existing information found that there is little to no chance of encountering federally and/or state threatened or endangered species during the brief two weeks of construction activity. This determination was made from identifying that species are generally absent during the time

of construction (August). In the event that any threatened or endangered species are present, they would likely be of large enough size (i.e. adult life stage) to effectively migrate outside of the construction area. Additionally, construction will occur in a side channel of the Sacramento River, and will not impact mainstem Sacramento River activities. Recently, the United States Army Corps of Engineers awarded a \$6,600,000 contract for maintenance dredging of the Sacramento and Stockton Deep Water Ship Channels. This continued approval of large-scale dredging operations sets a precedent for similar operations that alter streambeds and entrain sediment. In comparison, the magnitude of this project is minimal.

2.0 Environmental Setting

The Sacramento-San Joaquin Delta (Delta) consists of over 700 miles of sloughs and channels intertwined between 57 leveed island tracts where freshwater from the Sacramento and San Joaquin Rivers combine with saltwater from the Pacific Ocean to create the West Coast's largest estuary. Decker Island (Figure 1), a 658-acre artificial island on the Sacramento River, is approximately 8.0 river miles upstream of the confluence of the Sacramento River and the San Joaquin River. The Sacramento River runs along the western edge of the island, and Horseshoe Bend, an old meander of the Sacramento River, is now a side channel that runs along the eastern edge of the island. The Horseshoe Bend side channel is approximately three river miles long, and Sherman Island constrains the channel on the river left side (facing downstream).

The construction site is approximately 0.4 river miles downstream of the northern tip of Decker Island and is located within the Horseshoe Bend side channel. LJ Consultants (Manteca, CA) and eTrac Engineering, Incorporated (San Rafael, CA) conducted a bathymetric analysis of the streambed on July 19, 2013. Bathymetric analysis revealed that mean depth in the construction site was approximately 11.5 feet and that the slope of the water level became shallower toward Sherman Island with Decker Island as the reference point (Figure 2).

Based on a site visit to the construction site on October 24, 2013, there did not appear to be a substantial amount of emergent vegetation visible in the line of sight (i.e. proposed pathway for construction activities) between both river left and river right banks. The only visible emergent vegetation was localized to the Sherman Island (river left) bank and no emergent vegetation was observed on the river right (Decker Island). The Decker Island shoreline is an approximately 30 foot high sand bank, and the Sherman Island shoreline is a riprap-armored bank. Tules (*Scirpus acutus*) were the only emergent vegetation identified. Distribution and density of tule stands varied along the bank. Hyacinth (*Eichornia crassipes*) mats were found in greatest density where sparse stands of tule were found (downstream of the construction site). The proposed construction pathway appears to pass through an area of sparse amounts of tule. The substrate throughout the channel is composed of sand sized sediment, and this area is tidally influenced.



Figure 1. Map of Decker Island and surrounding area.

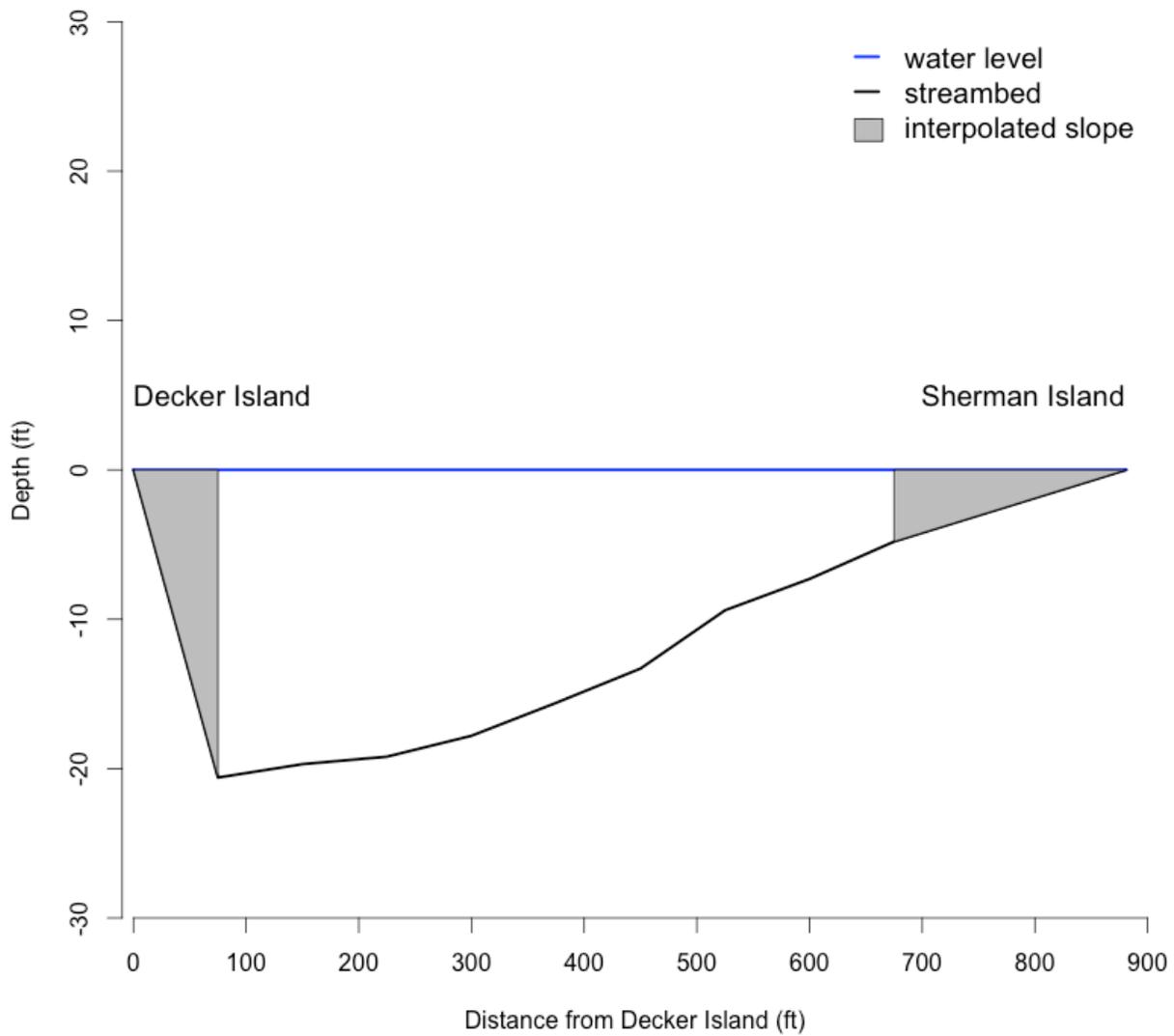


Figure 2. Generalized bathymetry of the construction site relative to water level from data collected by LJ Consultants and eTrac Engineering, Inc., on July 19, 2013. The terminal ends are interpolated because the bathymetric analysis did not include all the area to the wetted margin.

2.1 Previous impacts to environment at Decker Island

Decker Island is a manmade land feature. The island was not always an island and was once a low terrace on the southwest edge of the Montezuma Hills. The island was created during the construction of the Sacramento Deep Water Ship Channel. Dredging spoils were deposited on top of Decker Island by the U.S. Army Corps of Engineers (USACE) in the 1990s (Avery 2011), and dredging spoils continue to be deposited onto the southwestern portion of Decker Island in accordance with a USACE permanent easement. The volume of deposited dredged material has raised some areas of the island to over 30 feet high and is representative of non-naturally occurring habitat (Avery 2011). The soils of Decker Island have low water holding capacity and do not support native Delta vegetation (Avery 2011). The USACE continues to conduct maintenance dredging of the Sacramento Deep River Ship Channel in this area.

The California Department of Fish and Wildlife (CDFW) completed a two-phase long-term restoration project on the northeastern portion of the island in 2004, and this project is referred to as the Decker Island Enhancement Project. The Decker Island Enhancement Project is located upstream of the construction site and will not be impacted during the installation of the utility line to Decker Island. During 2003 and 2004, water hyacinth was mechanically removed and treated with herbicides to control this invasive species (Philipp 2005).

3.0 Potential Fish Species That May Occur in the Construction Area

Horseshoe Bend serves as migratory and/or rearing habitat for several fish species including native, non-native, listed (i.e. federal or state endangered or threatened), and non-listed fish species. Recent investigation, proximal studies, and federal and state threatened and endangered species lists were used to compile lists of species that may occur at some point within the construction area.

3.1 Non-listed Fish Species

The source for non-listed fish species that may occur in the construction area is compiled from data from fish community and entrainment studies conducted in association with maintenance dredging of the Sacramento and Stockton River Deep Water Ship Channels from 2005-2012 (Mari-Gold 2013). California Species of Special Concern (SSC) were also included as non-listed fish species. This list (Table 1) is representative of species that potentially use Horseshoe Bend habitat during some portion of the year.

3.2 Federal/State listed Fish Species

The species list for federally endangered or threatened fish species in Jersey Island, Solano County (quadrant 480C), was obtained from the USFWS website and an official copy of the list of species is attached (Appendix A) at the end of this report. A list of state endangered or threatened species (Table 2) that may potentially occur in the area was obtained from the CDFW

Table 1. Non-listed fish species that potentially use habitat in Horseshoe Bend irrespective of temporal distribution.

Common Name	Species	Origin	Demersal/Pelagic
shimofuri goby	<i>Tridentiger bifasciatus</i>	Non-native	Demersal
channel catfish	<i>Ictalurus punctatus</i>	Non-native	Demersal
lamprey	<i>Lampetra</i>	Native	Demersal
striped bass	<i>Morone saxatilis</i>	Non-native	Pelagic
yellowfin goby	<i>Acanthogobius flavimanus</i>	Non-native	Demersal
Shokihaze goby	<i>Tridentiger barbatus</i>	Non-native	Demersal
white catfish	<i>Ameiurus catus</i>	Non-native	Demersal
prickly sculpin	<i>Cottus asper</i>	Native	Demersal
wakasagi	<i>Hypomesus nipponensis</i>	Non-native	Pelagic
brown bullhead	<i>Ameiurus nebulosus</i>	Non-native	Demersal
threadfin shad	<i>Dorosoma petenense</i>	Non-native	Pelagic
American shad	<i>Alosa sapidissima</i>	Non-native	Pelagic
Pacific staghorn sculpin	<i>Leptocottus armatus</i>	Native	Demersal
bluegill	<i>Lepomis macrochirus</i>	Non-native	Pelagic
warmouth	<i>Lepomis gulosus</i>	Non-native	Pelagic
bigscale logperch	<i>Percina macrolepida</i>	Non-native	Demersal
common carp	<i>Cyprinus carpio</i>	Non-native	Demersal
white sturgeon	<i>Acipenser transmontanus</i>	Native	Demersal
redeer sunfish	<i>Lepomis microlophus</i>	Non-native	Pelagic
starry flounder	<i>Platichthys stellatus</i>	Native	Demersal
tule perch	<i>Hysterocarpus traski</i>	Native	Pelagic
blue catfish	<i>Ictalurus furcatus</i>	Non-native	Demersal
Sacramento blackfish	<i>Orthodon microlepidotus</i>	Native	Pelagic
black crappie	<i>Pomoxis nigromaculatus</i>	Non-native	Pelagic
Sacramento pikeminnow	<i>Ptychocheilus grandis</i>	Native	Pelagic
white crappie	<i>Pomoxis annularis</i>	Non-native	Pelagic
golden shiner	<i>Notemigonus crysoleucas</i>	Non-native	Pelagic
largemouth bass	<i>Micropterus salmoides</i>	Non-native	Pelagic
Mississippi silverside	<i>Menidia beryllina</i>	Non-native	Pelagic
river lamprey ¹	<i>Lampetra ayresii</i>	Native	Demersal
Central Valley late fall/fall-run Chinook salmon ¹	<i>Oncorhynchus tshawytscha</i>	Native	Pelagic
Pacific lamprey ¹	<i>Lampetra tridentata</i>	Native	Demersal
hardhead ¹	<i>Mylopharodon conocephalus</i>	Native	Pelagic
Sacramento splittail ¹	<i>Pogonichthys macrolepidotus</i>	Native	Pelagic

¹ California Species of Special Concern.

Table 2. Federal/State endangered or threatened species summary table for construction site in the Horseshoe Bend of the Sacramento River at Decker Island.

Species	Listing Status ¹	Listing Agency	Potentially Present During Construction	Potential Habitat Present	Potential to be Impacted
Central Valley steelhead (adult)	FT	USFWS	Y ^{m2}	N	N
Central Valley steelhead (juvenile)	FT	USFWS	Y ^{m3}	N	N
Central Valley spring-run Chinook salmon (adult)	FT / ST	USFWS / CDFW	N ⁴	N	N
Central Valley spring-run Chinook salmon (juvenile)	FT / ST	USFWS / CDFW	N ⁵	N	N
Sacramento River winter-run Chinook salmon (adult)	FE / SE	USFWS / CDFW	N ⁶	N	N
Sacramento River winter-run Chinook salmon (juvenile)	FE / SE	USFWS / CDFW	N ⁷	N	N
Delta smelt (adult)	FT / SE	USFWS / CDFW	N ⁸	N	N
Delta smelt (juvenile)	FT / SE	USFWS / CDFW	N ⁸	N	N
Longfin smelt (adult)	ST	CDFW	N ⁸	N	N
Longfin smelt (juvenile)	ST	CDFW	N ⁸	N	N
Green sturgeon (adult)	FT	USFWS	N ⁹	N	N
Green sturgeon (juvenile)	FT	USFWS	N ¹⁰	N	N

¹ Listing status: F = Federal, S = State, T= Threatened, E = Endangered

^m Species is migratory and may be present short-term during migration

² Hallock 1989, ³ Moyle 2008, ⁴ Cramer and Demko 1997, ⁵ Yoshiyama et al., 1998, ⁶ Hallock and Fisher 1985, ⁷ Stevens 1989, ⁸ Moyle 2002,

⁹ Hueblein et al., 2009, ¹⁰ USFWS 1995

website¹. Each federally and/or state threatened or endangered species was evaluated for spatiotemporal distribution in the construction area, and the presence of spawning and/or rearing habitat was also evaluated in regards to this construction site.

The Sacramento River serves as a migration corridor for both listed (e.g. Central Valley steelhead, Central Valley spring-run Chinook salmon, and Sacramento River winter-run Chinook salmon, green sturgeon) and non-listed (e.g. Central Valley fall/late-fall run Chinook salmon) species traveling upstream to spawn or downstream during juvenile outmigration. According to trawl catches (i.e. CDFW Smelt Larva Survey and 20 mm Survey) in the Horseshoe Bend side channel, both longfin and delta smelt occur in this area. Juvenile green sturgeon could potentially utilize this area for rearing; however, information on spatiotemporal distribution of juvenile green sturgeon rearing is limited. Below are brief descriptions of life history and timing of listed fish species.

3.2.1 Central Valley steelhead

The Central Valley Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) includes all naturally spawned anadromous steelhead below impassable barriers (natural and manmade) in the Sacramento and San Joaquin River basins, excluding steelhead from the San Francisco and San Pablo bays and their tributaries. Steelhead are flexible in their life history strategies, and may exhibit solely freshwater residency or exhibit anadromy (McEwan 2001). Generally, juveniles migrate from December through May (Moyle et al., 2008). Adults migrate to spawning grounds between July and March with a peak in September and October (Hallock 1989). After hatching, fry migrate to shallow edges or low gradient riffles, and as juveniles grow they move toward higher-velocity, deeper, mid-channel habitats (Everest and Chapman 1972). Older juvenile steelhead (ages 1+ and 2+) show a stronger preference for pool habitats with ample cover, such as boulders, undercut banks, and large woody debris, as well as for rapids and cascade habitats (Dambacher 1991, Moyle et al., 2008). Historically, this DPS was estimated to average 1 to 2 million steelhead, but the current estimate is approximately 3,600 (NMFS 2008).

3.2.2 Central Valley spring-run Chinook salmon

Spring-run Chinook salmon (*Oncorhynchus tshawytscha*) historically were the second most abundant run of Central Valley Chinook salmon (Fisher 1994). Current surveys indicate that a remnant, non-sustaining spring-run Chinook salmon populations may be found in Cottonwood, Battle, Antelope, and Big Chico Creeks (CDWR 1997). The Feather River Fish Hatchery sustains the spring-run population on the Feather River, but the genetic integrity of that run is questionable (CDWR 1997). Historical records indicate that adult spring-run Chinook salmon enter the mainstem Sacramento River in February and March and continue to their spawning streams, where they then hold in deep, cold pools until they spawn. Spawning occurs in gravel beds in late August through October (USDOI 2008), and emergence takes place in March and April. Spring-run Chinook salmon appear to emigrate at two different life stages: fry and

¹ Website visited on November 21, 2013: <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf>.

yearlings. Fry move between February and June, while the yearling spring-run immigrate October to March, peaking in November (Cramer and Demko 1997). Juvenile spring-run Chinook salmon may leave their natal streams as fry soon after emergence or rear for several months to a year before migrating as smolts or yearlings (Yoshiyama et al., 1998).

3.2.3 Sacramento River winter-run Chinook salmon

Adult winter-run Chinook salmon (*Oncorhynchus tshawytscha*) leave the ocean and migrate through the Delta into the Sacramento River system from November through July. Salmon migrate upstream past the Red Bluff Diversion Dam (RBDD) on the Sacramento River from mid-December through July, and most of the spawning population has passed RBDD by late June. Winter-run Chinook salmon spawn from mid-April through August, and incubation continues through October. The primary spawning grounds in the Sacramento River are above RBDD. Juvenile winter-run Chinook salmon rear and emigrate in the Sacramento River from July through March (Hallock and Fisher 1985). Juveniles descending the Sacramento River above RBDD from August through October and possibly November are mostly pre-smolts (smolts are juveniles that are physiologically ready to enter seawater) and probably rear in the Sacramento River below RBDD. Winter-run salmon smolts may migrate through the Delta and bay to the ocean from December through as late as May (Stevens 1989). The Sacramento River channel is the main migration route through the Delta.

3.2.4 Delta smelt

Delta smelt (*Hypomesus transpacificus*), an endemic species to the San Francisco Estuary, is listed as a threatened species under both the Endangered Species Act (ESA) and California Endangered Species Act (CESA) (58 FR 12854, 1993). Historically, juveniles and adults have been found as far upstream in the San Joaquin River as Mossdale or in the Sacramento River to Isleton. Today, distribution is primarily localized to the lower Delta and Suisun Bay (Moyle 2002). Juveniles rear in shallow, open waters, at salinity between 2 and 7 parts per thousand (ppt). They usually occupy open, shallow waters, but also occur in the deeper, main channels in the region where fresh water and brackish water mix.

Adult delta smelt begin their migration in September or October towards spawning grounds in the upper Delta (Moyle 2002). Spawning occurs between December and July in sloughs and channels, including the Sacramento River above Rio Vista, Cache Slough, Lindsey Slough, and Barker Slough (Moyle 2002; 59 FR 65256). The peak of spawning occurs in March and April. During broadcast spawning, eggs adhere to hard substrates. After hatching, the semi-buoyant larvae spend time near the bottom feeding on rotifers and other zooplankton. As the larvae develop swim bladders, they move higher in the water column and further downstream (Moyle 2002).

Both the mean delta smelt Townet Survey (TNS) and Fall Midwater Trawl (FMWT) indices indicate that the delta smelt population declined abruptly in the early 1980s (Moyle et al., 1992). Currently, the delta smelt population indices are two orders of magnitude smaller than historical highs (on the order of 1 percent) and recent population abundance estimates are up to three

orders of magnitude below historical highs (on the order of 0.1 percent; Newman 2008). The population rebounded somewhat in the mid-1990s (Sweetnam 1999) but has trended downward since about 2000 (USFWS 2008). Results from the CDFW 20 mm Trawl over the past five years at Decker Island (station 705) indicate that the last delta smelt captured in each year were either in May or June. Juvenile delta smelt are typically 40-55 mm fork length by early August (Moyle 2002).

3.2.5 Longfin smelt

Unlike delta smelt, longfin smelt (*Spirinchus thaleichthys*) are anadromous and prefer the higher salinities in the San Francisco Estuary for rearing. Central Valley longfin smelt congregate in Suisun Bay and Marsh, San Pablo, the North San Francisco Bays, and in the Delta. They are rarely found upstream of Rio Vista on the Sacramento River or Medford Island in the San Joaquin River (Moyle 2002); however, they have been found “as far upstream as the...Old River south of Indian Slough” (CDFG 2009a, p. 7; Radtke 1966)(63 FR 19756). Before spawning, the adult longfin smelt occupy the deep, brackish habitats of the northern Delta and Suisun Bay (Rosenfield and Baxter 2007). In fall and winter, the longfin smelt yearlings begin to move upstream to the primary spawning locations in or near Suisun Bay channel, the Sacramento River channel near Rio Vista, and (at least historically) Suisun Marsh (Wang 1991; Moyle 2002; Rosenfield and Baxter 2007). Larval samples indicate that spawning usually occurs from February to April, but spans November through June (Moyle 2002).

After about 40 days, the embryos hatch and larvae ascend into the upper part of the water column, where they are transported into the estuary. Juveniles rear in brackish water typically where salinity concentrations are between 2 and 7 parts per thousand (ppt), but can tolerate up to 19 ppt. They are usually found in Suisun and San Pablo bays, but occasionally in the western Delta (Moyle 2002). They feed on copepods, amphipods, and shrimp in the open channels (USFWS 1996, Moyle 2002).

Although the abundance of longfin smelt in the San Francisco Estuary has been variable over time, annual trawl surveys show that there has been a decline since the early 1980s (Rosenfield and Baxter 2007, Sommer et al., 2007). Results from the CDFW 20 mm Trawl over the past five years indicated that the last longfin smelt of each year were captured from late March to mid May.

3.2.6 Green sturgeon

Green sturgeon (*Acipenser medirostris*) are listed as threatened by NMFS (71 Federal Register [FR] 17757, April 7, 2006). Green sturgeon that inhabit the Sacramento River are considered the southern DPS. They are found in the lower reaches of large rivers, including the Sacramento–San Joaquin River basin, along with the Eel, Mad, Klamath, and Smith Rivers. Green sturgeon adults and juveniles are found throughout the upper Sacramento River, as indicated by observations incidental to winter-run Chinook monitoring at the RBDD in Tehama County (NMFS 2005). Green sturgeon spawn predominantly in the upper Sacramento River upstream of Hamilton City, which is thought to occur every three to five years (Tracy 1990). Their spawning

period is March to July, with a peak in mid-April to mid-June (Moyle et al., 1992). Juveniles inhabit the estuary until they are approximately four to six years old, when they migrate to the ocean (Kohlhorst et al., 1991). Green sturgeon are found primarily in the Sacramento River, occasionally in the Feather River, and are unlikely to enter smaller tributaries to these rivers (Beamesderfer et al., 2004, Moyle 2002). Juveniles captured at the Glen-Colusa facility are generally three weeks old (DFG, unpublished data as cited in USDOJ 2008; Van Eenennaam et al., 2001).

4.0 Potential Impacts to Listed Fish Species

A thorough review of other related dredging activity found that the potential fisheries related impacts from construction activities are sediment entrainment and disruption to a minimal amount of potential spawning and/or rearing habitat. Sediment entrainment can result in increased turbidity and possible toxin re-suspension (if present).

Turbidity in the Sacramento River Delta is highly variable and can increase substantially during storm events, ship passages, and in-channel activities such as dredging. The scope of the Decker Island Project is small and relatively short in duration. Increased turbidity from the Decker Island Project is expected to be drastically less in magnitude when compared to storm events, ship passages, or dredging. Increases in turbidity associated with rainfall events have increased turbidity levels to 200 NTUs, as seen at Woodland, CA, in the fall of 2011 (Trussell Technologies 2011). There is an estimated increase of approximately 10 percent in total suspended solids downstream of dredging activities (Regional Board 2004) associated with maintenance dredging of the Stockton Deep Water Ship Channel. The USACE does not believe that maintenance dredging would greatly change background turbidity levels in the San Joaquin (USACE 2006). Water quality monitoring conducted during trawl activities in the Sacramento River Deep Ship Channel indicate background turbidity can range from 8.60-44.40 NTU, but can increase to a high of 192.0 NTU immediately after a ship's passage (Mari-Gold 2013). Nightingale and Simenstad (2001) indicated that turbidity levels in excess of 4,000 mg/L were required to adversely affect salmonids. Localized minimal increases in turbidity from this project are expected to be drastically lower than that of the dredging operations and are not expected to adversely affect fish.

Several alternatives to open trenching were evaluated and the construction method of open trenching with backfill of side castings was determined to be the best feasible option. A summary table for each species (Table 2) summarizes species likelihood to be present, potential habitat present, and potential for each species to be impacted by construction. The construction site is located within the Critical Habitat designations for delta smelt, green sturgeon², Central Valley steelhead, Central Valley spring-run Chinook, and winter-run Chinook salmon and is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon. Regardless, the construction timeframe (both month and duration of activity) will effectively reduce or eliminate any adverse effects to any threatened or endangered species. Potential presence of each species in the construction zone by month is shown in Table 3. The August

² Critical habitat established under 74 FR 52300 (USDOC 2009); however not listed on USFWS official species list.

time frame is also within an accepted work window (i.e. August 1 – October 31) for delta smelt, longfin smelt, and salmonids (USACE 2012). Substrate from dredging operations and those on Decker Island are representative of the substrate at the construction site. Toxin levels have not exceeded applicable regulatory limits (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013); therefore, the toxin levels at the construction site are not likely to exceed regulatory limits. The placement of the utility line will pass through an area of sparse emergent vegetation in order to minimize impact to potential fish habitat (Figure 3 and Figure 4). Summarized below are the potential impacts to threatened or endangered species.

Table 3. Potential presence of each species in the construction zone over a single year.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
steelhead							1 1	1 1	1 1	1 1		
Chinook salmon (spring-run)												
Chinook salmon (winter-run)												
delta smelt								2				
longfin smelt								2				
green sturgeon	3	3	3	3	3	3	3	3	3	3	3	3

¹ Adult migration to spawning grounds, area serves as potential migration route but may not serve as primary route since it is a side channel.

² Fish not documented in past five years, but historical data indicated they have occurred in this area.

³ Species not documented in the project area but are suggested to inhabit the Delta throughout the year.



Figure 3. Trenching path (view from Highway 160 side).



Figure 4. Trenching path (view from Decker Island).

4.1 Potential impacts to Central Valley Steelhead

The timing of the project will provide adequate protection for steelhead. Construction will occur for two weeks in August. Steelhead are not expected to be in the proximity of the construction site during this time. The August timeframe for construction only overlaps adult steelhead migration; however, the construction timeframe is before peak migration (Hallock 1989). The construction site is tidally influenced; thus, it serves as a migration corridor for adult and juvenile steelhead. Construction is occurring in the side channel and construction equipment (i.e. barge and long reach excavator or clamshell bucket) is not expected to prevent upstream or downstream migration in the Horseshoe Bend side channel. The alternate and more likely route of passage is through the mainstem Sacramento River. All steelhead encountering construction equipment would be of adequate size to circumvent or avoid any potential danger. No steelhead were encountered during fish monitoring associated with maintenance dredging of the Sacramento River Deep Water Ship Channel (SWCA 2007, 2008, 2009; Mari-Gold 2010, 2011, 2012, 2013). The channel is utilized as a migratory pathway, and steelhead do not rely upon habitat within the study area.

4.2 Potential impacts to Central Valley spring-run Chinook salmon

Central Valley spring-run Chinook salmon is expected to be absent at the time of construction. Adults should be upstream of this location by August (USDOI 2008), and outmigration of smolts does not occur during this period (Cramer and Demko 1997). Adults and juveniles utilize the area as a migratory pathway and would not be impacted by any alteration to stream channel or surrounding habitat.

4.3 Potential impacts to Sacramento River winter-run Chinook salmon

Sacramento River winter-run Chinook salmon is not expected to be present during the construction activities. Adults do not migrate into the Sacramento River until November (USDOI 2008), and smolts do not migrate through this area during the construction timeframe (Stevens

1989, USDOJ 2008). Adults and juveniles utilize the area as a migratory pathway and would not be impacted by any alteration to stream channel or proximal habitat.

4.4 Potential impacts to delta smelt

Delta smelt is not expected to be impacted from project activity. Adults do not migrate into the Sacramento River until September (Moyle 2002), and results from the CDFW 20 mm Trawl over the past five years indicate that larval and early juvenile delta smelt were not captured in the area during August. While construction activities will minimize any alteration to emergent vegetation by passing through a sparsely vegetated area, there is potential to disturb minimal amounts of emergent vegetation along the river left bank. Streambed alteration will only be temporary and brief. Natural revegetation is expected from any localized alteration to vegetation, resulting in a negligible disturbance. Spatiotemporal distribution of delta smelt is variable by water year (i.e. dry or wet; Moyle 2002). In the event that delta smelt are in the area, they will likely be of large enough size (Moyle 2002) to migrate outside of the construction zone.

4.5 Potential impacts to longfin smelt

Construction in August is not expected to adversely impact longfin smelt. Adults do not migrate into the Sacramento River until November, larvae are typically abundant between February and April (Moyle 2002), and results from the CDFW 20 mm Trawl over the past five years indicated that larval and early juvenile longfin smelt were not captured in the area during August. While construction activities will minimize any disturbance to emergent vegetation by passing through a location with sparse vegetation, there is potential to disturb minimal amounts of emergent vegetation along the river left bank. Streambed alteration will only be temporary and natural revegetation is expected.

4.6 Potential impacts to green sturgeon

Information on green sturgeon is limited, but available data do not suggest any impact as a result of project construction. The construction site may serve as a migration corridor for adult and outmigrating juvenile green sturgeon. Adults migrate through the Sacramento River up to spawning grounds in the upper Sacramento River from March to July (Moyle et al., 1992); therefore, they should not be present at the construction site during August. Additionally, adults migrate out of the Sacramento River in November and December (Hueblein et al., 2009). Juvenile green sturgeon are found throughout the Delta at all times of the year; however, a literature search could not find any historical documentation of species presence proximal to the project site in August. In October 2006, two green sturgeon were captured at Decker Island. This was the only documentation of species presence from six years of fish monitoring associated with maintenance dredging of the Sacramento River Deep Water Ship Channel (SWCA 2007, 2008, 2009; Mari-Gold 2010, 2011, 2012, 2013). In the event that any green sturgeon are in the area, they would likely be of large enough size to effectively remove them from the construction zone.

5.0 Conclusions

There is little to no potential for construction activities to result in the direct mortality or harassment of any protected species. Review of recent and historical data suggests that protected species will be absent during construction activity. Localized effects from the construction activity are expected to be negligible and brief. Turbidity will not increase beyond background levels commonly occurring during rain events. Toxins in the soil are not present based on testing (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013). While habitat in the area is of a degraded quality, the impact of the dredging will have a small overall footprint. The pathway of dredging will minimize disturbance of emergent vegetation and any alteration is expected to revegetate naturally and rapidly. Construction is occurring in the Horseshoe Bend side channel, which is not likely the primary route for migrating fish species. This project will result in an overall improvement to air quality, reduction of fossil fuel consumption, and provide a benefit to the environment as a result of its implementation.

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Appendix A.

12/10/13

Sacramento Fish & Wildlife Office Species List



United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825



December 10, 2013

Document Number: 131210094402

Stephen A. Zipper
FISHBIO
180 East 4th Street
Suite 160
Chico, CA 95928

Subject: Species List for Decker Island

Dear: Mr. Zipper

We are sending this official species list in response to your December 10, 2013 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

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

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

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be March 10, 2014.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division



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

Document Number: 131210094402
Database Last Updated: September 18, 2011

Quad Lists

JERSEY ISLAND (480C)

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Elaphrus viridis*
delta green ground beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

FINAL
INITIAL STUDY /
MITIGATED NEGATIVE DECLARATION

for the

DECKER ISLAND ELECTRICAL CROSSING
OF HORSESHOE BEND
in Solano and Sacramento Counties

May 13, 2014

WALLACE

Environmental Consulting, Inc

Prepared for:

RECLAMATION DISTRICT #341
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

RESPONSE TO COMMENTS RECEIVED DURING THE REVIEW OF THE

PUBLIC REVIEW DRAFT
INITIAL STUDY / MITIGATED NEGATIVE DECLARATION
DECKER ISLAND ELECTRICAL CROSSING PROJECT
March 14, 2014

RECLAMATION DISTRICT #341

RD341 received a total of 4 comment letters from agencies. The comment letters, which are shown on the following pages, make a range of comments not all of which require a response under CEQA. The comments include:

1. Direct comment on the content of the IS/MND, including comments on the environmental analysis and/or issues addressed IS/MND. RD341's responses to these comments are shown below.
2. Comments related to the project itself and not the environmental impact analysis required under CEQA. Although these comments may raise important issues that may need to be considered by the Board of Directors, including project opposition, they do not require a response in the CEQA environmental impact analysis context.
3. Other matters related to the project and required approvals that may or may not have a direct relationship to the IS/MND and RD341's obligations under CEQA. Typically, these comments identify regulatory requirements that do not have a direct bearing on the environmental analysis presented in the IS/MND.

Each of the comment letters is shown in full in the following sections of this chapter. RD341 provides a written response to each of the comments that involve concerns with respect to the IS/MND.



EDMUND G. BROWN JR.
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX
DIRECTOR

April 15, 2014

Jesse Barton
Reclamation District 341
1112 I Street, Suite 240
Sacramento, CA 95814

Subject: Decker Island Electrical Crossing
SCH#: 2014032039

Dear Jesse Barton:

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 April 14, 2014, 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

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

1A

COMMENT NO. 1
STATE CLEARINGHOUSE

**Document Details Report
State Clearinghouse Data Base**

SCH# 2014032039
Project Title Decker Island Electrical Crossing
Lead Agency Reclamation District 341

Type MND Mitigated Negative Declaration
Description The project proponent, Deck Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project will extend electrical supply from existing PG&E lines on Sherman Island near SR 160 to the DI operation via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Deck Island from Sherman Island.

Lead Agency Contact

Name Jesse Barton
Agency Reclamation District 341
Phone 916 444 2880 **Fax**
email
Address 1112 I Street, Suite 240
City Sacramento **State** CA **Zip** 95814

Project Location

County Sacramento, Solano
City Rio Vista
Region
Lat / Long 38° 5' 55.2" N / 121° 42' 29.2" W
Cross Streets SR 160 and Sherman Island Levee Road
Parcel No.
Township 3N **Range** 2E **Section** **Base** MDB&M

Proximity to:

Highways Hwy 160
Airports Rio Vista
Railways No
Waterways Horseshoe Bend, Sacramento River
Schools No
Land Use Sacramento County: Levee, Agricultural AG-80, Recreation,
Solano County: Mining, Agricultural A-160, Agriculture

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Public Services; Recreation/Parks; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Landuse

Reviewing Agencies Resources Agency; Department of Boating and Waterways; Department of Conservation; Department of Fish and Wildlife, Region 3; Delta Protection Commission; Department of Parks and Recreation; Central Valley Flood Protection Board; Department of Water Resources; Resources, Recycling and Recovery; Caltrans, District 3 S; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Toxic Substances Control; Native American Heritage Commission; State Lands Commission

Date Received 03/14/2014 **Start of Review** 03/14/2014 **End of Review** 04/14/2014

**COMMENT NO. 1
STATE CLEARINGHOUSE**

Responses to Comment #1. State Clearinghouse.

Response 1A.

This comment advises RD341 of the close of the public review period for state agencies, identifies the state agencies involved in the review, transmits comment letters collected by the State Clearinghouse from state agencies, and advises RD341 that CEQA public review requirements have been met, and that the CEQAa review process is complete, on the state level. The letter makes no substantive comment on the IS/MND, and no further response is required.

DELTA PROTECTION COMMISSION

2101 Stone Blvd., Suite 210
West Sacramento, CA 95691
Phone (916) 375-4800 / FAX (916) 376-3962
Home Page: www.delta.ca.gov



CLEAR
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APR 14 2014

April 9, 2014

Decker Island, LLC
4060 Campus Drive, Suite 100
New Port Beach, CA 926600

STATE CLEARING HOUSE

SUBJECT: Draft Initial Study/ Mitigated Negative Declaration for the
Decker Island Electrical Crossing of Horseshoe Bend (SCH#
2014032039)

Dear Project Proponent:

Thank you for providing the Delta Protection Commission (Commission) the opportunity to review the Draft Initial Study/ Mitigated Negative Declaration for the Decker Island Electrical Crossing of Horseshoe Bend (Project). As the Project is within the Primary Zone of the Legal Delta, it must be consistent with the Land Use and Resource Management for the Primary Zone (LURMP). After careful review we have determined that the Project is consistent with the LURMP and associated goals of burying utility lines to reduce impacts. We also ask that the Project proponent ensure that impacts to recreation and aquatic/terrestrial wildlife be minimized. California Department of Fish and Wildlife manages habitat lands on Decker Island and construction activities should be managed to reduce impacts to these areas. The following LURMP policies support the proposed Project:

Utilities and Infrastructure: P-1, To minimize impacts on agricultural practices, utility lines shall follow edges of fields. Pipelines in utility corridors or existing rights-of-way shall be buried to avoid adverse impacts to terrestrial wildlife. Pipelines crossing agricultural areas shall be buried deep enough to avoid conflicts with normal agricultural or construction activities. Utilities shall be designed and constructed to minimize any detrimental effect on levee integrity or maintenance, agricultural uses and wildlife within the Delta. Utilities shall consult with communities early in the planning process for the purpose of creating an appropriate buffer from residences, schools, churches, public facilities and inhabited marinas.

Natural Resources: P-1, Preserve and protect the natural resources of the Delta. Promote protection of remnants of riparian and aquatic habitat.

Contra Costa County Board of Supervisors

Sacramento County Board of Supervisors

San Joaquin County Board of Supervisors

Solano County Board of Supervisors

Yolo County Board of Supervisors

Cities of Contra Costa and Solano Counties

Cities of Sacramento and Yolo Counties

Cities of San Joaquin County

Central Delta Reclamation Districts

North Delta Reclamation Districts

South Delta Reclamation Districts

CA State Transportation Agency

CA Department of Food and Agriculture

CA Natural Resources Agency

CA State Lands Commission

2A

2B

2C

Thank you for the opportunity to provide input. Please contact Raymond Costantino, Associate Environmental Planner, at 916-375-4534 for any questions regarding the comments provided herein.

Sincerely,

A handwritten signature in black ink, appearing to read 'Erik Vink', written in a cursive style.

Erik Vink
Executive Director

COMMENT NO. 2
DELTA PROTECTION COMMISSION

Responses to Comment #2. Delta Protection Commission.

Response 2A.

This comment advises RD341 that the project must be, and is, consistent with the Delta Land Use and Resource Management for the Primary Zone (LURMP). This comment raises no substantive concern regarding the IS/MND, and no further response is required.

Response 2B.

This comment requests that the proponent ensure that recreation and biological impacts will be minimized. The IS/MND documents the potential environmental effects of the project, including potential effects on recreation and biological resources. Where any of these effects are found to be potentially significant, mitigation measures are proposed that will reduce potential effects to a less than significant level. Mitigation measures will be applied by RD 341 and other permitting agencies via a Mitigation Monitoring/Reporting Plan, and will be subject to other protections included in permit conditions of approval. As a result, potential recreation and biological effects will be minimized.

Response 2C.

This comment consists of excerpts from the LURMP that support the project. The comments provides additional information to the IS/MND and does not identify any new environmental concerns. No further response is necessary.

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Rm. 151
 SACRAMENTO, CA 95821
 (916) 574-0609 FAX: (916) 574-0682
 PERMITS: (916) 574-2380 FAX: (916) 574-0682



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 E



April 2, 2014

Mr. Jesse Barton
 Reclamation District 341
 1112 I Street, Suite 240
 Sacramento, California 95814

Subject: CEQA Comments: Decker Island Electrical Crossing, Mitigated Negative Declaration, SCH No. 2014032039

Location: State Route 160 and Sherman Island Levee Road, Sacramento and Solano Counties

Dear Mr. Barton:

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

The proposed project is located adjacent to or under the Sacramento River which is under Board jurisdiction. The Board enforces its Title 23, California Code of Regulations (23 CCR) for the construction, maintenance, and protection of adopted plans of flood control that protect public lands from floods. Adopted plans of flood control include federal-State facilities of the State Plan of Flood Control, regulated streams, and designated floodways. The geographic extent of Board jurisdiction includes the Central Valley, and all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and the Tulare and Buena Vista basins (23 CCR, Section 2).

A Board permit is required prior to working in the Board's jurisdiction for the following:

- 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 (23 CCR Section 6);
- Existing structures that predate permitting, or where it is necessary to establish the conditions normally imposed by permitting. The circumstances include those where responsibility for the encroachment has not been clearly established or ownership and use have been revised (23 CCR Section 6);
- Vegetation plantings require submission of detailed design drawings; identification of vegetation type; plant and tree names (both common and scientific); quantities of each type of plant and tree; spacing and irrigation method; a vegetative management plan for maintenance to prevent the interference with flood control operations, levee maintenance, inspection, and flood fight procedures (23 CCR Section 131).

