Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites Project
Initial Study/Proposed Mitigated Negative Declaration

November 2014

California Department of Water Resources
1416 Ninth Street
Sacramento, CA 95814

Proposed Mitigated Negative Declaration

Project: Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites Project

Lead Agency: California Department of Water Resources (DWR)

Availability of Documents: Copies of the documents can be obtained by contacting Kathleen Buchnoff, Senior Engineer, Bay-Delta Office (916) 653-6426.

Project Location: The two fish release sites are on the northwest side of Sherman Island, Rio Vista, California, on the levee along the Sacramento River. They are off of West Sherman Island Road, with each site located where the road transitions from on top of the levee crown to along the levee toe. The sites are southwest of the Rio Viento RV Park and northeast of Sherman Island County Park. The two sites are approximately a half mile apart. The Manzo Ranch site Latitude/Longitude coordinates are 38°04'0.56"N /121°46'18.62"W. The Little Baja site, southwest of Manzo Ranch, Latitude/Longitude coordinates are 38°03'48.01"N /121°46'46.63"W. The project sites are in the U.S. Geological Survey (USGS) 7.5 Minute Antioch North Quadrangle map in Sections 28, 32, and 33 of Township 3 North, Range 2 East (M.D.M).

Project Description
The construction of the Little Baja and Manzo Ranch fish release sites includes: levee improvements and county road realignment to be completed by Reclamation District 341; installation of two automated access gates for access to the sites from the county road to the release site access road on top of the levee; replacement of the aggregate base road on the levee crown with asphalt concrete paving, installation of an asphalt concrete operation pad on top of the levee crown at each of the fish release sites; construction of concrete foundations for support site lighting and a downspout at each of the fish release sites; construction of a fish release system (including piles, a screened intake pipe, and a release pipe) with security fencing and a gate at each of the fish release sites; construction of a log boom for protection of each fish release site; and providing electrical service to the fish release sites, via a new Pacific Gas & Electric pole line with service road.

This project will be implemented to comply with the National Marine and Fisheries Services' (NMFS) Biological Opinion (BiOp) on the Long-term Operations of the Central Valley Project and State Water Project (2009) and the California Department of Fish and Wildlife's (CDFW) Longfin Smelt Incidental Take Permit (ITP) for the California State Water Project Delta Facilities and Operations (2009). Specific requirements are to reduce predation of salvaged fish at the fish release sites and increase salvaged fish survival rates.

The work is scheduled to occur April 2015 through December 2016; however, if the work is not completed in this time frame, work would be continued in subsequent years.

Findings:

An Initial Study (IS) has been prepared to assess the proposed project's potential effects on the environment and the significance of those effects. Based on the IS, it has been determined that the proposed project would not have any significant effects on the environment because environmental commitments and mitigation measures would be implemented to reduce impacts to a less than significant level. This conclusion is supported by the following findings:

1. The proposed project would not impact cultural resources, land use and planning, mineral resources, population and housing, public services, recreation, or utilities and service systems.
2. The proposed project would have a less than significant impact to aesthetics, agriculture and forest resources, geology and soils, greenhouse gas emissions, hydrology and water quality, noise, and transportation and traffic.
3. Mitigation has been adopted by DWR to reduce potentially significant impacts related to air quality, biological resources, and hazards and hazardous materials.

Environmental Commitments and Mitigation Measures:

The following mitigation measures will be implemented by DWR to avoid, minimize and mitigate environmental impacts. Implementation of these mitigation measures would reduce the environmental impacts of the proposed project to a less than significant level.

<u>Air Quality</u>

Mitigation Measure AQ-1: Reduce Construction-Related Emissions

The DWR and/or the contractor shall implement the following measures recommended by the Sacramento Metropolitan Air Quality Management District to reduce construction related emissions.

- Water all exposed surfaces two times daily or as necessary to control fugitive dust. 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 shall 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 or as necessary. 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 would be completed as soon as possible. In addition, building pads would be laid as soon as possible after grading unless seeding or soil binders are used.

- 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.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications.