3A

COMMENT NO. 21
CENTRAL VALLEY FLOOD PROTECTION BOARD

Mr. Jesse Barton
April 2, 2014
Page 2 of 2

Other local, federal and State agency permits may be required and are the responsibility of the applicant to obtain.

Board permit application forms and our complete 23 CCR regulations can be found on our website at <http://www.cvfpb.ca.gov/>. Maps of the Board's jurisdiction including all tributaries and distributaries of the Sacramento and San Joaquin Rivers, and Board designated floodways are also available on a Department of Water Resources website at <http://gis.bam.water.ca.gov/bam/>.

3A

Additional Considerations Related to Potential Impacts of Vegetation and Hydraulics

Accumulation and establishment of woody vegetation that is not managed may have negative impacts on channel capacity and may increase the potential for levee over-topping or other failure. When vegetation develops and becomes habitat for wildlife, maintenance to initial baseline conditions typically becomes more difficult as the removal of vegetative growth may be subject to federal and State resource agency requirements for on-site mitigation. The proposed project should include mitigation measures to avoid decreasing floodway channel capacity.

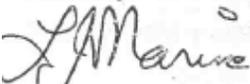
3B

Adverse hydraulic impacts of proposed encroachments could impede flood flows, reroute flood flows, and/or increase sediment accumulation. The proposed project should include mitigation measures for channel and levee improvements and maintenance to prevent and/or reduce hydraulic impacts. If possible off-site mitigation outside of the Board's jurisdiction should be used when mitigating for vegetation removed at the project location.

3C

If you have any questions please contact James Herota at (916) 574-0651, or via email at james.herota@water.ca.gov.

Sincerely,



Len Marino, P.E.
Chief Engineer

cc: Governor's Office of Planning and Research
State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, California 95814

Responses to Comment #3. Central Valley Flood Protection Board.

Response 3A.

This comment identifies the project location and the permitting jurisdiction over the project. The project proponent will be required to obtain a CVFPB permit prior to project construction. This comment raises no substantive concern regarding the IS/MND, and no further response is required.

Response 3B.

The proposed project will not contribute to the establishment or potential accumulation of woody vegetation along Horseshoe Bend. The project will place electrical cable underground and restore existing conditions along the project alignment. The project will not involve the planting of any new trees or woody vegetation. As a result, no additional mitigation measures are required.

Response 3C.

As noted in Response 3B, the project involves the burial of electrical cable and restoration of pre-project conditions along the cable alignment. The project will have no effect on the capacity of Horseshoe Bend; it will not impede or reroute flood flows or contribute to increased sediment accumulation.

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, Executive Officer
(916) 574-1800 Fax (916) 574-1810
California Relay Service TDD Phone 1-800-735-2929
from Voice Phone 1-800-735-2922



Established in 1938

CledR
04/17/14
E

Contact Phone: (916) 574-1890
Contact FAX: (916) 574-1885

April 11, 2014

RECEIVED

File Ref: SCH #2014032039

Reclamation District 341
c/o Jesse Barton
1112 "I" Street, Suite 240
Sacramento, CA 95814

APR 11 2014

STATE CLEARING HOUSE

Subject: Mitigated Negative Declaration (MND) for the Decker Island Electrical Crossing Project, Sacramento and Solano Counties

Dear Mr. Barton:

The California State Lands Commission (CSLC) staff has reviewed the subject MND for the Decker Island Electrical Crossing Project (Project), which is being prepared by Reclamation District 341 (District). The District, as a public agency with principal responsibility for approving the Project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The CSLC is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Additionally, because the Project involves work on sovereign lands, the CSLC will act as a responsible agency.

4A

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

4B

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the

boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

After reviewing the information contained in the MND, CSLC staff has determined the Project will be located within Horseshoe Bend, a portion of the Sacramento River. Those portions of the Project located in the natural and historic bed of Horseshoe Bend are located on State-owned sovereign land under the jurisdiction of the CSLC. The Project will require a lease from the CSLC to authorize construction, use, and maintenance of the facilities on sovereign lands. Please contact Jonathan Sampson, Public Land Management Specialist (see contact information below) for further information about the CSLC leasing process.

Please also be advised that the waterways involved in the Project are subject to a public navigational easement. This easement provides that the public has the right to navigate and exercise the incidences of navigation in a lawful manner on State waters that are capable of being physically navigated by oar or motor-propelled small craft. Such uses may include, but are not limited to, boating, rafting, sailing, rowing, fishing, fowling, bathing, skiing, and other water-related public uses. The activities completed under the Project must not restrict or impede the easement right of the public.

This conclusion is without prejudice to any future assertion of State ownership or public rights, should circumstances change, or should additional information come to our attention. This letter is not intended, nor should it be construed as, a waiver or limitation of any right, title, or interest of the State of California in any lands under its jurisdiction.

Project Description

Decker Island LLC (Decker) proposes to extend a buried electrical cable from existing Pacific Gas & Electric's lines on Sherman Island to Decker Island to meet its objectives and needs as follows:

- Replace Decker's current electricity supply from a standalone diesel-powered electrical generator.

From the Project Description, CSLC staff understands that the Project would include the following components:

- Electrical Cable. A 3- to 4-inch-diameter cable consisting of several electrical conductors will be buried a minimum of 3 feet below the ground surface on the upland and a minimum of 5 feet below the ground surface within the river channel bottom.
- Burial Method. One of two burial methods may be used for in-water work: (1) a barge-mounted long range excavator may be used to create a trench in the river, lay the cable, and then backfill the trench, or (2) a jetting sled may be used to cut a burial trench using hydraulic jets and the cable will be simultaneously laid and buried in a single pass.

4B

4C

4D

Environmental Review

CSLC staff requests that the District consider the following comments on the Project MND.

Biological Resources

- 1. Invasive Species: The MND should consider a range of options to slow the introduction of invasive species into sensitive habitats, including hiring construction vessels from nearby, or requiring hull cleaning from contractors prior to Project construction. Please consider current and proposed aquatic invasive species prevention programs in the area as models for invasive species prevention during the Project.

4E

Cultural Resources

- 2. Submerged Resources: The MND should evaluate potential impacts to submerged cultural resources in the Project area. The CSLC maintains a shipwrecks database that can assist with this analysis. CSLC staff requests that the County contact Senior Staff Counsel Pam Griggs (see contact information below) to obtain shipwrecks data from the database and CSLC records for the Project site. The database includes known and potential vessels located on the State's tide and submerged lands; however, the locations of many shipwrecks remain unknown. Please note that any submerged archaeological site or submerged historic resource that has remained in State waters for more than 50 years is presumed to be significant.
- 3. Title to Resources: The MND should also mention that the title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the State and under the jurisdiction of the CSLC. CSLC staff requests that the District consult with Senior Staff Counsel Pam Griggs (see contact information below) should any cultural resources on state lands be discovered during Project construction.

4F

Hydrology and Water Quality

- 4. Mercury/Methylmercury: Although the MND discloses that the Central Valley Regional Water Quality Control Board (CVRWQCB) considers the western portion of the Delta impaired under Clean Water Act Section 303(d) for mercury, the MND does not disclose that cable burial activities may contribute to mercury movement in the Delta. CSLC staff requests that the MND acknowledge that sediment movement may enhance the transport of mercury in the Delta. Please include avoidance and minimization measure to reduce potential release of mercury from Project activities into waterways and onto State lands underlying those waterways.

4G

To provide some background, on April 22, 2010, the Central Valley Regional Water Quality Control Board (CVRWQCB) identified the CSLC as both a State agency that manages open water areas in the Sacramento-San Joaquin Delta Estuary and a nonpoint source discharger of methylmercury (Resolution No. R5-2010-0043), because subsurface lands under the CSLC's jurisdiction are impacted by mercury from legacy mining activities dating back to California's Gold Rush. Pursuant to a CVRWQCB Total Maximum Daily Load (TMDL), the CVRWQCB is requiring the CSLC to fund studies to identify potential methylmercury control methods in the Delta and to participate in an

Exposure Reduction Program. The goal of the studies is to evaluate existing control methods and evaluate options to reduce methylmercury in open waters under jurisdiction of the CSLC. Any action taken that may result in mercury or methylmercury suspension within the Sacramento-San Joaquin Delta Estuary may affect the CSLC's efforts to comply with the CVRWQCB TMDL.

4G

Recreation/Transportation and Traffic

5. River Use: On page 3-62, the MND states that "Conformance with [US Army Corps of Engineers and US Coast Guard] permit conditions minimizing applicable navigation hazard requirements will reduce any potential impacts on recreational boating safety to a less than significant level." Please provide examples of some of these permit conditions, to avoid the improper deferral of mitigation. CEQA requires that mitigation measures should either be presented as specific, feasible, enforceable obligations, or should be presented as formulas containing "performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way" (CEQA Guidelines §15126.4, subd. (b)). As written, the MND does not include enough detail to consider the permit requirements referenced as specific, enforceable obligations that would reduce impacts to less than significant.

4H

Also, please consider including measures to minimize impacts to recreational boaters such as posting notices of the Project at upstream boat launches to provide information on alternate boating routes and the last "take-out" location upstream of the Project site.

Thank you for the opportunity to comment on the MND for the Project. As a responsible and trustee Agency, the CSLC will need to rely on the Final MND for the issuance of any new lease as specified above and, therefore, we request that you consider our comments prior to adoption of the MND.

Please send copies of future Project-related documents, including electronic copies of the Final MND, Mitigation Monitoring and Reporting Program (MMRP), and Notice of Determination (NOD), when they become available, and refer questions concerning environmental review to Holly Wyer, Environmental Scientist, at (916) 574-2399 or via e-mail at Holly.Wyer@slc.ca.gov. For questions concerning archaeological or historic resources under CSLC jurisdiction, please contact Senior Staff Counsel Pam Griggs at (916) 574-1854 or via email at Pamela.Griggs@slc.ca.gov. For questions concerning CSLC leasing jurisdiction, please contact Jonathan Sampson, Public Land Management Specialist, at (916) 574-0909, or via email at Jonathan.Sampson@slc.ca.gov.

4I

Sincerely,



Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
Jonathan Sampson, LMD, CSLC
Holly Wyer DEPM, CSLC

COMMENT NO. 4
STATE LANDS COMMISSION

Responses to Comment #4. State Lands Commission.

Response 4A. This comment identifies the State Lands Commission's (SLC) purview as both a Trustee Agency and a Responsible Agency under CEQA. This comment does not identify any concerns with the IS/MND, and no further response is required.

Response 4B. This comment summarizes Project Description information included in the IS/MND, notes that the Horseshoe Bend portion of the project is under SLC jurisdiction, and states that will require a lease from the SLC. This information was discussed in the IS/MND at page 2-4. No further response is required.

Response 4C. This comment describes the public's right to access the waters of Horseshoe Bend for a range of recreational and other uses. The IS/MND considered the potential effects of the project on the range of recreational uses of Horseshoe Bend and found that the project's effect on these uses would be less than significant.

Response 4D. This comment repeats certain Project Description information included in the IS/MND at pages 3-57 through 3-60 but adds no new information, or any information that would suggest that the potential environmental effects of the project are not adequately addressed in the IS/MND. No further response is required.

Response 4E. The project has the potential to introduce invasive aquatic species transported into the project on construction vessels and in-water construction equipment. This potential effect will be avoided by requiring the contractor to inspect and clean all vessels and equipment prior to entering the Delta. The following will be added to the IS/MND's biological mitigation measures. This measure will be effective in avoiding potential invasive species impacts.

The proponent will require the Decker Island cable installation contractor(s) to inspect and clean any construction vessels and in-water construction equipment that is to be moved into the Delta to prevent introduction of invasive aquatic species.

Response 4F. The SLC shipwrecks database was consulted for a list of all recorded shipwrecks in Solano and Sacramento County. No records were recorded for Solano County. The recorded shipwreck site that is nearest to the project site is located approximately 1.1 miles south of the site on the east bank of Horseshoe Bend. The proposed project would have no effect on this site or nearby lands.

As noted by the SLC, the location of many shipwrecks are unknown, and therefore the project has the potential to affect undiscovered shipwreck sites along the project corridor. The IS/MND addressed the issue of undiscovered cultural resources sites at page 3-32 and provided a mitigation measure that would reduce potential

cultural resource effects to a less than significant level. With a slight modification shown below, this measure would also apply to undiscovered resources in the submerged portion of the project site.

CU-1 If any subsurface or submerged cultural resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified archaeologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant impacts to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery, and the proponent shall be responsible for retaining a qualified archaeologist and for implementing recommended mitigation measures.

With the slight modification of this mitigation measure, the potential effect of the project on undiscovered shipwrecks would be less than significant.

This comment also notes that the State has title to cultural resources located on lands under SLC jurisdiction. The SLC requests notification in the event that such resources are discovered during construction. No further response is required.

Response 4G. The comment raises a concern that project disturbance of bottom sediments in Horseshoe Bend may contribute to mercury and/or methylmercury movement in the Delta, and that the project should include avoidance and minimization measures to reduce potential methylmercury releases to the river and onto underlying State lands. Specifically, the SLC is concerned that any project-related mercury or methylmercury releases “may affect the CSLC’s efforts to comply with the CVRWQCB TMDL.” Methylmercury is a developmental neurotoxin that is produced from elemental mercury by bacteria under anaerobic conditions.

The IS/MND considered the potential water quality effects of the project and of project construction, including potential effects on turbidity, sediment re-suspension, and the release of water quality constituents of concern, including heavy metals. Methylmercury was not specifically addressed; however, the IS/MND found that even ongoing dredging projects, which are orders-of-magnitude larger than the project, would not exceed applicable RWQCB criteria. The short-duration project confined would “not cause the release of water quality constituents of concern.” (pp 46-47)

As noted by the SLC, waters of the Delta are “impaired” by mercury. The Cal-EPA and RWQCB, Central Valley Region prepared a TMDL report as a first step in managing mercury impairment in Delta waters. The TMDL report quantifies the sources of methylmercury and mercury in Delta waters including “tributary inputs from upstream watersheds and within-Delta sources such as sediment flux, municipal and industrial wastewater, agricultural drainage, and urban runoff.” Approximately 60% of the methylmercury load is contributed by tributary inflow;

about 15% is related to “sediment flux” in open water areas of the Delta. The TMDL Staff Report indicates that “More than 97% of identified total mercury loading to the Delta comes from tributary inputs; within-Delta sources are a very small component of overall loading.”

The SLC is participating in the multi-agency second step in the TMDL program, which is underway. The agencies are in the early stages of developing a Delta mercury “control program.” A control study progress report is not due until October 2015 and a final report is projected to be completed in October 2018.

The proposed project will involve the temporary disturbance of a maximum of 0.3 acres of open water bottom sediments over a period of less than 2 weeks. As a result, the project may contribute to mercury and/or methylmercury movement in the Delta, but any potential releases would be small and short-lived relative to the background methylmercury content of the waters of Horseshoe Bend and the Sacramento River. As discussed in the IS/MND, the amount of sediment disturbed by the project would be orders of magnitude less than sediment disturbance associated with ongoing maintenance dredging, which is but one of several existing sources of sediment disturbance to project area waters. The amounts of mercury or methylmercury released by the project would have a less than significant effect on overall levels in the affected waters. According to TMDL-predicted methylmercury losses, more than 70% of this amount would be lost from waters before reaching San Francisco Bay.

Sediment disturbance will be associated with cable placement and is essential to the proposed project. Alternatives that would avoid disturbance were considered in the IS/MND and identified as infeasible. Since the project would not involve any significant mercury releases, no avoidance or minimization measures are necessary.

The SLC is concerned that project-related mercury releases to the river would then be deposited, or otherwise affect, existing mercury levels on the underlying State lands. The project would have no net effect or a beneficial effect on State lands. Any mercury released to waters as a result of the project would be derived from State lands crossed by the project and, if deposited downstream, would be re-deposited to State lands, or remain in suspension or solution and be exported from the Delta.

The project will not involve any significant mercury or methylmercury releases, or net increases in mercury or methylmercury levels in sediment deposits on State lands. The project will not involve any other conceivable effect that would interfere with the CSLC’s efforts to comply with the CVRWQCB TMDL.

SOURCES FOR RESPONSE 4G:

California Environmental Protection Agency, Regional Water Quality Control Board, Central Valley Region. Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury, Staff Report. April 2010.

Domagalski, Joseph. Mercury and methylmercury in water and sediment of the Sacramento River Basin, California. Applied Geochemistry 16 (2001) 1677-1691. March 31, 2001

Foe, Chris, Stephen Louie and David Bosworth. Task 2. Methyl mercury Concentrations and Loads in the Central Valley and Freshwater Delta. August 2008.

Response 4H. This comment requests clarification of the probable permit conditions that would ensure that project construction activity does not result in a significant effect on recreational boating. To clarify, the IS/MND does not identify the probable permit conditions as “mitigation measures” that would be “necessary to reduce the project’s impacts to a less than significant level.” To the contrary, the IS/MND states that construction will involve a “minor impediment” to the movement of water craft of all kinds. No potential significant effect is identified, and no mitigation measures are necessary.

Nonetheless, as the SLC notes, and as described in the IS/MND, anticipated permit conditions will help avoid significant navigation effects. As noted, the project must obtain a USACOE permit, which would be obtained under Nationwide Permit #12 as described in the “2012 Nationwide Permits, Conditions, District Engineer’s Decision, Further Information, and Definitions.” The permit will be subject to all applicable general permit conditions, including Condition 1 regarding navigation:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

Response 4I. This comment requests RD341’s consideration of the SLC comments prior to adoption of the IS/MND. These comments will be considered by the RD341 Board; consideration is also documented in the above RD341 responses to each of the SLC’s comments.

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NEGATIVE DECLARATION

Lead Agency:
RECLAMATION DISTRICT 341
(SHERMAN ISLAND)
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

PROJECT NAME:

Decker Island Electrical Crossing of Horseshoe Bend

PROJECT PROPONENT

Decker Island, LLC
4060 Campus Drive, Suite 100
Newport Beach, CA 92660

LEAD AGENCY:

Reclamation District 341
(Sherman Island)
c/o Gallery and Barton
1112 I St # 240
Sacramento, CA 95814

PROJECT LOCATION:

The project site is linear corridor connecting Sherman Island near State Route (SR) 160 and Decker Island; the project corridor will be 15 feet, or less, in width depending on the construction method selected. The site is approximately 4 river miles south of Rio Vista along SR 160 and is located in both Solano and Sacramento Counties. The project site is located in an unsectionalized area, a portion of T3N, R2E, MDBM. The decimal latitude and longitude of the approximate center of the project site are 38.098679N and -121.708102W.

PROJECT DESCRIPTION:

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

ENVIRONMENTAL DETERMINATION:

The Lead Agency has prepared an Initial Study, following, which considers the potential environmental effects of the proposed project. The Initial Study shows that there is no substantial evidence, in light of the whole record before the Lead Agency, that the project may have a potentially significant effect on the environment, provided that the following mitigation measures are included in the project.

BIOLOGICAL RESOURCES MITIGATION MEASURES

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts special-status species:

BIO-1 In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS)

BIO-2 If construction commences between February 1 and August 31, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors' active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG's 1994 Staff Report regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

BIO-3 A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material

- BIO-4 Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above
- BIO-5 Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the buffer area will be delayed until hatching is complete and the young have left the nest site.
- BIO-6 Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.
- BIO-7 A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program will be Swainson's hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.
- BIO-8 Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.
- BIO-9 The proponent will require the Decker Island cable installation contractor(s) to inspect and clean any construction vessels and in-water construction equipment that is to be moved into the Delta to prevent introduction of invasive aquatic species.

Project Brief

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation on Decker Island via a buried electrical cable. The 1,100-foot cable will cross approximately 800 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

Project Baseline, Setting and Background

DI currently operates an aggregate and fill material extraction, handling and loading facility on Decker Island. Exported materials are transported by barge for use in construction work in and around the California Delta, and the San Francisco Bay Area. DI currently produces approximately 700,000 tons of material annually. Assuming increasing demand for its products over time, annual production is expected to reach 2 million tons/year; however, the potential for DI expansion will depend on uncertain long-term market conditions.

DI operates under a Use Permit (U-09-08) and Reclamation Plan (RP-09-01) issued by Solano County in 2010; over the permitted 30-year life of the project, as much as 55 million tons of material may be extracted. Solano County prepared and adopted an Initial Study/Mitigated Negative Declaration (IS/MND), completing the CEQA environmental review for the existing DI facilities, before approving the Use Permit and Reclamation Plan.

The Solano County IS/MND addressed all aspects of existing and planned future DI operations on Decker Island, including materials mining, handling and export, and the required reclamation of mined lands. The IS/MND noted that the operation's electrical needs would be met by diesel generators in the short-term but that a connection to PG&E facilities would be made as soon as it could be constructed. The potential environmental effects of providing electrical service to DI within the Solano County permit area on Decker Island were addressed by the IS/MND. The potential environmental effects of the proposed Horseshoe Bend river crossing were not addressed in the IS/MND. Those potential environmental effects are addressed by this document.

Purpose of the Initial Study

The California Environmental Quality Act (CEQA) requires that public agencies document and consider the potential environmental effects of any agency actions that meet CEQA's definition of a "project;" briefly summarized, a "project" is an action that has the potential to result in direct or indirect physical changes in the environment. A project includes the agency's direct activities and activities that involve public agency approvals or funding. Guidelines for an agency's implementation of CEQA are found in the "CEQA Guidelines" (Title 14, Chapter 3 of the California Code of Regulations). The proposed project will require several permits and approvals from state and federal agencies with jurisdiction over the Sacramento River and its environs. Because the project involves modifications to a levee operated and maintained by Reclamation District 341 (RD341), an encroachment permit from RD341 is required. In the course of reviewing the project for a permit, RD341 agreed to be the Lead Agency for the project. Thus, RD341 is the Lead Agency for the project and is responsible for environmental review under CEQA.

Provided that a project is not found to be exempt from CEQA, the first step in the Lead Agency's evaluation of the potential environmental effects of the project is the preparation of an Initial Study. The purpose of an Initial Study is to determine whether the project would involve "significant" environmental effects as defined by CEQA and to describe feasible mitigation measures that would be necessary to avoid the significant effects or reduce them to a less than significant level. In the event that the Initial Study does not identify significant effects, or identifies mitigation measures that would reduce all of the significant effects of the project to a less than significant level, the agency may prepare a Negative Declaration. If this is not the case, the Lead Agency must prepare an Environmental Impact Report (EIR); the agency may also decide to proceed directly with the preparation of an EIR without preparation of an Initial Study.

The Decker Island Electrical Crossing is a "project" as defined by CEQA and is not CEQA-exempt. RD 341 has determined that the project involves the potential for significant environmental effects. The purpose of this Initial Study is to describe the proposed project, briefly describe the environmental setting of the project, discuss the potential environmental effects of the project, identifying any potentially significant environmental effects, and identify mitigation measures needed to reduce the potentially significant environmental effects of the project to a less than significant level.

Scope of Initial Study

This Initial Study evaluates the project's potential to result in "significant" environmental effects, as defined by CEQA, in the following issue areas. Where there are feasible mitigation measures that would avoid or reduce significant effects, they are identified, and the level of significance of the environmental effect, with the application of the mitigation measure(s) is identified.

Aesthetics
Agricultural Resources

Air Quality
Biological Resources
Cultural Resources
Geology and Soils
Greenhouse Gas Emissions
Hazards and Hazardous Materials
Hydrology and Water Quality
Land Use and Planning
Mineral Resources
Noise
Population and Housing
Public Services
Recreation
Transportation/Traffic
Utilities and Service Systems
Mandatory Findings of Significance

Environmental Evaluation Checklist Terminology

The potential environmental effects of the proposed project are evaluated in the following Environmental Evaluation Checklist. The checklist includes a list of environmental considerations against which the project is evaluated. For each question, the lead agency determines whether the project would involve: 1) No Impact, 2) a Less Than Significant Impact, 3) a Less Than Significant Impact With Mitigation Incorporated, or 4) a Potentially Significant Impact.

A Potentially Significant Impact occurs when there is substantial evidence that the project would involve a substantial adverse change to the physical environment, i.e. that the environmental effect may be significant, and mitigation measures have not been defined that would reduce the impact to a less than significant level. If there are one or more Potentially Significant Impact entries in the Initial Study, an EIR is required.

A Less Than Significant Impact occurs when the project would involve effects on a particular resource, but there is no substantial evidence that the project would involve a substantial adverse change to the physical environment – a significant environmental effect - and no mitigation measures are required.

An environmental effect that is Less Than Significant With Mitigation Incorporated is a Potentially Significant Impact that can be avoided or reduced to a less than significant level with the application of proposed mitigation measures, and the proponent agrees to implement the mitigation measures.

A determination of No Impact is self-explanatory.

Project Brief

The project proponent, Decker Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project (the "Project") will extend electrical supply from existing PG&E lines on Sherman Island to the DI operation on Decker Island via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

Project Location

The project site is an approximately 15 foot-wide linear corridor within which the proposed electrical cable will be installed. The corridor extends from an upland area on Sherman Island near State Route (SR) 160 across Horseshoe Bend to an existing access road on the eastern shore of Decker Island. The entire project is approximately 1,100 feet in length.

Horseshoe Bend is an approximately 3 mile-long side channel of the Sacramento River that extends up to a mile east of the 3,000-foot-wide Sacramento River Deep Water Shipping Channel that borders Decker Island on the west. The project site is approximately 4 river miles south of the SR 12 crossing of the Sacramento River at Rio Vista. The eastern terminus of the project is approximately 4.3 miles south of SR 12 along SR 160. The general location of the project site is shown on Figures 1 through 3.

The project site located in both Solano and Sacramento Counties; the County boundary is the approximate center of Horseshoe Bend at the proposed crossing. The project site is located in an unsectionalized area, a portion of T3N, R2E, MDBM. The decimal latitude and longitude of the approximate center of the project site are 38.098679N and -121.708102W.

Consideration of Alternatives

The proposed project involves direct burial of the proposed electrical cable across Horseshoe Bend to Decker Island. The proposed crossing method was selected as the option with the least potential environmental effects and acceptable costs after evaluation of a range of crossing options. The options considered included: 1) bottom-laid cable; 2) an overhead crossing from Sherman to Decker Island; 3) a conduit bridge from Sherman to Decker Island; 4) directional drilling under Horseshoe Bend; and 5) alternative crossing locations.

The relative feasibility and potential environmental effects of these options are described below.

Bottom-Laid Cable. Placement and anchoring of the cable on the channel bottom be the simplest and least expensive of the crossing options. This option was, however, dismissed by the U.S. Army Corps of Engineers and Coast Guard as unacceptable due to the potential for anchor drag hazards from recreational boating. Horseshoe Bend sustains heavy recreational boating and anchorage use since the area is sheltered from the prevailing, strong westerly winds. Therefore, this option is considered infeasible.

Overhead Line. An overhead line crossing of Horseshoe Bend would have the advantage of avoiding in-channel disturbance and related environmental effects but would involve increased potential for bird strike and adverse aesthetic effects for residents and recreational users of the area. The extreme costs of overhead line construction, however, make this option infeasible. In order to construct the 800-foot span and provide the required clearance for navigation, a 80+-foot guyed steel tower would be needed on Sherman Island, and a slightly shorter tower on Decker Island. Due to the relative instability of soils on Sherman Island, foundation structures 30 to 40 feet deep would be needed to provide adequate support for the tower. Landowners contacted by the applicant opposed this option and were not willing to make land available for towers or guys. Therefore, this option is considered infeasible.

Bridge. The proponent considered the option of constructing a bridge over Horseshoe Bend to carry the electrical cable. To accommodate recreational boating, the bridge would require either sufficient clearance height or a mechanical system to allow safe river traffic passage. A bridge would be expensive to construct and operate. In-channel bridge construction could have potentially significant effects on biological resources and water quality and have potentially significant post-construction effects on aquatic organisms, recreation and aesthetics. This option is considered economically infeasible and more environmentally damaging than the Project.

Directional Drilling. The proponent considered the use of directional drilling to make the channel crossing, but this option was rejected as infeasible. In order to provide the required clearance of 75 feet below the bottom of the Sherman Island protective levee, the directional drilling site on Sherman Island would need to be set back several hundred feet from the shoreline, as would the receiving location on Decker Island. The proponent was unable to identify property on Sherman Island that would be available for mobilization of a directional drilling operation. On Decker Island the set-back receiving location would substantially restrict permitted future mining. If the required clearance could be achieved, RD 341 has concerns that the project could nonetheless result in leakage of river water into and along the bore that could result in failure of the Sherman Island levee and flooding of the island. Due to the flood water storage capacity of the Island, such an event would have potentially significant effects on the hydrology and water quality of the lower Delta as well as on the operation of the Central Valley and State Water Project facilities in the south Delta. The additional engineering and construction costs of prevention, and of ongoing inspection and maintenance are considered prohibitive.

Alternative Locations. In addition to the project site, only one other location offers private land access to Horseshoe Bend and would provide feasible access to Decker Island. The alternative site is along Sherman Island Road, west of SR 160. The applicants were unsuccessful in reaching acceptable terms with the landowners for purchase of access rights. From an engineering standpoint, this site is less desirable than the project site; existing PG&E facilities are located on the levee, and the underlying soils are substantially less stable than those at the project site. The required crossing distance at this site is approximately 100 feet longer than at the proposed site, which would result in additional aquatic habitat effects. The alternative would involve increased potential for impacts on three special-status plants (Delta mudwort, Suisun marsh aster, and Mason's lilaepsis), which have been recorded in the California Natural Diversity Data Base on this part of Sherman Island. Potential occurrences of these species are mapped continuously along the shoreline. Completion of the Decker Island portion of the alternative alignment would involve increased potential for impacts on riparian vegetation and near-shore emergent wetland vegetation that may also support special-status plants.

Future Electrical Supply Improvements

The Project will allow DI to reduce or eliminate the use of existing diesel generators and take advantage of PG&E electrical capacity of approximately one megawatt available from its existing distribution system on Sherman Island. DI's proposed cable crossing to Decker Island will include sufficient capacity to accommodate additional electrical demand for Decker Island that may be needed to handle permitted future increases in production.

Currently, PG&E facilities on Sherman Island have the capacity to provide the approximately one megawatt of electrical power needed to meet DI's existing needs. In order to provide electrical supply beyond this existing capacity, the PG&E distribution system on Sherman Island will need to be upgraded or reconstructed. Neither DI nor PG&E have made or expect to make any commitment to the required improvements in the near future, and no engineering plans, specifications or cost estimates have been prepared by either entity. The need for and feasibility of expanded electrical supply will be determined by future market conditions, and neither DI nor PG&E will consider a major improvement project that is not supported by existing use and projected demand.

The possibility that there may be future improvements to the PG&E distribution system is identified in this document in the interests of "full disclosure" required by CEQA. However, these potential improvements are not considered a part of the proposed project and are not subject to environmental review in this document. The improvements are not related to any known near-term need, and they are not in any way defined as to type, size or location. These potential future improvements are not an activity that is being undertaken or approved and therefore does not constitute a "project" or portion of a project under CEQA. The potential environmental effects that might result from these possible future improvements are therefore considered "speculative" pursuant to the CEQA Guidelines (Section 15145) and are not addressed further in this document.

Project Entitlements

The Sherman Island Reclamation District (RD341) is the CEQA lead agency for the project. An encroachment permit from RD341 is necessary for this project. RD341's role will be to permit and endorse the proposed crossing of the Sherman Island levee once it is satisfied that its levee facility will not be compromised.

Project construction and operation will also require permits and approvals from federal and state agencies, as summarized below:

US Army Corps of Engineers (USACOE). Section 10, Rivers and Harbors Act, for work in navigable waters, and Section 404, Clean Water Act, for dredging and/or placement of fill in a Water of the United States. Corps approval will include the required endorsement from US Coast Guard.

California Department of Fish and Wildlife (CDFW). Fish and Game Code Section 1600 Streambed Alteration Agreement for work in the bed and/or banks of a state-regulated waterway.

California Regional Water Quality Control Board. Water Quality Certification under Section 401 of the Clean Water Act (required in connection with USACOE Permit).

Central Valley Flood Protection Board (CVFPB). Encroachment Permit for work on and near regulated streams, including levees.

California State Lands Commission. Lease for proposed use of State Lands (river channel).

Project Details

The proposed project will connect the existing DI facilities to existing PG&E power lines located along SR 160 on Sherman Island, east of Horseshoe Bend. The primary project component is a buried 3 to 4-inch diameter cable composed of several electrical conductors; the cable will be anchored at junction boxes at either end of the river crossing. In upland portions of the project site, the proposed cable will be buried a minimum of 3 feet below the ground surface; within the river channel, the cable will be buried a minimum of 5 feet below the channel bottom. The total length of the project is approximately 1,065 feet; the approximate length of the proposed cable segments is as follows:

115 feet	PG&E connection to river channel
890 feet	River channel
60 feet	River channel to Decker Island vault box

The eastern end of the cable will terminate at an underground box vault to be installed adjacent to an existing overhead PG&E electrical pole line west of SR 160 on Sherman Island. The project will require the installation of a total of five new poles approximately 45 feet in height at this location in order to

accommodate a meter and other required electrical equipment, and to transition from overhead to underground equipment. The western terminus of the cable will be a box vault to be installed on DI property, approximately 60 feet from the shoreline.

The proposed project will be constructed during summer 2014. The estimated time required to construct the project is approximately 2 weeks. In-water work will likely be completed in 100- to 200-foot sections, or longer sections depending on field conditions and construction scheduling.

Cable burial in upland areas will be accomplished with conventional equipment, such as excavator or backhoe. Soil will be removed from the trench and placed in the adjacent area; the cable bed will be prepared, the cable will be laid, and the trench will be backfilled with compacted native material and revegetated. The construction width of disturbance will be 15 feet or less, depending on the construction method. The maximum upland area of disturbance will be approximately 2,625 square feet, or about 0.06 acres.

The placement of the cable in the Sherman Island levee will be consistent with the standards set forth in the encroachment permit issued by RD341. Cable burial across the Sherman Island levee will require removal of existing paving along the Sherman Island levee road, and of existing rip-rap along the water-side levee slope and then trenching to bury the cable. Following construction, the roadbed grade will be restored with aggregate base material; rip-rap removed from the levee slope will be set aside during construction and replaced.

Cable embedment in the river channel will involve use of a barge-mounted long-reach excavator or clamshell bucket equipment. Sediment will be removed from the trench and placed on the down-current side of the trench. The cable will be laid in the trench from a barge and may be stabilized with netting and/or ballast until the trench is backfilled. The trench will be backfilled using the excavation equipment; backfill material will consist of the sidecast sediment topped with a 4 to 12-inch layer of approximately 3-inch rock. Trench width will vary based on the consolidation of the channel bottom materials; in areas with poor consolidation, the trench slopes may need to be laid back to achieve the required burial depth. The average disturbed area in the channel portion of the project using the excavator or clamshell bucket construction method is not expected to exceed the proposed easement width of 15 feet; the maximum in-water area of disturbance will be 13,350 square feet or about 0.3 acres.

Embedment of the cable may also be accomplished with a jetting sled. With this method, hydraulic jets mounted on a skid-supported cable guide will cut the cable burial trench. The cable will simultaneously be fed through the guide, laid and buried in a single pass; additional hydraulic jets will bury the cable and partially refill the trench with excavated sediment; backfill will be completed with a 4 to 12-inch layer of approximately 3-inch rock. Hydraulic pressure, power supply and system control will be provided by an umbilical line connecting the sled to an accompanying support barge. The jetting sled will be operated continuously until the submarine portion of the cable burial is complete, with an estimated construction period for this portion of the work of 2-3 24-hour

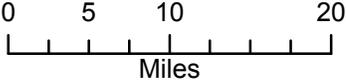
shifts. The embedment will be inspected at approximately 100-foot intervals by divers following the jet sled.



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

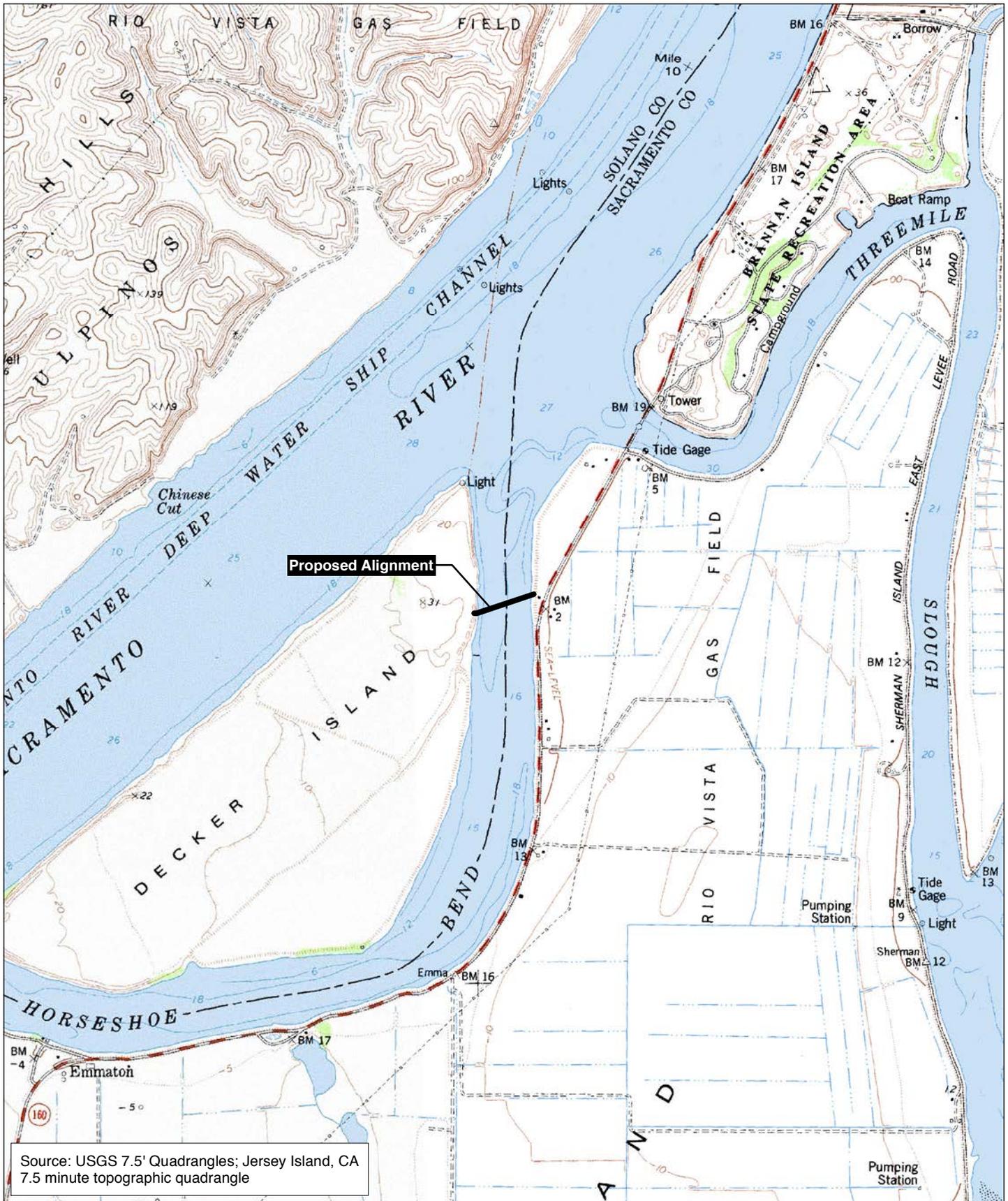
Figure 1

Map Date: January 2014



PROJECT VICINITY

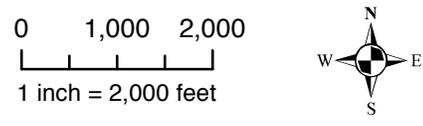
Decker Island
Solano and Sacramento
Counties, CA



Source: USGS 7.5' Quadrangles; Jersey Island, CA
7.5 minute topographic quadrangle

Figure 2

Map Date: January 2014



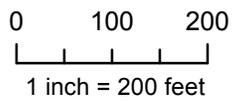
Project Location

Decker Island
Solano and Sacramento
Counties, CA



Figure 3

Map Date: January 2014



Aerial: USGS (April 9, 2011)

Aerial Photograph

Decker Island

*Solano and Sacramento
Counties, CA*

Chapter 3.0

Environmental Checklist / Initial Study

3.1 SUMMARY OF ENVIRONMENTAL EFFECTS

The environmental factors checked below will be subject to potentially significant environmental effects as a result of this project, as discussed in the following environmental checklist. Proposed mitigation measures, to which the proponent has agreed, will reduce all of these potential effects to a less than significant level.

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems
- Mandatory Findings of Significance

3.2 LEAD AGENCY DETERMINATION:

On the basis of this initial evaluation:

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

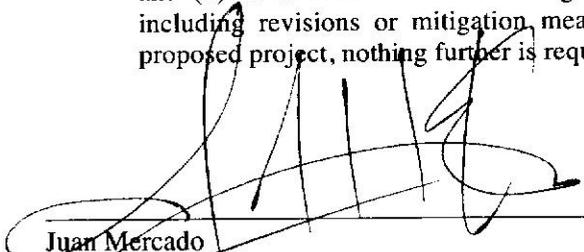
- ✘ I find that although the proposed project could have a significant effect on the environment there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

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

I find that the proposed project **MAY** have a "potentially significant

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

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



Juan Mercado
Reclamation District 341

5/13/14
Date

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

The foregoing environmental determination is based on the evaluation of the potential environmental effects of the proposed project, as documented in the following checklist and supporting documentation. The checklist has been prepared in accordance with the following requirements:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or Negative Declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where the analysis(es) are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of, and adequately analyzed in, an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated", describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats.
9. The explanation of each issue should identify:
 - a. the significance criteria or threshold, if any, used to evaluate each question; and
 - b. the mitigation measure identified, if any, to reduce the impact to less than significance

3.4 ENVIRONMENTAL CHECKLIST AND NARRATIVE

3.4.1 AESTHETICS

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

NARRATIVE EXPLANATION

Environmental Setting

The project site is a 15-foot-wide corridor that crosses Horseshoe Bend, a branch of the Sacramento River, the riverbanks and the Sherman Island levee. The majority, approximately 890 lineal feet, of the project site is open water; a band of sparse emergent vegetation is located in a shallow area adjacent to Sherman Island.

The western 60 feet of the project site is the eastern shore area of Decker Island, which is a narrow sandy beach and an approximately 25-foot high bluff populated with ruderal grasses and Himalaya berry vines. A narrow band of riparian vegetation is located along the shoreline north and south of, but not within, the project site.

The eastern 115 feet of the alignment crosses the Sherman Island levee and adjacent land area. The western, waterside levee bank is covered with rip-rap and is vegetated with cottonwood trees and associated riparian groundcover; vegetation along the levee, and in all portions of the project site, is discussed in more detail in Section 4, Biological Resources. The former Sherman Island Levee Road, an approximately 25-foot-wide paved section, occupies the top of the levee. The levee's landside slope is vegetated with ruderal grasses.

As discussed in Section 15 Recreation, the Sacramento River and its environs are outdoor recreation resources of statewide importance that support heavy multi-seasonal use for boating, fishing, wind sports and other active and passive recreation. Recreational values are in large part dependent on the aesthetic value of the surrounding environment. The river corridor is preserved and managed by local, state and federal agencies to maintain these values. The project site is a component of and contributor to an important aesthetic resource and is therefore aesthetically sensitive. Sacramento County identifies the shoreline of Horseshoe Bend as a Scenic Corridor.

The easternmost 50 feet of the project alignment on the landside of the Sherman Island levee is visible from SR 160. SR 160 is a State- and Sacramento County-designated Scenic Highway. Agriculture, river views, recreational use and other open space values contribute to the scenic qualities reflected in the designation. The project area is designated as a Priority 1 Open Space in the Open Space Element of the Sacramento County General Plan because the project area has five contributing factors, including “Habitat,” “Natural Resources,” “Recreation,” “Agricultural” and “Rivers and Streams.” Only four contributing factors are necessary to be considered Priority 1. The visibility of this portion of the project site to passing motorists is fleeting; at an assumed travel speed of 55 miles per hour, views of the approximately 200-foot-wide open area surrounding the project alignment are available for about 2.5 seconds. Cottonwood and blue gum trees adjacent to the project site are the principal distinguishing aesthetic features in this area; these trees would not be affected by the project.

Potentially-affected viewer groups include recreational users of the river and motorists on SR 160, which passes the eastern terminus of the project at a distance of approximately 90 feet. The Sherman Island levee, between the river and the highway, obstructs views east from the river and west from the highway. Recreational use of Horseshoe Bend in the project vicinity includes boating and fishing; the Decker Island shoreline area is a popular anchorage, because the island provides shelter from the prevailing northwesterly winds. Recreational usage of this area is considered relatively heavy but is not specifically quantified; anchorage and overnight users have extended exposure to aesthetic conditions in the area.

Decker Island is uninhabited except for employees of DI Aggregates; all DI activities are currently located in the western portion of the Island. There are two existing residences in the project vicinity. One is adjacent to the east bank of Horseshoe Bend, approximately 500 feet north of the project site, has views of the project alignment as it crosses the river but no views of the eastern on-land portion of the project, which is screened from view by existing tree plantings. The second residence is located east across SR 160 and has views of the portion of the project site east of the Sherman Island levee.

There is no existing night lighting in the project vicinity other than security lighting on the Sherman Island residence north of the project.

Environmental Impacts and Mitigation Measures

- a) The project will not involve any interference with or permanent or long-term changes to scenic vistas in the project area. Most proposed project facilities will be below ground or under water and, following construction, will not be visible. A total of 5 wooden electrical poles will be installed at the eastern project terminus near SR 160; these poles will be visible from the highway but would be obscured from water views by the Sherman Island levee and existing tree growth along the levee and shoreline. Electrical poles are ubiquitous in the project area; views for travelers along SR 160, and for the existing residence east of the highway, will not be significantly affected. The 0.06 acres of

disturbed land associated with project excavation will be revegetated and will not contribute to any long-term aesthetic changes. The project will have no effect on access to or availability of scenic vistas.

The proposed project will involve temporary construction effects on aesthetics along the 15-foot-wide cable corridor. For recreational users in open water areas in Horseshoe Bend, and the Sherman Island residence with open water views, the aesthetic effects of construction will consist of the presence of a barge, barges or other watercraft in the open water section of the project, and of conventional construction equipment, materials and stockpiled soils in the land portions of the project, over a period of as much as two weeks. Recreational boaters in close proximity to the in-channel portion of project construction may see short-lived turbid water.

All of the potential construction effects of the project will be short-lived. Disturbed areas will be revegetated. Following the completion of construction and revegetation of disturbed areas, the project site will be indistinguishable from surrounding lands and waters. As a result, the project's potential effects on scenic vistas will be less than significant.

- b) The project will not involve any substantial damage to scenic resources. As discussed in "a)" above, the project will not involve any substantial long-term effect on the lands and waters making up the project site. The project will not remove any trees, rock outcroppings, historical structures or any other landscape features that might constitute potential scenic resources. Existing cottonwood and blue gum trees on Sherman Island will not be affected. The project has been sited to avoid all tree removal.
- c) As noted in "a" above, the project will involve minor temporary disturbance and therefore minor short-term degradation of the visual character and quality of the land portions of the project site; these effects will be less than significant during construction and eliminated by revegetation following completion of construction. The project will not involve any long-term degradation of visual character or quality.
- d) The project will not involve any new lighting and therefore no effect on light, glare and nighttime views in the project area.

SOURCES

Sacramento County, Community Planning and Development Department.
General Plan, Circulation Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department.
General Plan, Open Space Element. Amended November 9, 2011.

Site observations. October – December, 2013, Wallace Environmental.

3.4.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts 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 forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest use?				X
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 forestland to non-forest use?				X

NARRATIVE EXPLANATION

Environmental Setting

The majority of the proposed project site is the existing waterway known as Horseshoe Bend, a branch of the Sacramento River. There is no agriculture or forestry use of this portion of the site.

The western 60 feet of the project is located on the eastern shore of Decker Island in Solano County. Decker Island is not currently in agricultural use but has been used for agricultural purposes in the past, most recently for cattle and goat grazing; until the 1940s the island was farmed for dry-land barley.

The Solano County Important Farmland Map classifies most of Decker Island, including the project site, as “Grazing Land.” The existing materials handling facility is classified as “Other Land.” Lands in both classifications are not considered “important” farmlands. Most of the DI ownership on Decker Island is under Williamson Act contracts; however, the parcel that includes the project site (APN #0090-210-050) is not under a Williamson Act contract.

The eastern 115 feet of the project site is located on and near the Sherman Island levee; this small parcel of land is not subject to agricultural use. The Sacramento County Important Farmland Map classifies most of Sherman Island in the project

vicinity as “Prime Farmland;” the project site and its immediate vicinity are classified as “Farmland of Local Importance.” Farmland of Local Importance is also not considered “important” farmland. The Sherman Island portion of the project is not under a Williamson Act contract.

As discussed in Section 3.4.10 Land Use, the respective County general plans do not designate any portion of the project site for agricultural use. Mining is considered an allowable and compatible use in the agricultural zoning of Decker Island.

There are no forestlands, or lands designated or zoned for forestry purposes, on or near the project site.

Environmental Impacts and Mitigation Measures

- a) The project will not result in any conversion of “important farmlands” - i.e. Prime Farmland, Unique Farmland or Farmland of Statewide Importance - to nonagricultural use. There are no such lands within or adjacent to the project site. The project will result in construction phase disturbance of the site but no long-term effects on the soils or agricultural suitability of any portion of the project site.
- b) The project is consistent with existing Solano and Sacramento County general plan designations and zoning as described in Section 3.4.10 Land Use. No portion of the project site is designated or zoned exclusively for agricultural use; mining is an allowable use within the agricultural zoning of Decker Island. No portion of the project site is subject to a Williamson Act contract. The project will involve no conflict with agricultural zoning or a Williamson Act contract.
- c,d) The project will not involve any conflicts with or loss of forestland, timberland or lands designated or zoned for these purposes. No such lands exist on or near the project site.
- e) The project will not involve any conflict with or adverse effect on the ongoing and continued use of agricultural land in the project vicinity. The project will not facilitate development or conversion of surrounding lands, other than the permitted mineral resource development on Decker Island. Therefore, the project will not contribute directly or indirectly to conversion of off-site farmland. The project will have no effect on potential for conversion of forestland to non-forest use.

SOURCES

California Department of Conservation. Sacramento County Important Farmland 2010. Accessed on-line January 18, 2013 at <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/>

California Department of Conservation. Solano County Important Farmland 2010. Accessed on-line January 14, 2013 at <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2010/>

Sacramento County, Community Planning and Development Department.
 General Plan, Agricultural Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department.
 General Plan, Open Space Element. Amended November 9, 2011.

3.4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable Air Quality Attainment Plan?			X	
b) Violate any air quality standard or contribute to an existing or projected air quality violation?			X	
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)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

NARRATIVE EXPLANATION

Environmental Setting

The project is located on the boundary separating Solano and Sacramento County, which is also the border between the Bay Area and Sacramento Air Quality Management Districts (AQMDs). Air quality management under the federal and state Clean Air Acts is the responsibility of the two AQMDs.

The federal and state governments have adopted ambient air quality standards (AAQS) for the primary air pollutants of concern, known as “criteria” air pollutants. Air quality is managed by the AQMDs to attain these standards. Primary standards are established to protect the public health; secondary standards are established to protect the public welfare. Both of the AQMDs are in attainment with the applicable criteria pollutant standards, except standards for ozone, respirable particulate matter (PM10), and fine particulate matter (PM2.5). The AQMDs are considered in non-attainment for these pollutants because the applicable standards are periodically exceeded.

DI’s existing electrical generation operations are an existing source of criteria pollutants as well as GHG emissions, as discussed in Section 3.4.7. Based on DI’s estimated existing fuel consumption for electricity generation and U.S. Environmental Protection Agency (USEPA) emission factors for diesel fuel,

existing electricity generation produces several tons of nitrogen oxides (ozone precursors), PM10 and total organic compounds annually.

Both AQMDs have prepared attainment plans for the non-attainment pollutants. The AQMDs have each adopted local regulations establishing control over air pollutant emissions associated with new stationary sources, land development and other pollutant-generating activities, including specific controls on construction including rules governing dust, asphalt paving and application of coatings.

The federal Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate emissions of and exposure to airborne hazardous air emissions; this is accomplished through the federal Hazardous Air Pollutant (HAP) Program and the State Air Toxics Program. A principal air toxic is diesel particulate matter, which is a component of diesel engine exhaust.

Both AQMDs have adopted guidelines for the analysis of air quality impacts under CEQA and requirements for mitigation of impacts when significant; these guidelines are cited at the end of this section. The guidelines address potential “operational” (long-term) air emissions associated with new stationary air emission sources, indirect sources such as land development and potential short-term emissions associated with construction activities. The guidelines address the range of potential emissions including criteria pollutants, greenhouse gases, air toxics and odors.

Potential project emissions are, in both the BAAQMD and the SMAQMD, to be quantified and compared to CEQA significance thresholds to determine whether the project will or will not involve significant environmental effects. If potential air quality effects are significant, the guidelines specify mitigation measures that must be incorporated into the project. The BAAQMD is unable to recommend significance thresholds as a result of litigation regarding its 2010 CEQA Thresholds of Significance. The adjacent SMAQMD has, however, adopted a construction significance threshold of 85 pounds per day for oxides of nitrogen (NOx), an ozone precursor. The SMAQMD threshold is used to analyze the potential significance of the project’s air quality effects.

As discussed below in the analysis of air quality effects, subsection “a, b”, the project will not generate any operational air emissions, although it will likely result in the reduction of existing DI Aggregates emissions associated with its on-site diesel-powered electrical generation equipment. The new electrical supply obtained from PG&E will reduce or eliminate use of the diesel-powered generators currently used by DI to generate electricity for its existing operations. As a result, the AQMD guidance related to analysis of operational emissions does not apply. Construction-related requirements are discussed in the Environmental Impacts and Mitigation Measures section below.

Environmental Impacts and Mitigation Measures

The two AQMDs differ in their requirements for estimation of project impacts on criteria pollutants, significance thresholds, and impact mitigation. These requirements and the calculation of potential project emissions are shown below. Responses to the more specific checklist questions follow.

In brief, the BAAQMD requires quantification of potential construction emissions for comparison to significance thresholds; for linear projects, the Road Construction Emissions Model (RCEM) is to be used to estimate emissions. The SMAQMD requires a similar procedure for most projects but provides an exemption from emissions calculation if the project site is less than 35 acres. The proposed project will affect a maximum of 0.4 acres, including land and water areas and would qualify for the SMAQMD exemption; nonetheless, potential project emissions are quantified using the RCEM to satisfy the more stringent BAAQMD requirements.

Construction of the proposed project will involve the use of heavy equipment powered by diesel or other internal combustion engines. The RCEM model was used to estimate the pollutant emissions that would result from such equipment use. For the purposes of the model run, the equipment expected to be in use throughout the construction period was assumed to include an excavator, diesel generator set and one “other equipment.” This equipment list was considered “conservative” (over-estimating emissions) with respect to the project. Potential project air emissions of non-attainment criteria pollutants as estimated by the RCEM model are shown in Table 1. The model assumptions, calculations and results are shown in Appendix A.

TABLE 1
ESTIMATED CONSTRUCTION EMISSIONS
DECKER ISLAND ELECTRICAL CROSSING PROJECT
CONSTRUCTION PHASE

Pollutant	SMAQMD Significance Threshold	Emissions (lbs/day)
ROG	NA	3.1
NO _x	85 lbs/day	29.4
PM (Total)	NA	0.31

The BAAQMD does not currently have recommended air quality significance thresholds; the estimated NO_x emissions will be substantially below the SMAQMD significance threshold of 85 lbs/day. As a result, project construction will not have a significant air quality effect associated with emissions of criteria pollutants.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT
DISTRICT
BASIC CONSTRUCTION EMISSION CONTROL PRACTICES

The following practices are considered feasible for controlling fugitive dust from a construction site.

Control of fugitive dust is required by District Rule 403 and enforced by District staff.

Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).

All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations.

Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Lead agencies may add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).

Project construction will be subject to the applicable AQMD rules related to control of construction emissions. In addition, all projects within SMAQMD, including exempt projects, are subject to Basic Construction Emission Control practices, shown below. The BAAQMD has a comparable set of basic standards, which are not required unless the project will have significant air quality effects. The application of the SMAQMD rules to the project will further reduce the already less than significant effects of the project on criteria pollutants.

Project construction activity, including use of the heavy equipment described above and assumed in the RCEM model, will not emit significant amounts of, or pose any human health concerns related to, air toxics. Health concerns related to air toxics are associated with long-term (i.e. decades) exposure to relative high air toxic emissions levels. Residences or schools have relatively long occupancy times and therefore the potential for cumulative exposure to ongoing air toxic emissions. Project construction would involve 2 weeks of construction at relatively low emission rates.

The RCEM model predicts total particulate emissions of 1.3 pounds per day over the 2-week construction period; about 2/3 (0.9 pounds) of this is diesel engine exhaust and the remaining third is fugitive dust, which is not a recognized air toxic. Less than a pound of emissions would be emitted over the span of a work day and dispersed by prevailing winds. The project is in a relatively undeveloped area with only one downwind receptor, approximately 500 feet from the nearest point of the project site. As a result, the project's potential air toxic effects are considered less than significant.

- a,b) The project will not involve any conflict with, or potential to obstruct implementation of, applicable Air Quality Attainment Plans, contribute to or cause violation of any air quality standard, or contribute to any projected future violation of air quality standards. The project will not involve any operational emissions. As described above, estimated project construction air emissions will be minor, short-term and substantially below the applicable significance threshold adopted by the SMAQMD.

After construction, the project will have a net beneficial effect on regional criteria pollutant emissions. Provision of the proposed PG&E electrical supply will result in net reductions in or avoidance of DI use of the diesel generator currently used to operate the its material handling facilities. As a result existing emissions of several tons of criteria pollutants associated with these facilities will be reduced or eliminated annually. The potential reduced emissions each year would greatly exceed the total construction emissions for the project. This would be considered a beneficial effect of the project. Over a short period of time, this benefit will offset any adverse air emission effect associated with project construction.

- c) The project will contribute less than significant amounts of non-attainment criteria pollutants, including ozone precursors (ROG, NOx) and particulate matter to the regional airshed during project construction. These emissions will be short-term and will not involve any substantial long-term contribution to existing non-attainment status of the respective AQMDs for ozone and particulate matter. Project construction emissions will be minor

and not cumulatively considerable.

As discussed in “a,” provision of PG&E electrical supply to the existing DI operation will result in reductions in criteria pollutants presently emitted from the existing diesel generator. This will result in a beneficial effect on regional levels of non-attainment criteria pollutants and will, over time, offset any construction emission contribution to the regional airshed.

- d) The project will not generate any substantial or long-term air emissions that have the potential to affect sensitive receptors outside the project site. Sensitive receptors are limited to a single residence located approximately 500 feet north and cross-wind of the site under the prevailing northwesterly winds. Project emissions, including criteria pollutants and air toxic emissions, will be dispersed over largely-uninhabited agricultural lands to the east and south.
- e) The project does not involve any features that will generate odors during either construction or operation.

SOURCES

Bay Area Air Quality Management District. California Environmental Quality Act, Air Quality Guidelines. Updated May 2012.

Sacramento Air Quality Management District. CEQA Guide to Air Quality Assessment. Updated through October 2013. Accessed on-line at <http://airquality.org/ceqa/ceqaguideupdate.shtml> on January 18, 2014.

U.S. Environmental Protection Agency. [Introduction to AP 42, Volume I, Chapter 3 Stationary Internal Combustion Sources](#). Fifth Edition. January 1995.

U.S. Environmental Protection Agency. Unit Conversions, Emission Factors, and Other Reference Data. November 2004.

3.4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Adversely impact, either directly or through habitat modifications, any endangered, rare, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?		X		
b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?			X	
d) 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?			X	
e) 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?			X	
f) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
g) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?				X

NARRATIVE EXPLANATION

Environmental Setting

Terrestrial Biology

Terrestrial biological resources of the project were evaluated by Moore Biological Consultants in conjunction with the preparation of this Initial Study and documented in Moore’s Biological Assessment (BA) dated February 5, 2014. The BA describes terrestrial biological resources, potential jurisdictional Waters of the U.S. or wetlands, and suitable habitat for or presence of special-status plant and animal species, the project’s potential impacts on these resources, and appropriate avoidance, minimization and mitigation measures for potential impacts. The detailed findings of the BA are shown in their entirety in Appendix B.

Preparation of the BA included a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database for an approximately 240 square mile area surrounding the project site and the United States Fish and Wildlife Service (USFWS) list of Federally Threatened and Endangered species that may occur in or be affected by projects in the same area. Field surveys via boat and on foot were conducted on October 24, October 30 and December 9, 2013, and on January 21, 2014.

Sherman Island consists of land farmed in alfalfa, hay, and other annual crops. The Sherman Island portion of the project site, however, is confined to a levee slope, the paved levee road, and ruderal grassland on the land side of the levee. On the whole, Decker Island is used for grazing and aggregate mining, and a CDFW habitat area at the north tip of the island. The Decker Island portion of the project site includes a sandy beach, steep bank covered primarily with Himalayan blackberry brambles, and ruderal grassland. A list of plant species occurring in these areas is shown in the BA, Appendix B.

In the vicinity of the site, the banks of Decker Island are steep and are vegetated with a narrow and discontinuous band of riparian vegetation dominated by coastal live oak willows and black walnut trees. The island banks also support dense patches of Himalayan blackberry, intermixed with patches of California wild rose and California wild grape. There is, however, no woody riparian vegetation within the project site that will be disturbed by the project. The near-shore areas of Decker Island have vegetation on small islands on a sandy shelf within 20 feet of the shore where the water is a few feet deep. There is no other in-water vegetation adjacent to Decker Island near the project site; habitats transition abruptly from deep open water, to a narrow sandy beach, to the blackberry brambles.

On Sherman Island, there are large Fremont cottonwood trees along the bank, near the waterline, just north and south of the site, but no woody riparian vegetation within areas that will be disturbed. Offshore of Sherman Island, extending 100-150 feet from the bank, there is a sparse patch of tules, and some water hyacinth, an invasive species, in a relatively shallow near-shore area.

No blue elderberry shrubs were observed in or adjacent to the project site.

A limited variety of bird species all common to agricultural areas in the Delta were observed during the site surveys. A list of observed species is shown in Appendix B. A few potential nest trees near the project site may be suitable for nesting raptors and other protected migratory birds, including Swainson's hawk, most notably, the row of large Fremont cottonwoods, and some large eucalyptus trees on Sherman Island. These trees may be used by nesting raptors and songbirds, which may also nest in other in or adjacent to the project site.

A variety of mammals common to agricultural areas are likely occur in the project site, although none were observed during field surveys. Based on habitat types present, a number of common amphibians and reptiles may also use habitats in the project site, but none were observed in the site during the field surveys. A list of potentially-occurring mammal, amphibian and reptile species is shown in Appendix B.

Waters of the U.S. and Wetlands

Waters of the U.S. are navigable waterways, their tributaries and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill materials into any waters of the U.S., including wetlands. Both CDFW and ACOE have jurisdiction over modifications to jurisdictional riverbanks, lakes, stream channels and other wetland features. Issuance of ACOE permits are conditional on issuance of a water quality certification under Section 401 of the Clean Water Act by the Regional Water Quality Control Board.

The only potentially jurisdictional waters of the U.S. or wetlands in or adjacent to the project site is Horseshoe Bend. The elevation of high tide in Horseshoe Bend is the limit of ACOE jurisdiction. At the proposed cable crossing, the banks of both Sherman Island and Decker Island are steep; there are no adjacent wetlands. Horseshoe Bend is a navigable water of the U.S. subject to Section 10 of the River and Harbor Act and Section 404 of the Clean Water Act. This side channel of the Sacramento River also falls under the jurisdiction of CDFW, the California Regional Water Quality Control Board (RWQCB), the State Lands Commission (SLC), and the Central Valley Flood Protection Board (CVFPB). There are no other potentially jurisdictional wetlands or Waters of the U.S. in or near the project site.

Special-Status Plant and Wildlife Species

Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations, other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, species considered rare or endangered under Section 15380 of the CEQA Guidelines, such as species shown on California Native Plant Society (CNPS) Lists 1A, 1B and 2, and other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing.

Moore Biological compiled a list of potentially-occurring special status species and assessed their likelihood of occurrence. This analysis, shown on Table 2 of Appendix B, indicates that the likelihood of occurrence of special-status species in the project site is generally low.

Special Status Plants

Table 2 of Appendix B identifies 25 special-status plants with potential to occur in the project area. Although some of these species may occur in close proximity to the project site, none of these species have been observed or are expected to occur in the immediate vicinity of the proposed cable. Special-status plants generally occur in relatively undisturbed areas and are largely found within unique vegetation communities such as vernal pools, marshes and swamps, and areas with unique soils. The upland grassland habitats on Sherman Island and

Decker Island are routinely mowed, sprayed, and/or grazed to meet levee standards and for fire suppression and do not provide suitable habitat for special-status plants.

Several species of special-status plants listed in Table 2 occur in marshes and swamps or riparian woodlands; none of these species have state or federal listing status. These include Bolander's water hemlock, wooly rose mallow, delta tule pea, Mason's lilaeopsis, delta mudwort, eel-grass pondweed, Sanford's arrowhead, side-flowering skullcap, and Suisun marsh aster. Mason's lilaeopsis, delta tule pea, and delta mudwort are also recorded in the CNDDDB in several locations in the waterways near the site.

Suisun marsh aster was observed on four small near-shore islands 15+/- to 100+/- feet north of the site along the edge of Decker Island. The Suisun marsh aster is growing at and near the water line in association with common verbena, Himalayan blackberry, California wild rose, and California wild grape. Several of the other non-listed species in Table 2 that occur in marsh and swamp habitats may also occur on the small near-shore islands, but are not present within the project site and were not observed during biological field surveys.

Suisun marsh aster is not listed at either the state or federal level but is on CNPS List 1B (CNPS, 2010). CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere. Suisun marsh aster is recorded in the CNDDDB (2013) in several locations within delta waterways within two to three miles of the project site. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the site.

The sandy cove on Decker Island that is crossed by the project does not provide suitable habitat for Suisun marsh aster or any of the other species in Table 2 that occur in marsh and swamp habitats. The opposite shoreline of Sherman Island is shaded and does not provide suitable marsh and swamp habitat required by for Suisun marsh aster or the other identified special-status marsh or swamp species.

Special-Status Wildlife

The potential for intensive use of habitats within the project site by special-status wildlife species is also generally considered low. Of the species identified in Table 2, Swainson's hawk, burrowing owl, tricolored blackbird, and western pond turtle have at least some potential to occur within the project site. Swainson's hawk and other bird species protected by the Migratory Bird Treaty Act and Fish and Game Code of California have potential to occur in or near the site and could be adversely affected by construction activities if they nested in or near the site during construction. If present, western pond turtle could be adversely impacted by project construction. There is no suitable habitat in the project site for the remaining species in Table 3. Appendix B provides detailed life history information for each of the potentially-occurring species.

Swainson's Hawk: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, and their nests during the nesting season (March 1 through September 15). Swainson's

hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August. The CNDDDB (2013) contains numerous records of nesting Swainson's hawks within the search area; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.

No Swainson's hawk nests were located during the surveys, which was conducted during the non-breeding season. The grasslands on Decker Island and croplands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker Island and on Sherman Island in the vicinity of the alignment that could be used by nesting Swainson's hawks.

Burrowing Owl: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, and their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands and scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.

No burrowing owls were observed in the project site. Further no ground squirrels or ground squirrel burrows were observed in or adjacent to the site. The site is well within the species range and burrowing owls may fly over or forage in the site on an occasional basis. It is possible that burrowing owls could nest in or near the site if burrow habitat is available.

Tricolored Blackbird: The tricolored blackbird is a State of California Species of Concern and is also protected by the federal Migratory Bird Treaty Act. Tricolors are colonial nesters requiring very dense stands of emergent wetland vegetation and/or dense thickets of wild rose or blackberries adjacent to open water for nesting. This species is endemic to California. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.

Tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The grasslands on Decker Island and croplands on nearby islands provide foraging habitat for tricolored blackbirds. The blackberry brambles, patches of wild rose, willows, and emergent wetland vegetation along the shore are suitable for nesting and tricolored blackbirds may nest in or near the site during some years. Some blackberry brambles (15+/- feet wide) will be removed during construction but is expected to revegetate rapidly; the project will not cause a permanent loss of potential nesting habitat.

Western Pond Turtle: The western pond turtle is a state species of concern, but is not a listed species at the state or federal level. Western pond turtles are associated with permanent or nearly permanent bodies of water with adequate basking sites such as logs, rocks or open mud banks. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.

No western pond turtles were observed in or near the site. However, the near-shore aquatic habitats and stream banks along Horseshoe Bend provide suitable habitat for western pond turtle. This species may occur in the Horseshoe Bend in the vicinity of the alignment and could potentially nest in sandy areas along the shore of Decker Island.

Critical Habitat for Special-Status Plant and Animal Species

The site is not within any known designated critical habitat for terrestrial species, including critical habitat for California red-legged frog, federally listed vernal pool shrimp, California tiger salamander, valley elderberry longhorn beetle, Delta Green Ground Beetle, Contra Costa wallflower, Contra Costa goldfields, or Antioch dunes evening

Fishery Resources

An assessment of the fishery resources of Horseshoe Bend at the project site and the potential fishery effects of the project was prepared by FISHBIO in conjunction with this Initial Study. A detailed report documenting the FISHBIO assessment is shown in Appendix C. The assessment considered the potentially-occurring fish species, life history information for each species, habitat and substrate conditions in the project vicinity and the timing of project construction. The potentially-occurring special-status species included Central Valley steelhead trout, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, delta smelt, longfin smelt and green sturgeon.

The project site is located in the Sacramento-San Joaquin Delta (Delta), which consists of over 700 miles of sloughs and channels intertwined with 57 leveed island tracts where freshwater from the Sacramento and San Joaquin Rivers combine with saltwater from San Francisco Bay to create the West Coast's largest estuary. Decker Island is approximately 8.0 river miles upstream of the confluence of the Sacramento River and the San Joaquin River.

Horseshoe Bend, a side channel of the Sacramento River, has a mean depth of approximately 11.5 feet at the project site; the channel is shallow adjacent to Sherman Island and reaches a depth of more than 20 feet offshore of Decker Island. The substrate throughout the channel is composed primarily of sand-sized sediment, and the project area is tidally influenced. Emergent vegetation in the project area consists of tules in the shallower areas along the Sherman Island; tule growth is sparse at the proposed project site. The banks of Sherman Island are armored with rip-rap. Decker Island, including the project site, is composed of deposits of dredged material; these non-natural materials do not support native Delta vegetation. The CDFW completed a two-phase, long-term restoration project on the northeastern portion of the island in 2004 known as the Decker Island Enhancement Project (DIEP). The DIEP is located upstream of the project site and outside the area of potential construction effects.

The Delta, the Sacramento River and Horseshoe Bend serve as migratory and/or rearing habitat for several fish species including native, non-native, listed (i.e. federal or state endangered or threatened), and non-listed fish species. FISHBIO compiled a list of species potentially occurring in the project area from recent investigation, proximal studies, and federal and state threatened and endangered species lists, including non-listed and listed species. A table identifying all of the non-listed species considered by FISHBIO is shown in Appendix C, including California Species of Special Concern (SSC). This list is representative of fish species that potentially use Horseshoe Bend habitat during some portion of the year.

FISHBIO obtained a list of endangered or threatened fish species potentially occurring in the project area from the USFWS website and from the CDFW website. These species, together with their listing status is shown in Table 2. The project site is located within Critical Habitat designations for Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt and green sturgeon; the project site is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon.

Each species was evaluated for its potential occurrence during the proposed construction period, and for the potential presence of spawning habitat in the project area. The Sacramento River serves as a migration corridor for both listed (e.g. Central Valley steelhead, Central Valley spring-run Chinook salmon, and Sacramento River winter-run Chinook salmon, green sturgeon) and non-listed (e.g. Central Valley fall/late-fall run Chinook salmon) species traveling upstream to spawn or downstream during juvenile outmigration. According to trawl catches in the Horseshoe Bend side channel, both longfin and delta smelt occur in this area. Juvenile green sturgeon could potentially utilize this area for rearing. A more detailed description for each species is provided in Appendix C.

Table 3 is a graphic illustration of the likelihood of each species of concern to be present, presence of potential habitat, and potential for each species to be impacted by construction over the course of a year. The shaded boxes indicate that the species has the potential to be present, the project area may provide habitat, and/or the project may have potential impacts, in each of the half-month timespan columns; unshaded boxes indicate that the species is not present and

there is no potential for impact. Numbered boxes are explained in the table notes. Although the table indicates that delta smelt and longfin smelt may be present in September and October, these months are within the accepted work window (August 1 – October 31) for these species.

TABLE 2
POTENTIAL ENDANGERED OR THREATENED SPECIES
DECKER ISLAND ELECTRICAL CROSSING PROJECT

Species	Listing Status ¹	Listing Agency
Central Valley steelhead (adult)	FT	USFWS
Central Valley steelhead (juvenile)	FT	USFWS
Central Valley spring-run Chinook salmon (adult)	FT / ST	USFWS / CDFW
Central Valley spring-run Chinook salmon (juvenile)	FT / ST	USFWS / CDFW
Sacramento River winter-run Chinook salmon (adult)	FE / SE	USFWS / CDFW
Sacramento River winter-run Chinook salmon (juvenile)	FE / SE	USFWS / CDFW
Delta smelt (adult)	FT / SE	USFWS / CDFW
Delta smelt (juvenile)	FT / SE	USFWS / CDFW
Longfin smelt (adult)	ST	CDFW
Longfin smelt (juvenile)	ST	CDFW
Green sturgeon (adult)	FT	USFWS
Green sturgeon (juvenile)	FT	USFWS

Notes:

1 Listing status: F = Federal, S = State, T= Threatened, E = Endangered

TABLE 3
 POTENTIAL PRESENCE OF SPECIAL-STATUS FISH SPECIES
 IN THE PROJECT AREA

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
steelhead							1	1	1	1		
Chinook salmon (spring-run)												
Chinook salmon (winter-run)												
delta smelt									2			
longfin smelt									2			
green sturgeon	3	3	3	3	3	3	3	3	3	3	3	3

Notes:

- 1 Adult migration to spawning grounds, area serves as potential migration route but may not serve as primary route since it is a side channel.
- 2 Fish not documented in past five years, but historical data indicated they have occurred in this area.
- 3 Species not documented in the project area but are suggested to inhabit the Delta throughout the year.

Central Valley Steelhead. Central Valley steelhead may be resident or anadromous. Juvenile steelhead migrate from December through May; adults migrate to spawning grounds between July and March with a peak in September and October.

Central Valley Spring-run Chinook Salmon. Spring-run Chinook salmon enter the mainstem Sacramento River in February and March and continue to their upstream spawning streams and the Feather River fish hatchery, where they then hold in deep, cold pools until they spawn. Spawning occurs in gravel beds in late August through October and emergence takes place in March and April. Spring-run Chinook salmon appear to emigrate at two different life stages: fry and yearlings. Fry move between February and June, while the yearling spring-run immigrate October to March, peaking in November. Juvenile spring-run Chinook salmon may leave their natal streams as fry soon after emergence or rear for several months to a year before migrating as smolts or yearlings.

Sacramento River Winter-run Chinook Salmon. Adult winter-run Chinook salmon leave the ocean and migrate through the Delta from November through July. Juvenile winter-run Chinook salmon rear and emigrate in the Sacramento River from July through March. Winter-run salmon smolts may migrate through the Delta and bay to the ocean from December through as late as May. The Sacramento River channel is the main migration route through the Delta.

Delta Smelt. Delta smelt are endemic to the San Francisco Estuary, primarily the lower Delta and Suisun Bay. They usually occupy open, shallow waters, but also occur in the deeper, main channels region where fresh water and brackish water mix. Adult delta smelt begin their migration in September or October towards spawning grounds in the upper Delta. Spawning occurs between December and July in sloughs and channels, peaking in March and April. Trawling results over

the past five years at Decker Island indicate that the last delta smelt of each year is captured in May or June.

Longfin Smelt. Unlike delta smelt, longfin smelt are anadromous and prefer the higher salinities in the San Francisco Estuary for rearing. In fall and winter, longfin smelt yearlings begin to move upstream to primary spawning locations in or near Suisun Bay channel, the Sacramento River channel near Rio Vista, and (at least historically) Suisun Marsh. Larval samples indicate that spawning usually occurs from February to April, but spans November through June (Moyle 2002). Trawl results over the past five years indicate that the last longfin smelt of each year is captured from late March to mid May.

Green Sturgeon. Green sturgeon are found in the lower reaches of large rivers, including the Sacramento–San Joaquin River basin, as well as the upper Sacramento River and the Feather River. Green sturgeon spawn predominantly in the upper Sacramento River. Their spawning period is March to July, with a peak in mid-April to mid-June. Juveniles inhabit the estuary until they are approximately four to six years old, when they migrate to the ocean.

Habitat Conservation Plans. No habitat conservation plans or related conservation plans apply to the project site or vicinity.

Environmental Impacts and Mitigation Measures

- a) Special-Status Plants. The proposed project will have no effect on either listed special-status plant species or their habitats. Habitat for listed special-status plant species does not occur in the project vicinity. See discussion of non-listed plant species in Section “b.”

Swainson’s Hawk. The project has the potential to disturb Swainson’s hawk nesting during construction on and near Sherman Island if construction occurs during the nesting period for the species. A pre-construction survey for Swainson’s hawk nesting, if construction will occur during the nesting season, and modification of construction activities to avoid interference with nesting activities, will reduce this potential effect to a less than significant level. This is identified as a mitigation measure below.

Listed Fish Species. The FISHBIO assessment evaluated the potential impacts of the project on each of the 6 listed fish species that have potential to occur in the project area. Potential impacts considered included direct effects on fish and migration activity, sediment entrainment, and disruption of potential spawning and/or rearing habitat. A detailed discussion of these concerns is shown in the FISHBIO report, Appendix C of this Initial Study, and summarized here.

Based on the FISHBIO assessment, there is little to no potential for project construction activity to result in the direct mortality, harassment of or water quality effects on any protected fish species.

- Review of recent and historical data suggests that protected species will be absent during construction.

Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt, longfin smelt and green sturgeon may be present in Horseshoe Bend in accordance with their life history. The project site is located within Critical Habitat designations for Central Valley steelhead, Central Valley spring-run Chinook, winter-run Chinook salmon, delta smelt and green sturgeon. The project site is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon. Existing information reviewed by FISHBIO indicated that there is little to no chance of encountering the listed fish species during the proposed August two-week (or less) construction period. This determination was based on the fact that listed fish are generally absent during the time of construction (August). In the event that any of the species are present, they would likely be of large enough size (i.e. adult life stage) to effectively migrate outside of the construction area. Additionally, construction will occur in a side channel of the Sacramento River and will not impact the mainstem Sacramento River, the primary fish movement corridor. As a result, the project as proposed will have less than significant to no effects on the listed species, and no mitigation is necessary.

- Localized effects from construction activity are expected to be negligible and brief.

Turbidity will not be substantially increased and is not expected to reach levels commonly occurring during rainfall events and ship passage along the Sacramento River.

Trenching activity will create a relatively minimal local increase in turbidity. FISHBIO expects increased turbidity to be localized to the middle of the channel where flow velocity is greater and there is a lack of vegetation. The project is small relative to the large-scale maintenance dredging of the Sacramento River Deep Water Ship Channel (SRDWSC), which has occurred annually, between August and December, from 2005-2012. The Army Corps of Engineers determined in its 2011 Draft EIS/EIR on the proposed deepening of the SRDWSC that this 10 million cubic yard, 4-year project will not involve a significant effect on water quality (see Section 3.4.9 Hydrology and Water Quality). Localized increases in turbidity from the project will be much lower and of much shorter duration than those associated with dredging operations and are not expected to adversely affect fish.

- Toxins in the soil are not present in the sediments to be disturbed, based on testing described in in more detail in the FISHBIO report.

Dredging will churn substrate and may expose toxins in the substrate, if present. Sand substrate from nearby dredging operations has been extensively tested for toxicity. Testing results from these nearby projects showed that the sand substrate did not contain toxin levels that exceeded applicable regulatory limits or that were in excess of normal background levels. Therefore, it is not expected that toxins in the sand substrate in the construction zone will exceed regulatory limits. The 2011 USACOE EIS/EIR also analyzed the potential for its project to result in releases of toxins; although some of these metals exceeded Regional Water Quality Control Board Waste Discharge Requirements criteria for sediment governing ACOE dredging activity, the resulting in-water concentrations will not exceed Waste Discharge Requirement criteria.

- FISHBIO concluded on the basis of their analysis that fish habitat in the project area is of degraded quality, and the project will have a small overall footprint.

The project alignment will minimize disturbance of emergent vegetation, and any alteration is expected to revegetate naturally and rapidly. The project is located in the Horseshoe Bend side channel, which is not likely the primary route for migrating fish species.

- b) Special-Status Plant Species. The proposed project will have no effect on potentially-occurring plant species that are identified as sensitive, candidate or otherwise special-status. Although habitat for many of these species occurs in the general project vicinity, the proposed project alignment avoids all potential special-status plant species habitat.

The proposed cable alignment is in relative close proximity to an existing population of Suisun marsh aster, which is located on a series of small islands near the shore of Decker Island. The project alignment has, however, been modified to avoid this population with a minimum 15-foot margin of safety. The nearest islands will need to be marked with highly-visible fencing, and construction workers will be trained to identify marsh aster habitat and other special-status species prior to construction. These requirements are included in the biological mitigation measures below.