Biological Resources

As an environmental commitment, in addition to the following mitigation measures, this project has been planned to correspond with the work window for special status fish. In-water work will be restricted to occur between August 1 and October 31 to minimize impacts to migrating and spawning fish. Excavation/filling of the irrigation/drainage ditches will occur between May 1 and October 1, which is when giant garter snakes are active and more capable of avoiding construction activities; upon completion of ditch activities on-land work will continue on a year-round basis until work is complete.

Mitigation Measure Bio-1: Avoid and minimize impacts to special status plants

A botanist will conduct pre-construction surveys for special status plants, if any are identified (i.e., Bolander's water-hemlock, woolly rose-mallow, Delta tule pea, legenere, delta mudwort, Tehama navarretia, Baker's navarretia, shining navarretia, Lobb's aquatic buttercup, Sanford's arrowhead, side-flowering skullcap, Suisun Marsh aster, and/or saline clover), they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting or propagation measures are warranted.

If Mason's lilaeopsis is identified, it will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, an attempt to transplant them via a CDFW approved method will be made.

Mitigation Measure Bio-2: Avoid and minimize underwater sound pressure due to pile driving

Underwater sound monitoring shall be performed during pile-driving activities. A qualified biologist or natural resource specialist shall be present during such work to monitor construction activities and compliance with terms and conditions of permits.

Underwater sound reduction measures shall be employed, as needed, to ensure that levels do not exceed the threshold levels established by U.S. Fish and Wildlife Service and NMFS (for fish greater than 2 grams).

Peak pressure	=	206 decibel
Accumulated Sound Exposure Level	=	187 decibel

These underwater sound reduction measures shall include use of an impact hammer cushion block. Additionally, hammers shall be used only during daylight hours and

initially shall be used at low energy levels and reduced impact frequency. Applied energy and frequency shall be gradually increased until necessary full force and frequency are achieved.

If necessary, one or more of the following shall be implemented to further reduce sound:

- Pipe caissons shall be used to isolate the piles from waters to buffer underwater sound pressure levels if underwater sound monitoring indicates that underwater sound levels exceed threshold levels. The caissons shall be driven below the mud line using vibratory or hydraulic methods and the interior area dewatered before pipe piles are installed using impact methods.
- The use of a bubble curtain surrounding the pile to be driven.

Mitigation Measure Bio-3: Avoid and minimize impacts to special status wildlife
An environmental awareness training will be conducted by the environmental monitor for all construction personnel prior to commencement of construction. This training will include a brief overview of the life history of western pond turtle, Short-eared Owl, Swainson's Hawk, Loggerhead Shrike, Song Sparrow ("Modesto" population), and giant garter snake (GGS), legal protections and penalties, and explain the relevant Environmental Commitments and Mitigation Measures. Additionally, pre-construction surveys and buffers shall be implemented as follows:

- Western pond turtle: A pre-construction survey for western pond turtles will be conducted immediately prior to construction. Construction personnel will be alerted during a tailgate meeting that western pond turtles may be present in the area and should be avoided. If a western pond turtle is identified within the work zone, work will not proceed until the turtle has moved out of the work zone.
- Swainson's Hawk: If work is to be conducted during the nesting season (April 1-August 31), pre-construction surveys will be completed, between 30 and 14 days prior to construction, within a radius of 1/2 mile of the project site to identify any active nests (eggs or juveniles). Surveys will be completed in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWHA TAC 2000). If an active nest is identified, work will be postponed until September 1 or after the young have fledged. If that area cannot be avoided or work postponed, an appropriate buffer will be established and, if necessary, a qualified biologist will monitor the nesting pair for behavioral indications of disturbance during construction, upon CDFW consultation and approval.
- Migratory birds, Short-eared Owl, Loggerhead Shrike, and Song Sparrow ("Modesto" population): If work is scheduled to take place during the nesting season (April 1-August 31), a pre-construction survey will be conducted within a radius of 250 feet of all activities for nests. If active nests are found in the project area, an appropriate non-disturbance buffer will be established in consultation with CDFW and will depend on the species involved, site conditions, and the type

of work proposed. No new project activity shall occur within the buffer zone until the young have fledged, until the nest is no longer active, or until a qualified biologist has determined in consultation with CDFW that reducing the buffer would not result in nest abandonment. Monitoring of the nest by a qualified biologist during construction shall be required to ensure that nests are not jeopardized.