Burrowing Owl. Project construction has the potential to disturb burrowing owl nesting if owls are present and if construction occurs during the burrowing owl nesting period. A pre-construction survey for this species, and modification of construction activities to avoid interference with nesting activities, as described in the biological

resource mitigation measures below, will reduce this potential effect to a less than significant level.

Tricolored Blackbird. Project construction will result in the removal of blackberry brambles on Decker Island that may be used for nesting by tricolored blackbirds or other songbirds. A pre-construction survey for nesting tricolored blackbirds or other songbirds, if construction will occur during the nesting season, and modification of construction activities to avoid interference with nesting activities, will reduce this potential effect to a less than significant level. This is identified as a mitigation measure below.

Western Pond Turtle. Western pond turtles may occur on and near the project site and may nest in sandy areas along the shoreline of Decker Island. Project construction has the potential for direct disturbance of western pond turtles and of nesting activity. Pre-construction surveys for turtles and turtle nesting sites, and avoidance of these sites, will reduce this potential effect to a less than significant level. These requirements are contained in the biological resource mitigation measures below.

- c) Sensitive natural communities in the project area consist of woody riparian habitat along the shorelines of Decker Island and Sherman Island. The project alignment has been selected to have no effect on woody riparian vegetation. The project will have no effect on woody riparian vegetation, or on shaded riverine habitat that may be associated with riparian vegetation.
- d) The project will involve temporary construction disturbance of shallow and deep portions of the river channel and shoreline and river bank areas of Decker Island and Sherman Island that are below the high tide (i.e., the limit of U.S. Army Corps of Engineers jurisdiction). These areas are not considered wetlands but are waters of the U.S., and a Section 404 permit will need to be obtained from the U.S. Army Corps of Engineers as required by mitigation measures described below.

Construction effects on the unvegetated river bottom will be restored as a part of the construction process. Project construction will involve temporary disturbance of a sparse tule population located in the shallow area along Sherman Island; FISHBIO indicates that this disturbance naturally and will quickly be repopulated. Upland portions of the project site will be restored to their pre-project condition and revegetated.

Mitigation measures provide that permits will be obtained from the ACOE, which will require consultation with the National Marine Fisheries Service, and the United States Fish and Wildlife Service. The project will also require a Streambed Alteration Agreement from CDFW for the planned work, 401 certification from the Regional Water Quality Control Board and approval of the State Lands Commission. Conditions on or compensation required for permit approval for project

construction will reduce these potential impacts to a less than significant level.

- e) Project construction will involve the operation of one or more barges and excavation equipment in Horseshoe Bend for a period of up to two weeks. The FISHBIO report indicates the project will not have a substantial effect on fish migration or movement. Project construction will occur outside of migration windows for special-status fish, and FISHBIO indicates that there is “little to no chance” of the protected species being present in the project area during the proposed construction period. The fish life stages that might be located in the project vicinity during construction will be large enough to maneuver and avoid construction equipment and turbidity. As a result, the project’s effect on fish migration will be less than significant.

The project will involve the installation of five wooden electrical poles and overhead conductors on Sherman Island. The project will involve no other above-ground structures, fencing or improvements that could obstruct wildlife movement. As a result, the project will have no effect on the movement of wildlife in the project vicinity.

- f) The project is located in an area that is largely outside local regulatory authority but subject to permitting requirements of several state and federal agencies. In any event, the project will not affect any trees, and its effects on biological resources will be temporary and, with mitigation, less than significant.
- g) The project will involve no conflict with any adopted conservation plan. No such plans exist for lands in the project area.

BIOLOGICAL RESOURCE MITIGATION MEASURES

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts special-status species:

- BIO-1 In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with CDFW and National Marine Fisheries Service (NMFS)
- BIO-2 If construction commences between February 1 and August 31, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors’ active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG’s 1994 Staff Report regarding Mitigation for Impacts to Swainson’s Hawks (*Buteo*

swainsoni) in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

- BIO-3 A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material
- BIO-4 Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above
- BIO-5 Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the buffer area will be delayed until hatching is complete and the young have left the nest site.
- BIO-6 Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during

the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.

BIO-7 A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program will be Swainson’s hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.

BIO-8 Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.

BIO-9 The proponent will require the Decker Island cable installation contractor(s) to inspect and clean any construction vessels and in-water construction equipment that is to be moved into the Delta to prevent introduction of invasive aquatic species.

SOURCES

FISHBIO. Decker Island Fisheries Impacts. January 24, 2014

Moore Biological Consultants. Baseline Biological Resources Assessment for the Decker Island Electrical Line, Sacramento and Solano Counties, California. February 5, 2014.

3.4.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource?				X
b) Cause a substantial adverse change in the significance of a unique archaeological resource (i.e., an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it contains information needed to answer important scientific research questions, has a special and particular quality such as being the oldest or best available example of its type, or is directly associated with a scientifically recognized important prehistoric or historic event or person)?		X		

- c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? X
- d) Disturb any human remains, including those interred outside of formal cemeteries? X

NARRATIVE EXPLANATION

Environmental Setting

The project site is composed entirely of previously-disturbed soil material and the open waters of Horseshoe Bend with low cultural resource sensitivity. Decker Island, which was historically marshland adjacent to the Sacramento, has over time been buried under several feet of dredge spoils. The Horseshoe Bend waterway, the historic channel of the Sacramento River, has not supported historic or prehistoric occupation, although prehistoric or historic cultural use might once have occurred along its banks. The Sherman Island portion of the project, however, consists only of the man-made levee, which is composed of fill material, and the adjacent area disturbed during repeated levee construction and repair projects.

A cultural resources record search was obtained from the Northern California Information Center (NCIC) of the California Historical Resources Information System at California State University, Sacramento for areas within a ¼-mile radius of the project. The record search identified several archaeological surveys that had occurred in the vicinity of, and possibly crossing, the project site. These included a survey of Decker Island, including the western terminus of project site, and a survey of lands along the SR 160 corridor. The National Register of Historic Places, California Register of Historical Resources, California Inventory of Historic Resources, and California Historical Landmarks do not list any sites within the search radius.

None of the archaeological surveys identified prehistoric resources on or near the project site. A 1994 survey of Decker Island did not identify any archaeological resources in the vicinity of the project site, and the report reaffirmed the origin of the island as resulting from the placement of dredge spoils in a former wetland area adjacent to the Sacramento River.

A 1997 survey report (A Cultural Resources Survey for the Sherman Island Levee Improvement Project, Sacramento County, California) addressed, and may have surveyed, but certainly recorded the entire 18-mile Sherman Island levee. The levee was evaluated for its potential significance under the National Historic Preservation Act. Although the levee might conceivably qualify for listing on the National Register of Historic Places or the California Register of Historical Resources as being associated with reclamation of the Delta, the evaluation found that the levee did not have any distinctive characteristics, or retain sufficient integrity, to make it eligible for listing. As a result, the Sherman Island levee is not considered a historically important or significant resource. The site record was updated in 2005, 2012 and 2013 with the same results.

The project site has low to no potential for discovery of paleontological materials (fossils). The Delta area, including the project site is classified as to its paleontological sensitivity in the Bay-Delta Conservation Plan EIR/EIS (EIR/EIS). The fill materials that comprise the land area of the site (Decker Island, Sherman Island levee) have no potential to yield paleontological materials; the Delta peats and muck that underlie these materials have low potential; these geologically younger sediments are considered too young to yield scientifically significant paleontological specimens. EIR/EIS Figure 27-3 estimates that the depth to deposits that might yield fossils is more than 30 feet at the project site.

Environmental Impacts and Mitigation Measures

- a) The project would have no effect on significant historic resources. The project would involve excavation across the Sherman Island levee. The Sherman Island levee, which was originally constructed in the 1860s, is the only identified historic resource in the project vicinity. The levee has, however, been evaluated and found not to meet criteria for listing on the National Register of Historic Places or the California Register of Historical Resources. Therefore, the project would have no effect in this issue area.

- b,d) The project site is composed of dredge spoil and levee fill material, and the historic channel of the Sacramento River. These areas have a very low probability of yielding archaeological materials. A cultural resources record search did not identify any archaeological resources, unique archaeological resources, or evidence of potential human burials that could be located on or near the project site. The project unlikely to have any effect on archaeological resources.

Even though archeological resource and human burial records were not identified during the record search, subsurface archeological resources of unknown importance, or human burials, could be present and potentially disturbed during project construction. In this case, the project could result in significant cultural resource effects; the significance of archaeological materials, the nature of human burials, if any, and the need and options for mitigation in accordance with CEQA must be evaluated by a qualified archaeologist. The following cultural resources mitigation measures outline procedures for this contingency. Implementation of these measures will reduce any potential impacts to a less than significant level.

- c) The project site does not contain any known paleontological resources or unique geological features. The materials comprising the project site have no to low potential to yield paleontological resources. It is conceivable that excavation associated with the project could unearth paleontological materials of significance. The establishment of procedures to address paleontological discoveries if they should occur will reduce any potential paleontological effects to a less than significant level. These procedures are set forth in the following mitigation measures.

CULTURAL RESOURCES MITIGATION MEASURES

- CU-1 If any subsurface or submerged cultural resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified archaeologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant impacts to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery, and the proponent shall be responsible for retaining a qualified archaeologist and for implementing recommended mitigation measures.
- CU-2. If human remains are encountered at any time during project construction, all construction activity in the vicinity of the encounter shall cease, and the County Coroner and RD 341 shall be notified immediately. The Coroner will contact the Native American Heritage Commission if the remains have been identified as being of Native American descent. The proponent, under the direction of RD 341, shall implement the requirements of the CEQA Guidelines, which detail steps to be taken when human remains are found to be of Native American origin. The proponent shall also retain a qualified archaeologist to evaluate the archaeological implications of the find and recommend any mitigation measures needed to reduce any potentially significant effects to a less than significant level under CEQA. The proponent, under the direction of RD 341, shall implement those recommendations.
- CU-3. If any paleontological resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified paleontologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant effects to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery; the proponent shall be responsible for retaining a qualified paleontologist and for implementing recommended mitigation measures, under the direction of RD 341.

SOURCES

- Cultural Resources Unlimited. A Cultural Resources Survey Report for Mega Sand – Sacramento River Dredging / Decker Island San Mining Facility ADEIR, Solano and Sacramento Counties, California. April, 1994.
- Northern California Information Center. Record Search Results for Decker Island T3N/R2E, USGS Jersey Island 7.5' Quad, Sacramento County.
- U.S. Department of the Interior, Bureau of Reclamation (Reclamation) and U.S. Department of Fish and Wildlife (USFWS), et. al. Draft Environmental Impact Report / Environmental Impact Statement, Bay Delta Conservation Plan, Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California. November 13, 2013.

3.4.6 GEOLOGY AND SOILS

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

NARRATIVE EXPLANATION

Environmental Setting

The project site and the surrounding Delta islands are located within the alluvial Great (Central) Valley geomorphic province, which is an approximately 450-mile long, and 50 mile-wide sediment-filled trough flanked on the east and west by the Sierra Nevada and Coast Ranges. Sediment deposits within the Great Valley may exceed 30,000 feet in thickness; older marine sedimentary deposits are typically overlain by more recent continental sediments. In most of the Delta, including the project site, these materials consist of fine inorganic sediment and peat developed from accumulated organic material deposited during the Holocene period; the Geologic Map of California describes these materials as Intertidal Deposits.

Historically, both Decker Island and Sherman Island were intertidal marshes. Sherman Island has been successively reclaimed with levees for agricultural use

since the 1860s. Decker Island, originally a tidal marsh extending east from the toe of the Montezuma Hills, has served as a dredge spoil disposal site since construction of the Sacramento Deep Water Ship Channel in the early 1960s, and subsequent deepening and maintenance dredging projects. As a result, materials on Decker Island consist primarily of fine sands that are excessively-drained. The DI-owned portion of Island drains internally from higher elevations or levees along the perimeter. The majority of Sherman Island is protected by the RD 341 levee system and is predominantly in agricultural use.

Bottom sediments in Horseshoe Bend, a side channel of the Sacramento River, are assumed to have grain size composition similar to that of the Sacramento River DWSC. Based on analysis of the Decker Island sediments, which are accumulated Sacramento River dredge spoil materials, the Horseshoe Bend bottom sediments are expected to consist predominantly of fine sands with some fraction of silt and clay materials.

The California Geological Survey has mapped faults, fault traces and relative fault activity levels in the project region. These faults are concentrated along the western and eastern margins of the Central Valley, including several faults in the east Bay Area with historical activity, and additional faults with geologically-recent (Late Quaternary) activity. The nearest of these faults is approximately 20 miles to the southwest. Further to the east, faults have been mapped in the Sierra Nevada foothills that have had geologically-recent activity.

In the immediate project vicinity, the State has mapped the alignment of the Midland Fault approximately 4 miles east of the project site, and the Rio Vista fault a few hundred feet west of the project site. Both the Midland and the Rio Vista faults are concealed (no surface evidence) and are not known to have had geologically-recent activity. There are no mapped faults, fault traces or Alquist-Priolo fault zones located at the project site.

Due to its proximity to the active east Bay Area faults, the project site and vicinity are subject to substantial seismic shaking hazards. The City of Rio Vista is mapped in seismic risk zone 4 (major risk and damage and near major fault zones) on a scale ranging from 0 (no risk) to 4. The Sacramento County General Plan Safety Element indicates that the water-saturated alluvial materials of the Delta typically pose liquefaction problems.

The Safety Element also indicates that there is credible potential for seiches that could overtop and damage levees; in the same document, the Delta is identified as being subject to subsidence at an estimated 3 inches per year due largely to peat oxidation, although subsidence in the areas of Sherman Island northeast of the site is attributed to oil and gas withdrawal. Expansive soils are associated with clay soils of the Delta island interiors; the primarily coarse materials of the project site are not considered expansive.

Soils in the land portions of the project site are classified by the USDA Natural Resources Conservation Service as follows:

Decker Island. Tujunga fine sand, an excessively drained soil.

Sherman Island. Egbert clay, a poorly-drained soils that consists of clay upper horizons over silty clay loam subsoil.

Environmental Impacts and Mitigation Measures

- a) The proposed project is not exposed to fault rupture hazards; there are no known faults that directly affect the project site. Being located in seismic risk zone 4, the project is exposed to strong seismic ground shaking hazards and, due to the saturated soils of the area, to seismically-induced ground failure, including liquefaction. The proposed electrical cable, being inherently flexible, is not sensitive to seismic shaking; engineering design of the project will in any event minimize the potential for shaking damage. There are no landslide risks at or near the project site.
- b) The project will involve localized disturbance of project site soils as the cable bundle trench is opened and backfilled after placement of the cable. The extent of soils disturbance will amount to no more than 0.1 acres. The disturbance area consists almost entirely of previously-disturbed materials (i.e. dredge spoil, levee fill), and as a result the project will have incidental to no impacts on topsoil. The cable trench and disturbed area will be revegetated after construction, which will reduce potential erosion to a less than significant level.
- c) See discussion “a)”
- d) The easternmost portion of the project may be located on expansive soil. However, as discussed in “a”, the cable bundle is inherently flexible and not subject to substantial damage from soil expansion/contraction.
- e) The project does not involve any sewage generation or on-site wastewater disposal systems and therefore will not involve any effect in this issue area.

SOURCES

California Department of Conservation. 2010 Fault Activity Map of California.

Viewed on-line April 5, 2013 at

<http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html>

California Department of Conservation. Geologic Map of the Sacramento Quadrangle. Regional Geologic Maps 1:250,000. Viewed on-line January 21, 2014 at

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Natural Resources Conservation Service. Custom Soil Resource Report for Sacramento County, California, and Solano County, California, Decker Island Electrical Crossing (for the project site). January 21, 2014.

3.4.7 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?				✗
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✗

NARRATIVE EXPLANATION

Environmental Setting

Human-generated emissions greenhouse gases (GHGs) are understood to be a cumulatively important cause of global climate change. Global climate change is a subject of increasing scientific and public concern, and for government action. Increasing levels of atmospheric GHGs that trap heat and lead to a variety of effects, including increasing ambient temperature, changes in patterns and intensity of weather, and various secondary effects resulting from those changes, including potential effects on public health and safety.

California’s AB 32, the Global Warming Solutions Act, identifies global climate change as a “serious threat to the economic well-being, public health, natural resources and the environment of California.” As a result, global climate change, and GHG emissions that contribute to it, are issues that need to be considered under CEQA. GHGs include carbon dioxide (CO₂), the most abundant GHG, as well as methane, nitrous oxide and other gases, each of which have GHG “potential,” the ability to influence climate change, that is several times that of CO₂. GHG emissions result from combustion of carbon-based fuels; major GHG sources in California include transportation (40.7%), electric power generation (20.5%), industrial (20.5%), agriculture and forestry (8.3%) and others (8.3%).

The State of California is actively engaged in developing and implementing strategies for reducing GHG emissions. State programs for GHG reduction include a regional cap-and-trade program, industrial and emission control technologies, alternative energy generation technologies, advanced energy conservation in lighting, heating, cooling and ventilation, reduced-carbon fuels, hybrid and electric vehicles, and other vehicle mileage reduction programs. Using these and other strategies, the State’s Global Climate Change Scoping Plan, adopted in December 2008, proposes to achieve a 29% reduction in projected business-as-usual emission levels for 2020.

PG&E provides gas and electricity to most of northern California. As a generator and purchaser of electrical power, PG&E is directly and indirectly an emitter of greenhouse gases. PG&E supports AB 32 and is involved in a range of actions to reduce GHG emissions, including ongoing energy efficiency programs, acquisition and development of renewable energy capability and reducing emissions of high-potential GHGs such as sulfur hexafluoride. PG&E is active in reporting its GHG emissions to the California Climate Action Registry, the California Air Resources Board and the USEPA. PG&E's most-recently verified GHG emissions rate is 445 pounds per megawatt-hour (MWh) of electricity.

PG&E's GHG emissions efficiency can be expected to increase over time. This would result from the utility's various efforts to reduce GHG and increases in its renewable energy portfolio. PG&E's 2012 power mix included 19% qualifying renewable energy sources; the State requires that the renewable share be increased to 33% by the end of 2020.

DI's existing electrical generation operations are a source of GHG emissions. The US Environmental Protection Agency (USEPA) estimates that GHG emissions from diesel electrical generation amount to approximately 23 pounds per gallon of diesel fuel. DI estimates its 2013 diesel fuel consumption for electricity generation at approximately 42,000 gallons; fuel consumption results in emissions of approximately 483 US tons, or 438 metric tons, of GHG annually.

By virtue of its location adjacent to the Sacramento River, DI product is delivered to construction sites by barge. Barge delivery is substantially more efficient compared to the alternative of delivering DI product by truck. A national study co-sponsored by the U.S. Department of Transportation indicates that a barge can transport 576 ton-miles (1 ton transported 1 mile) per gallon of fuel; this is compared to 413 ton-miles per gallon for transportation by rail and 155 ton-miles per gallon by truck. Pollutant and GHG emissions per gallon are comparable for all three modes. Barge delivery involves substantial relative reductions in air emissions, including GHGs, as compared to an equivalent amount of product transported by truck.

Environmental Impacts and Mitigation Measures

- a) The project will generate greenhouse gases during project construction. As discussed and detailed in Section 3.4.3 Air Quality, project construction will involve the use of several pieces of heavy equipment over a construction period of up to two weeks. The RCEM model used to calculate potential air pollution emissions in Section 3.4.3 was also used to estimate the potential GHG emissions associated with project construction; model results are shown in Appendix A. These emissions are estimated at below 10 metric tons of CO₂ equivalent per year (MT/yr of CO₂e). Construction GHG emissions will be temporary and substantially offset by net GHG emission reductions associated with shifting the DI power supply from existing diesel generators to the PG&E system.

Shifting the DI electricity source to the PG&E system will have a beneficial net effect on regional GHG emissions that will extend over a period of at least several years. This potential benefit is quantified below on the basis of 1) comparison of the relative GHG emissions of diesel generators and the PG&E system per unit of electricity, and 2) on the basis of GHG emissions reductions associated with discontinuation or reduction of DI's use of diesel generators.

GHG Per Unit of Electricity. According to the USEPA, diesel generation of electricity results in typical GHG emissions of 1.54 pounds of CO₂ per kilowatt-hour of electricity, or 1,540 pounds per MWh. PG&E's existing GHG emission rate per MWh is 455 pounds per MWh, approximately 30% of the GHG emissions of diesel generators per MWh. Conversion of the DI operation to the PG&E system will result in a 70% reduction in DI's existing GHG emissions from electricity generation.

GHG Emission from Reduced Diesel Fuel Consumption. As described above, DI's GHG emissions from diesel electricity generation amount to 438 metric tons at a rate of 23 pounds of GHG per gallon of diesel fuel. Based on the above percentage reduction of 70%, DI's existing GHG emissions would be reduced by approximately 307 metric tons annually. Over a 10-year period, this would amount to a cumulative reduction of up to 3,000 metric tons of GHG emissions, assuming continuation of DI's existing level of operation. Avoiding a single year of DI diesel generator operation would result in a reduction in GHG emissions that is more than 30 times the estimated total GHG emissions produced by constructing the project. Over a period of years, the net reduction would be much higher.

The proposed electrical cable is capable of accommodating up to 5 megawatts of electrical load, of supporting expanded future operations on Decker Island, and of generating consequent additional savings in potential future GHG emissions that would otherwise be associated with generation of electricity using diesel generators.

The project will involve less than 10 metric tons of GHG emissions from project construction, but the project will result in ongoing and direct and indirect reductions in net GHG emissions associated with the DI Aggregates operation of more than 300 metric ton per year. The project will indirectly support continuation and future expansion of GHG emission avoidance associated with the use of barges instead of trucks for product delivery. As a result, the project will have a beneficial effect on GHG emissions.

- b) The project will not involve any known conflict with any adopted plan, policy or regulation for reducing GHG emissions. The project will involve minor GHG emissions during construction and enable substantial reduction in existing GHG emissions from existing industry. As a result of State regulation of the electrical industry, and PG&E efforts to comply with AB 32, project-related GHG emissions per unit

of electrical power consumption will be further reduced over time.

SOURCES

California Air Resources Board. Climate Change Scoping Plan – a framework for change. December 2008.

Pacific Gas and Electric. Clean Energy Solutions. Web site accessed January 28, 2014 at <http://www.pge.com/en/about/environment/pge/cleanenergy/index.page>.

Pacific Gas and Electric. Fighting Climate Change. Web site accessed January 28, 2014 at <http://www.pge.com/about/environment/pge/climate/>.

U.S. Environmental Protection Agency. Sector Strategies: Potential for Reducing Greenhouse Gas Emissions in the Construction Sector. February 2009.

3.4.8 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
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?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
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?				X
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?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X

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?

NARRATIVE EXPLANATION

Environmental Setting

The project site consists of the channel of Horseshoe Bend, the adjacent shoreline of Decker Island, the levee protecting Sherman Island from flooding and the adjacent inland area. Decker Island consists of dredge spoil deposits and is used periodically for livestock grazing.

On Sherman Island, the project crosses the former Sherman Island Levee Road; SR 160 is located 90 feet east of the eastern project terminus. An existing residence is located approximately 500 feet north of the site and immediately east of the Sherman Island levee. Another residence and a group of farm-related structures is located southeast of the site, across SR 160. Agriculture is the prevailing land use of Sherman Island in the project area.

SR 160 supports substantial truck traffic, approximately 10% of the average annual daily traffic of 12,200 vehicles per day reported in Section 16 Transportation; truck traffic on this state highway likely supports regular transportation of hazardous materials. Bulk hazardous materials may occasionally be transported by barge or ship along the Sacramento Deep Water Shipping Channel to the west of Decker Island. There are no railroads, airports or other major transportation facilities in the project vicinity that could present hazards to or influence safety at the project site.

Existing electrical lines in the project vicinity consist of overhead electrical distribution lines along SR 160. There are no very high-voltage electrical transmission lines that might generate substantial electromagnetic fields (EMFs) within, adjacent to or crossing the project site. The nearest such facility crosses Sherman Island in a north-south direction approximately 1,200 feet east of SR 160.

Hazardous materials consist of substances that may cause or contribute to serious illness or mortality, or pose a substantial hazard to human health or the environment when they are not treated, stored, transported or disposed properly. Hazardous wastes are hazardous materials that no longer have a practical use. Although not classified strictly as hazardous materials, petroleum products also involve health and environmental contamination concerns.

Under Government Code Section 65962.5, the Department of Toxic Substances Control (DTSC) is required annually to report information related to hazardous waste disposal, and hazardous substance release, sites that require State action to the California Secretary for Resources. This information is known collectively as the "Cortese List." The Cortese List excludes sites where response actions have been completed and no operation or maintenance activities are required. The

Cortese List is contained in the DTSC's Envirostor, an on-line database. Envirostor lists several sites in Solano and Sacramento Counties. However, none of these sites are located at or in the vicinity of the project site.

GeoTracker is an additional on-line database maintained by the State Water Resources Control Board. Geotracker lists waste discharges to land and releases of hazardous substances from underground storage tanks. The database contains data on Leaking Underground Fuel Tanks (LUFT), Cleanup Program Sites (spills, leaks), military underground storage tank sites, landfills, and underground storage tank permits.

There are no Geotracker sites within a mile of the project site. Geotracker lists a PG&E-owned (natural gas) Dehydration Station, which is approximately one mile south of the project site along SR 160. This site is undergoing remediation and monitoring under the State Cleanup Program (Case #SL185952955). A 2013 monitoring report for the site indicates that the concentrations of most monitored constituents are stable or abating.

There are no schools within ¼ mile of the project site. The project site is not within an airport land use plan area, and there are no public or public-use airports within two miles of the site. There are no airstrips in the project vicinity. The site is not exposed to or a potential contributor to aviation-related hazards.

The project area consists primarily of vacant dredge spoil area, maintained levee and agricultural land. There are no substantial wildland fire hazards in the project area.

Environmental Impacts and Mitigation Measures

- a) Project construction will involve the use of petroleum fuels for internal combustion construction equipment, including excavators, barges, tugs and other watercraft. Construction materials will consist largely of the inert electrical cable, rock and other materials used to secure the cable as the channel crossing is completed. Existing regulations and permit requirements include precautions to avoid fuel spills to land or water. Anticipated transportation and use of hazardous materials associated with project construction will involve a less than significant hazard to the public and the environment.

Project operation will not involve any hazardous material transportation or use.

- b) The project will not involve routine use of any hazardous materials, or operations that have the potential for upset, accident or environmental release of air toxics or hazardous waste.
- c) Other than as described for the construction process in "a," the project will not involve any potential air emissions of hazardous materials, substances or waste. The project site is not within ¼ mile of any existing school. Section 3.4.5 Biological resources evaluates the potential for project construction to release toxic materials from bottom

sediments into the waters of Horseshoe Bend and finds that the project would not have an adverse water quality effect.

- d) The California Department of Toxic Substances Control ENVIROSTOR database does not list any sites in the project vicinity. As a result, there are no sites on or near the project site that are included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The project will not expose members of the public to any area of known environmental contamination on land. Section 3.4.5 Biological Resources evaluates the potential for project construction to release toxic materials from bottom sediments into the waters of Horseshoe Bend and finds that the project would not have an adverse water quality effect. The project will have no effect in this issue area.
- e,f) The project site is not within an airport land use plan area, and there are no public or public-use airports within two miles of the site. The site is not exposed to, or a potential contributor to, aviation-related hazards. The project will have no effect in this issue area.
- g) The project will not involve any substantial hindrance to emergency response or evacuation during either construction or operation. The project will not involve work within or affecting any public road or other air or land transportation system. During construction, the project will briefly limit recreational boat traffic in Horseshoe Bend, but not prevent evacuation of the area, as alternative routes be available north and south of Decker Island.
- h) There is no substantial wildland fire risk in the project vicinity. Proposed improvements will be buried and not subject to substantial damage in the event of fire.

SOURCES

California Department of Toxic Substances Control. ENVIROSTOR Hazardous Waste and Substances and Sites List. Accessed January 21, 2014 at: http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&report_type=CORTESE&site_type=CSITES,ERAP,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST

Parsons. 2013 Annual Monitoring Report, PG&E Sherman Island Dehydrator Station, Sacramento County, California. October 2013.

State Water Resources Control Board. Geotracker Database. Accessed January 21, 2014 at: <http://geotracker.waterboards.ca.gov/>

3.4.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?			X	
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)?				X
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?			X	
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?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems?				X
f) 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?				X
g) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
h) 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?				X
i) Inundation by seiche, tsunami, or mudflow?				X

NARRATIVE EXPLANATION

Environmental Setting

Decker Island and Horseshoe Bend are located in the western portion of the Sacramento-San Joaquin Delta. The Delta comprises a large network of river channels and smaller sloughs and is connected to the San Francisco Bay through Suisun Bay and the Carquinez Strait. During flow tides, the direction of the flow is into the Delta and the river stage increases; during ebb tides, the river water

flows out of the Delta and the river stage falls. As for much of the Delta, water flow rates, directions, and levels are complex. The Sacramento and San Joaquin Rivers are the principal contributors to fresh waters entering the Delta. The hydrology and water quality of Horseshoe Bend, a side channel of the Sacramento River Deep Water Shipping Channel (SRDWSC), are closely tied to conditions in the SRDWSC.

Sacramento River hydrology and water quality is described in detail in the U.S. Army Corps of Engineers' 2011 Draft Supplemental EIS/Subsequent EIR on the Sacramento River Deep Water Ship Channel deepening project. Near the project site, the Sacramento River is tidally-influenced; the tidal effect depends on the height and timing of ocean tides and variations in inflow from upstream watersheds and storage facilities. At Threemile Slough just north of the project site, the mean tidal range is 3.01 feet, increasing to 4.05 feet during Spring tides. The river current generally follows the tidal motion, flowing upstream with the flood tide and downstream with the ebb tide. The current velocity is a relatively constant 2-3 feet per second except during the winter months when the tidal influence is overpowered by storm water inflow. Current velocity and direction may also be influenced by pumping at the State Water Project and Central Valley Project plants in the south Delta.

Sacramento County is responsible for floodplain management using Flood Insurance Rate Maps (FIRMs) provided by the Federal Emergency Management Agency (FEMA). According to the FIRMs for the project area, Decker Island is not subject to flooding; with the exception of the CDFW wetland site in the northern portion of the island, the entire island is located above the 100-year flood elevation. Despite its levee protection, Sherman Island is mapped by FEMA as being located within the 100-year floodplain; the portions of the island nearest the site are designated Zone AE on the FIRM. Horseshoe Bend is a Central Valley Flood Protection Board Designated Floodway.

Existing water quality conditions at the project site are described based on detailed sampling and analysis by the USACOE in their 2011 EIS/EIR on proposed deepening of the Sacramento River Deep Water Ship Channel. A 2009 water quality sampling effort quantified baseline water quality parameters (pH, temperature, turbidity, DO, and salinity) at sampling stations immediately above and below the project site on the SRDWSC. The 2009 sampling found the following mean values:

pH range	7-8
Temperature	59 degrees F
Turbidity	35-93 NTU
DO	10+ mg/l
Salinity	140 ppm

The study noted that nutrient levels contribute to algae and invasive species growth, but nutrient levels were not quantified.

In their technical study of the project's potential fishery impacts, FISHBIO reported (Appendix C) that the turbidity of Sacramento River is "highly variable and can increase substantially during storm events, ship passages, and in-channel

activities such as dredging. Based on trawl survey data, typical background turbidity in the Sacramento DWSC can range from 8.6 to 44.4 NTU but can increase to a high of 192 NTU immediately after a ship's passage and 200 NTU during rainfall events. The fisheries literature indicates that turbidity greater than 4,000 milligrams per liter are required to adversely affect salmonids.

The CVRWQCB has listed pollutants for which water quality in the western portion of the Delta is considered impaired under Clean Water Act Section 303(d):

Chlorpyrifos	Agriculture Urban Runoff/Storm Sewers
DDT	Agriculture
Diazinon	Agriculture Urban Runoff/Storm Sewers
Electrical Conductivity	Agriculture
Group A Pesticides	Agriculture
Mercury	Resource Extraction

The USACOE analyzed more than 120 bulk sediment samples, including numerous samples in the project vicinity, and concluded that heavy metals of concern, including arsenic, chromium and nickel, were at regional background levels and consistent with sampling conducted as part of past maintenance dredging efforts, which have been routinely approved by the Central Valley Regional Water Quality Control Board (CVRWQCB).

The project area is within the Sacramento Valley Groundwater Basin, and the Solano Sub-Basin. The land surface elevation of the Delta islands, including Sherman Island, is typically below the elevation of the surrounding Delta channels. As the surface and groundwaters are hydraulically closely connected, groundwater levels are typically at or near the surface. The agricultural islands are developed with drainage and pumping systems to remove groundwater from the root zone.

Environmental Impacts and Mitigation Measures

- a) The project will involve the disturbance of bottom sediments as the cable trench is excavated and then backfilled. A portion of the sediments will be temporarily suspended in the water column and will then resettle to the bottom; the amount, time of suspension and area affected will vary based on the current and size distribution of the material.

FISHBIO reported that the California Regional Water Quality Control Board – Central Valley Region estimated the downstream increase in total suspended solids downstream of dredging activities to be approximately 10%; similarly, the USACOE found, in its analysis of maintenance dredging of the San Joaquin River, that background turbidity levels would not change greatly.

Potential water quality impacts of much larger-scale dredging were evaluated by the USACOE in their environmental impact analysis of the Sacramento River Deep Water Shipping Channel (SRDWSC) deepening

project. In this analysis, resuspension rates were found to range from less than 0.1% to 5%, depending on the nature of the dredging equipment and the coarseness of the bottom sediment. Larger sediment plumes will occur in the waters closest to the dredging, but sediment plume sizes will decrease exponentially with distance from the dredging site, vertically and horizontally. The USACOE analysis found that planned dredging of up to 10 million cubic yards of sediment on a 24-hour, 7 day per week schedule over a period of six months, will not have a significant effect on water quality; more specifically, the USACOE dredging project will not involve any exceedence of the Waste Discharge Requirements (WDRs) issued by the CVRWQCB in 2001 for maintenance dredging of the SRDWSC. The proposed project would involve localized effects of relatively short duration, and substantially less disturbance, than would be with maintenance dredging operations. As a result, the project will not involve any discharges could substantially affect surface water quality, water quality standards or waste discharge requirements and will have a less than significant effect on turbidity.

Excavation and backfill of the cable trench also has the potential to release any water quality constituents of concern that may be contained in the bottom sediments, with potential effects aquatic species generally as well as special-status species. The USACOE analyzed the potential for its project to result in releases of heavy metals; although some of these metals exceeded WDR criteria for sediment, in-water concentrations will not exceed WDR criteria. FISHBIO reported that extensive toxicity testing of sediments from nearby dredging operations showed that the sandy bottom sediments did not contain toxin levels that were in excess of applicable regulatory limits or normal background levels. As a result, the project will not cause the release of water quality constituents of concern.

- b) The project involves relatively shallow excavation and replacement of existing sediments on Decker Island and Sherman Island, and of saturated sediments in Horseshoe Bend. Trench excavation, cable installation and trench backfill with the native materials will have no temporary or permanent effect on groundwater or groundwater recharge mechanisms.
- c) The project will involve temporary excavation of soil in upland areas of Decker Island and Sherman Island. These materials will be replaced in the trench, compacted and revegetated following construction. This excavation work will not result in any change in drainage pattern or any substantial potential for erosion.

The crossing of Horseshoe Bend will temporarily remove and replace sandy bottom sediments. Temporary opening of the trench will not result in any change in flow patterns in Horseshoe Bend; materials returned to the trench will be stabilized with a layer of rock, preventing any substantial erosion.

- d) As noted in “c” above, the project will not result in any substantial changes in the channel of Horseshoe Bend. The project will not construct any new impervious areas or alter the infiltration capacity of existing soils in the land areas of the site. As a result, the project will make no substantial contribution to storm water runoff from the project site or to flooding on or near the project site.
- e) As noted in “d” above, the project will not result in any substantial increase in storm water runoff. There are no existing or planned storm water drainage systems in the project area.
- f) The project does not involve housing and therefore will not place housing in a flood hazard area.
- g) The project will place an electrical cable beneath the channel bottom surface of Horseshoe Bend. After installation, the channel bottom surface will be restored to its pre-project configuration. The project will not place or construct any structures that will impede or redirect flood flows.
- h) The project does not involve any improvements that will be exposed to potential flood damage, or that will expose people to flooding. The proposed electrical cable will be buried below the channel bottom and isolated from potential flooding damage.
- i) The proposed electrical cable will be buried and is not at risk of damage from inundation.

SOURCES

Central Valley Regional Water Quality Control Board. Clean Water Act Sections 305(b) and 303(d) Integrated Report for the Central Valley Region, Final Staff Report. September 2009.

Federal Emergency Management Agency. Flood Insurance Rate Maps for Solano and Sacramento Counties, Map #s 06095C0730E (May 4, 2009) and 06067C0680H (August 16, 2012). Accessed January 21, 2014.

Sacramento County General Plan. Safety Element Background to the 1993 General Plan As Amended (portions updated to November 9, 2011).

U.S. Army Corps of Engineers, San Francisco District and Port of West Sacramento. Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report. Sacramento River Deep Water Ship Channel. February 2011.

U.S. Department of the Interior, et. al. Draft Environmental Impact Report / Environmental Impact Statement, Bay Delta Conservation Plan, Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties, California. Chapter 7 Groundwater. December 2013.

3.4.10 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				✗
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				✗
c) Conflict with any applicable habitat conservation plan or natural communities conservation plan?				✗

NARRATIVE EXPLANATION

Environmental Setting

The project site consists of the shoreline of Decker Island, the waters of Horseshoe Bend, the Sherman Island levee and lands immediately adjacent to the levee. The Decker Island portion of the site is presently unused but has periodically been in agricultural use, primarily livestock grazing. Horseshoe Bend is a public water resource that is extensively used for recreation, as discussed in more detail in Section 3.15 Recreation; Horseshoe Bend is not subject to local land use regulation. Sherman Island is primarily in agricultural use; the project site, however, consists of the Sherman Island levee, the former Sherman Island levee road, and vacant unused land immediately adjacent to the levee on the inland side.

The project vicinity is largely unpopulated. Decker Island has no resident population, and residential development on Sherman Island in the project vicinity consists of a single residence located approximately 500 feet north of the project. There is no established community in the vicinity of the project site; the nearest established community is the City of Rio Vista, located approximately 4 miles north of the site. Solano County and Sacramento County have land use jurisdiction over the western and eastern portions of project site, respectively.

The Solano County General Plan designates Decker Island for Agriculture. The existing DI Aggregates operation is allowable under the existing zoning of Agricultural A-160, subject to obtaining a Use Permit; the County has issued Use Permit #U-09-08 and Reclamation Plan #RP-09-01 for the existing operation. The extension of PG&E electrical supply to DI Aggregates was anticipated during the issuance of the existing Solano County permits.

The Sacramento County General Plan designates the majority of Sherman Island as Agricultural Cropland. The Horseshoe Bend shoreline, including the levee, inland area west of SR 160 and the project site, is designated Recreation. This area is zoned Agricultural AG-80 (80-acre minimum parcel size).

There are no habitat conservation plans or other conservation plans that are applicable to the project site or vicinity. A habitat conservation plan is in preparation for Solano County; a public review draft of this plan is expected to be released in Summer 2014. A habitat conservation plan is also being prepared for the southern Sacramento County area, but the plan area does not include the project site.

Environmental Impacts and Mitigation Measures

- a) The project will have no adverse effect on established communities. There are no established communities in the vicinity of the site.
- b) The project will involve no conflict with applicable land use plans or zoning. The proposed project is consistent with existing General Plan designations and zoning for the project site and surroundings.
- c) The project will not involve any conflict with habitat conservation plans. There are no habitat conservation plans or other conservation plans that are applicable to the project site or vicinity.

SOURCES

Lee, Chris. Director of Environmental Compliance, Permitting, and Habitat Conservation. Solano County Water Agency. E-mail January 24, 2014.

Sacramento County, Community Planning and Development Department. General Plan, Land Use Diagram. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department. Sacramento County Zoning Map. Accessed January 24, 2014 at http://generalmap.gis.saccounty.net/JSViewer/county_portal.aspx#

Sacramento County, Community Planning and Development Department. South Sacramento County Habitat Conservation Plan web site. Accessed January 24, 2014 at <http://www.per.saccounty.net/PlansandProjectsInProgress/Pages/SSHCPPlan.aspx>

Solano County Code. Chapter 28, Zoning Regulations, Table 28.21A Table of Allowed Uses for the Exclusive Agricultural District. Accessed January 24, 2014 at <http://www.co.solano.ca.us/civicax/filebank/blobdload.aspx?blobid=12826>

Solano County General Plan. General Plan Land Use Diagram. November 4, 2008

3.4.11 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the state?				✗
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✗

NARRATIVE EXPLANATION

Environmental Setting

The mineral resource development potential of lands in the counties are classified by the State Geologist in accordance with the California Mineral Land Classification System. The classifications include:

- MRZ-1 Areas of No Mineral Resource Significance
- MRZ-2 Areas of Identified Mineral Resource Significance
- MRZ-3 Areas of Undetermined Mineral Resource Significance
- MRZ-4 Areas of Unknown Mineral Resource Significance

The project site is not located in a designated MRZ-2 area in either Solano County or Sacramento County. Although Decker Island is an active mineral development, the island is not mapped as an MRZ-2 area in the Solano County General Plan. The island is not designated as a locally-important or otherwise important mineral resource development site.

There are no oil, gas or geothermal fields located on or adjacent to the project site. The portions of Sherman Island located north and east of the site are mapped as being a part of the Rio Vista Gas Field.

There are no other known oil, gas or other mineral resources in the project vicinity.

Environmental Impacts and Mitigation Measures

- a) The project is not located in an area classified as MRZ-2. Project development will have no adverse effect on the availability of State-designated mineral resources.
- b) The project will not result in the loss of availability of any known, locally-important mineral resource site. No such sites are identified in the respective county general plans.

SOURCES

California Department of Conservation. Oil, Gas and Geothermal Fields in California. 2001.

Solano County General Plan. Chapter 4 Resources. Accessed at http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp on January 14, 2014.

Sacramento County General Plan. Conservation Element, Mineral Resources Background Report. Accessed at <http://www.per.saccounty.net/PlansandProjectsInProgress/Documents/General%20Plan%202030/Conservation%20Element%20Background.pdf> on January 14, 2014.

3.4.12 NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			X	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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?				X
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?				X

NARRATIVE EXPLANATION

Environmental Setting

Noise is defined as “unwanted sound,” usually measured in A-weighted decibels, which generally represent community sensitivity. Noise levels may be described in a number of ways, including, among others: “ambient” noise, the prevailing background noise level; the “average” or equivalent sound level (Leq); and the

Day-Night Average Noise Level (Ldn), which considers the higher community sensitivity to noise during the night hours.

“Sensitive receptors” are land uses that are particular sensitive to noise, including residential uses and excluding industry and mining. There are two residences located in the general vicinity of the eastern terminus of the project, both in Sacramento County; one residence, approximately 500 feet north of the project site, would be exposed to noise from most of the project site; the second residence, approximately 500 feet east of the site across SR 160, would be exposed to noise from activity on the portion of the project site east of the Sherman Island levee.

Acceptable noise criteria are established the Noise Element of the Sacramento General Plan 2030. Noise standards for Solano County are not considered as there are no sensitive receptors that could be subject to noise impacts from the project. Noise associated with construction activities is required to adhere to Sacramento County Code Section 6.68.090 when construction occurs near certain land uses, primarily areas of urban and suburban residential development. The zoning districts on and surrounding the project site are not subject to these regulations. The Noise Element establishes standards for non-transportation noise sources during day and night periods as follows:

Day	L50/Lmax = 55/75
Night	L50/Lmax = 50/70

Ambient noise levels in areas of Sacramento County that are comparable to the project site (i.e. rural agricultural areas along the Sacramento River) were measured in conjunction with preparation of the Noise Element of the General Plan; Ldn (Day-Night Average Noise) levels were identified at approximately 55 dBA in these areas. There are few major noise sources in the project vicinity; traffic on State Route (SR) 160 is a relatively consistent source of noise; agriculture, and marine and recreational boat traffic on the Sacramento River and Horseshoe Bend, are intermittent sources of noise.

The existing average annual daily traffic level of approximately 12,200 vehicles per day generates substantial noise only in the vicinity of the roadway but does contribute to background noise levels in more distant areas; a nomograph included in Sacramento County General Plan Noise Element predicts that the 65 dBA contour line for existing SR 160 traffic is located less than 100 feet from the roadway.

The prevailing agricultural use of lands on Sherman Island involves intermittent noise during the use of heavy and light equipment for field preparation, planting and harvesting. Periodic weed and pest control activity may involve additional equipment use and/or aerial overflights. This is not a consistent noise source.

Marine traffic along the Sacramento River is an occasional noise source for land uses along the banks of the shipping channel. Due to distance and the shielding effect of the island, marine traffic is not a substantial source of noise at the project site.

Recreational boat traffic can result in substantial noise varying with the type of boat being used in the area. The Sacramento County General Plan Noise Element indicates that noise from “power boats” may reach a maximum of 80-86 dBA along the shoreline. Noise contributions from other boat traffic (i.e. cruising, fishing) will be substantially lower.

DI currently operates a construction material extraction, handling and shipping facility. DI operations are presently confined to the western portion of Decker Island, approximately 4,000 feet southwest of the project. Although the DI facilities generate substantial noise in the immediate vicinity during operations, these operations are barely audible at the eastern edge of the island or within the project site. There are intermittent DI Aggregate operations in the vicinity of the project site.

There are no manufacturing facilities, railroads, airports, airstrips or other noise-generating land uses in the project vicinity.

Environmental Impacts and Mitigation Measures

- a,d) Construction of the project using a barge-mounted excavator or clam-shell dredge will generate short-term construction noise along the project alignment and potential for exposure of recreationists using Horseshoe Bend and two nearby residences to noise levels in excess of Sacramento County standards. There are no other sensitive receptors in the project vicinity.

Excavator, dredge and/or jetting sled operations will involve noise that can reach maximum levels of up to 89 dBA at 50 feet from the construction site. Considering a noise dropoff rate of 6 dBA for each doubling of distance, the typical noise level at the nearest part of the project would be an estimated 68.7 dB, which is below the County’s maximum nighttime noise standard for residential uses of 70 dB; at the furthest point of the project, the construction noise level would be an estimated 61.1 dB, also below the night and day standards. Construction noise generated by the project will occur daily for up to two weeks.

Project construction will not result in significant noise effects at the one nearby residence, including effects during the more sensitive nighttime period. The predicted noise levels outdoor noise levels are below County standards. These levels will be further reduced in interior areas; standard residential construction is able to reduce outdoor noise levels by 25 dB or more with windows closed. Resulting interior noise levels would not exceed 43.7 dB, which is below the U.S. Department of Housing and Urban Development interior noise standard of 45 dB.

Construction noise will be below standards, temporary, short-term and therefore not significant.

- b) Heavy construction equipment can result in groundborne vibration, described in vibration decibels (VdB) can range to over 90 VdB for

heavy tracked equipment; potential vibration levels for the planned excavation equipment in relatively soft materials will be lower. At the nearest potential receptor, a residence approximately 500 feet north of the project site, accounting for a dropoff rate comparable to airborne noise, the maximum potential vibration will be less than 75 VdB, which is an impact threshold defined by the Federal Transit Administration for vibration events that occur between 30-70 times per day. This is considered a less than significant effect.

- c) The project will not cause any increase in ambient noise levels in the project vicinity. The proposed electrical crossing will not generate any noise that exceeds existing background levels.
- d) The project will generate temporary, short-term construction noise that will exceed existing ambient noise levels. This noise increase is not considered significant. See discussion of item “a.”
- e) The project is not located within an airport land use plan area, or within 2 miles of a public use airport. The nearest public use airport is in Rio Vista, approximately 6 miles north of the project site. The project will not expose people to aircraft operations noise.
- f) The project is not located near a private airstrip and will not expose people to noise generated by airstrips.

SOURCES

Federal Transit Administration, Office of Planning and Environment. Transit Noise and Vibration Impact Assessment. Report No.: FTA-VA-90-1003-06. May 2006.

Sacramento County Code. Section 6.68.090(e).

Sacramento County, Community Planning and Development Department. General Plan, Noise Element. Amended November 9, 2011.

Sacramento County, Community Planning and Development Department. General Plan, Noise Element, Appendix A Existing and Future Noise Environments Report. Amended November 9, 2011.

3.4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✗
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✗
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✗

NARRATIVE EXPLANATION

Environmental Setting

The proposed project is located in rural and relatively lightly populated sections of Solano and Sacramento County. According to the California Department of Finance (CDOF), the estimated January 1, 2013 population of Solano County was 418,387; an estimated 154,111 housing units existed at that time. The CDOF estimated population of Sacramento County was 1,445,806, with an estimated total of 559,806 housing units in the County.

Land use in the nearby portions of both counties is predominantly agricultural with very low housing and population density. General plan and zoning documents for both counties designate the project area for agricultural and resource management uses (see Section 3.10 Land Use).

There are no housing units within the project site and few in the project vicinity; two nearby residence on Sherman Island is approximately 500 feet north of the east project terminus. The next nearest residence is approximately 0.5 miles northeast of the project near Threemile Slough.

Environmental Impacts and Mitigation Measures

- a) The project will not involve any direct or indirect effect on population growth. The project will not add or remove existing housing units, displace planned residential development, or have an effect on population growth.

The project will provide an alternative power supply to existing mining development and will not contribute indirectly to population growth or housing development.

- b,c) There are no existing housing units within the proposed project site or that could be substantially affected by the project. Project development will not cause displacement of any existing population or housing.

SOURCES

California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2013 with 2010 Census Benchmark. January 1, 2013. Accessed January 14, 2014.

3.4.14 PUBLIC SERVICES

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks?				X
e) Other public facilities?				X

NARRATIVE EXPLANATION

Environmental Setting

The Montezuma Fire Protection District provides fire protection service on the Solano County portion of the project from its station at 21 N 4th St, Rio Vista., Fire protection service in Sacramento County is provided by the Delta Fire Protection District from its station at 350 Main Street in Rio Vista; the District provides contract services to the City of Rio Vista.

Law enforcement services for the project site are provided by the respective county Sheriff’s Departments. Besides customary on-land services, the Sheriffs operate marine patrol program that address recreational and commercial boat traffic on the waters of each county. Additional marine law enforcement is provided by the U.S. Coast Guard, which maintains a regular patrol in the Rio Vista area from its base at 900 Beach Drive in Rio Vista. The California Department of Fish and Wildlife, and the U.S. Fish and Wildlife Service, have additional law enforcement responsibilities related to the natural resources of the Delta waterways.

The proposed project site is located within the River Delta Unified School District, which serves residents of both Solano and Sacramento Counties. The District’s nearest schools, which include elementary, middle and high schools, are located in the City of Rio Vista. There are no school facilities located near the proposed project site.

Both counties provide parks and recreation services in the unincorporated areas. The Solano County Parks and Recreation operates several regional parks, several facilities in Rio Vista, and water-related facilities including fishing access and boat launch facilities. The nearest of these facilities is Sandy Beach County Park, which provides river access, camping and other facilities; Sandy Beach is located on the Sacramento River just south of Rio Vista, approximately 3.2 miles north of the project site.

Sacramento County operates several regional parks including facilities in the Delta. The nearest of these is Sherman Island Regional Park, which provides camping facilities and water access for boats, fishing, wind surfing and kite boarding. This park is located approximately 3.5 miles southwest of the site.

More broadly, the majority of recreational use in the project vicinity consists of watercraft on the Sacramento River and other Delta waterways. These resources are addressed Section 3.15, Recreation.

Environmental Impacts and Mitigation Measures

- a) The project will involve direct burial and ongoing use of electrical cable. Use of construction equipment on land would involve incidental, short-term potential fire risk and need for emergency services. The project would not affect public access or recreational use of the project vicinity lands or waters. Following construction, the project would involve no increase in fire risk or potential demand for fire or emergency services from the respective fire districts.
- b) Project construction would involve encroachment into recreational waters and incidental short-term potential to generate water-based law enforcement demand. Following construction, the project will involve no effect on the Sheriff's responsibilities in either of the two counties.
- c) The project will have no direct or indirect effect on schools. There are no school facilities in the project vicinity that could be subject to physical effects. The project will not cause an increase or decrease in the general population or in student populations.
- d) The project will have no direct or indirect effect on park facilities. There are no park facilities in the project vicinity that could be subject to physical effects. The project will not cause an increase or decrease in population or in park demands.

The project will involve minor and short-term effects on recreational use of Horseshoe Bend; these potential effects are explored in Section 3.15 Recreation.

SOURCES

Web sites for the agencies discussed in the Environmental Setting section, all accessed January 14, 2014, are as follows:

<http://www.montezumafiredistrict.com/>

http://www.saclafco.org/ServiceProviders/Documents/atozlistings/sac_006817.pdf

<http://www.co.solano.ca.us/depts/sheriff/>

<http://www.sacsheriff.com/>

<http://riverdelta.org/>

<http://www.regionalparks.saccounty.net/Parks/RegionalParksDetails/Pages/default.aspx>

<http://www.regionalparks.saccounty.net/Parks/SacramentoRiverandDelta/Pages/default.aspx>

3.4.15 RECREATION

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
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?				X

NARRATIVE EXPLANATION

Environmental Setting

Environmental setting information related to county and city parks is discussed in Section 14, Public Services. This section addresses regional natural resource recreational resources of the Sacramento-San Joaquin Delta, the Sacramento River, the project site and vicinity.

The project site includes the waters and bank areas of Horseshoe Bend, a branch of the Sacramento River. These waters are extensively used for water-related recreation including boating, fishing and wind sports.

The Delta Protection Commission in conjunction with the California Department of Parks and Recreation and the Department of Boating and Waterways conducted the 1997 Sacramento-San Joaquin Delta Recreation Survey. The survey identified a wide range of water-based recreational activities including:

- Fishing and hunting
- Cruising, sailing, canoeing, kayaking and personal water craft
- House boating, swimming and boat camping
- Water skiing, wind surfing and kite boarding

The lower Sacramento-San Joaquin River area, identified as Zone D in the survey, was the most popular of the various Delta zones, ranking first in boat launching, sailing, fishing, water-skiing, swimming and sleeping on board a boat. There are more than 50 marinas. Brannan Island State Park, just north of the project site, provides a large number of picnicking and camping facilities and what the survey terms a “very large boat launch facility.”

Horseshoe Bend attracts a substantial amount of recreational use. Located off of the main shipping channel and on the lee side of Decker Island, the channel is a popular anchorage.

Environmental Impacts and Mitigation Measures

- a) The project will not increase the use of any recreational facility, including use of the waters of Horseshoe Bend. Project construction will involve localized and temporary limitation of recreational boating use of the immediate vicinity of construction activity, which represents a small percentage of the available water recreation area in Horseshoe Bend. As a result, the project’s effect on recreational facilities will be less than significant.
- b) The project does not include any recreational facilities and will have no effect on demand for recreational facilities.

3.4.16 TRANSPORTATION/TRAFFIC

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?			X	
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?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in				X

location that results in substantial safety risks?

d) Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? X

e) Result in inadequate emergency access? X

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? X

NARRATIVE EXPLANATION

Environmental Setting

Transportation facilities in the project vicinity include highway SR 160 for automobiles and trucks, Horseshoe Bend for recreational boat traffic, and the Sacramento Deep Water Ship Channel west of Decker Island for commercial marine traffic.

SR 160 on Sherman Island in Sacramento County is a primary State highway connecting Sacramento with Antioch, Pittsburg and other urbanized areas of northern Contra Costa County. Locally, SR 160 serves Rio Vista via the intersecting SR 12, which connects Lodi with Fairfield at Interstate 80 in the west. In the vicinity of the project site SR 160 is a wide two-lane road with continuous shoulders. No passing is allowed in the site vicinity. Caltrans records for 2012 indicate that the average annual daily traffic (AADT) on SR 160 north of the Antioch bridge is 12,200 vehicles per day; peak hour traffic is estimated at 1,150 vehicles per hour.

There are no other public roads or highways on or near the site. On Decker Island, an existing dirt road accesses the western terminus of the project. The former Sherman Island Levee Road crosses the project site near its eastern terminus. Other roads in the area are agricultural access roads.

The Sacramento River Deep Water Ship Channel west of Decker Island accommodates commercial marine traffic carrying bulk and general cargo to and from the Port of West Sacramento. The Port reported 58 vessel calls in 2011 and projects gradual growth to more than twice this level by 2053. Additional commercial traffic includes tugboat and barge movements, including two barge loads per day originating at DI Aggregates. DI Aggregates workers are also transported to the Island by boat from Rio Vista. Commercial marine traffic does not utilize Horseshoe Bend.

Both the Deep Water Ship Channel and Horseshoe Bend are used extensively for recreational boating and related uses. Additional detail on recreational use is provided in Section 15 Recreation.

There are no railroads, airports or other major transportation facilities in the vicinity of the project. An existing public transit system provides service from the City of Rio Vista; the Rio Vista Delta Breeze provides daily service between Rio Vista, Antioch and the Pittsburg/Bay Point BART station via SR 160.

Relatively wide shoulders along SR 160 provide for bicycle use. Beside the highway shoulders, there are no pedestrian sidewalks in the project area.

Environmental Impacts and Mitigation Measures

- a) During construction of the easternmost portion of the project on Sherman Island, the project will involve very minor construction traffic to and from the project site along SR 160. Total construction traffic in this area is not expected to exceed 20 vehicle trips to and from the site each day. The project will have no substantial effect on highway operation or involve any potential conflict with an applicable transportation-related plan, ordinance or policy. As described in Section 3.10 Land Use, the project is consistent with existing, planned and approved land uses for the project area.

Barge and barge-mounted construction equipment operation in Horseshoe Bend during the construction period of up to two weeks will involve a minor impediment to the movement of recreational boats, wind- and paddle-craft along the channel. Construction equipment is not expected to prohibit free passage of recreational boats along Horseshoe Bend. The project will require permits from the US Army Corps of Engineers and an endorsement from the US Coast Guard. Conformance with permit conditions minimizing applicable navigation hazard requirements will reduce any potential impacts on recreational boating safety to a less than significant level.

- b) As discussed under item “a,” the project would have no substantial effect on SR 160 traffic operations. Therefore, the project will have no effect on existing congestion management plans for Sacramento County.
- c) There are no airports in the project vicinity. The project will have no effect on airport facilities or operations and therefore no effect on existing air traffic patterns.
- d) The project will have no effect on vehicular transportation facilities or on the movement of vehicles, including farm equipment, along roadway in the project vicinity. Installation of the proposed cable at the recommended minimum depth of five feet below the channel bottom will avoid any potential anchor drag effects.
- e) The project will not affect access along SR 160 or Horseshoe Bend, to properties along those alignments routes, or access to and from Decker Island. Therefore, the project will have no effect on emergency access.
- f) The project will have no effect on transit, bicycle or pedestrian facilities. As a result, the project will involve no potential conflict with any adopted transportation plan addressing planned transit, bicycle or pedestrian facilities.

SOURCES

Caltrans. 2012 Traffic Counts on State Highways. Accessed at <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm> on January 20, 2014.

City of Rio Vista Transit Services. Delta Breeze Schedule. Accessed at <http://www.riovistacity.com/transit/schedule.htm>, January 20, 2014.

Sacramento County, Community Planning and Development Department. General Plan, Circulation Element. Amended November 9, 2011.

U.S. Army Corps of Engineers, San Francisco District and Port of West Sacramento. Draft Supplemental Environmental Impact Statement/ Subsequent Environmental Impact Report. Sacramento River Deep Water Ship Channel. February 2011.

3.4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
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?				X
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Are sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Has the wastewater treatment provider which serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state and local statutes and regulations related to solid waste?				X

NARRATIVE EXPLANATION

Environmental Setting

The proposed project site is located in rural portions of Solano and Sacramento Counties. Organized domestic water, sewage collection, sewage treatment and storm drainage services are not available in the project area, either on Decker Island or Sherman Island. Water supply and sewage disposal are provided by individual landowners on-site, as needed to support individual land uses. Storm drainage for Sherman Island is provided internally by ditch and pumping systems operated by the Reclamation District 341. Decker Island drains internally and has no existing drainage system.

Electrical supply in the project vicinity is provided by Pacific Gas and Electric (PG&E). A PG&E electrical distribution line is located along the west side of SR 160 in the vicinity of the easterly project terminus. Power supply for Decker Island would be obtained from this line. A very high voltage electrical transmission line supported on steel lattice towers is located approximately 0.25 miles east of SR 160.

There is no domestic natural gas service in the project vicinity. A PG&E gas transmission line passes through Sherman Island approximately 0.5 miles south and southeast of the project site.

Sacramento County Waste Management and Recycling provides source-separated waste collection service to the unincorporated area. The County's State-permitted Kiefer Road landfill is currently 250 acres but is permitted up to 660 acres in size. The County indicates that the landfill will be able to serve the regional waste disposal needs for many years to come.

Environmental Impacts and Mitigation Measures

- a) The project will not generate wastewater or otherwise affect systems subject to Regional Water Quality Control Board wastewater treatment requirements.
- b) The project will not generate wastewater or require water service. No new water or wastewater facilities will be constructed or needed in conjunction with the project.
- c) The project will not generate any substantial new storm runoff or need for storm water disposal systems. No new storm water facilities will be constructed or needed in conjunction with the project.
- d) The project will not require water service or in any way affect existing available water supplies.
- e) As noted above, the project will not generate wastewater or place wastewater treatment demand on any wastewater treatment provider.
- f) The project will not generate any substantial volume of solid waste in

either construction or operation and would have no effect on the capacity of available waste disposal sites.

- g) The project will comply with any applicable statutes and regulations related to solid waste.

SOURCES

Pacific Gas and Electric. Gas Transmission System Pipeline Map. Accessed at <http://www.pge.com/safety/systemworks/gas/transmissionpipelines/> on January 20, 2014.

Sacramento County Waste Management and Recycling. Web site accessed at <http://www.wmr.saccounty.net/Pages/Kiefer-Landfill.aspx> on January 20, 2014.

3.4.18 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				X

NARRATIVE EXPLANATION

(a) Impacts on Biological and Cultural Resources

Finding (a) is checked as “Less than Significant with Mitigation Incorporated” on the basis of the project’s potential biological and cultural resource impacts, described in Sections 3.4 and 3.5, respectively. Potentially significant environmental effects were identified in these issue areas, but all of the potentially significant effects will be reduced to a less than significant level with mitigation measures that will be incorporated into the project.

(b) Cumulative Project Impacts

As described in this Initial Study, the potential environmental effects of the project will either be less than significant, or the project will have no impact at all, when compared to the baseline. Where the project involves potentially significant effects, these effects would be reduced to a less than significant level with proposed mitigation measures.

The potential environmental effects identified in this Initial Study have been considered in conjunction with each other as to their potential to generate other potentially significant effects. The various potential environmental effects of the project will not combine to generate any potentially significant cumulative effects. There are no other known, similar projects with which the project might combine to produce cumulative impacts.

(c) Other Substantial Effects on Human Beings

This Initial Study has considered the potential environmental effects of the project in the discrete issue areas outlined in the CEQA Environmental Checklist. During the environmental analysis, the potential for the project to result in substantial effects on human beings in these issue areas, as well as the potential for substantial effects on human beings to occur outside of these issue areas, was considered, and no other such effects were identified.

APPENDIX A
AIR QUALITY MODEL RESULTS

Road Construction Emissions Model, Version 7.1.5.1

Emission Estimates for -> Decker Island Electrical Crossing										
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	1.9	10.7	17.6	3.0	1.0	2.0	1.3	0.9	0.4	1,951.1
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (pounds/day)	1.9	10.7	17.6	3.0	1.0	2.0	1.3	0.9	0.4	1,951.1
Total (tons/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	10.7

Notes: Project Start Year -> 2014
 Project Length (months) -> 1
 Total Project Area (acres) -> 0
 Maximum Area Disturbed/Day (acres) -> 0
 Total Soil Imported/Exported (yd³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Decker Island Electrical Crossing										
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	-	-	-	-	-	-	-	-	-	-
Grading/Excavation	-	-	-	-	-	-	-	-	-	-
Drainage/Utilities/Sub-Grade	0.9	4.9	8.0	1.4	0.5	0.9	0.6	0.4	0.2	886.9
Paving	-	-	-	-	-	-	-	-	-	-
Maximum (kilograms/day)	0.9	4.9	8.0	1.4	0.5	0.9	0.6	0.4	0.2	886.9
Total (megagrams/construction project)	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	9.7

Notes: Project Start Year -> 2014
 Project Length (months) -> 1
 Total Project Area (hectares) -> 0
 Maximum Area Disturbed/Day (hectares) -> 0
 Total Soil Imported/Exported (meters³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Road Construction Emissions Model

Version 7.1.5.1

Data Entry Worksheet

Note: Required data input sections have a yellow background.

Optional data input sections have a blue background. Only areas with a

yellow or blue background can be modified. Program defaults have a white background.

The user is required to enter information in cells C10 through C25.



Input Type

Project Name	Decker Island Electrical Crossing	
Construction Start Year	2014	Enter a Year between 2009 and 2025 (inclusive)
Project Type	1	1 New Road Construction 2 Road Widening 3 Bridge/Overpass Construction
Project Construction Time	0.50	months
Predominant Soil/Site Type: Enter 1, 2, or 3	1	1. Sand Gravel 2. Weathered Rock-Earth 3. Blasted Rock
Project Length	0.20	miles
Total Project Area	0.40	acres
Maximum Area Disturbed/Day	0.10	acres
Water Trucks Used?	2	1. Yes 2. No
Soil Imported	0.00	yd ³ /day
Soil Exported	0.00	yd ³ /day
Average Truck Capacity	20	yd ³ (assume 20 if unknown)

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells C34 through C37.

Construction Periods	User Override of	Program	2005		2006		2007	
	Construction Months	Calculated Months		%		%		%
Grubbing/Land Clearing	0.00	0.05	0.00		0.00		0.00	
Grading/Excavation	0.00	0.20	0.00		0.00		0.00	
Drainage/Utilities/Sub-Grade	0.50	0.18	0.00		0.00		0.00	
Paving	0.00	0.08	0.00		0.00		0.00	
Totals	0.50	0.50						

NOTE: soil hauling emissions are included in the Grading/Excavation Construction Period Phase, therefore the Construction Period for Grading/Excavation cannot be zero if hauling is part of the project.

Hauling emission default values can be overridden in cells C45 through C46.

Soil Hauling Emissions		User Override of				
		Soil Hauling Defaults	Default Values			
User Input						
Miles/round trip		30				
Round trips/day		0				
Vehicle miles traveled/day (calculated)			0			
Hauling Emissions	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00
Emission rate (grams/trip)	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day	0.00	0.00	0.00	0.00	0.00	0.00
Tons per construction period	0.00	0.00	0.00	0.00	0.00	0.00

Worker commute default values can be overridden in cells C60 through C65.

Worker Commute Emissions		User Override of Worker				
		Commute Default Values	Default Values			
Miles/ one-way trip		20				
One-way trips/day		2				
No. of employees: Grubbing/Land Clearing	0.00	4				
No. of employees: Grading/Excavation	0.00	16				
No. of employees: Drainage/Utilities/Sub-Grade	6.00	14				
No. of employees: Paving	0.00	10				
	ROG	NOx	CO	PM10	PM2.5	CO2
Emission rate - Grubbing/Land Clearing (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.182	0.249	2.208	0.047	0.020	443.370
Emission rate - Paving (grams/mile)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grubbing/Land Clearing (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Grading/Excavation (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Emission rate - Draining/Utilities/Sub-Grade (gr/trip)	0.616	0.407	5.187	0.004	0.003	95.481
Emission rate - Paving (grams/trip)	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grubbing/Land Clearing	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grub/Land Clear	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Grading/Excavation	0.000	0.000	0.000	0.000	0.000	0.000
Pounds per day - Drainage/Utilities/Sub-Grade	0.112	0.142	1.304	0.025	0.011	236.904
Tons per const. Period - Drain/Util/Sub-Grade	0.001	0.001	0.007	0.000	0.000	1.303
Pounds per day - Paving	0.000	0.000	0.000	0.000	0.000	0.000
Tons per const. Period - Paving	0.000	0.000	0.000	0.000	0.000	0.000
tons per construction period	0.001	0.001	0.007	0.000	0.000	1.303

Water truck default values can be overridden in cells C91 through C93 and E91 through E93.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values			
	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Day	Miles Traveled/Day			
Grubbing/Land Clearing - Exhaust		0		0			
Grading/Excavation - Exhaust		0		0			
Drainage/Utilities/Subgrade		0		0			
	ROG	NOx	CO	PM10	PM2.5	CO2	
Emission rate - Grubbing/Land Clearing (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	
Emission rate - Grading/Excavation (grams/mile)	0.00	0.00	0.00	0.00	0.00	0.00	
Emission rate - Draining/Utilities/Sub-Grade (gr/mile)	0.28	10.43	1.26	0.25	0.18	1713.35	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grub/Land Clear	0.00	0.00	0.00	0.00	0.00	0.00	
Pound per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	
Pound per day - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Subgrade	0.00	0.00	0.00	0.00	0.00	0.00	

Fugitive dust default values can be overridden in cells C110 through C112.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		0	0.0	0.0	0.0	0.0
Fugitive Dust - Grading/Excavation		0	0.0	0.0	0.0	0.0
Fugitive Dust - Drainage/Utilities/Subgrade		0.1	2.0	0.0	0.4	0.0

Off-Road Equipment Emissions

Grubbing/Land Clearing		Default Number of Vehicles	ROG	CO	NOx	PM10	PM2.5	CO2
Override of Default Number of Vehicles	Program-estimate	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
		Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
		Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
		Grubbing/Land Clearing	pounds per day	0.0	0.0	0.0	0.0	0.0
		Grubbing/Land Clearing	tons per phase	0.0	0.0	0.0	0.0	0.0

Grading/Excavation	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
	0	Cranes	0.00	0.00	0.00	0.00	0.00	0.00
	1	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	3	Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
	1	Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Pavers	0.00	0.00	0.00	0.00	0.00	0.00
		Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	2	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
	2	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Grading	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0

Paving	Default		ROG	CO	NOx	PM10	PM2.5	CO2
	Override of Default Number of Vehicles	Number of Vehicles Program-estimate						
		Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00
		Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00
		Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00
		Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00
		Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00
		Cranes	0.00	0.00	0.00	0.00	0.00	0.00
		Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Excavators	0.00	0.00	0.00	0.00	0.00	0.00
		Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00
		Graders	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00
		Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00
		Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00
	1	Pavers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00
		Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00
		Pumps	0.00	0.00	0.00	0.00	0.00	0.00
	3	Rollers	0.00	0.00	0.00	0.00	0.00	0.00
		Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00
		Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Scrapers	0.00	0.00	0.00	0.00	0.00	0.00
	1	Signal Boards	0.00	0.00	0.00	0.00	0.00	0.00
		Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00
		Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00
		Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00
	2	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00
		Trenchers	0.00	0.00	0.00	0.00	0.00	0.00
		Welders	0.00	0.00	0.00	0.00	0.00	0.00
	Paving	pounds per day	0.0	0.0	0.0	0.0	0.0	0.0
	Paving	tons per phase	0.0	0.0	0.0	0.0	0.0	0.0
Total Emissions all Phases (tons per construction period) =>			0.0	0.1	0.1	0.0	0.0	9.4

Equipment default values for horsepower and hours/day can be overridden in cells C289 through C322 and E289 through E322.

Equipment	Default Values		Default Values
	Horsepower	Hours/day	
Aerial Lifts	63		8
Air Compressors	106		8
Bore/Drill Rigs	206		8
Cement and Mortar Mixers	10		8
Concrete/Industrial Saws	64		8
Cranes	226		8
Crawler Tractors	208		8
Crushing/Proc. Equipment	142		8
Excavators	163		8
Forklifts	89		8
Generator Sets	66		8
Graders	175		8
Off-Highway Tractors	123		8
Off-Highway Trucks	400		8
Other Construction Equipment	172		8
Other General Industrial Equipment	88		8
Other Material Handling Equipment	167		8
Pavers	126		8
Paving Equipment	131		8
Plate Compactors	8		8
Pressure Washers	26		8
Pumps	53		8
Rollers	81		8
Rough Terrain Forklifts	100		8
Rubber Tired Dozers	255		8
Rubber Tired Loaders	200		8
Scrapers	362		8
Signal Boards	20		8
Skid Steer Loaders	65		8
Surfacing Equipment	254		8
Sweepers/Scrubbers	64		8
Tractors/Loaders/Backhoes	98		8
Trenchers	81		8
Welders	45		8

0

END OF DATA ENTRY SHEET

APPENDIX B
TERRESTRIAL BIOLOGICAL ASSESSMENT

MOORE BIOLOGICAL CONSULTANTS

February 5, 2014

Mr. Pat Brown

Decker Island L.L.C.

12275 El Camino Real, Ste. 110

San Diego, California 92130

Subject: BASELINE BIOLOGICAL RESOURCES ASSESSMENT FOR THE
DECKER ISLAND ELECTRICAL LINE, SACRAMENTO AND
SOLANO COUNTIES, CALIFORNIA

Dear Pat:

Thank you for asking Moore Biological Consultants to prepare the Biological Assessment (BA) addressing the potential impacts of the proposed project to terrestrial biological resources. Our work involved documenting terrestrial biological resources, identifying potentially jurisdictional Waters of the U.S. or wetlands, searching for suitable habitat for or presence of special-status species in the project site, assessing potential project impacts to these resources, and developing appropriate avoidance and minimization measures. This BA supplements an analysis of project impacts to fish resources (FishBio, 2014).

Project Overview

The project extends from Sherman Island to Decker Island, spanning the Sacramento County and Solano County line (Figures 1 and 2). Decker Island LLC (DI) currently extracts, handles, and ships aggregate and fill materials from Decker Island. The proposed project will extend electrical supply from existing PG&E lines on Sherman Island to Decker Island. The purpose of the project is to provide reliable electrical power to replace the present power supply of standalone diesel-powered electrical generators.



Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2012

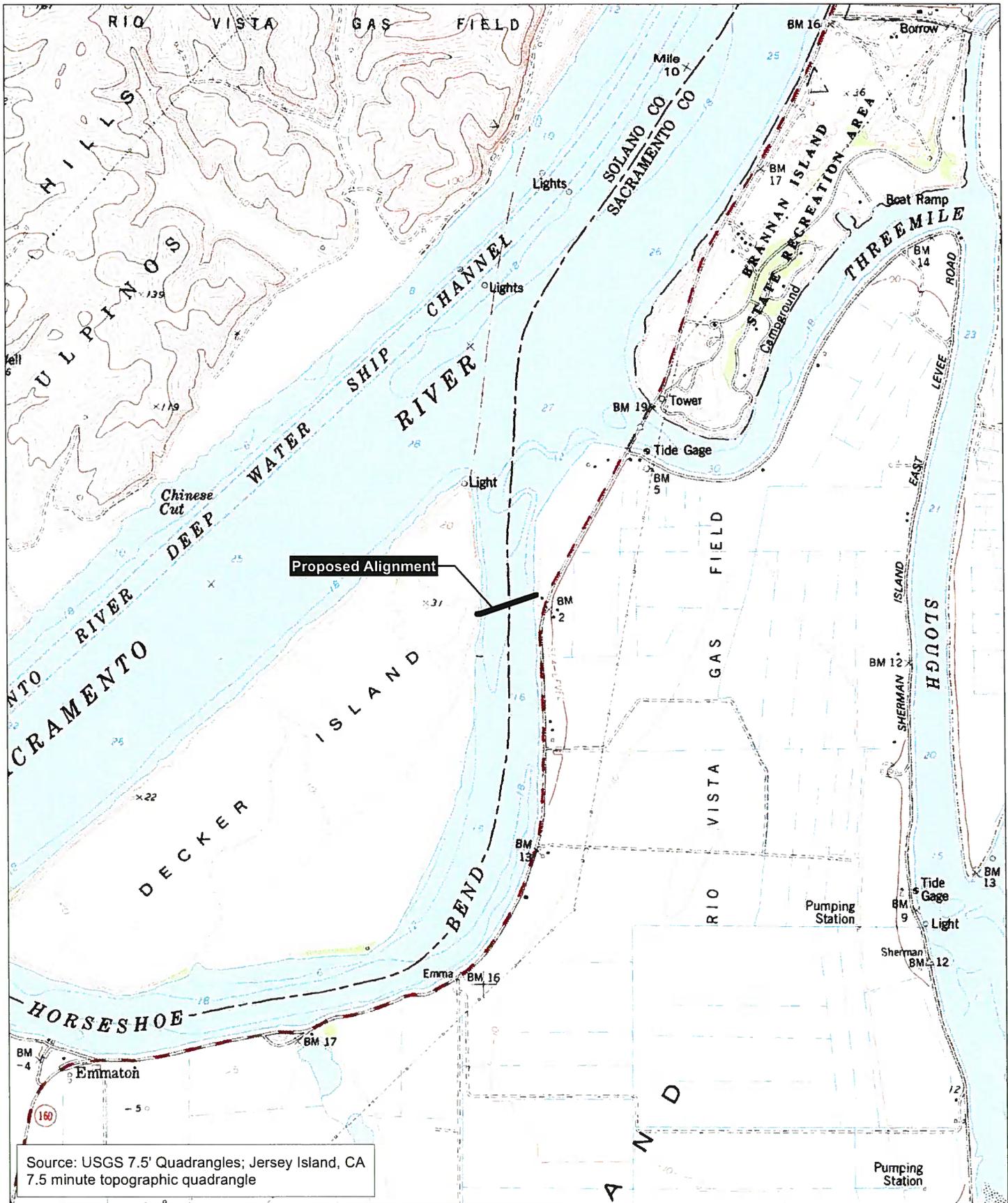
Figure 1

Moore Biological
Consultants



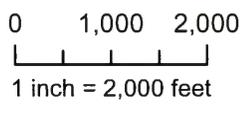
PROJECT VICINITY

Decker Island
Solano and Sacramento
Counties, CA



Source: USGS 7.5' Quadrangles; Jersey Island, CA 7.5 minute topographic quadrangle

Figure 2
 Moore Biological
 Consultants



Project Location
 Decker Island
 Solano and Sacramento
 Counties, CA

The project involves installing a cable from an upland area on Sherman Island near State Route (SR) 160 across Horseshoe Bend to an existing access road on the eastern shore of Decker Island (Figure 3). The entire project is approximately 1,100 feet in length. The project site consists of an approximately 15 foot-wide linear corridor within which the proposed cable would be installed. All construction disturbance will be temporary and will occur in the 15-foot wide corridor. Habitat conditions in the site are expected to be comparable to existing conditions following construction.

The primary project component is a 3 to 4-inch diameter cable composed of several electrical conductors, which would be anchored at junction boxes at either end of the river crossing. In upland portions of the project site, the proposed cable would be buried a minimum of 3 feet below the ground surface; within the river channel, the cable would be buried a minimum of 5 feet below the channel bottom. The eastern end of the cable would terminate at a box vault to be installed adjacent to an existing PG&E electrical pole line. The western terminus of the cable would be a box vault to be installed on DI property, approximately 75 feet from the shoreline.

Cable burial in upland areas will be accomplished with excavator or backhoe. Soil will be removed from the trench and placed in the adjacent area; the cable bed will be prepared, the cable will be laid, and the trench will be backfilled with compacted native material. Cable burial across the Sherman Island levee will require removal of existing paving along the levee road, and removal of existing rip-rap along the water-side levee slope. Following construction, the roadbed grade will be restored with aggregate base material; rip-rap removed from the levee slope will be set aside during construction and replaced.