- Giant garter snake: Standard construction BMP's such as limiting speeds on the project site will be implemented. Additionally, exclusion fencing will be placed along the southern boundaries of the project area to prevent GGS from entering the work areas during the active season (May 1 – October 1). Exclusion fencing will be maintained throughout the entirety of the project until completion. Pre-construction surveys for GGS will occur 24 hours prior to construction activities and after any lapse in construction of two weeks or greater has occurred. The irrigation/drainage ditches will be dewatered and will remain dry for at least 30 consecutive days after April 15 and prior to excavation or filling of the dewatered habitat. Excavation/Filling of the irrigation/drainage ditches will be conducted between May 1 and October 1, during the snake's active season. An environmental monitor will either be present or on call during on-land work activities. If a GGS is identified in the work zone, work will not proceed until the snake has moved on its own out of the work zone and USFWS and CDFW have been consulted. If deemed necessary by USFWS or CDFW, loss of potential GGS habitat will be mitigated.

Mitigation Measure Bio-4: Minimize impacts to jurisdictional waters of the United States and waters of the state during construction, and compensate for unavoidable impacts.

The following measures shall be implemented to minimize impacts to jurisdictional waters and navigable waters of the U.S., DWR shall implement the following measures:

- Minimize placement of structures in waters of the United States and waters of the state to the greatest extent feasible.
- Locate all staging areas, parking areas, equipment, and storage areas for fuel, lubricants, and solvents in areas away from waters of the United States and waters of the State.
- Comply with mitigation required by the USACE, if deemed necessary, to mitigate for loss of waters of the U.S.

<u>Greenhouse Gas Emissions</u>

As an environmental commitment, the proposed project will incorporate the following Best Management Practices (BMPs) from DWR's Climate Action Plan-Phase I: Greenhouse Gas (GHG) Reduction Plan to avoid and minimize impacts related to greenhouse gas emissions:

BMP 1. Evaluate project characteristics, including location, project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the project or specific elements of the project.

BMP 2. Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.

BMP 3. Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.

BMP 4. Evaluate the feasibility and efficacy of producing concrete on-site and specify that batch plants be set up on-site or as close to the site as possible.

BMP 5. Evaluate the performance requirements for concrete used on the project and specify concrete mix designs that minimize GHG emissions from cement production and curing while preserving all required performance characteristics.

BMP 6. Limit deliveries of materials and equipment to the site to off peak traffic congestion hours.

BMP 7. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure Cal. Code of Regs., tit. 13, §2485). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 8. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

BMP 9. Implement a tire inflation program on the jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

BMP 10. Develop a project specific ride share program to encourage carpools, shuttle vans, transit passes, and secure bicycle parking for construction worker commutes.

BMP 11. Reduce electricity use in temporary construction offices by using high efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business.

BMP 12. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box type trailer is used for hauling, a SmartWay2 certified truck will be used to the maximum extent feasible.

BMP 13. Minimize the amount of cement in concrete by specifying higher levels of cementitious material alternatives, larger aggregate, longer final set times, or lower maximum strength where appropriate.

BMP 14. Develop a project specific construction debris recycling and diversion program to achieve a documented 50 percent diversion of construction waste.

BMP 15. Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution, minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

Hazards and Hazardous Materials

Mitigation Measure HM-1: All personnel involved in use of hazardous materials will be trained in emergency response and spill control. Diesel fuel and oil will be used, stored and disposed of in accordance with standard protocols for the handling of hazardous materials. Contracts will require contractors to prepare and make available to DWR, for review and acceptance, a spill prevention and control plan.

Mitigation Measure HM-2: Soils and water contaminated by any hazardous materials spills during construction would be excavated, removed or mopped up from the site and disposed of at an appropriate regional landfill.

Mitigation Measure HM-3: The project contractor will be required to develop a fire protection and prevention plan which incorporates fire safety measures (e.g., spark arrestors, mufflers) on all equipment with the potential to create a fire hazard. The plan will ensure that fire suppression equipment is on site and that all construction employees have received appropriate fire safety training.

Statement of No Significant Effect:

DWR prepared an Initial Study in support of this Mitigated Negative Declaration. Copies of the Initial Study/Mitigated Negative Declaration (IS/MND) were provided to the State Clearinghouse on May 13, 2014, initiating the 30-day public review period, which ends on June 11, 2014.

Pursuant to Section 21082 of the California Environmental Quality Act, DWR has independently reviewed and analyzed the IS/MND for the proposed project and finds that the IS/MND reflects the independent judgment of DWR. As the lead agency for the project, DWR further finds that the project mitigation and conservation measures will be implemented as stated in the MND. With implementation of these mitigation and conservation measures, the proposed project as modified would have no significant effect on the environment.

I hereby approve this project:

11/10/14

Paul A. Marshall
Chief, Bay Delta Office
California Department of Water Resources

Date

RECEIVED
NOV 12 2014
STATE CLEARING HOUSE

Initial Study
Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites

1. Project Title	Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites Project
2. Lead Agency Name and Address	California Department of Water Resources 1416 Ninth Street Sacramento, California 95814
3. Contact Person and Phone Number	Kathleen Buchnoff Senior Engineer, Bay-Delta Office Delta Conveyance Branch, Rm 252-17 (916) 653-6426 Kathleen.Buchnoff@water.ca.gov
4. Project Location	The project is located on the northwest portion of Sherman Island, within the Antioch North USGS 7.5 minute quadrangle in Sacramento County
5. Project Sponsor's Name	California Department of Water Resources
6. General Plan Designation	Agricultural Cropland
7. Zoning	Agricultural-80 Acres
8. Description of Project	The construction of the Little Baja and Manzo Ranch fish release sites includes: levee improvements and county road realignment to be completed by Reclamation District 341; installation of two automated access gates for access to the sites from the county road to the release site access road on top of the levee; replacement of the aggregate base road on the levee crown with asphalt concrete paving, installation of an asphalt concrete operation pad on top of the levee crown at each of the fish release sites; construction of concrete foundations for support site lighting and a downspout at each of the fish release sites; construction of a fish release system (including piles, a screened intake pipe, and a release pipe) with security fencing and a gate at each of the fish release sites; construction of a log boom for protection of each fish release site; and providing electrical service to the fish release sites, via a new PG&E pole line with service road. See *Section 2, "Proposed Project Description."*
9. Surrounding Land Uses and Setting	Surrounding land uses include agriculture and recreation. See *Environmental Settings discussion under each issue area in Chapter 3. "Environmental Checklist."*
10. Other Public Agencies	U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Fish

Whose Approval is Required	and Wildlife Service, National Marine Fisheries Service, CA Department of Fish and Wildlife, CA State Lands Commission, Central Valley Regional Water Quality Control Board, State Office of Historic Preservation, Central Valley Flood Protection Board, Reclamation District 341, Sacramento County, Delta Stewardship Council.

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1 Introduction

1.1 Background and Location

The State Water Project is a water storage and delivery system of reservoirs, aqueduct, power plants, and pumping plants that began construction in 1957. Its main purpose is to store and distribute water for both urban and agricultural needs in California. The John E. Skinner Delta Fish Protective Facility (Fish Facility) was constructed in the late 1960's to salvage fish entrained at the southern Sacramento-San Joaquin Delta, State Water Project export facility. Fish are held in the Fish Facility until they are collected by draining each holding tank into a haul-out bucket, transferred to a water tanker truck, and transported to fixed release sites in the central Delta. These fixed release sites are near the confluence of the Sacramento and San Joaquin Rivers (Figure 1).

1.2 Project Purpose

The Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites Project are being designed and constructed to comply with the National Marine and Fisheries Services' (NMFS) Biological Opinion (BiOp) on the Long-term Operations of the Central Valley Project and State Water Project (2009) and the Department of Fish and Wildlife's (CDFW) Longfin Smelt Incidental Take Permit (ITP) for the California State Water Project Delta Facilities and Operations (2009). The purpose of the project is to build new facilities to release fish that have been salvaged from the State's John E. Skinner Fish Protective Facility and the federal Tracy Fish Salvage Facility back into the Delta. The Department of Water Resources (DWR) implemented this project in response to the Suite IV.4 Actions contained in the Reasonable and Prudent Alternative (RPA) of the BiOp governing the operation of the Delta facilities of the State Water Project. Specifically, the RPA requires DWR to comply with Action IV.4.3 (3) of the BiOp which concerns the survival rates of salvaged fish. The overall goal of the project is to reduce predation of salvaged fish at the fish release sites and increase salvaged fish survival rates.