Cable burial in the river channel will be accomplished using either a barge-mounted long-reach excavator or clamshell bucket equipment or a jetting sled. If a barge-mounted long-reach excavator or clamshell bucket is utilized, sediment will be removed from the trench and stockpiled on the down-current side of the

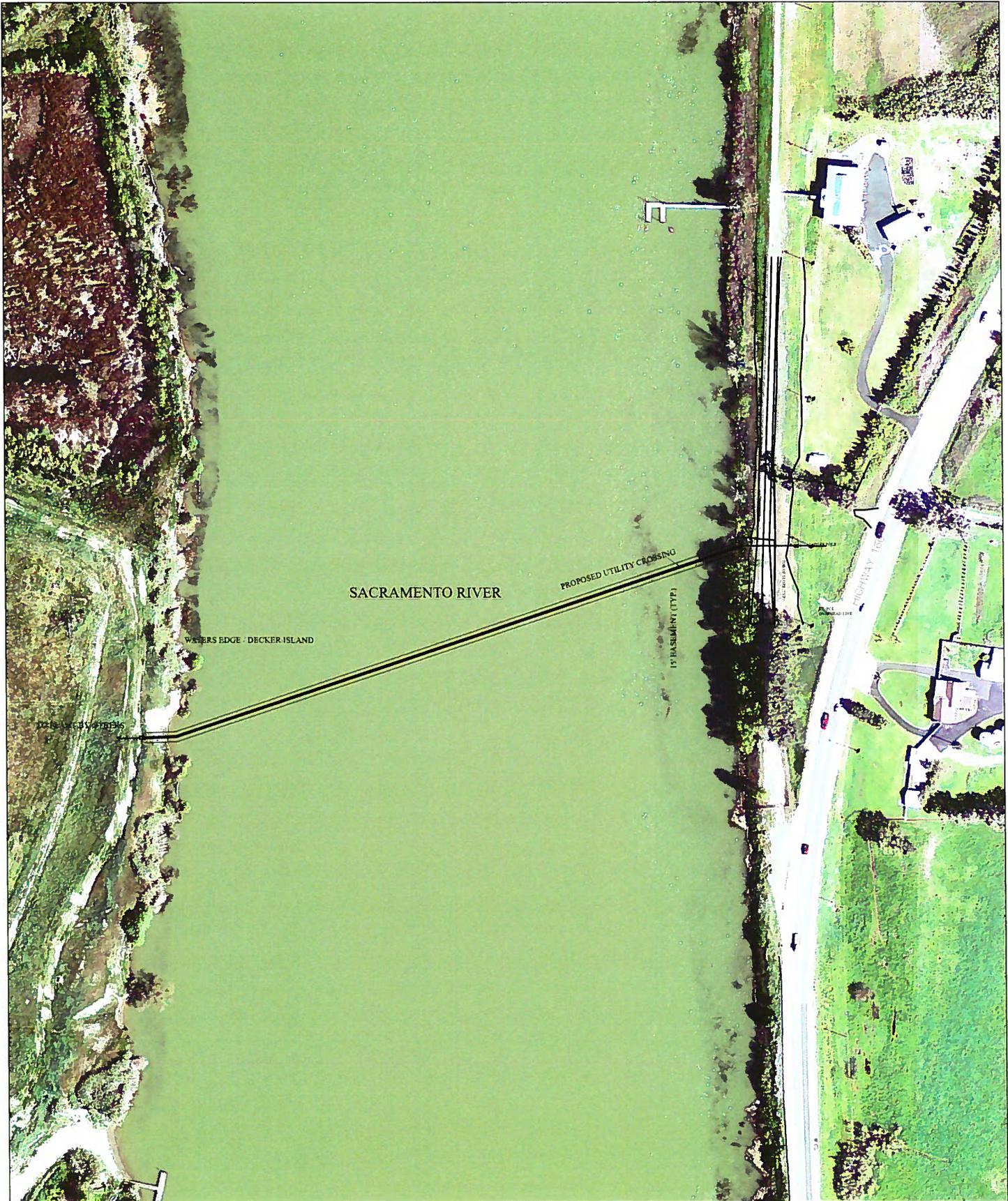
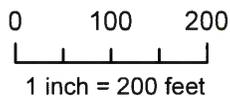


Figure 3

Moore Biological
Consultants



Aerial: USGS (April 9, 2011)

Aerial Photograph

Decker Island
Solano and Sacramento
Counties, CA

Map Date: January 2014

trench. The cable will be laid in the trench from the barge and the trench will then be backfilled using the excavation equipment. The backfill material will consist of the sidecast sediment topped with a layer of 3-inch rock. The average disturbed area in the channel portion of the project is not expected to exceed the proposed easement width of 15 feet. The maximum in-water area of disturbance will be 12,750 ft² (0.3+/- acres). If a barge-mounted long-reach excavator or clamshell bucket is utilized, the duration of in-water construction will be approximately 2 weeks.

Burial of the cable may also be accomplished with a jetting sled. With this method, hydraulic jets mounted on a skid-supported cable guide will cut the cable burial trench. The cable bundle would simultaneously be fed through the guide, laid and buried in a single pass; additional hydraulic jets would bury the cable and partially refill the trench with excavated sediment; backfill will be completed with a layer of 3-inch rock. Hydraulic pressure, power supply, and system control would be provided by an umbilical line connecting the sled to an accompanying support barge. The jetting sled would be operated continuously until the submarine portion of the cable burial is complete, with an estimated construction period for this portion of the work of 2 to 3 24-hour shifts.

Methods

Prior to the field surveys, we conducted a search of California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB, 2013). As the site is in the northwest portion of the USGS 7.5-minute Jersey Island topographic quadrangle, the CNDDDB search encompassed the Jersey Island quadrangle, and also the Rio Vista, Birds Landing, and Antioch North quadrangles, which are situated to the north and west. This CNDDDB search area is approximately 240 square miles surrounding the project site. The United States Fish and Wildlife Service (USFWS) list of Federally Threatened and Endangered species that may occur in or be affected by projects in these same

topographic quadrangles was also reviewed (Appendix A). This information was used to identify special-status wildlife and plant species that have been previously documented in the project vicinity or have the potential to occur based on suitable habitat and geographical distribution. Additionally, the CNDDDB also depicts the locations of sensitive habitats.

Field surveys were conducted on October 24 and 30, and December 9, 2013, and January 21, 2014. The surveys were accomplished via boat and on foot and consisted of making observations of habitat conditions, and noting surrounding land uses, general habitat types, and plant and wildlife species. The surveys included an assessment of the project site for potentially jurisdictional Waters of the U.S. (a term that includes wetlands) as defined by the U.S. Army Corps of Engineers (ACOE, 1987; 2008), and a search for special-status species, and suitable habitat for special-status species (e.g., blue elderberry shrubs, vernal pools). Additionally, trees within and near the work areas were assessed for the potential use by nesting raptors, especially Swainson's hawk (*Buteo swainsoni*). The upland portions of the site were searched for burrowing owls (*Athene cunicularia*) or burrows with evidence of occupancy by burrowing owls.

Results

GENERAL SETTING: The project site spans the boundary of Solano County and Sacramento County, California (Figure 1). The project site is located in unnumbered Sections within Township 3 North, Range 2 East MDBM of the USGS 7.5-minute Jersey Island topographic quadrangle (Figure 2). Project site elevations range from approximately 25 feet below to 25 feet above mean sea level. Surrounding land uses are primarily agricultural, with very widely scattered residences, barns, and shops.

HABITAT CONDITIONS: Sherman Island consists of leveled irrigated cropland that is primarily farmed in alfalfa, hay, and other annual crops. On Sherman Island,

the project site encompasses a levee slope, paved levee road, and ruderal grassland on the land side of the levee (Figure 3 and photographs in Appendix B). Decker Island is used for grazing and aggregate mining; there is a CDFW habitat area at the north tip of the island. On Decker Island, the project site encompasses a sandy beach, steep bank covered primarily with Himalayan blackberry (*Rubus discolor*) brambles, and ruderal grassland.

VEGETATION: California annual grassland series (Sawyer and Keeler-Wolf, 1995) best describes the vegetation along the Sherman Island levee slopes and the body of Decker Island. Grasses including Bermuda grass (*Cynodon dactylon*), oats (*Avena* sp.), soft chess brome (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), and foxtail barley (*Hordeum murinum*) are dominant grass species. Other grassland species such as fennel (*Foeniculum vulgare*), bull thistle (*Cirsium vulgare*), prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), and filaree (*Erodium botrys*) are intermixed with the grasses. Table 1 is a list of plant species observed in and adjacent to the site.

In the vicinity of the site, the banks of Decker Island are steep and are vegetated with a narrow and discontinuous band of riparian vegetation. Coastal live oak (*Quercus agrifolia*), willows (*Salix* spp.), and black walnut (*Juglans californicus*) are the dominant trees. The banks of the island also support dense patches of Himalayan blackberry, intermixed with patches of California wild rose (*Rosa californica*), and California wild grape (*Vitis californicus*). There are trees north and south of the site on Decker Island, but no woody riparian vegetation within areas that will be disturbed (i.e., the 15-foot wide corridor).

On Sherman Island there are large Fremont cottonwood (*Populus fremontii*) trees along the bank near the waterline on just north and south of the site, but no woody riparian vegetation within areas that will be disturbed (i.e., the 15-foot wide corridor). All of the woody riparian vegetation will remain and the project will not result in removal of trees or the associated shaded loss or shaded aquatic riverine habitat.

TABLE 1
PLANT SPECIES OBSERVED IN AND NEAR THE SITE

<i>Amsinckia menziesii</i>	rancher's fireweed
<i>Arundo donax</i>	giant reed
<i>Avena</i> sp.	oat
<i>Baccharis pilularis</i>	coyote brush
<i>Brassica nigra</i>	black mustard
<i>Bromus diandrus</i>	ripgut brome
<i>Bromus hordeaceus</i>	soft chess brome
<i>Centaurea solstitialis</i>	yellow star-thistle
<i>Cirsium vulgare</i>	bull thistle
<i>Convolvulus arvensis</i>	morning glory
<i>Cynodon dactylon</i>	Bermuda grass
<i>Distichlis spicata</i>	saltgrass
<i>Eichhornia crassipes</i>	water hyacinth
<i>Epilobium brachycarpum</i>	fireweed
<i>Eremocarpus setigerus</i>	dove weed
<i>Erodium botrys</i>	filaree
<i>Eucalyptus</i> sp.	blue gum
<i>Foeniculum vulgare</i>	fennel
<i>Heterotheca grandiflora</i>	telegraph weed
<i>Hordeum marinum</i>	Mediterranean barley
<i>Hordeum murinum</i>	foxtail barley
<i>Lactuca serriola</i>	prickly lettuce
<i>Lepidium latifolium</i>	perennial pepperweed
<i>Lolium perenne</i>	perennial ryegrass
<i>Malva neglecta</i>	common mallow
<i>Populus fremontii</i>	Fremont cottonwood
<i>Quercus agrifolia</i>	coastal live oak

TABLE 1 (Continued)
 PLANT SPECIES OBSERVED IN AND NEAR THE SITE

<i>Rosa californica</i>	California wild rose
<i>Rubus discolor</i>	Himalayan blackberry
<i>Rumex crispus</i>	curly dock
<i>Salix</i> spp.	willow
<i>Scirpus acutus</i>	tule
<i>Verbena hastata</i>	common verbena
<i>Vitis californicus</i>	California wild grape

There is a patch of sparse tules (*Scirpus acutus*) and some water hyacinth (*Eichhornia crassipes*) on a shallow near-shore area approximately 100 to 150 feet from the bank of Sherman Island (Figure 3 and photographs in Appendix B). Near-shore areas adjacent to Decker Island are deeper; in-water vegetation is primarily on small islands on a sandy shelf within 20 feet of the shore where the water is a few feet deep. There is no in-water vegetation adjacent to Decker Island near the west tip of alignment; habitats transition abruptly from deep open water, to a narrow sandy beach, to the blackberry brambles.

No blue elderberry (*Sambucus mexicana*) shrubs were observed in or adjacent to the project site.

WILDLIFE: A limited variety of bird species were observed during the site surveys; all of these are common to agricultural areas in the delta. Birds observed in the project site include turkey vulture (*Cathartes aura*), mallard (*Anas platyrhynchos*), great blue heron (*Ardea herodias*), great egret (*Casmerodias albus*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), rock dove (*Columba livia*), northern mockingbird (*Mimus polyglottos*), western scrub jay

(*Aphelocoma coerulescens*), red-winged blackbird (*Agelaius phoeniceus*), tricolored blackbird (*Agelaius tricolor*), Brewer's blackbird (*Euphagus cyanocephalus*), and house sparrow (*Passer domesticus*).

There are a few potential nest trees near the project site that may be suitable for nesting raptors and other protected migratory birds, including Swainson's hawk. Most notably, there is a row of large Fremont cottonwoods and some large blue gums (*Eucalyptus* sp.) on Sherman Island; future use of these trees by nesting raptors is possible. Further, it is considered likely that songbirds nest within trees, shrubs, and grassland habitats in or adjacent to the project site each year.

A variety of mammals common to agricultural areas likely occur in the project site. While no mammals were observed, sign of raccoon (*Procyon lotor*) was observed on Decker Island. Coyote (*Canis latrans*), black-tailed hare (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), and opossum (*Didelphis virginiana*) are expected to occur on Sherman Island. Mine personnel on Decker Island have observed Norway rats (*Rattus norvegicus*) on the island, but have not observed coyotes or any other mammals.

Based on habitat types present, a number of common amphibians and reptiles may use habitats in the project site. However, no reptiles or amphibians were observed in the site during the field surveys. The project site provides suitable for pacific chorus frog (*Pseudacris regilla*) and bullfrog (*Rana catesbeiana*). Reptiles including western fence lizard (*Sceloporus occidentalis*), Gilbert's skink (*Eumeces gilbertii*), and western terrestrial garter snake (*Thamnophis elegans*) are expected to occur at the project site.

WATERS OF THE U.S. AND WETLANDS: Waters of the U.S., including wetlands, are broadly defined under 33 Code of Federal Regulations (CFR) 328 to include navigable waterways, their tributaries, and adjacent wetlands. State and federal agencies regulate these habitats and Section 404 of the Clean Water Act requires that a permit be secured prior to the discharge of dredged or fill

materials into any waters of the U.S., including wetlands. Both CDFW and ACOE have jurisdiction over modifications to jurisdictional riverbanks, lakes, stream channels and other wetland features.

“Waters of the U.S.”, as defined in 33 CFR 328.4, encompasses Territorial Seas, Tidal Waters, and Non-Tidal Waters; Non-Tidal Waters includes interstate and intrastate rivers and streams, as well as their tributaries. In tidal waters, the limit of federal jurisdiction is high tide. The limit of federal jurisdiction of Non-Tidal Waters of the U.S. extends to the “ordinary high water mark”. The ordinary high water mark is established by physical characteristics such as a natural water line impressed on the bank, presence of shelves, destruction of terrestrial vegetation, or the presence of litter and debris.

Jurisdictional wetlands and Waters of the U.S. include, but are not limited to, perennial and intermittent creeks and drainages, lakes, seeps, and springs; emergent marshes; riparian wetlands; and seasonal wetlands. Wetlands and Waters of the U.S. provide critical habitat components, such as nest sites and a reliable source of water, for a wide variety of wildlife species.

The only potentially jurisdictional Waters of the U.S. or wetlands in or adjacent to the project site is Horseshoe Bend. The elevation of high tide in Horseshoe Bend is the limit of ACOE jurisdiction. At the proposed cable crossing, the banks of both Sherman Island and Decker Island are steep; there are no adjacent wetlands.

Horseshoe Bend is a navigable Water of the U.S. subject to Section 10 of the River and Harbor Act as well as Section 404 of the Clean Water Act. This side channel of the Sacramento River also falls under the jurisdiction of CDFW, the California Regional Water Quality Control Board (RWQCB), the State Lands Commission (SLC), and the Central Valley Flood Protection Board (CVFPB).

Beyond Horseshoe Bend, no other potentially jurisdictional wetlands or Waters of the U.S. were observed in or near the project site. On Decker Island and Sherman Island, the project site is situated entirely in upland grassland and ruderal habitats. There are no lakes, ponds, vernal pools, seasonal wetlands, seeps, marshes, agricultural wetlands, or wetlands of any other type within or immediately adjacent to the project site.

SPECIAL-STATUS SPECIES: Special-status species are plants and animals that are legally protected under the state and/or federal Endangered Species Act or other regulations. The Federal Endangered Species Act (FESA) of 1973 declares that all federal departments and agencies shall utilize their authority to conserve endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of FESA and pertains to native California species.

Special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. The presence of species with legal protection under the Endangered Species Act often represents a major constraint to development, particularly when the species are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species.

Special-status plants are those, which are designated rare, threatened, or endangered, and candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those plant species identified on Lists 1A, 1B and 2 in the Inventory of Rare and Endangered Vascular Plants of California by the California Native Plant Society (CNPS, 2010). Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of

adequate information to permit listing or rejection for state or federal status, such as those included on List 3 in the CNPS Inventory.

The likelihood of occurrence of listed, candidate, and other special-status species in the work areas is generally low. Table 2 provides a summary of the listing status and habitat requirements of special-status species that have been documented in the greater project vicinity or for which there is potentially suitable habitat in the greater project vicinity. This table also includes an assessment of the likelihood of occurrence of each of these species within the project site.

SPECIAL-STATUS PLANTS: Twenty-five (25) special-status plants were identified from the CNDDDB (2013) search and USFWS Species List (Table 2). Although some of these species may occur in close proximity to the project site, none of these species have been observed or are expected to occur in the immediate vicinity of the proposed cable. Special-status plants generally occur in relatively undisturbed areas and are largely found within unique vegetation communities such as vernal pools, marshes and swamps, and areas with unique soils. The upland grassland habitats on Sherman Island and Decker Island are routinely mowed, sprayed, and/or grazed for fire suppression. These highly disturbed upland grasslands do not provide suitable habitat for special-status plants.

Several species of special-status plants listed in Table 2 occur in marshes and swamps or riparian woodlands. These include Bolander's water hemlock (*Cicuta maculata* var. *bolanderi*), wooly rose mallow (*Hibiscus lasiocarpus*), delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Mason's lilaeopsis (*Lilaeopsis masonii*), delta mudwort (*Limosella australis*), eel-grass pondweed (*Potamogeton zosteriformis*), Sanford's arrowhead (*Sagittaria sanfordii*), side-flowering skullcap (*Scutellaria lateriflora*), and Suisun marsh aster (*Symphotrichum lentum*).

Suisun marsh aster was observed on four small near-shore islands 15+/- to 100+/- feet north of the site along the edge of Decker Island (Figure 4 and photographs in Appendix B). The Suisun marsh aster is growing at and near the

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
PLANTS						
Alkali milk-vetch	<i>Astragalus tener</i> <i>var. tener</i>	None	None	1B	Alkali playas and vernal pools.	Unlikely: the project site does not contain suitable habitat for this species. The nearest occurrence of alkali milk vetch in the CNDDDB (2013) search area is approximately 11.5 miles northwest of the project site.
Heartscale	<i>Atriplex cordulata</i>	None	None	1B	Valley and foothill grassland, chenopod scrub	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for heartscale. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 11 miles northwest of the site.
San Joaquin spearscale	<i>Atriplex joaquiniana</i>	None	None	1B	Chenopod scrub, alkali meadow, valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of San Joaquin spearscale in the CNDDDB (2013) search area is approximately 4.5 miles northeast of the project site.
Big tarplant	<i>Blepharizonia plumosa</i> ssp. <i>plumosa</i>	None	None	1B	Valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of big tarplant in the CNDDDB (2013) search area is approximately 9.5 miles southwest of the site.
Round-leaved filaree	<i>California macrophyllum</i>	None	None	2	Cismontane woodland and valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for round-leaved filaree. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Pappose tarplant	<i>Centromadia parryi</i> ssp. <i>parryi</i>	None	None	1B	Coastal salt marsh, coastal prairie, meadows and seeps, vernal mesic valley and foothill grassland; often in alkaline soils.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for pappose tarplant. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles northwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Soft bird's-beak	<i>Cordylanthus mollis ssp. mollis</i>	E	Rare	1B	Coastal salt marsh	Unlikely: the site does not contain suitable coastal salt marsh habitat for this species. The nearest occurrence of soft bird's-beak in the CNDDDB (2013) search area is approximately 12 miles northwest of the site.
Bolander's water hemlock	<i>Cicuta maculata var. bolanderi</i>	None	None	2	Fresh or brackish water marshes.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Bolander's water hemlock, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Bolander's water hemlock. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Hoover's cryptantha	<i>Cryptantha hooveri</i>	None	None	1B	Inland dunes; sandy areas in valley and foothill grasslands.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for Hoover's cryptantha. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles southwest of the site.
Dwarf downingia	<i>Downingia pusilla</i>	None	None	2	Vernal pools.	Unlikely: there are no vernal pools or seasonal wetlands in the site. The nearest occurrence of dwarf downingia in the CNDDDB (2013) search area is approximately 9 miles west of the site.
Antioch Dunes buckwheat	<i>Eriogonum nudum var. psychicola</i>	None	None	1B	Inland dunes.	Unlikely: there is no suitable habitat for Antioch Dunes buckwheat in the site. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.
Mt. Diablo buckwheat	<i>Eriogonum truncatum</i>	None	None	1A	Chaparral, coastal scrub, valley and foothill grassland	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Mt. Diablo Buckwheat in the CNDDDB (2013) search area is approximately 8 miles southwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Contra Costa wallflower	<i>Erysimum capitatum</i> ssp. <i>angustatum</i>	E	E	1B	Inland dunes.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for Contra Costa wallflower. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 9.5 miles southwest of the site. The site is not in designated critical habitat for Contra Costa wallflower (CFR, 1990a).
Diamond-petaled California poppy	<i>Eschscholzia rhombipetala</i>	None	None	1B	Valley and foothill grasslands, alkaline, clay slopes and flats.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species; no alkaline or clay soils were observed in the site. The nearest occurrence of diamond-petaled California poppy in the CNDDDB (2013) search area is approximately 9 miles southwest of the site.
Fragrant fritillary	<i>Fritillaria liliacea</i>	None	None	1B	Coastal scrub, valley and foothill grassland and coastal prairie; often on serpentine soils.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species; there are no serpentine soils in the site. The nearest occurrence of fragrant fritillary in the CNDDDB (2013) search area is approximately 8.5 miles northwest of the site.
Woolly rose mallow	<i>Hibiscus lasiocarpus</i>	None	None	2	Freshwater marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may provide suitable habitat for woolly rose mallow, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for woolly rose mallow. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 3.5 miles northeast of the site.
Carquinez goldenbush	<i>Isocoma arguta</i>	None	None	1B	Valley and foothill grasslands.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Carquinez goldenbush in the CNDDDB (2013) search area is approximately 9 miles northwest of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Northern California black walnut	<i>Juglans hindsii</i>	None	None	1B	Riparian forest and woodlands along the Sacramento River.	Unlikely: no northern California black walnuts were observed in the site. This species is recorded as having occurred along the Sacramento River between Freeport and Rio Vista, however the CNDDDB (2013) describes this population as extirpated.
Contra Costa goldfields	<i>Lasthenia conjugens</i>	E	None	1B	Valley and foothill grassland within vernal pools and swales.	Unlikely: the site does not provide suitable habitat for Contra Costa goldfields. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 8.5 miles southwest of the site. The site is not in designated critical habitat for Contra Costa goldfields (USFWS, 2005a).
Delta tule pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	None	None	1B	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Delta tule pea, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Delta tule pea. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, with the closest record in the search area approximately 3 miles southeast of the project site.
Mason's lilaepsis	<i>Lilaeopsis masonii</i>	None	R	1B	Marshes, swamps and riparian scrub.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Mason's lilaepsis, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Mason's lilaepsis. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, including the Sacramento River just west of the site (along the west edge of Decker Island) and along the north edge of Sherman Island a few miles south of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Delta mudwort	<i>Limosella australis</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Delta mudwort, the sandy cove does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Delta mudwort. This species is recorded in the CNDDDB (2013) in several locations in nearby waterways, including the Sacramento River just northwest of the site (near the north tip of Decker Island) and along the south edge of Decker Island a few miles south of the site.
Baker's navarretia	<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	None	None	1B	Vernal pools and swales within a variety of vegetation communities.	Unlikely: there are no vernal pools or swales in the site. The closest documented occurrence of Baker's navarretia in the CNDDDB (2013) search area is approximately 12 miles northwest of the site.
Colusa grass	<i>Neostapfia colusana</i>	T	E	1B	Large, deep vernal pools; blooms May - August.	Unlikely: there are no vernal pools or seasonal wetlands in the site. There are no occurrences of Colusa grass in the CNDDDB (2013) search area.
Antioch dunes evening primrose	<i>Oenothera deltooides</i> ssp. <i>howellii</i>	E	E	1B	Interior dunes in the Delta region.	Unlikely: there is no dune habitat in the site for this species. The nearest occurrence of Antioch dunes evening primrose in the CNDDDB (2013) search area is approximately 6.5 miles southwest of the site. The site is not in designated critical habitat for Antioch dunes evening primrose (CFR, 1990b).
Bearded popcorn-flower	<i>Plagiobothrys hystriculus</i>	None	None	1B	Vernal pools, valley and foothill grassland.	Unlikely: the site does not provide suitable habitat for this species. The nearest occurrence of bearded popcorn-flower in the CNDDDB (2013) search area is approximately 7.5 miles northwest of the site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status 1	State Status 2	CNPS List 3	Habitat	Potential for Occurrence in the Work Areas
Eel-grass pondweed	<i>Potamogeton zosteriformis</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for this species, the sandy cove does not provide suitable habitat for eel-grass pondweed. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for this species. The nearest occurrence of eel-grass pondweed in the CNDDB (2013) search area is approximately 4.5 miles southeast of the site.
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	None	None	1B	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for Sanford's arrowhead, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Sanford's arrowhead. The nearest occurrence of this species in the CNDDB (2013) search area is approximately 10.5 miles northeast of the site.
Side-flowering skullcap	<i>Scutellaria lateriflora</i>	None	None	2	Marshes and swamps.	Unlikely: while the near-shore islands just north of the site along the edge of Decker Island may be potentially suitable for side-flowering skullcap, the sandy cove is not suitable for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for side-flowering skullcap. The nearest occurrence of this species in the CNDDB (2013) search area is approximately 5 miles northeast of the site.
Keck's checkerbloom	<i>Sidalcea keckii</i>	E	None	1B	Cismontane woodland, valley and foothill grassland.	Unlikely: the river banks are highly disturbed and do not provide suitable habitat for this species. The nearest occurrence of Keck's checkerbloom in the CNDDB (2013) search area is approximately 9 miles northwest of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Suisun marsh aster	<i>Symphotrichum lentum</i>	None	None	1B	Marshes and swamps.	Unlikely: Suisun marsh aster occurs on the near-shore islands just north of the site along the edge of Decker Island. However, the sandy cove where the alignment is proposed does not provide suitable habitat for this species. The shore of Sherman Island is shaded and does not provide suitable marsh and swamp habitat for Suisun marsh aster. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the project site.
WILDLIFE						
Birds						
Swainson's hawk	<i>Buteo swainsoni</i>	None	T	N/A	Breeds in stands of tall trees in open areas. Requires adjacent suitable foraging habitats such as grasslands or alfalfa fields supporting rodents.	Low: the grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker island and on Sherman Island in the vicinity of the alignment. There are many records of nesting Swainson's hawks in the project vicinity; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.
California black rail	<i>Laterallus jamaicensis coturniculus</i>	None	T	N/A	Mainly inhabits salt marshes bordering larger bays.	Unlikely: while they may nest in regional delta waterways, the river banks and near-shore areas do not provide suitable habitat for California black rail. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 7 miles southwest of the project site.
Bank swallow	<i>Riparia riparia</i>	None	T	N/A	Nests colonially in riparian habitats; requires vertical banks and cliffs with fine-textured soils.	Unlikely: there is no suitable nesting habitat for bank swallows in the project site. The only occurrence of this species in the CNDDDB (2013) search area is at Brannan Island State Recreational Area, approximately 2 miles northeast of the project site.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Burrowing owl	<i>Athene cunicularia</i>	None	SC	N/A	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Low: no burrowing owls, ground squirrels, or ground squirrel burrows were observed in or near the site. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.
Tricolored blackbird	<i>Agelaius tricolor</i>	None	SC	N/A	Open water and protected nesting substrate, usually cattails and riparian scrub.	Moderate: tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.
Mountain plover	<i>Charadrius montanus</i>	None	None	SC	Winter migrant that forages and stages in short grasslands and grazed or newly plowed fields.	Unlikely: mountain plover may fly over or forage in the site during winter and spring migration; this species is not known to nest in this area. The nearest occurrence of mountain plover in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.
Suisun song sparrow (Modesto population)	<i>Melospiza melodia</i>	None	SC	N/A	Brackish water marshes. Inhabits cattails, tules, and tangles bordering sloughs.	Unlikely: Suisun song sparrow may fly over or forage in the site on occasion. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 0.5 miles northwest of the site.
Suisun song sparrow	<i>Melospiza melodia maxillaris</i>	None	SC	N/A	Brackish water marshes in and near Suisun Bay. Inhabits cattails, tules, and tangles bordering sloughs.	Unlikely: Suisun song sparrow may fly over or forage in the site on occasion. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 7.5 miles southwest of the site.
California least tern	<i>Sturnula antillarum browni</i>	E	E	N/A	Estuaries and bays; nests on exposed tidal flats or beaches.	Unlikely: the site does not provide suitable habitat for California least tern. There are no occurrences of this species in the CNDDDB (2013) search area.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status 1	State Status 2	CNPS List 3	Habitat	Potential for Occurrence in the Work Areas
Saltmarsh common yellowthroat	<i>Geothlypis trichas sinuosa</i>	None	None	N/A	San Francisco Bay fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging	Unlikely: the site does not provide suitable habitat for saltmarsh common yellowthroat. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 6 miles southwest of the site.
Mammals						
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	T	N/A	Inhabits open, dry grasslands and scrublands with loose textured soils.	Unlikely: grasslands in and near the site provide potentially suitable habitat for San Joaquin kit fox. However, the site is well north of the range of this species. There are no occurrences of this species in the CNDDDB (2013) search area.
Salt-marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E	E	N/A	Saline emergent wetlands dominated by pickleweed.	Unlikely: the site does not provide suitable habitat for salt-marsh harvest mouse. The nearest occurrence of this species in the CNDDDB (2013) search area is approximately 6.5 miles southwest of the site.
Western red bat	<i>Lasiurus blossevillii</i>	None	SC	N/A	Roosts in trees in a wide variety of habitats between the coast western Sierra Nevada mountains.	Unlikely: there is suitable roosting habitat for western red bat in the trees along the river banks, but there are no trees in the site. This species may fly over, forage, or roost near the site on occasion. The nearest occurrence of western red bat in the CNDDDB (2013) search area is approximately 5 miles northeast of the site.
Reptiles & Amphibians						
Giant garter snake	<i>Thamnophis gigas</i>	T	T	N/A	Freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches, primarily for dispersal or migration.	Unlikely: Horseshoe Bend provides poor quality habitat for giant garter snake, which are generally absent from larger rivers. The nearest occurrence of this species recorded in the CNDDDB (2013) search area is approximately 1.5 miles south of the project site. The validity of this occurrence is questionable as the CNDDDB ranks it as "poor", and the record is a visual observation of a large snake (about 5 feet long) crossing the road, and not a specimen in-hand.

TABLE 2

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
California red-legged frog	<i>Rana aurora draytonii</i>	T	SC	N/A	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	Unlikely: there is no suitable aquatic habitat for California red-legged frog in or near the project site. California red-legged frog is presumed extinct on the floor of the Central Valley of California. There are no recorded occurrences of this species in the CNDDDB (2013) search area. The project site is not within designated critical habitat for California red-legged frog (USFWS, 2006).
Western pond turtle	<i>Emys marmorata</i>	None	SC	N/A	Ponds, marshes, streams, and ditches with emergent aquatic vegetation and basking areas.	Low: the near-shore aquatic habitats and stream banks provide suitable habitat for western pond turtle. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.
Silvery legless lizard	<i>Anniella pulchra pulchra</i>	None	SC	N/A	Sandy or loose loamy soils under sparse vegetation.	Unlikely: the river banks do not provide suitable habitat for silvery legless lizard. This species is also not known to occur in the area; the nearest occurrences of this species in the CNDDDB (2013) search area are in Antioch, approximately 7 to 8 miles southwest of the site.
California tiger salamander	<i>Ambystoma californiense</i>	T	T	N/A	Seasonal water bodies without fish (i.e., vernal pools and stock ponds) and grassland/ woodland habitats with summer refugia (i.e., burrows).	Unlikely: There is no suitable habitat within or near the project site for California tiger salamander. This species occurs in the transitional bands between the valley floor and foothills and is not known to occur on delta islands. The nearest occurrence of California tiger salamander in the CNDDDB (2013) search area is approximately 14 miles northwest of the project site. The site is not within designated critical habitat for California tiger salamander (USFWS, 2005b).
Invertebrates						
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	T	None	N/A	Elderberry shrubs, usually in Central Valley riparian habitats.	Unlikely: there are no blue elderberry shrubs in or adjacent to the site. There are no occurrences of valley elderberry longhorn beetle recorded in the CNDDDB (2013) in the search area. The site is not within designated critical habitat for valley elderberry longhorn beetle (USFWS 1980a).

TABLE 2

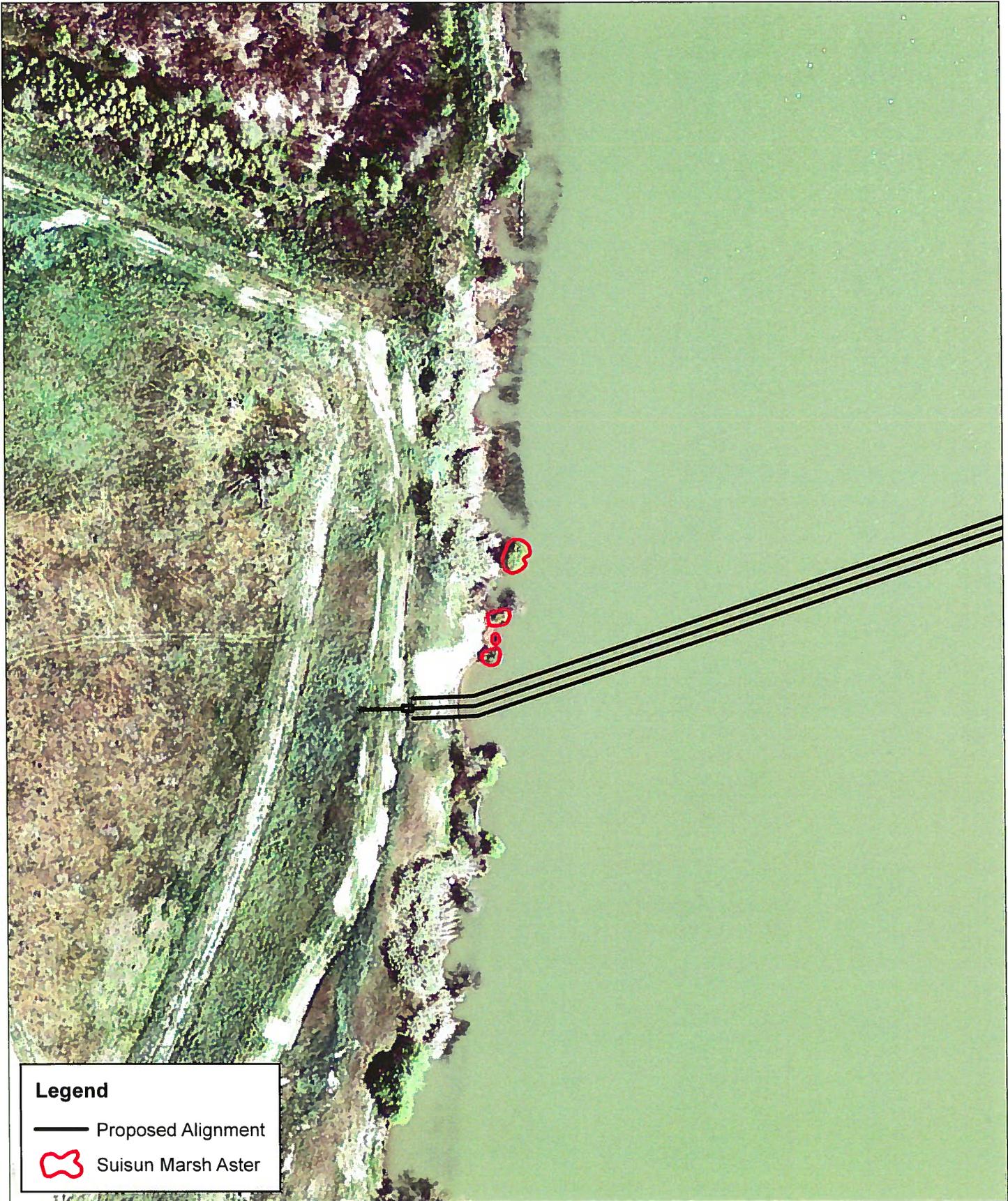
SPECIAL-STATUS PLANT AND WILDLIFE SPECIES DOCUMENTED OR POTENTIALLY-OCCURRING IN THE PROJECT VICINITY

Common Name	Scientific Name	Federal Status ¹	State Status ²	CNPS List ³	Habitat	Potential for Occurrence in the Work Areas
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of vernal pool fairy shrimp in the CNDDDB (2013) search area is approximately 11 miles northwest of the project site. The site is not within designated critical habitat for vernal pool fairy shrimp (USFWS 2005a).
Conservancy fairy shrimp	<i>Branchinecta conservatio</i>	T	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of Conservancy fairy shrimp in the CNDDDB (2013) search area is approximately 9 miles west of the project site. The site is not within designated critical habitat for Conservancy fairy shrimp (USFWS 2005a).
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E	None	N/A	Vernal pools	Unlikely: there are no vernal pools in or near the site. The closest occurrence of vernal pool tadpole shrimp in the CNDDDB (2013) search area is approximately 9 miles west of the project site. The site is not within designated critical habitat for vernal pool tadpole shrimp (USFWS 2005a).
Delta green ground beetle	<i>Elaphrus viridis</i>	T	None	N/A	Margins of vernal pools in grasslands.	Unlikely: there are no vernal pools in or near the site. There are no occurrences of delta green ground beetle recorded in the CNDDDB (2013) in the search area. The site is not within designated critical habitat for Delta green ground beetle (USFWS 1980b).
Lange's metalmark butterfly	<i>Apodemia mormo langei</i>	E	None	N/A	Inhabits stabilized dunes along the San Joaquin River.	Unlikely: there is no dune habitat in the project site. The closest occurrence of Lange's metalmark butterfly in the CNDDDB (2013) search area is approximately 6 miles southwest of the site.

1 T= Threatened; E = Endangered.

2 T = Threatened; E = Endangered; R = Rare; SC=State of California Species of Special Concern

3 CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere; List 2 includes plants that are rare, threatened or endangered in California but are more common elsewhere.



Legend

— Proposed Alignment

 Suisun Marsh Aster

Figure 4

Moore Biological
Consultants

0 50 100

1 inch = 100 feet



Aerial: USGS (April 9, 2011)

Suisun Marsh Aster

Decker Island

Solano and Sacramento
Counties, CA

Map Date: January 2014

water line in association with common verbena (*Verbena hastata*), Himalayan blackberry, California wild rose, and California wild grape.

Suisun marsh aster is not listed at either the state or federal level but is on CNPS List 1B (CNPS, 2010). CNPS List 1B includes species that are rare, threatened, or endangered in California and elsewhere. Suisun marsh aster is recorded in the CNDDDB (2013) in several locations within delta waterways within two to three miles of the project site. The nearest occurrence of this species in the CNDDDB (2013) search area is on the east edge of Decker Island, just north of the site.

Mason's lilaeopsis, delta tule pea, and delta mudwort are also recorded in the CNDDDB (2013) in several locations in the waterways near the site. These species, along with the other species in Table 2 that occur in marsh and swamp habitats, may also occur on the small near-shore islands just north of the site along the edge of Decker Island.

The sandy cove where the alignment is proposed does not provide suitable habitat for Suisun marsh aster or any of the other species in Table 2 that occur in marsh and swamp habitats. The shoreline of Sherman Island is shaded and does not provide suitable marsh and swamp habitat required by for Suisun marsh aster or other marsh or swamp species.

SPECIAL-STATUS WILDLIFE: The potential for intensive use of habitats within the project site by special-status wildlife species is also generally considered low. Of the species identified in Table 2, Swainson's hawk, burrowing owl, tricolored blackbird, and western pond turtle have at least some potential to occur within the project site. Swainson's hawk and other bird species protected by the Migratory Bird Treaty Act and Fish and Game Code of California have potential to occur in or near the site and could be adversely affected by construction activities if they nested in or near the site during construction. If present, western pond turtle could be adversely impacted by project construction. There is no suitable habitat in the project site for the remaining species in Table 2.

SWAINSON'S HAWK: The Swainson's hawk is a migratory hawk listed by the State of California as a Threatened species. The Migratory Bird Treaty Act and Fish and Game Code of California protect Swainson's hawks year-round, as well as their nests during the nesting season (March 1 through September 15).

Swainson's hawk are found in the Central Valley primarily during their breeding season, a population is known to winter in the San Joaquin Valley.

Swainson's hawks prefer nesting sites that provide sweeping views of nearby foraging grounds consisting of grasslands, irrigated pasture, hay, and wheat crops. Most Swainson's hawks are migratory, wintering in Mexico and breeding in California and elsewhere in the western United States. This raptor generally arrives in the Central Valley in mid-March, and begins courtship and nest construction immediately upon arrival at the breeding sites. The young fledge in early July, and most Swainson's hawks leave their breeding territories by late August. The CNDDDB (2013) contains numerous records of nesting Swainson's hawks within the search area; the nearest occurrence of nesting Swainson's hawks in the CNDDDB (2013) search area is on the north tip of Decker Island, approximately 0.5 miles north of the site.

No Swainson's hawk nests were located during the surveys, which was conducted during the non-breeding season. The grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for Swainson's hawk. There are a few potential nest trees on Decker Island and on Sherman Island in the vicinity of the alignment that could be used by nesting Swainson's hawks.

BURROWING OWL: The Migratory Bird Treaty Act and Fish and Game Code of California protect burrowing owls year-round, as well as their nests during the nesting season (February 1 through August 31). Burrowing owls are a year-long resident in a variety of grasslands as well as scrub lands that have a low density of trees and shrubs with low growing vegetation; burrowing owls that nest in the Central Valley may winter elsewhere.

The primary habitat requirement of the burrowing owl is small mammal burrows for nesting. The owl usually nests in abandoned ground squirrel burrows, although they have been known to dig their own burrows in softer soils. In urban areas, burrowing owls often utilize artificial burrows including pipes, culverts, and piles of concrete pieces. This semi-colonial owl breeds from March through August, and is most active while hunting during dawn and dusk. The nearest occurrence of nesting burrowing owls in the CNDDDB (2013) search area is approximately 2 miles northeast of the project site.

No burrowing owls were observed in the project site. Further no ground squirrels or ground squirrel burrows were observed in or adjacent to the site. The site is well within the species range and burrowing owls may fly over or forage in the site on an occasional basis. It is possible that burrowing owls could nest in or near the site if burrow habitat is available.