In addition to the construction of the fish release sites, the levee and the county road (West Sherman Island Road), at the two sites and between the sites, will be improved. The design of these levee and road improvements is being led by Reclamation District 341 (RD 341) and will be constructed under a separate contract handled by RD 341. These improvements are being made due to concerns regarding levee stability, settlement, and seepage. Improvements will widen the levee crown at the location of the fish release sites to allow operation of the fish release facilities, and improve the safety of traffic on the county road. Improvements will also support a temporary county road and PG&E service road. Maintenance and construction of existing siphon pipes will be made during the levee improvements and county road realignment. The coordinated efforts between DWR and RD 341 will ensure that the needs for the fish release sites are incorporated into the levee and road improvement design and that the fish release site design includes the final levee design.

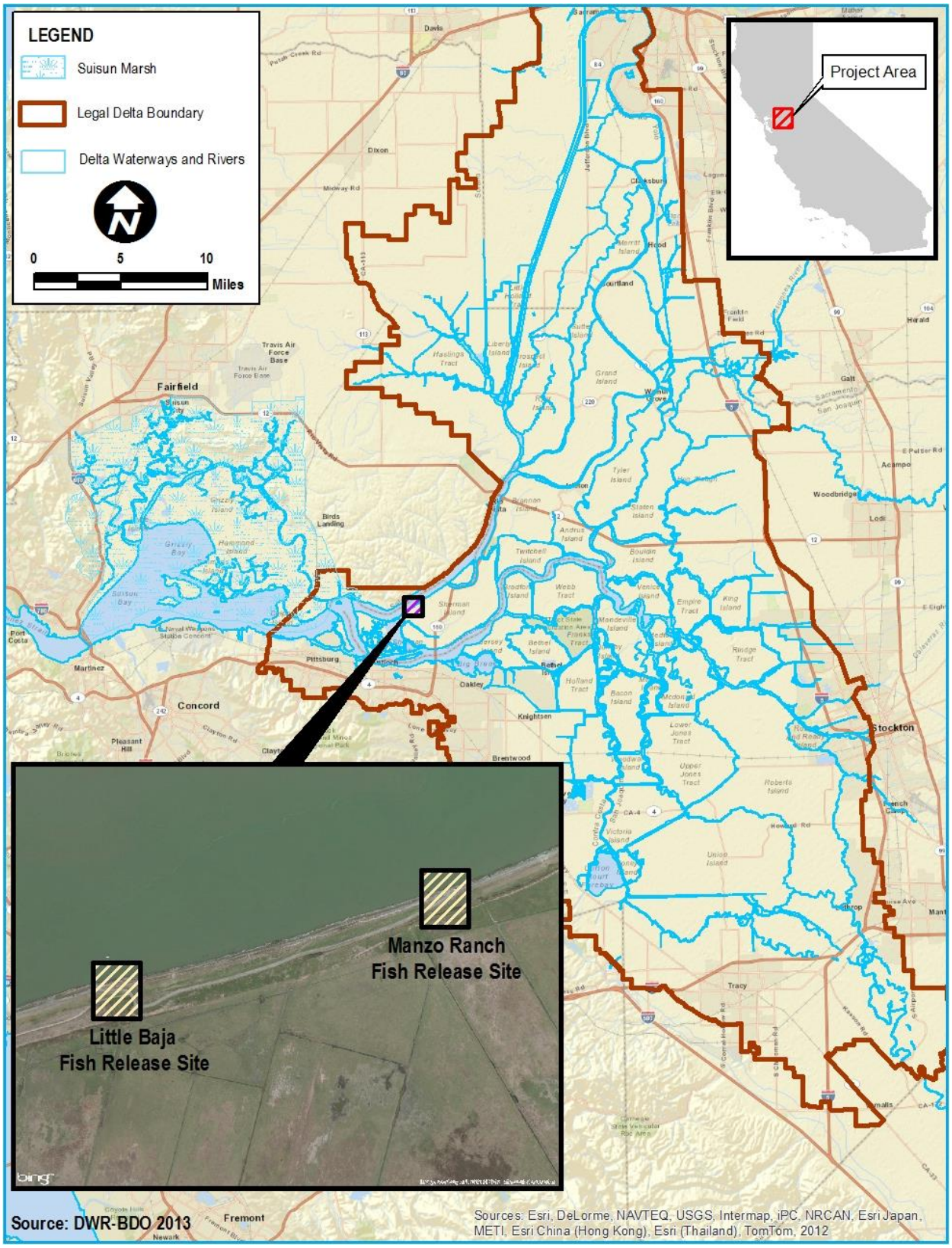

Figure 1: Little Baja and Manzo Ranch Fish Release Sites Location Map

1.3 Project Location and Setting

The two fish release sites are on the northwest side of Sherman Island, Rio Vista, California, on the levee along the Sacramento River (Figure 1). They are off of West Sherman Island Road, with each site located where the road transitions from the top of the levee crown to along the levee toe. The sites are located southwest of