TRICOLORED BLACKBIRD: The tricolored blackbird is a State of California Species of Concern and is also protected by the federal Migratory Bird Treaty Act. Tricolors are colonial nesters requiring very dense stands of emergent wetland vegetation and/or dense thickets of wild rose or blackberries adjacent to open water for nesting. This species is endemic to California. The nearest occurrence of tricolored blackbirds in the CNDDDB (2013) search area is approximately 10.5 miles northwest of the project site.

Tricolored blackbirds were observed flying around and perching in blackberry brambles and emergent wetland vegetation along the shore of Decker Island downstream of the site. The grasslands on Decker Island and crop lands on nearby islands provide foraging habitat for this species. The blackberry brambles, patches of wild rose, willows, and emergent wetland vegetation along the banks of Decker Island are suitable for nesting and tricolored blackbirds may nest in or near the site during some years. Some blackberry brambles (15+/- feet wide) would be removed during construction but would be expected to revegetate rapidly; the project will not cause a permanent loss of potential nesting habitat.

WESTERN POND TURTLE: The western pond turtle is a state species of concern, but is not a listed species at the state or federal level. Western pond turtles are associated with permanent or nearly permanent bodies of water with adequate basking sites such as logs, rocks or open mud banks. The nearest occurrence of this species in the CNDDDB (2013) search area is on Jersey Island, approximately 4 miles southeast of the project site.

No western pond turtles were observed in or near the site. However, the near-shore aquatic habitats and stream banks along Horseshoe Bend provide suitable habitat for western pond turtle. This species may occur in the Horseshoe Bend in the vicinity of the alignment and could potentially nest in sandy areas along the shore of Decker Island.

CRITICAL HABITAT: The site is not within designated critical habitat for California red-legged frog (USFWS, 2006), federally listed vernal pool shrimp (USFWS, 2005a), California tiger salamander (USFWS, 2005a), valley elderberry longhorn beetle (USFWS, 1980), Delta Green Ground Beetle (USFWS, 1980), Contra Costa wallflower (CFR, 1990a), Contra Costa goldfields (USFWS, 2005a), or Antioch dunes evening primrose (CFR, 1990b).

Avoidance and Minimization Measures

The following avoidance and minimization measures will be incorporated into the project to reduce the potential for impacts to jurisdictional Waters of the U.S. and wetlands, special-status species, and potential or actual habitats of special-status species:

- Disturbance in Waters of the U.S. will be limited to minimal amount to accomplish the work and shall occur within the 15-foot corridor. The under-water construction shall minimize potential entrainment of

sediment by sidecasting excavated material immediately adjacent to the trench and not bringing it up through the water column.

- In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with CDFW and National Marine Fisheries Service (NMFS).
- Standard construction best management practices (BMPs) shall be employed to minimize dust, erosion, and potential sedimentation. These BMPs may also include use of water trucks, compaction of soil, re-seeding disturbed areas, and implementation of other erosion control measures such as silt fences, straw wattles, or hay bales.
- Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all permit conditions and mitigation measures related to the protection of habitats and species.
- A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material.
- If construction commences between February 1 and August, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the

beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors' active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG's 1994 Staff Report regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

- Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be

necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above.

- Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.
- Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the 50-foot buffer area will be delayed until hatching is complete and the young have left the nest site.
- A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program

will be Swainson's hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.

The collective implementation of these measures as a part of the project will assure the protection of sensitive habitat and species and the maintenance of biological functions and values.

Thank you, again, for asking Moore Biological Consultants to assist with the project. Please feel free to call me at (209) 745-1159 with any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Moore', with a stylized flourish at the end.

Diane S. Moore, M.S.
Principal Biologist

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for Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*). Designated in Federal Register notice 43:39044; August 31, 1978.

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Appendix A

CNDDDB Summary Report and Exhibits

USFWS Species List

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 <i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020			G2G3	S2	SC
2 <i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
3 <i>Anniella pulchra pulchra</i> silvery legless lizard	ARACC01012			G3G4T3T4 Q	S3	SC
4 <i>Anthicus antiochensis</i> Antioch Dunes anthicid beetle	IICOL49020			G1	S1	
5 <i>Anthicus sacramento</i> Sacramento anthicid beetle	IICOL49010			G1	S1	
6 <i>Apodemia mormo langei</i> Lange's metalmark butterfly	IILEPH7012	Endangered		G5T1	S1	
7 <i>Archoplites interruptus</i> Sacramento perch	AFCQB07010			G2G3	S1	SC
8 <i>Ardea herodias</i> great blue heron	ABNGA04010			G5	S4	
9 <i>Astragalus tener var. tener</i> alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2
10 <i>Athene cunicularia</i> burrowing owl	ABNSB10010			G4	S2	SC
11 <i>Atriplex cordulata var. cordulata</i> heartscale	PDCHE040B0			G3T2	S2	1B.2
12 <i>Atriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
13 <i>Blepharizonia plumosa</i> big tarplant	PDAST1C011			G2	S2	1B.1
14 <i>Branchinecta conservatio</i> Conservancy fairy shrimp	ICBRA03010	Endangered		G1	S1	
15 <i>Branchinecta lynchi</i> vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
16 <i>Branchinecta mesovallensis</i> midvalley fairy shrimp	ICBRA03150			G2	S2	
17 <i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070		Threatened	G5	S2	
18 <i>California macrophylla</i> round-leaved filaree	PDGER01070			G2	S2	1B.1
19 <i>Centromadia parryi ssp. parryi</i> pappose tarplant	PDAST4R0P2			G3T1	S1	1B.2
20 <i>Charadrius montanus</i> mountain plover	ABNNB03100			G3	S2?	SC
21 <i>Chloropyron molle ssp. molle</i> soft bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
22 <i>Cicuta maculata var. bolanderi</i> Bolander's water-hemlock	PDAP10M051			G5T3T4	S2	2B.1
23 <i>Coastal Brackish Marsh</i>	CTT52200CA			G2	S2.1	

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

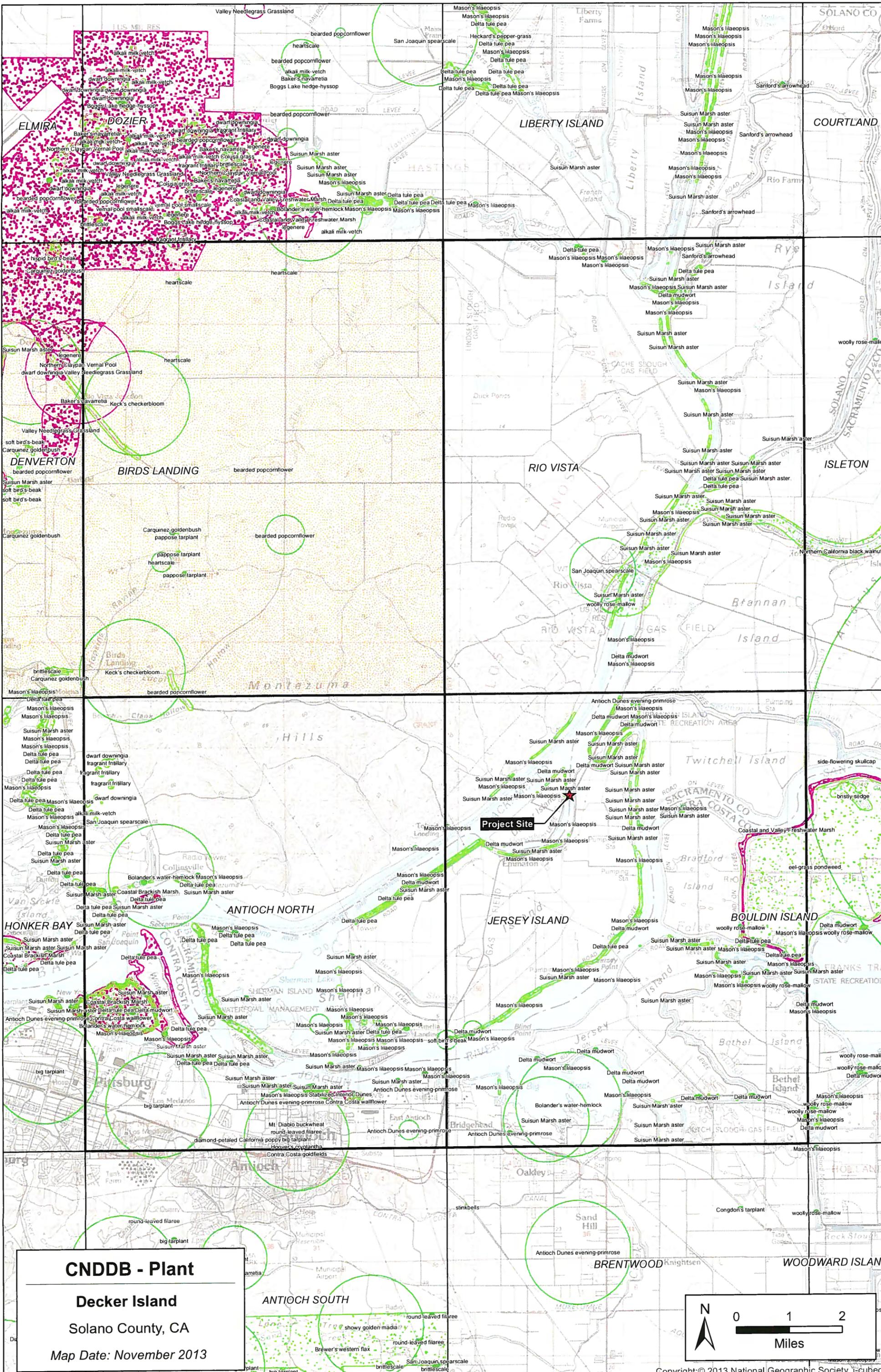
Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 <i>Coastal and Valley Freshwater Marsh</i>	CTT52410CA			G3	S2.1	
25 <i>Coelus gracilis</i> San Joaquin dune beetle	IICOL4A020			G1	S1	
26 <i>Cryptantha hooveri</i> Hoover's cryptantha	PDBOR0A190			GH	SH	1A
27 <i>Downingia pusilla</i> dwarf downingia	PDCAM060C0			G2	S2	2B.2
28 <i>Efferia antiochi</i> Antioch efferian robberfly	IIDIP07010			G1G3	S1S3	
29 <i>Elanus leucurus</i> white-tailed kite	ABNKC06010			G5	S3	
30 <i>Emys marmorata</i> western pond turtle	ARAAD02030			G3G4	S3	SC
31 <i>Eriogonum nudum var. psychicola</i> Antioch Dunes buckwheat	PDPGN0849Q			G5T1	S1	1B.1
32 <i>Eriogonum truncatum</i> Mt. Diablo buckwheat	PDPGN085Z0			G2	S2	1B.1
33 <i>Erysimum capitatum var. angustatum</i> Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
34 <i>Eschscholzia rhombipetala</i> diamond-petaled California poppy	PDPAP0A0D0			G1	S1	1B.1
35 <i>Eucerceris ruficeps</i> redheaded sphecid wasp	IIHYM18010			G1G3	S1S2	
36 <i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0			G2	S2	1B.2
37 <i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A			G5T2	S2	SC
38 <i>Hibiscus lasiocarpus var. occidentalis</i> woolly rose-mallow	PDMAL0H0R3			G5T2	S2	1B.2
39 <i>Hygrotus curvipes</i> curved-foot hygrotus diving beetle	IICOL38030			G1	S1	
40 <i>Hypomesus transpacificus</i> Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
41 <i>Idiostatus middlekauffi</i> Middlekauff's shieldback katydid	IORT31010			G1G2	S1	
42 <i>Isocoma arguta</i> Carquinez goldenbush	PDAST57050			G1	S1	1B.1
43 <i>Juglans hindsii</i> Northern California black walnut	PDJUG02040			G1	S1	1B.1
44 <i>Lasiurus blossevillii</i> western red bat	AMACC05060			G5	S3?	SC
45 <i>Lasiurus cinereus</i> hoary bat	AMACC05030			G5	S4?	
46 <i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered		G1	S1	1B.1
47 <i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041		Threatened	G4T1	S1	

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait

Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
48 <i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	PDFAB250D2			G5T2	S2.2	1B.2
49 <i>Lepidurus packardii</i> vernal pool tadpole shrimp	ICBRA10010	Endangered		G3	S2S3	
50 <i>Lillaeopsis masonii</i> Mason's lillaeopsis	PDAPI19030		Rare	G2	S2	1B.1
51 <i>Limosella australis</i> Delta mudwort	PDSCR10050			G4G5	S2	2B.1
52 <i>Linderiella occidentalis</i> California linderiella	ICBRA06010			G3	S2S3	
53 <i>Melospiza melodia</i> song sparrow ("Modesto" population)	ABPBXA3010			G5	S3?	SC
54 <i>Melospiza melodia maxillaris</i> Suisun song sparrow	ABPBXA301K			G5T2	S2	SC
55 <i>Metapogon hurdi</i> Hurd's metapogon robberfly	IIDIP08010			G1G3	S1S3	
56 <i>Myrmosula pacifica</i> Antioch multilid wasp	IIHYM15010			GH	SH	
57 <i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	PDPLM0C0E1			G4T2	S2	1B.1
58 <i>Northern Claypan Vernal Pool</i>	CTT44120CA			G1	S1.1	
59 <i>Oenothera deltoides</i> ssp. <i>howellii</i> Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
60 <i>Perdita scitula antiochensis</i> Antioch andrenid bee	IIHYM01031			G1T1	S1	
61 <i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020			G5	S3	
62 <i>Philanthus nasalis</i> Antioch specid wasp	IIHYM20010			G1	S1	
63 <i>Plagiobothrys hystriculus</i> bearded popcornflower	PDBOR0V0H0			G2	S2	1B.1
64 <i>Potamogeton zosteriformis</i> eel-grass pondweed	PMPOT03160			G5	S2.2?	2B.2
65 <i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
66 <i>Riparia riparia</i> bank swallow	ABPAU08010		Threatened	G5	S2S3	
67 <i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0			G3	S3	1B.2
68 <i>Scutellaria lateriflora</i> side-flowering skullcap	PDLAM1U0Q0			G5	S1	2B.2
69 <i>Sidalcea keckii</i> Keck's checkerbloom	PDMAL110D0	Endangered		G1	S1	1B.1
70 <i>Sphecodogastra antiochensis</i> Antioch Dunes halcitiid bee	IIHYM78010			G1	S1	
71 <i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010		Threatened	G5	S1	SC

California Department of Fish and Game
 Natural Diversity Database
 Selected Elements by Scientific Name - Portrait

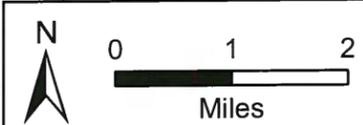
Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
72 <i>Stabilized Interior Dunes</i>	CTT23100CA			G1	S1.1	
73 <i>Symphotrichum lentum</i> Suisun Marsh aster	PDASTE8470			G2	S2	1B.2
74 <i>Thamnophis gigas</i> giant garter snake	ARADB36150	Threatened	Threatened	G2G3	S2S3	
75 <i>Valley Needlegrass Grassland</i>	CTT42110CA			G3	S3.1	

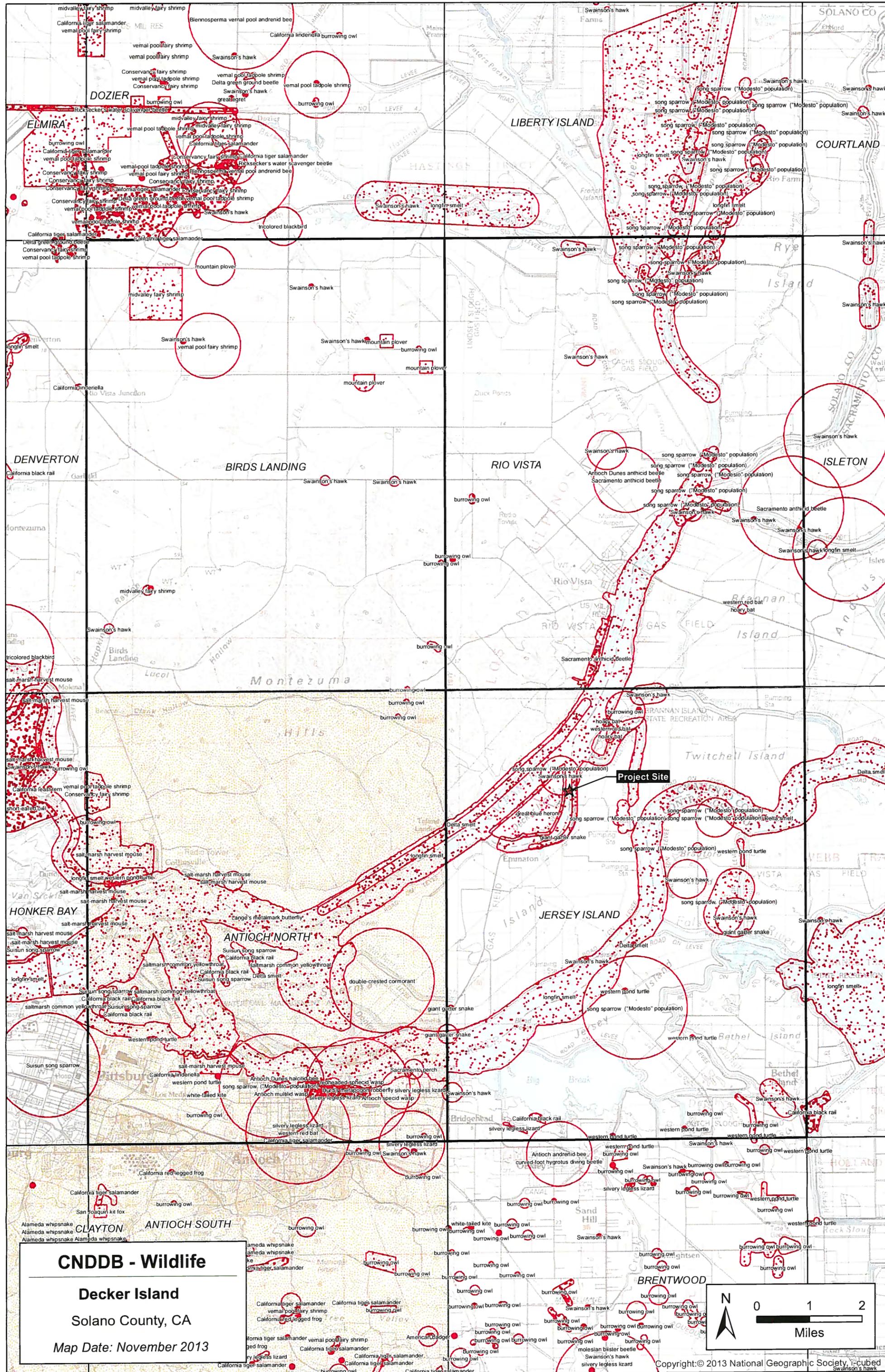


CNDDDB - Plant

Decker Island
Solano County, CA

Map Date: November 2013

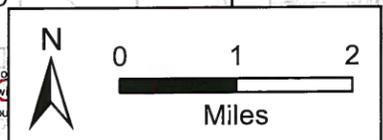




CNDDDB - Wildlife

Decker Island
Solano County, CA

Map Date: November 2013



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

Document Number: 140124061802

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

- Apodemia mormo langei*
Lange's metalmark butterfly (E)
- Branchinecta conservatio*
Conservancy fairy shrimp (E)
- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Elaphrus viridis*
delta green ground beetle (T)
- Lepidurus packardi*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

- Ambystoma californiense*
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)
- Rana draytonii*
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Erysimum capitatum ssp. angustatum
Contra Costa wallflower (E)
Critical Habitat, Contra Costa wallflower (X)

Lasthenia conjugens
Contra Costa goldfields (E)

Neostapfia colusana
Colusa grass (T)

Oenothera deltooides ssp. howellii
Antioch Dunes evening-primrose (E)
Critical habitat, Antioch Dunes evening-primrose (X)

Sidalcea keckii
Keck's checker-mallow (=checkerbloom) (E)

Quads Containing Listed, Proposed or Candidate Species:

RIO VISTA (480B)
JERSEY ISLAND (480C)
BIRDS LANDING (481A)
ANTIOCH NORTH (481D)

County Lists

No county species lists requested.

Key:

- (E) *Endangered* - Listed as being in danger of extinction.
- (T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
- (P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the [National Oceanic & Atmospheric Administration Fisheries Service](#). Consult with them directly about these species.
- Critical Habitat* - Area essential to the conservation of a species.
- (PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

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

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

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

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

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

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

Plants

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

Surveying

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

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

Your Responsibilities Under the Endangered Species Act

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

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

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

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

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

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

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

Critical Habitat

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

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

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

Candidate Species

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

Species of Concern

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

Wetlands

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

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be April 24, 2014.

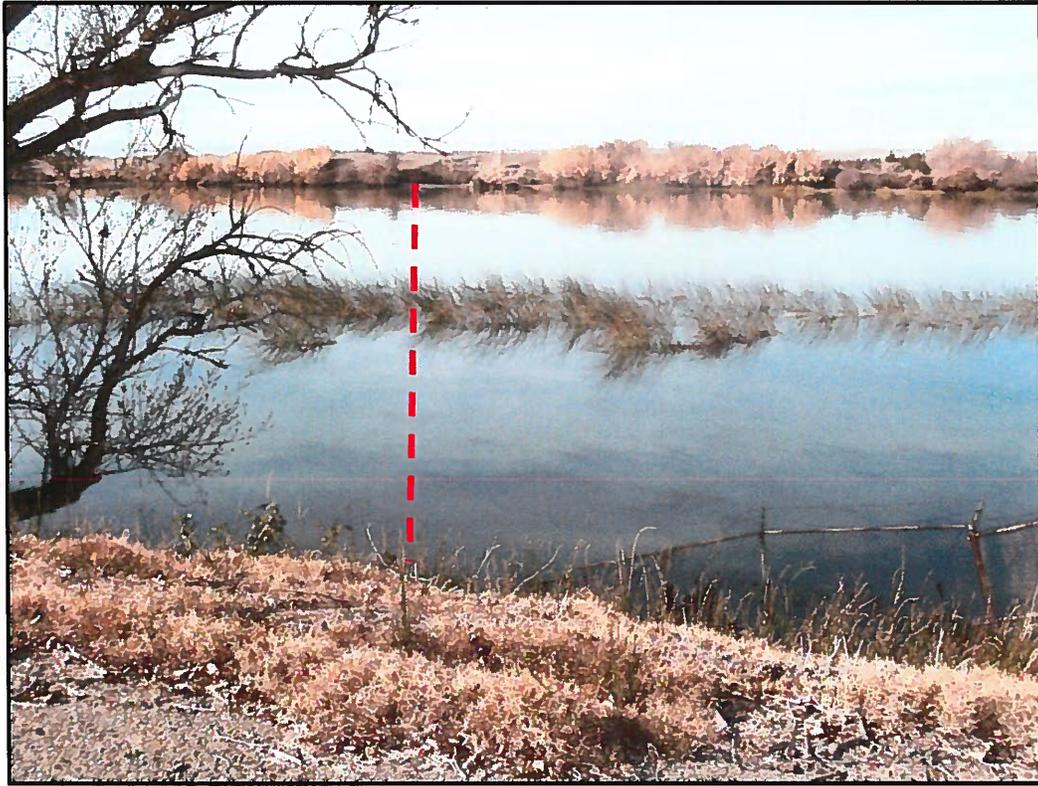
Appendix B
Photographs



Proposed alignment as viewed from Decker Island, looking east; 10/30/13.



Bank on Decker Island where the cable bundle will descend down to the river; 10/30/13.
Note the stake on the top of the bank is the same stake in the top photograph.



Looking along the proposed alignment from Sherman Island toward Decker Island; 01/21/14.



Levee bank on Sherman Island where the cable bundle will descend down to the river; 01/21/14.
Note that the alignment is in the foreground, on the near side of the fence where there are no trees.



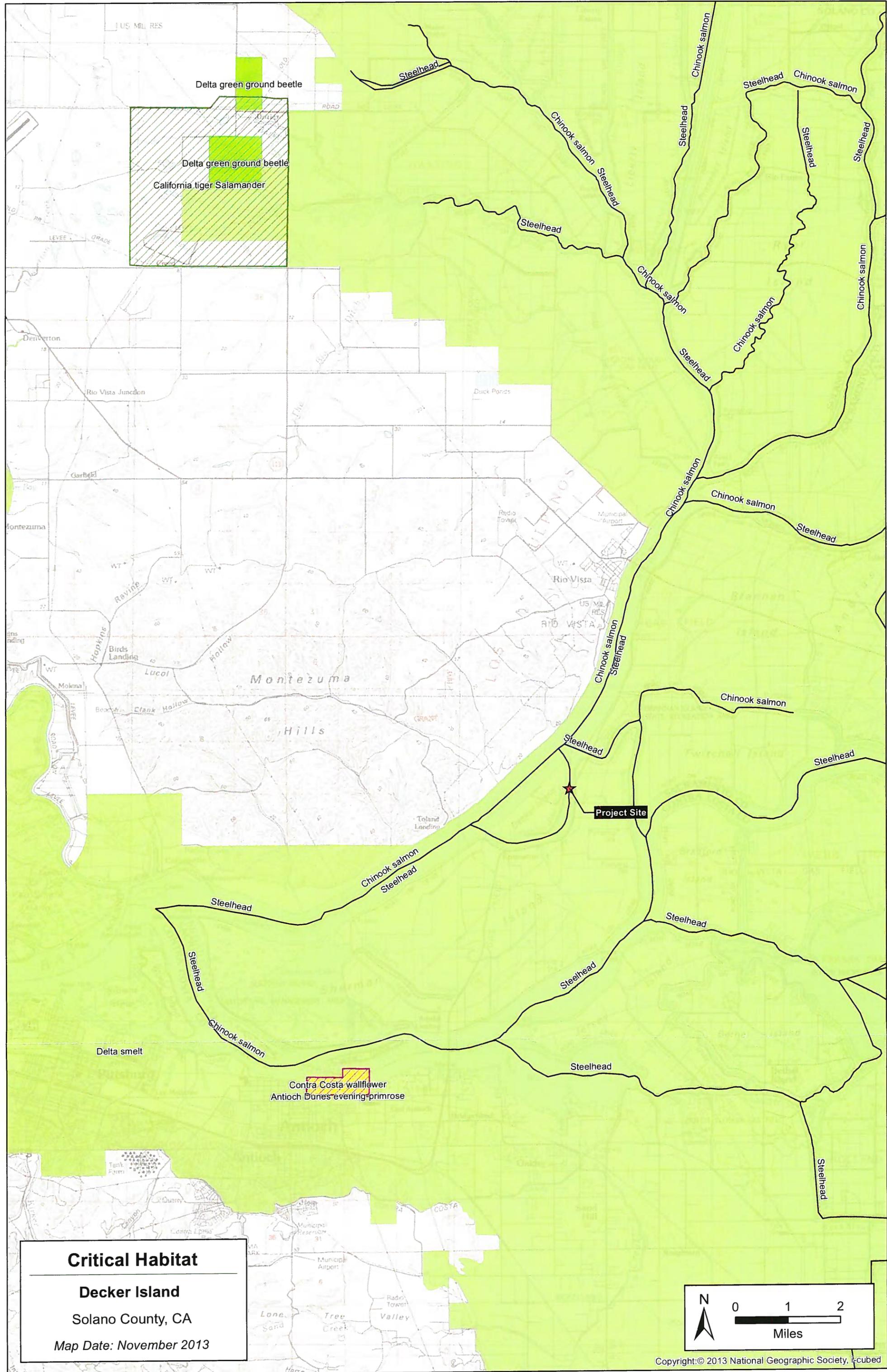
Near-shore islands near Decker Island supporting Suisun Marsh aster, looking southwest; 10/24/13. The alignment will ascend the bank in the blackberries in the cove south of the near-shore islands.



Ruderal grassland area on the land side of the levee on Sherman Island, looking northwest; 01/21/14.

Appendix C

Federally Designated Critical Habitat

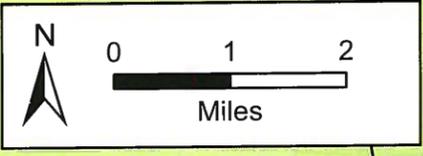


Critical Habitat

Decker Island

Solano County, CA

Map Date: November 2013



APPENDIX C
AQUATIC BIOLOGICAL ASSESSMENT

Decker Island Project

Fisheries Impacts



Submitted To:

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January 24, 2014

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1.0 Introduction

D.I. Aggregate Management LLC owns approximately 473 acres on Decker Island where they conduct mining operations. The remaining area of Decker Island is owned by the California Department of Fish and Wildlife (approximately 34 acres at the northeastern tip) and the Port of Sacramento (approximately 130 acres on the eastern side). Currently, all power on the island is generated on the island from local generators. In addition, fuel must be shipped over to the island because there is no permanent local power source (i.e. utility line). This usage of fuel is both inefficient and transitioning to utility-based transmission will reduce emissions and improve overall conditions in proximity of the island.

The Decker Island Project consists of the installation of an underground utility line spanning approximately 850 feet across the Horseshoe Bend side channel. The utility line will be installed perpendicular to the side channel. Construction will entail trenching (i.e. long reach excavator or clamshell bucket mounted on a barge), temporary side casting of the sand sized substrate, direct burial of electrical cable, and backfill of the side castings. This project will be conducted in August and construction is expected to last approximately two weeks. Potential negative impacts from construction activities were evaluated against all federally and/or state listed (i.e. endangered or threatened) species (e.g. Central Valley steelhead trout, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, delta smelt, longfin smelt, green sturgeon) that may be present in the area. All life histories for each species above and their spatiotemporal distribution were evaluated in regards to potential impacts from construction activities. In addition, presence of potential habitat at the construction site was also evaluated.

Trenching during construction is expected to create a relatively minimal local increase in turbidity and minor impact to localized vegetation. Trenching will entrain sand substrate and therefore increase turbidity. Increased turbidity is expected to be localized to the middle of the channel where flow velocity is greater and there is a lack of vegetation. Large scale dredging of the Sacramento River (i.e. Sacramento Deep Water Ship Channel) occurs annually throughout this area and was conducted between August and December 2005-2012. Dredging may also churn substrate and expose toxins in the substrate. Sand substrate from nearby dredging operations has been extensively tested for toxicity. Testing results from these nearby projects showed that the sand substrate did not contain toxin levels in exceedance of applicable regulatory limits or were in excess of normal background levels (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013); therefore, it is expected for the sand substrate in the construction zone to not exceed regulatory limits. Assuming similar emergent vegetation distribution at the time of construction (observed during a site visit, October 24, 2013), the trenching path will minimize any impacts to emergent vegetation because the construction site will pass through an area with sparse emergent vegetation.

Review of existing information found that there is little to no chance of encountering federally and/or state threatened or endangered species during the brief two weeks of construction activity. This determination was made from identifying that species are generally absent during the time

of construction (August). In the event that any threatened or endangered species are present, they would likely be of large enough size (i.e. adult life stage) to effectively migrate outside of the construction area. Additionally, construction will occur in a side channel of the Sacramento River, and will not impact mainstem Sacramento River activities. Recently, the United States Army Corps of Engineers awarded a \$6,600,000 contract for maintenance dredging of the Sacramento and Stockton Deep Water Ship Channels. This continued approval of large-scale dredging operations sets a precedent for similar operations that alter streambeds and entrain sediment. In comparison, the magnitude of this project is minimal.

2.0 Environmental Setting

The Sacramento-San Joaquin Delta (Delta) consists of over 700 miles of sloughs and channels intertwined between 57 leveed island tracts where freshwater from the Sacramento and San Joaquin Rivers combine with saltwater from the Pacific Ocean to create the West Coast's largest estuary. Decker Island (Figure 1), a 658-acre artificial island on the Sacramento River, is approximately 8.0 river miles upstream of the confluence of the Sacramento River and the San Joaquin River. The Sacramento River runs along the western edge of the island, and Horseshoe Bend, an old meander of the Sacramento River, is now a side channel that runs along the eastern edge of the island. The Horseshoe Bend side channel is approximately three river miles long, and Sherman Island constrains the channel on the river left side (facing downstream).

The construction site is approximately 0.4 river miles downstream of the northern tip of Decker Island and is located within the Horseshoe Bend side channel. LJ Consultants (Manteca, CA) and eTrac Engineering, Incorporated (San Rafael, CA) conducted a bathymetric analysis of the streambed on July 19, 2013. Bathymetric analysis revealed that mean depth in the construction site was approximately 11.5 feet and that the slope of the water level became shallower toward Sherman Island with Decker Island as the reference point (Figure 2).

Based on a site visit to the construction site on October 24, 2013, there did not appear to be a substantial amount of emergent vegetation visible in the line of sight (i.e. proposed pathway for construction activities) between both river left and river right banks. The only visible emergent vegetation was localized to the Sherman Island (river left) bank and no emergent vegetation was observed on the river right (Decker Island). The Decker Island shoreline is an approximately 30 foot high sand bank, and the Sherman Island shoreline is a riprap-armored bank. Tules (*Scirpus acutus*) were the only emergent vegetation identified. Distribution and density of tule stands varied along the bank. Hyacinth (*Eichornia crassipes*) mats were found in greatest density where sparse stands of tule were found (downstream of the construction site). The proposed construction pathway appears to pass through an area of sparse amounts of tule. The substrate throughout the channel is composed of sand sized sediment, and this area is tidally influenced.



Figure 1. Map of Decker Island and surrounding area.

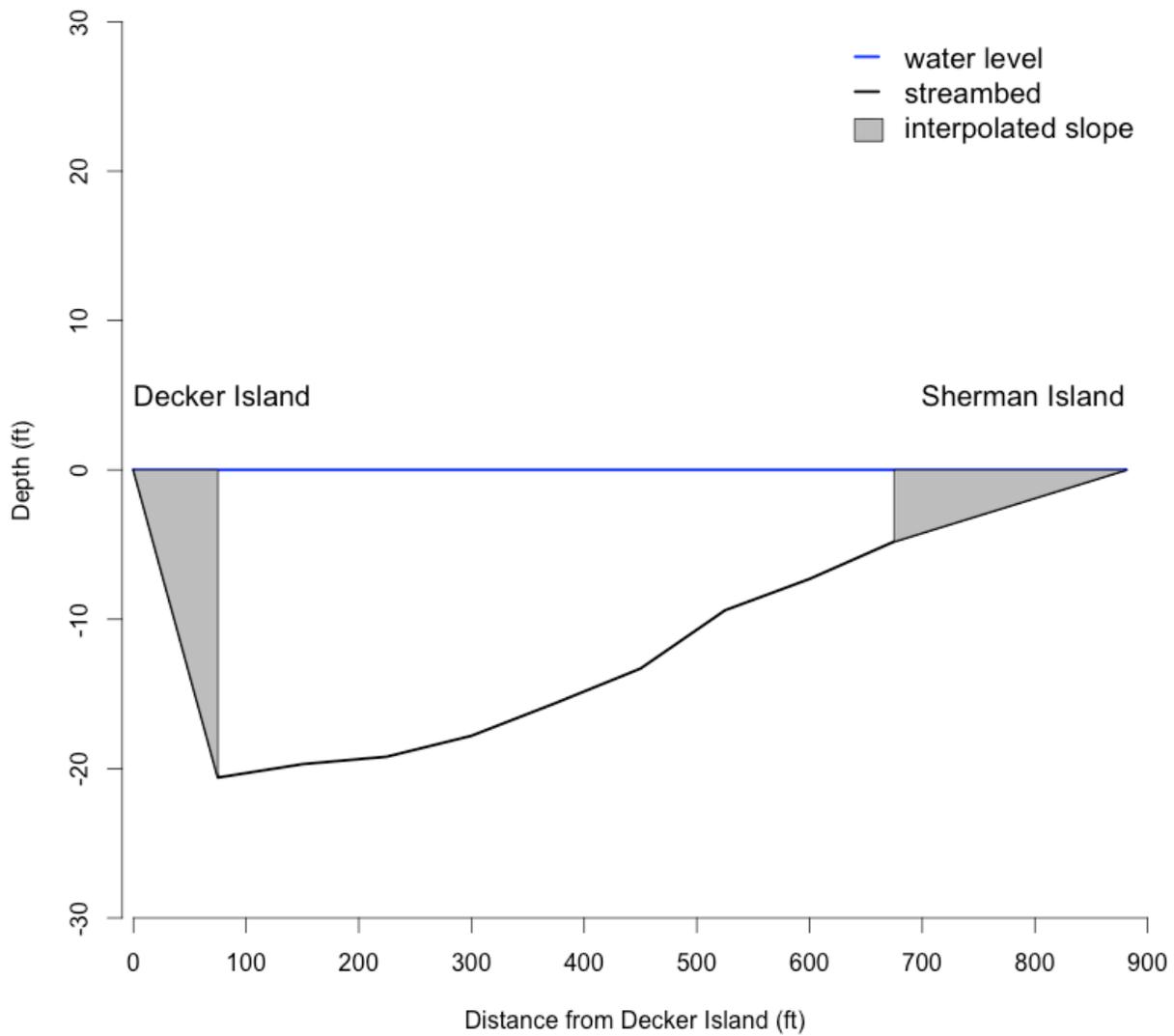


Figure 2. Generalized bathymetry of the construction site relative to water level from data collected by LJ Consultants and eTrac Engineering, Inc., on July 19, 2013. The terminal ends are interpolated because the bathymetric analysis did not include all the area to the wetted margin.

2.1 Previous impacts to environment at Decker Island

Decker Island is a manmade land feature. The island was not always an island and was once a low terrace on the southwest edge of the Montezuma Hills. The island was created during the construction of the Sacramento Deep Water Ship Channel. Dredging spoils were deposited on top of Decker Island by the U.S. Army Corps of Engineers (USACE) in the 1990s (Avery 2011), and dredging spoils continue to be deposited onto the southwestern portion of Decker Island in accordance with a USACE permanent easement. The volume of deposited dredged material has raised some areas of the island to over 30 feet high and is representative of non-naturally occurring habitat (Avery 2011). The soils of Decker Island have low water holding capacity and do not support native Delta vegetation (Avery 2011). The USACE continues to conduct maintenance dredging of the Sacramento Deep River Ship Channel in this area.

The California Department of Fish and Wildlife (CDFW) completed a two-phase long-term restoration project on the northeastern portion of the island in 2004, and this project is referred to as the Decker Island Enhancement Project. The Decker Island Enhancement Project is located upstream of the construction site and will not be impacted during the installation of the utility line to Decker Island. During 2003 and 2004, water hyacinth was mechanically removed and treated with herbicides to control this invasive species (Philipp 2005).

3.0 Potential Fish Species That May Occur in the Construction Area

Horseshoe Bend serves as migratory and/or rearing habitat for several fish species including native, non-native, listed (i.e. federal or state endangered or threatened), and non-listed fish species. Recent investigation, proximal studies, and federal and state threatened and endangered species lists were used to compile lists of species that may occur at some point within the construction area.

3.1 Non-listed Fish Species

The source for non-listed fish species that may occur in the construction area is compiled from data from fish community and entrainment studies conducted in association with maintenance dredging of the Sacramento and Stockton River Deep Water Ship Channels from 2005-2012 (Mari-Gold 2013). California Species of Special Concern (SSC) were also included as non-listed fish species. This list (Table 1) is representative of species that potentially use Horseshoe Bend habitat during some portion of the year.

3.2 Federal/State listed Fish Species

The species list for federally endangered or threatened fish species in Jersey Island, Solano County (quadrant 480C), was obtained from the USFWS website and an official copy of the list of species is attached (Appendix A) at the end of this report. A list of state endangered or threatened species (Table 2) that may potentially occur in the area was obtained from the CDFW

Table 1. Non-listed fish species that potentially use habitat in Horseshoe Bend irrespective of temporal distribution.

Common Name	Species	Origin	Demersal/Pelagic
shimofuri goby	<i>Tridentiger bifasciatus</i>	Non-native	Demersal
channel catfish	<i>Ictalurus punctatus</i>	Non-native	Demersal
lamprey	<i>Lampetra</i>	Native	Demersal
striped bass	<i>Morone saxatilis</i>	Non-native	Pelagic
yellowfin goby	<i>Acanthogobius flavimanus</i>	Non-native	Demersal
Shokihaze goby	<i>Tridentiger barbatus</i>	Non-native	Demersal
white catfish	<i>Ameiurus catus</i>	Non-native	Demersal
prickly sculpin	<i>Cottus asper</i>	Native	Demersal
wakasagi	<i>Hypomesus nipponensis</i>	Non-native	Pelagic
brown bullhead	<i>Ameiurus nebulosus</i>	Non-native	Demersal
threadfin shad	<i>Dorosoma petenense</i>	Non-native	Pelagic
American shad	<i>Alosa sapidissima</i>	Non-native	Pelagic
Pacific staghorn sculpin	<i>Leptocottus armatus</i>	Native	Demersal
bluegill	<i>Lepomis macrochirus</i>	Non-native	Pelagic
warmouth	<i>Lepomis gulosus</i>	Non-native	Pelagic
bigscale logperch	<i>Percina macrolepida</i>	Non-native	Demersal
common carp	<i>Cyprinus carpio</i>	Non-native	Demersal
white sturgeon	<i>Acipenser transmontanus</i>	Native	Demersal
redeer sunfish	<i>Lepomis microlophus</i>	Non-native	Pelagic
starry flounder	<i>Platichthys stellatus</i>	Native	Demersal
tule perch	<i>Hysteroecarpus traski</i>	Native	Pelagic
blue catfish	<i>Ictalurus furcatus</i>	Non-native	Demersal
Sacramento blackfish	<i>Orthodon microlepidotus</i>	Native	Pelagic
black crappie	<i>Pomoxis nigromaculatus</i>	Non-native	Pelagic
Sacramento pikeminnow	<i>Ptychocheilus grandis</i>	Native	Pelagic
white crappie	<i>Pomoxis annularis</i>	Non-native	Pelagic
golden shiner	<i>Notemigonus crysoleucas</i>	Non-native	Pelagic
largemouth bass	<i>Micropterus salmoides</i>	Non-native	Pelagic
Mississippi silverside	<i>Menidia beryllina</i>	Non-native	Pelagic
river lamprey ¹	<i>Lampetra ayresii</i>	Native	Demersal
Central Valley late fall/fall-run Chinook salmon ¹	<i>Oncorhynchus tshawytscha</i>	Native	Pelagic
Pacific lamprey ¹	<i>Lampetra tridentata</i>	Native	Demersal
hardhead ¹	<i>Mylopharodon conocephalus</i>	Native	Pelagic
Sacramento splittail ¹	<i>Pogonichthys macrolepidotus</i>	Native	Pelagic

¹ California Species of Special Concern.

Table 2. Federal/State endangered or threatened species summary table for construction site in the Horseshoe Bend of the Sacramento River at Decker Island.

Species	Listing Status ¹	Listing Agency	Potentially Present During Construction	Potential Habitat Present	Potential to be Impacted
Central Valley steelhead (adult)	FT	USFWS	Y ^{m2}	N	N
Central Valley steelhead (juvenile)	FT	USFWS	Y ^{m3}	N	N
Central Valley spring-run Chinook salmon (adult)	FT / ST	USFWS / CDFW	N ⁴	N	N
Central Valley spring-run Chinook salmon (juvenile)	FT / ST	USFWS / CDFW	N ⁵	N	N
Sacramento River winter-run Chinook salmon (adult)	FE / SE	USFWS / CDFW	N ⁶	N	N
Sacramento River winter-run Chinook salmon (juvenile)	FE / SE	USFWS / CDFW	N ⁷	N	N
Delta smelt (adult)	FT / SE	USFWS / CDFW	N ⁸	N	N
Delta smelt (juvenile)	FT / SE	USFWS / CDFW	N ⁸	N	N
Longfin smelt (adult)	ST	CDFW	N ⁸	N	N
Longfin smelt (juvenile)	ST	CDFW	N ⁸	N	N
Green sturgeon (adult)	FT	USFWS	N ⁹	N	N
Green sturgeon (juvenile)	FT	USFWS	N ¹⁰	N	N

¹ Listing status: F = Federal, S = State, T = Threatened, E = Endangered

^m Species is migratory and may be present short-term during migration

² Hallock 1989, ³ Moyle 2008, ⁴ Cramer and Demko 1997, ⁵ Yoshiyama et al., 1998, ⁶ Hallock and Fisher 1985, ⁷ Stevens 1989, ⁸ Moyle 2002,

⁹ Hueblein et al., 2009, ¹⁰ USFWS 1995

website¹. Each federally and/or state threatened or endangered species was evaluated for spatiotemporal distribution in the construction area, and the presence of spawning and/or rearing habitat was also evaluated in regards to this construction site.

The Sacramento River serves as a migration corridor for both listed (e.g. Central Valley steelhead, Central Valley spring-run Chinook salmon, and Sacramento River winter-run Chinook salmon, green sturgeon) and non-listed (e.g. Central Valley fall/late-fall run Chinook salmon) species traveling upstream to spawn or downstream during juvenile outmigration. According to trawl catches (i.e. CDFW Smelt Larva Survey and 20 mm Survey) in the Horseshoe Bend side channel, both longfin and delta smelt occur in this area. Juvenile green sturgeon could potentially utilize this area for rearing; however, information on spatiotemporal distribution of juvenile green sturgeon rearing is limited. Below are brief descriptions of life history and timing of listed fish species.

3.2.1 Central Valley steelhead

The Central Valley Distinct Population Segment (DPS) of steelhead (*Oncorhynchus mykiss*) includes all naturally spawned anadromous steelhead below impassable barriers (natural and manmade) in the Sacramento and San Joaquin River basins, excluding steelhead from the San Francisco and San Pablo bays and their tributaries. Steelhead are flexible in their life history strategies, and may exhibit solely freshwater residency or exhibit anadromy (McEwan 2001). Generally, juveniles migrate from December through May (Moyle et al., 2008). Adults migrate to spawning grounds between July and March with a peak in September and October (Hallock 1989). After hatching, fry migrate to shallow edges or low gradient riffles, and as juveniles grow they move toward higher-velocity, deeper, mid-channel habitats (Everest and Chapman 1972). Older juvenile steelhead (ages 1+ and 2+) show a stronger preference for pool habitats with ample cover, such as boulders, undercut banks, and large woody debris, as well as for rapids and cascade habitats (Dambacher 1991, Moyle et al., 2008). Historically, this DPS was estimated to average 1 to 2 million steelhead, but the current estimate is approximately 3,600 (NMFS 2008).

3.2.2 Central Valley spring-run Chinook salmon

Spring-run Chinook salmon (*Oncorhynchus tshawytscha*) historically were the second most abundant run of Central Valley Chinook salmon (Fisher 1994). Current surveys indicate that a remnant, non-sustaining spring-run Chinook salmon populations may be found in Cottonwood, Battle, Antelope, and Big Chico Creeks (CDWR 1997). The Feather River Fish Hatchery sustains the spring-run population on the Feather River, but the genetic integrity of that run is questionable (CDWR 1997). Historical records indicate that adult spring-run Chinook salmon enter the mainstem Sacramento River in February and March and continue to their spawning streams, where they then hold in deep, cold pools until they spawn. Spawning occurs in gravel beds in late August through October (USDOI 2008), and emergence takes place in March and April. Spring-run Chinook salmon appear to emigrate at two different life stages: fry and

¹ Website visited on November 21, 2013: <http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf>.

yearlings. Fry move between February and June, while the yearling spring-run immigrate October to March, peaking in November (Cramer and Demko 1997). Juvenile spring-run Chinook salmon may leave their natal streams as fry soon after emergence or rear for several months to a year before migrating as smolts or yearlings (Yoshiyama et al., 1998).

3.2.3 Sacramento River winter-run Chinook salmon

Adult winter-run Chinook salmon (*Oncorhynchus tshawytscha*) leave the ocean and migrate through the Delta into the Sacramento River system from November through July. Salmon migrate upstream past the Red Bluff Diversion Dam (RBDD) on the Sacramento River from mid-December through July, and most of the spawning population has passed RBDD by late June. Winter-run Chinook salmon spawn from mid-April through August, and incubation continues through October. The primary spawning grounds in the Sacramento River are above RBDD. Juvenile winter-run Chinook salmon rear and emigrate in the Sacramento River from July through March (Hallock and Fisher 1985). Juveniles descending the Sacramento River above RBDD from August through October and possibly November are mostly pre-smolts (smolts are juveniles that are physiologically ready to enter seawater) and probably rear in the Sacramento River below RBDD. Winter-run salmon smolts may migrate through the Delta and bay to the ocean from December through as late as May (Stevens 1989). The Sacramento River channel is the main migration route through the Delta.

3.2.4 Delta smelt

Delta smelt (*Hypomesus transpacificus*), an endemic species to the San Francisco Estuary, is listed as a threatened species under both the Endangered Species Act (ESA) and California Endangered Species Act (CESA) (58 FR 12854, 1993). Historically, juveniles and adults have been found as far upstream in the San Joaquin River as Mossdale or in the Sacramento River to Isleton. Today, distribution is primarily localized to the lower Delta and Suisun Bay (Moyle 2002). Juveniles rear in shallow, open waters, at salinity between 2 and 7 parts per thousand (ppt). They usually occupy open, shallow waters, but also occur in the deeper, main channels in the region where fresh water and brackish water mix.

Adult delta smelt begin their migration in September or October towards spawning grounds in the upper Delta (Moyle 2002). Spawning occurs between December and July in sloughs and channels, including the Sacramento River above Rio Vista, Cache Slough, Lindsey Slough, and Barker Slough (Moyle 2002; 59 FR 65256). The peak of spawning occurs in March and April. During broadcast spawning, eggs adhere to hard substrates. After hatching, the semi-buoyant larvae spend time near the bottom feeding on rotifers and other zooplankton. As the larvae develop swim bladders, they move higher in the water column and further downstream (Moyle 2002).

Both the mean delta smelt Townet Survey (TNS) and Fall Midwater Trawl (FMWT) indices indicate that the delta smelt population declined abruptly in the early 1980s (Moyle et al., 1992). Currently, the delta smelt population indices are two orders of magnitude smaller than historical highs (on the order of 1 percent) and recent population abundance estimates are up to three

orders of magnitude below historical highs (on the order of 0.1 percent; Newman 2008). The population rebounded somewhat in the mid-1990s (Sweetnam 1999) but has trended downward since about 2000 (USFWS 2008). Results from the CDFW 20 mm Trawl over the past five years at Decker Island (station 705) indicate that the last delta smelt captured in each year were either in May or June. Juvenile delta smelt are typically 40-55 mm fork length by early August (Moyle 2002).

3.2.5 Longfin smelt

Unlike delta smelt, longfin smelt (*Spirinchus thaleichthys*) are anadromous and prefer the higher salinities in the San Francisco Estuary for rearing. Central Valley longfin smelt congregate in Suisun Bay and Marsh, San Pablo, the North San Francisco Bays, and in the Delta. They are rarely found upstream of Rio Vista on the Sacramento River or Medford Island in the San Joaquin River (Moyle 2002); however, they have been found “as far upstream as the...Old River south of Indian Slough” (CDFG 2009a, p. 7; Radtke 1966)(63 FR 19756). Before spawning, the adult longfin smelt occupy the deep, brackish habitats of the northern Delta and Suisun Bay (Rosenfield and Baxter 2007). In fall and winter, the longfin smelt yearlings begin to move upstream to the primary spawning locations in or near Suisun Bay channel, the Sacramento River channel near Rio Vista, and (at least historically) Suisun Marsh (Wang 1991; Moyle 2002; Rosenfield and Baxter 2007). Larval samples indicate that spawning usually occurs from February to April, but spans November through June (Moyle 2002).

After about 40 days, the embryos hatch and larvae ascend into the upper part of the water column, where they are transported into the estuary. Juveniles rear in brackish water typically where salinity concentrations are between 2 and 7 parts per thousand (ppt), but can tolerate up to 19 ppt. They are usually found in Suisun and San Pablo bays, but occasionally in the western Delta (Moyle 2002). They feed on copepods, amphipods, and shrimp in the open channels (USFWS 1996, Moyle 2002).

Although the abundance of longfin smelt in the San Francisco Estuary has been variable over time, annual trawl surveys show that there has been a decline since the early 1980s (Rosenfield and Baxter 2007, Sommer et al., 2007). Results from the CDFW 20 mm Trawl over the past five years indicated that the last longfin smelt of each year were captured from late March to mid May.

3.2.6 Green sturgeon

Green sturgeon (*Acipenser medirostris*) are listed as threatened by NMFS (71 Federal Register [FR] 17757, April 7, 2006). Green sturgeon that inhabit the Sacramento River are considered the southern DPS. They are found in the lower reaches of large rivers, including the Sacramento–San Joaquin River basin, along with the Eel, Mad, Klamath, and Smith Rivers. Green sturgeon adults and juveniles are found throughout the upper Sacramento River, as indicated by observations incidental to winter-run Chinook monitoring at the RBDD in Tehama County (NMFS 2005). Green sturgeon spawn predominantly in the upper Sacramento River upstream of Hamilton City, which is thought to occur every three to five years (Tracy 1990). Their spawning

period is March to July, with a peak in mid-April to mid-June (Moyle et al., 1992). Juveniles inhabit the estuary until they are approximately four to six years old, when they migrate to the ocean (Kohlhorst et al., 1991). Green sturgeon are found primarily in the Sacramento River, occasionally in the Feather River, and are unlikely to enter smaller tributaries to these rivers (Beamesderfer et al., 2004, Moyle 2002). Juveniles captured at the Glen-Colusa facility are generally three weeks old (DFG, unpublished data as cited in USDOJ 2008; Van Eenennaam et al., 2001).

4.0 Potential Impacts to Listed Fish Species

A thorough review of other related dredging activity found that the potential fisheries related impacts from construction activities are sediment entrainment and disruption to a minimal amount of potential spawning and/or rearing habitat. Sediment entrainment can result in increased turbidity and possible toxin re-suspension (if present).

Turbidity in the Sacramento River Delta is highly variable and can increase substantially during storm events, ship passages, and in-channel activities such as dredging. The scope of the Decker Island Project is small and relatively short in duration. Increased turbidity from the Decker Island Project is expected to be drastically less in magnitude when compared to storm events, ship passages, or dredging. Increases in turbidity associated with rainfall events have increased turbidity levels to 200 NTUs, as seen at Woodland, CA, in the fall of 2011 (Trussell Technologies 2011). There is an estimated increase of approximately 10 percent in total suspended solids downstream of dredging activities (Regional Board 2004) associated with maintenance dredging of the Stockton Deep Water Ship Channel. The USACE does not believe that maintenance dredging would greatly change background turbidity levels in the San Joaquin (USACE 2006). Water quality monitoring conducted during trawl activities in the Sacramento River Deep Ship Channel indicate background turbidity can range from 8.60-44.40 NTU, but can increase to a high of 192.0 NTU immediately after a ship's passage (Mari-Gold 2013). Nightingale and Simenstad (2001) indicated that turbidity levels in excess of 4,000 mg/L were required to adversely affect salmonids. Localized minimal increases in turbidity from this project are expected to be drastically lower than that of the dredging operations and are not expected to adversely affect fish.

Several alternatives to open trenching were evaluated and the construction method of open trenching with backfill of side castings was determined to be the best feasible option. A summary table for each species (Table 2) summarizes species likelihood to be present, potential habitat present, and potential for each species to be impacted by construction. The construction site is located within the Critical Habitat designations for delta smelt, green sturgeon², Central Valley steelhead, Central Valley spring-run Chinook, and winter-run Chinook salmon and is in Essential Fish Habitat for winter-run and Central Valley spring-run Chinook salmon. Regardless, the construction timeframe (both month and duration of activity) will effectively reduce or eliminate any adverse effects to any threatened or endangered species. Potential presence of each species in the construction zone by month is shown in Table 3. The August

² Critical habitat established under 74 FR 52300 (USDOC 2009); however not listed on USFWS official species list.

time frame is also within an accepted work window (i.e. August 1 – October 31) for delta smelt, longfin smelt, and salmonids (USACE 2012). Substrate from dredging operations and those on Decker Island are representative of the substrate at the construction site. Toxin levels have not exceeded applicable regulatory limits (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013); therefore, the toxin levels at the construction site are not likely to exceed regulatory limits. The placement of the utility line will pass through an area of sparse emergent vegetation in order to minimize impact to potential fish habitat (Figure 3 and Figure 4). Summarized below are the potential impacts to threatened or endangered species.

Table 3. Potential presence of each species in the construction zone over a single year.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
steelhead							1 1	1 1	1 1	1 1		
Chinook salmon (spring-run)												
Chinook salmon (winter-run)												
delta smelt								2				
longfin smelt								2				
green sturgeon	3	3	3	3	3	3	3	3	3	3	3	3

¹ Adult migration to spawning grounds, area serves as potential migration route but may not serve as primary route since it is a side channel.

² Fish not documented in past five years, but historical data indicated they have occurred in this area.

³ Species not documented in the project area but are suggested to inhabit the Delta throughout the year.



Figure 3. Trenching path (view from Highway 160 side).



Figure 4. Trenching path (view from Decker Island).

4.1 Potential impacts to Central Valley Steelhead

The timing of the project will provide adequate protection for steelhead. Construction will occur for two weeks in August. Steelhead are not expected to be in the proximity of the construction site during this time. The August timeframe for construction only overlaps adult steelhead migration; however, the construction timeframe is before peak migration (Hallock 1989). The construction site is tidally influenced; thus, it serves as a migration corridor for adult and juvenile steelhead. Construction is occurring in the side channel and construction equipment (i.e. barge and long reach excavator or clamshell bucket) is not expected to prevent upstream or downstream migration in the Horseshoe Bend side channel. The alternate and more likely route of passage is through the mainstem Sacramento River. All steelhead encountering construction equipment would be of adequate size to circumvent or avoid any potential danger. No steelhead were encountered during fish monitoring associated with maintenance dredging of the Sacramento River Deep Water Ship Channel (SWCA 2007, 2008, 2009; Mari-Gold 2010, 2011, 2012, 2013). The channel is utilized as a migratory pathway, and steelhead do not rely upon habitat within the study area.

4.2 Potential impacts to Central Valley spring-run Chinook salmon

Central Valley spring-run Chinook salmon is expected to be absent at the time of construction. Adults should be upstream of this location by August (USDOI 2008), and outmigration of smolts does not occur during this period (Cramer and Demko 1997). Adults and juveniles utilize the area as a migratory pathway and would not be impacted by any alteration to stream channel or surrounding habitat.

4.3 Potential impacts to Sacramento River winter-run Chinook salmon

Sacramento River winter-run Chinook salmon is not expected to be present during the construction activities. Adults do not migrate into the Sacramento River until November (USDOI 2008), and smolts do not migrate through this area during the construction timeframe (Stevens

1989, USDOJ 2008). Adults and juveniles utilize the area as a migratory pathway and would not be impacted by any alteration to stream channel or proximal habitat.

4.4 Potential impacts to delta smelt

Delta smelt is not expected to be impacted from project activity. Adults do not migrate into the Sacramento River until September (Moyle 2002), and results from the CDFW 20 mm Trawl over the past five years indicate that larval and early juvenile delta smelt were not captured in the area during August. While construction activities will minimize any alteration to emergent vegetation by passing through a sparsely vegetated area, there is potential to disturb minimal amounts of emergent vegetation along the river left bank. Streambed alteration will only be temporary and brief. Natural revegetation is expected from any localized alteration to vegetation, resulting in a negligible disturbance. Spatiotemporal distribution of delta smelt is variable by water year (i.e. dry or wet; Moyle 2002). In the event that delta smelt are in the area, they will likely be of large enough size (Moyle 2002) to migrate outside of the construction zone.

4.5 Potential impacts to longfin smelt

Construction in August is not expected to adversely impact longfin smelt. Adults do not migrate into the Sacramento River until November, larvae are typically abundant between February and April (Moyle 2002), and results from the CDFW 20 mm Trawl over the past five years indicated that larval and early juvenile longfin smelt were not captured in the area during August. While construction activities will minimize any disturbance to emergent vegetation by passing through a location with sparse vegetation, there is potential to disturb minimal amounts of emergent vegetation along the river left bank. Streambed alteration will only be temporary and natural revegetation is expected.

4.6 Potential impacts to green sturgeon

Information on green sturgeon is limited, but available data do not suggest any impact as a result of project construction. The construction site may serve as a migration corridor for adult and outmigrating juvenile green sturgeon. Adults migrate through the Sacramento River up to spawning grounds in the upper Sacramento River from March to July (Moyle et al., 1992); therefore, they should not be present at the construction site during August. Additionally, adults migrate out of the Sacramento River in November and December (Hueblein et al., 2009). Juvenile green sturgeon are found throughout the Delta at all times of the year; however, a literature search could not find any historical documentation of species presence proximal to the project site in August. In October 2006, two green sturgeon were captured at Decker Island. This was the only documentation of species presence from six years of fish monitoring associated with maintenance dredging of the Sacramento River Deep Water Ship Channel (SWCA 2007, 2008, 2009; Mari-Gold 2010, 2011, 2012, 2013). In the event that any green sturgeon are in the area, they would likely be of large enough size to effectively remove them from the construction zone.

5.0 Conclusions

There is little to no potential for construction activities to result in the direct mortality or harassment of any protected species. Review of recent and historical data suggests that protected species will be absent during construction activity. Localized effects from the construction activity are expected to be negligible and brief. Turbidity will not increase beyond background levels commonly occurring during rain events. Toxins in the soil are not present based on testing (Krazan and Associates, Inc., personal communication to DI Aggregate, December 9, 2013). While habitat in the area is of a degraded quality, the impact of the dredging will have a small overall footprint. The pathway of dredging will minimize disturbance of emergent vegetation and any alteration is expected to revegetate naturally and rapidly. Construction is occurring in the Horseshoe Bend side channel, which is not likely the primary route for migrating fish species. This project will result in an overall improvement to air quality, reduction of fossil fuel consumption, and provide a benefit to the environment as a result of its implementation.

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Appendix A.

12/10/13

Sacramento Fish & Wildlife Office Species List



United States Department of the Interior
FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825



December 10, 2013

Document Number: 131210094402

Stephen A. Zipper
FISHBIO
180 East 4th Street
Suite 160
Chico, CA 95928

Subject: Species List for Decker Island

Dear: Mr. Zipper

We are sending this official species list in response to your December 10, 2013 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

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

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

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be March 10, 2014.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found [here](#).

Endangered Species Division



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

Document Number: 131210094402
Database Last Updated: September 18, 2011

Quad Lists

JERSEY ISLAND (480C)

Listed Species

Invertebrates

- Branchinecta lynchi*
vernal pool fairy shrimp (T)
- Desmocerus californicus dimorphus*
valley elderberry longhorn beetle (T)
- Elaphrus viridis*
delta green ground beetle (T)
- Lepidurus packardii*
vernal pool tadpole shrimp (E)

Fish

- Acipenser medirostris*
green sturgeon (T) (NMFS)
- Hypomesus transpacificus*
Critical habitat, delta smelt (X)
delta smelt (T)
- Oncorhynchus mykiss*
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)
- Oncorhynchus tshawytscha*
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

**RECLAMATION DISTRICT NO. 341
P.O. BOX 536
RIO VISTA, CA 94571
(916) 777-4244
FAX (916) 777-5329**

RESOLUTION NO. 2014- 03

**APPROVING AND ADOPTING A MITIGATED NEGATIVE DECLARATION
ON THE ENVIRONMENTAL IMPACT OF THE DECKER ISLAND ELECTRICAL
CROSSING OF HORSESHOE BEND**

WHEREAS, Reclamation District 341 (the "District") is a reclamation district organized and existing under California Water Code Sections 50000 et seq.; and

WHEREAS, as part of its duties as a reclamation district, the District operates and maintains the levee system surrounding Sherman Island; and

WHEREAS, DI Aggregates desires to install an electrical cable from Sherman Island, across a District levee, bury that cable under Horseshoe Bend, and then bring the cable up onto Decker Island to deliver electricity to Decker Island (the "Project"); and,

WHEREAS, the Project requires an encroachment permit from the District to cross the District levee; and,

WHEREAS, since the District will be issuing a permit for the Project, the Project will be subject to the California Environmental Quality Act (CEQA), and the District agreed to be the CEQA Lead Agency for the Project; and,

WHEREAS, DI Aggregates (DI), the Project proponent, entered into an agreement with the District under which DI agreed to be financially responsible for the costs of the CEQA compliance, but that the District would oversee and administer the compliance; and,

WHEREAS, DI's consultant has prepared an Initial Study and Mitigated Negative Declaration for the Project; and

WHEREAS, the proposed Mitigated Negative Declaration was circulated (State Clearinghouse # 2014032039) for the required 30 days for public review and comment, from March 14, 2014, to April 14, 2014; and,

WHEREAS, public notice of intent to adopt the Mitigated Negative Declaration for the Project was published in the Sacramento Bee on March 24, 2014, and posted with the Sacramento County Clerk on March 14, 2014, for the required 30 days, from March 14, 2014, to April 14, 2014; and,

WHEREAS, at the meeting held on May 13, 2014, the District Board considered the comments received during the public review period, the Mitigated Negative Declaration and all of its supporting documentation, and any comments received at the May 13, 2014, meeting.

NOW, THEREFORE, RECLAMATION DISTRICT 341 hereby finds, determines and resolves as follows.

1. A notice of intent to adopt a Mitigated Negative Declaration was properly publicized within the meaning of 14 CCR 15072.
2. The Mitigated Negative Declaration was subject to proper public review as provided in 14 CCR 15073.
3. The Mitigated Negative Declaration was completed in compliance with the CEQA Guidelines.
4. The Board has considered all comments received during the public review process and finds that no further modifications to the Project are necessary or required.
5. **The Board hereby finds and determines that there is no substantial evidence, in light of the whole record before it, that the approval of the Project, with mitigation incorporated, may have a significant effect on the environment; that changes or alterations have been required in, or incorporated into, the Project which avoid or substantially lessen the potentially significant environmental effects as identified in the final Mitigated Negative Declaration; that the Mitigated Negative Declaration, its explanations and analysis on all subjects including mitigation, attached hereto as Exhibit A and incorporated by reference herein, as provided for under Section 21080(c) of the Public Resources Code, is hereby approved; and that the Mitigated Negative Declaration reflects the Board's independent judgment and analysis.**
6. The Delta Stewardship Council, and its authorizing statutes, requires that any actions in the Delta be consistent with the Delta Plan. Based upon the completion of the Covered Action Checklist prepared by the Council, the Project is exempt from being a Covered Action under Step 2, Question 4, because there is no evidence based upon the analysis in the Mitigated Negative Declaration, with incorporated mitigation, that the burial of this cable will have either a substantial positive or negative impact on the achievement of one or both of the co-equal goals or the implementation of a government-sponsored flood control program to reduce risks to people, property, and state interests in the Delta, that is directly or indirectly caused by a project on its own or when the project's incremental effect is considered together with the impacts of other closely-related past, present, or reasonably foreseeable future projects. By being underground, the cable will result in no impact to water or flood flows, temporary and minor impacts to the streambed habitat, no tangible impact on the Delta ecosystem, and no impact on water supply reliability. The present aggregate operation on Decker Island is fully operational and considered part of the baseline; thus, the installation of the cable is not expected to have any incremental positive or negative impacts on the continued viability of the present operation.
7. The Board hereby approves and adopts the Mitigated Negative Declaration and authorizes and directs its president to execute the Mitigated Negative Declaration and cause the filing of a Notice of Determination with the Sacramento and Solano County clerks and the State Clearinghouse.
8. A mitigation monitoring and reporting program for reporting on or monitoring the changes which the Board has either required in the Project or made a condition of approval to mitigate

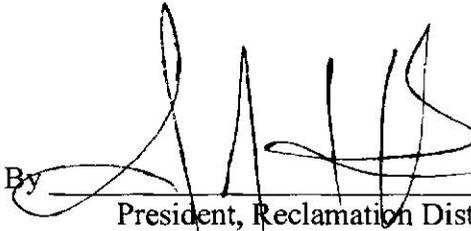
or avoid significant environmental effects is provided in Exhibit B to this resolution and is hereby adopted.

PASSED AND ADOPTED this 13th day of May 2014, by the following vote:

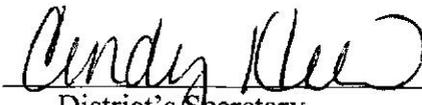
AYES: 3 Directors: Juan Mercado, Morgan Johnson, Robert Black

NOES: 0 Directors:

ABSENT: 0 Directors:

By 
President, Reclamation District 341

I hereby certify that the foregoing is a full, true, and correct copy of a resolution passed and adopted by the Board of Trustees of Reclamation District 341 at a meeting held on May 13, 2014, and that this Resolution has not been revoked and is now in full force and effect.

Secretary: 
District's Secretary

Date: 5/13/2014

MITIGATION MONITORING/REPORTING PROGRAM
DECKER ISLAND ELECTRICAL CROSSING PROJECT
RECLAMATION DISTRICT #341

May 13, 2014

The Decker Island Electrical Crossing Project involves the construction of a buried electrical cable from Sherman Island near SR 160 in Sacramento County to the eastern shore of Decker Island, a distance of approximately 1,100 feet. The project will cross the approximately 900-foot width of Horseshoe Bend, a branch of the Sacramento River. The project proponent is Decker Island LLC (DI). The project requires approvals from Reclamation District #341 (RD341), the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, the Central Valley Flood Protection Board, and the Regional Water Quality Control Board, Central Valley Region.

An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared and circulated for public and agency review during March and April 2014. Several comments on the Public Review Draft IS/MND were received by RD341. RD341's responses to these comments and any required revisions to the IS/MND are included in a Final IS/MND, which will be considered for adoption by the RD341 Board of Directors on May 13, 2014.

The Final IS/MND includes the mitigation measures listed on the following pages, and all of these mitigation measures will need to be implemented in conjunction with the project. Implementation of the mitigation measures will occur through their incorporation in project plans, specifications and conditions of approval, which will be the responsibility of DI's contractor to implement. DI will be responsible for ongoing monitoring the implementation of these requirements, for correcting deficiencies, and for providing periodic written reports of implementation progress, success or deficiencies to the Lead Agency. RD341 will periodically review mitigation measure compliance reports and advise the proponent of any additional correction that may be warranted.

BIOLOGICAL RESOURCES

BIO-1	<p>In-water construction shall be scheduled between August 1 and October 31 to reduce the potential impacts to special-status fish that occur in Horseshoe Bend on a seasonal basis. This work window may be adjusted through consultation with the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS).</p>	Contractor	Proponent	Before and during construction
BIO-2	<p>If construction commences between February 1 and August 31, a CDFW approved biologist shall conduct an initial pre-construction nest survey, in order to avoid take of protected raptors and migratory birds. The survey shall be conducted within fifteen (15) days prior to the beginning of construction activities in order to identify active nests within one hundred feet (100 ft.) of the project work areas and as to raptors' active nests within a quarter mile (1320 ft.) of the project work areas. The surveys shall incorporate methodologies from CDFG's 1994 Staff Report regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California and the Swainson's Hawk Technical Advisory Committee (SHTAC) survey guidelines (SHTAC, 2000). If active raptor nests are found within 1320 feet of the work area or other active nests within 100 feet of the work area, a temporary buffer of 1320 feet and 100 feet respectively shall be established and the applicant shall retain an on-site biologist/monitor experienced with raptor behavior. The biologist shall monitor the nest(s) and consult with the CDFW to determine the buffers to be applied and best course of action to avoid nest abandonment or take of individuals. The necessity and extent for temporal construction restrictions shall be determined by CDFW. CDFW may determine it is necessary for a designated biologist/monitor to be on-site daily while construction-related activities are within or near buffer</p>	Proponent	Proponent	Before construction

areas. The on-site biologist/monitor shall have authority to stop work if raptors are exhibiting agitated behavior such as defensive flights at intruders, unusual getting up from a brooding position or unusual flying off the nest. If during the nesting season there is a lapse in project-related work of fifteen (15) days or longer, another focused survey shall be performed and the results sent to CDFW prior to resuming work.

BIO-3	A temporary construction barrier shall be installed around the near-shore islands supporting Suisun marsh aster prior to project construction. The barrier shall be erected and maintained parallel to and along the edge of the work area, as far from the islands supporting Suisun marsh aster as possible. The barrier may be made of orange fencing installed on t-posts or some other highly visible material.	Contractor	Proponent	Before construction
BIO-4	Preconstruction surveys for burrowing owl shall be undertaken for any construction activities between February 1 and August 31. The surveys shall incorporate methodologies from CDFG's 2012 Staff Report on Burrowing Owl Mitigation and the California Burrowing Owl Consortium (CBOC) Burrowing Owl Survey Protocol and Mitigation Guidelines (CBOC, 1993). In the event that nesting owls are located within 250 feet of the work areas, temporal construction restrictions may be necessary to eliminate the potential for noise disturbance to the burrowing owls. The necessity and extent for temporal construction restrictions as to nesting burrowing owls is dependent upon location of the nest with respect to construction and shall be determined by CDFW as described above.	Contractor	Proponent	Before construction
BIO-5	Pre-construction surveys for western pond turtle and their nests will be conducted. This will involve a	Contractor	Proponent	Before

construction

search for individual turtles basking along the shore and nests in uplands. If nest sites are located, the applicant will notify CDFW and a 50-foot buffer area around the nest shall be staked and work within the buffer area will be delayed until hatching is complete and the young have left the nest site.

BIO-6 Trees and shrubs near the project site could be used by other birds protected by the Migratory Bird Treaty Act of 1918. The grasslands in and near the project site may be used by ground-nesting species, and the blackberry brambles on Decker Island may be used for nesting by tricolored blackbirds or other songbirds. Any vegetation removal during the avian nesting season (February 1 through August 31) shall be immediately preceded by a survey. If active nests are found, adequate marking of the nest site shall be provided and vegetation removal in the vicinity of the nest shall be delayed until the young fledge.

Contractor Proponent Before construction

BIO-7 A biological worker awareness training program shall be implemented to educate the construction crews of the biological diversity within the project area. The worker awareness program shall include a presentation on the life history and legal status of potentially occurring special-status species and distribution of informational packages to each worker. While all of the species in Table 2 will be at least briefly addressed, the focal species of the worker awareness training program will be Swainson's hawk, burrowing owl, western pond turtle, tricolored blackbird, and Suisun marsh aster.

Contractor Proponent Before construction

BIO-8 Permits from ACOE, CDFW, RWQCB, CVFPB and a lease from the SLC shall be secured prior to the placement of any fill material within jurisdictional waters of the U.S. The applicant shall implement all

Proponent Proponent Before construction

permit conditions and mitigation measures related to the protection of habitats and species.

BIO-9 The proponent will require the Decker Island cable installation contractor(s) to inspect and clean any construction vessels and in-water construction equipment that is to be moved into the Delta to prevent introduction of invasive aquatic species.

CULTURAL RESOURCES

CU-1 If any subsurface or submerged cultural resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified archaeologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant impacts to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery, and the proponent shall be responsible for retaining a qualified archaeologist and for implementing recommended mitigation measures.

Contractor
Proponent
During construction

CU-2. If human remains are encountered at any time during project construction, all construction activity in the vicinity of the encounter shall cease, and the County Coroner and RD 341 shall be notified immediately. The Coroner will contact the Native American Heritage Commission if the remains have been identified as being of Native American descent. The proponent, under the direction of RD 341, shall implement the requirements of the CEQA Guidelines, which detail steps to be taken when human remains are found to be of Native American origin. The proponent shall also retain a qualified archaeologist to evaluate the archaeological implications of the find and recommend any mitigation measures needed to reduce any

Contractor
Proponent
During construction

POTENTIAL IMPACT	MITIGATION MEASURES	RESPONSIBILITY FOR IMPLEMENTATION	RESPONSIBILITY FOR MONITORING/REPORTING	TIMING OF IMPLEMENTATION
<p>potentially significant effects to a less than significant level under CEQA. The proponent, under the direction of RD 341, shall implement those recommendations.</p>	<p>CU-3. If any paleontological resources are encountered during project construction, all construction activity in the vicinity of the encounter shall cease until a qualified paleontologist examines the materials, determines their significance, and recommends mitigation measures that reduce potentially significant effects to a less than significant level, in accordance with CEQA. RD 341 shall be immediately notified of the discovery; the proponent shall be responsible for retaining a qualified paleontologist and for implementing recommended mitigation measures, under the direction of RD 341.</p>	Contractor	Proponent	During construction

Notice of Determination

Appendix D

To:
[] Office of Planning and Research
U.S. Mail: P.O. Box 3044
Sacramento, CA 95812-3044
Street Address: 1400 Tenth St., Rm 113
Sacramento, CA 95814

[] County Clerk
County of: SACRAMENTO, SOLANO
Address:

From:
Public Agency: Reclamation District #341
Address: Gallery and Barton, 1112 I St, Ste 240
Sacramento, CA 95814
Contact: Jesse Barton
Phone: 916-444-2880

Lead Agency (if different from above):
Address:
Contact:
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2014032039

Project Title: Decker Island Electrical Crossing

Project Applicant: Decker Island LLC

Project Location (include county): Horseshoe Bend, Sacramento River, in Sacramento and Solano counties

Project Description:
The project will extend electrical supply from existing PG&E lines on Sherman Island to the existing Decker Island operation via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Decker Island from Sherman Island.

This is to advise that the Reclamation District #341 has approved the above ([] Lead Agency or [] Responsible Agency)

described project on May 13, 2014 and has made the following determinations regarding the above (date) described project.

- 1. The project [] will [] will not] have a significant effect on the environment.
2. [] An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
[] A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [] were [] were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [] was [] was not] adopted for this project.
5. A statement of Overriding Considerations [] was [] was not] adopted for this project.
6. Findings [] were [] were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:

Gallery and Barton, 1120 I Street, Suite 240, Sacramento, CA 95814

Signature (Public Agency): [Signature] Title: PRESIDENT 341

Date: May 13, 2014 Date Received for filing at OPR:

ENDORSED
SACRAMENTO COUNTY

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code.

MAY 13 2014

Revised 2011

DAVID VILLANUEVA CLERK/RECORDER
BY [Signature] DEPUTY

Notice of Determination

Appendix D

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[] Office of Planning and Research
U.S. Mail: P.O. Box 3044
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Sacramento, CA 95812-3044

[] County Clerk
County of: SACRAMENTO, SOLANO
Address:

From:
Public Agency: Reclamation District #341
Address: Gallery and Barton, 1120 I Street, Suite 240
Sacramento, CA 95814
Contact: Jesse Barton
Phone: 916-444-2880

FILED

MAY 13 2014

Lead Agency (if different from above):
Address: Birgitta E. Corsallo, Clerk of the Board of Supervisors of the County of Solano, State of California
Contact: Deputy Sandy Hoffert, Deputy
Phone:

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2014032039

Project Title: Decker Island Electrical Crossing

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Gallery and Barton, 1120 I Street, Suite 240, Sacramento, CA 95814

Signature (Public Agency): [Signature] Title: Personnel 391

Date: May 13, 2014 Date Received for filing at OPR:

Authority cited: Sections 21083, Public Resources Code.
Reference Section 21000-21174, Public Resources Code. Revised 2011

and document posted from 5-13-14 to

County Clerk of the



[OPR Home](#) > [CEQAnet Home](#) > [CEQAnet Query](#) > [Search Results](#) > [Document Description](#)

Decker Island Electrical Crossing

SCH Number: 2014032039

Document Type: MND - Mitigated Negative Declaration

Project Lead Agency: Reclamation District 341

Project Description

The project proponent, Deck Island LLC (DI), currently extracts, handles and ships aggregate and fill materials from Decker Island for use in construction projects in the Delta and San Francisco Bay Area; DI's present power supply consists of a standalone diesel-powered electrical generator. The proposed project will extend electrical supply from existing PG&E lines on Sherman Island near SR 160 to the DI operation via a buried electrical cable. The approximately 1,100-foot cable will cross approximately 900 feet of Horseshoe Bend, a branch of the Sacramento River, which separates Deck Island from Sherman Island.

Contact Information

Primary Contact:

Jesse Barton
Reclamation District 341
916 444 2880
1112 I Street, Suite 240
Sacramento, CA 95814

Project Location

County: Sacramento, Solano
City: Rio Vista
Region:
Cross Streets: SR 160 and Sherman Island Levee Road
Latitude/Longitude: 38° 5' 55.2" / 121° 42' 29.2" [Map](#)
Parcel No:
Township: 3N
Range: 2E
Section:
Base: MDB&M
Other Location Info:

Proximity To

Highways: Hwy 160
Airports: Rio Vista
Railways: No
Waterways: Horseshoe Bend, Sacramento River
Schools: No
Land Use: Sacramento County: Levee, Agricultural AG-80, Recreation. Solano County: Mining, Agricultural A-160, Agriculture

Development Type

Power: Other Power Type (Service Line)

Local Action

Other Action (Electrical Utility)

Project Issues

Aesthetic/Visual, Agricultural Land, Air Quality, Archaeologic-Historic, Biological Resources, Flood Plain/Flooding, Geologic/Seismic, Minerals, Noise, Public Services, Recreation/Parks, Soil Erosion/Compaction/Grading, Toxic/Hazardous, Traffic/Circulation, Vegetation, Water Quality, Wetland/Riparian, Landuse

Reviewing Agencies (Agencies in **Bold Type** submitted comment letters to the State Clearinghouse)

Native American Heritage Commission; State Lands Commission; Resources Agency; Department of Boating and Waterways; Department of Conservation; Department of Fish and Wildlife, Region 3; Delta Protection Commission; Department of Parks and Recreation; **Central Valley Flood Protection Board**; Department of Water Resources; Resources, Recycling and Recovery; Air Resources Board; Regional Water Quality Control Bd., Region 5 (Sacramento); Department of Toxic Substances Control

Date Received: 3/14/2014 **Start of Review:** 3/14/2014 **End of Review:** 4/14/2014

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