the Rio Viento RV Park and northeast of Sherman Island County Park. The two sites are approximately a half mile apart. The Manzo Ranch site Latitude/Longitude coordinates are 38°04'0.56"N /121°46'18.62"W. The Little Baja site, southwest of Manzo Ranch, Latitude/Longitude coordinates are 38°03'48.01"N /121°46'46.63"W. The project sites are in the U.S. Geological Survey (USGS) 7.5 Minute Antioch North Quadrangle map in Sections 28, 32, and 33 of Township 3 North, Range 2 East (M.D.M).

The proposed release site locations are accessed through locked gates off of West Sherman Island Road (county road) along the Sacramento River. The existing conditions at both proposed release sites are comprised of levee crown covered in aggregate base with no substantial structures. The area where the toe berm will be placed is mainly comprised of the existing levee slope (including the county road) and irrigated pasture.

Two staging and spoil areas have been identified. The primary staging and temporary spoil area is located approximately 500 feet downstream of the Little Baja fish release site and is situated adjacent to the levee. It is approximately 700 feet long and 150 feet wide (2.4 acres). The secondary staging and temporary spoil site is located next to the Manzo Ranch release site and is adjacent to the levee. It is approximately 1525 feet long and 150 feet wide (5.0 acres). The staging and spoils areas are mainly comprised of opens areas with weedy, non-native annual vegetation. See Figure 2 for staging and spoil area locations.

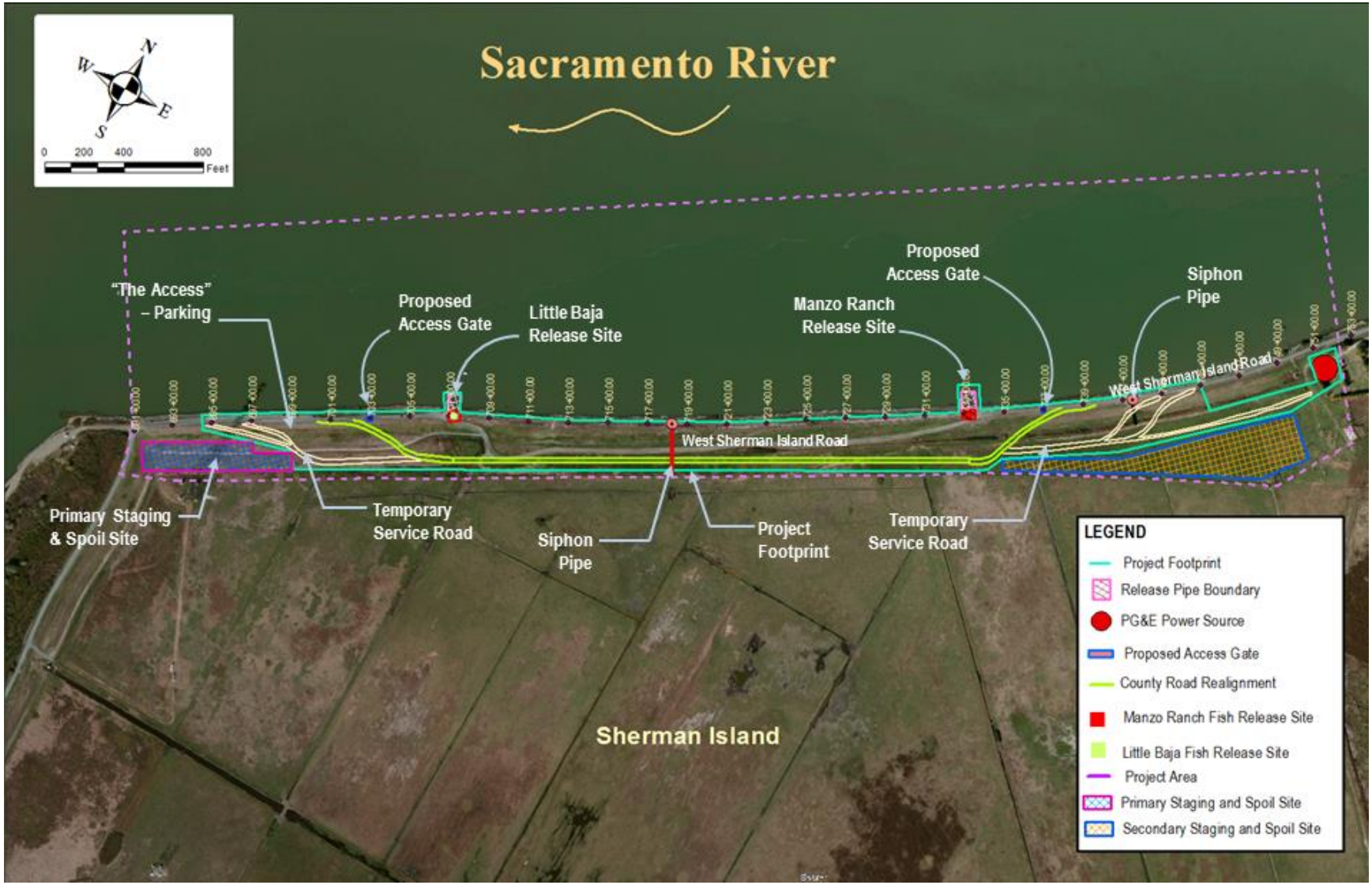

Figure 2: Staging and Spoil Site Locations of the Little Baja and Manzo Ranch Fish Release Sites

1.4 Project Objectives

DWR is proposing to implement the Sherman Island "Little Baja and Manzo Ranch" Fish Release Sites Project to achieve the following objectives as required for operation of the State Water Project by the 2009 NMFS Biological Opinion and 2009 CDFW Longfin Smelt Incidental Take Permit:

- Reduce predation at the salvage release sites by 50 percent from the current rate.
- Improve the overall survival of listed fish species salvaged at the John E. Skinner Delta Fish Protective Facility through the design of state-of-the-art salvage fish release facilities and implementing operational procedures to ensure complete flushing of fish and debris from the release pipe.
- Construct multiple release points (up to six) in the western Delta with randomized one-site per day release schedule.

1.5 Regulatory Requirements, Permits, and Approvals

DWR has the responsibility to ensure that all requirements of CEQA and other applicable regulations are met. Other permitting requirements for this project are listed below:

- Streambed Alteration Agreement from CDFW pursuant to Section 1601 of the California Department of Fish and Game Code.
- Permit pursuant to Section 404 of the Federal Clean Water Act US Army Corps of Engineers (USACE).
    - USACE will initiate Section 7 consultation with US Fish and Wildlife Service and National Marine Fisheries Service to comply with the Federal Endangered Species Act.
    - USACE will initiate Section 106 consultation with the State Historic Preservation Officer to comply with the State Historic Preservation Act.
- Water Quality Certification from the Regional Water Quality Control Board pursuant to Section 401 of the Federal Clean Water Act.
- Construction General Permit to comply with National Pollutant Discharge Elimination System (NPDES) standards from the Regional Water Quality Control Board pursuant to Section 402 of the Clean Water Act.
- Notification of use of State Lands, California State Lands Commission, Memorandum of Understanding dated October 19, 1979 between the State Lands Commission and DWR.
- Encroachment Permit, Central Valley Flood Protection Board (CVFPB), for construction and encroachment on the levee.
- Encroachment Permit, RD 341, for construction and encroachment on levee.
- Encroachment Permit, Sacramento County, for construction and encroachment of county road realignment.
- Consistency Determination of a Covered Action under the Delta Stewardship Council's Delta Plan.

2 Project Description

2.1 Project Features

The construction of the Little Baja and Manzo Ranch fish release sites includes:

- Levee improvements and county road realignment to be done by RD 341
- Installation of two automated site access gates for access to the sites from the county road to the release site access road on top of the levee
- Installation of an asphalt concrete operation pad on top of the levee crown at each of the fish release sites
- Construction of concrete foundations for support of site lighting and a downspout at each of the fish release sites
- Construction of a fish release system at each of the fish release sites
- Construction of a log boom and attached underwater debris screens
- Providing electrical service, via a new PG&E pole line, and running underground conduits from the PG&E poles to the fish release facilities

2.2 Construction Methods and Activities

2.2.1 Levee Improvements and County Road Realignment

The levee improvements along the length of the levee from the Little Baja site to the Manzo Ranch site will meet criteria set by the CVFPB and USACE. The proposed levee improvements will increase the width, height, and integrity of the levee section and realign the county levee road at the new salvaged fish release sites.

Inclinometers, relatively small devices to monitor and measure settlement, already exist along this section of levee. However, during the course of levee improvements additional inclinometers may be located at the landside crown hinge and at the existing landside levee toe to collect and monitor long term lateral levee deformation data. Standard drilling equipment (hollow-stem auger and/or mud rotary auger) will be required for inclinometer installation using standard procedures. An approximately 85mm/3.34 inch inclinometer diameter casing will be installed and the annular space between the casing and borehole will be filled with cement grout. The installed inclinometers will not be permanent.

An approximately 0.75 mile long stabilization/counterbalance berm will be built along the landside toe of the levee from the Little Baja site to the Manzo Ranch site. The berm will extend approximately 165 feet from the landside hinge point of the new crest. This berm will be approximately 5 feet thick at the existing slope toe and approximately 2 feet thick at 150 feet from the new landside hinge point.

RD 341, using the guidelines of USACE's Public Law 84-99 Flood Control and Coastal Emergency Act (PL 84-99), and taking into account the potential effects of sea level rise, sets the minimum elevation of the levee at 14.5 feet. The levee will be constructed with a 4 horizontal to 1 vertical

landside slope. The levee crown at each of the two sites will be 64 feet long and be constructed to have an overall crown width of approximately 55.0 feet. The length from crown high point to waterside hinge will be approximately 31 feet and have a slope of 6.7 percent. The length from crown high point to landside hinge will be approximately 19 feet and have a slope of 2 percent. The elevation of the crown high point is approximately 18.0 feet. Between the two fish release sites the levee crown will be raised approximately 1 foot to account for settlement and the landside slope will be re-graded to meet PL 84-99 standards.

The county road improvements will consist of demolition of the existing toe road and construction of a new toe road with new tie-ins to the road on top of the levee crest. The newly constructed portion of the asphalt roadway will meet minimum county agricultural road standards for Sherman Island, with two 11-foot wide lanes with 2-foot wide shoulders. The grade of the County road from the levee crest to the lower flat area are to be constructed at a +/- 5 percent slope.

The existing ditches located parallel to the county road, at the existing toe of the levee, will be buried and compacted to a density similar to the surrounding soil when the berm is constructed. Drainage from the PVC conduit pipe drains will drain to the existing drainage system on Sherman Island landward of the berm and new road. Underseepage will continue to be discharged to the existing drainage system.

Two existing siphons occur within the project area (Figure 2). Maintenance and construction of the siphon pipes will be made during the levee improvements. The siphon pipe at station 718 + 13 will be replaced under the berm and exit to beyond the new toe road. The connection between the existing and new siphon pipe will be on top of the levee crest. At station 741 + 51, the siphon pipe will be extended with approximately 100-feet of new siphon pipe.

New fill material will be brought to the project site by truck or possible by barge, depending on the determination by the construction contractor.

2.2.2 Site Access Gates

The two fish release sites will be located on the crown of the levee where the county road is situated at the toe of the levee. Each site is located where the county road transitions from on top of the levee crown to along the levee toe; where the county road diverges from the levee crown a gravel road continues along the levee crown. The fish release sites will be accessed from this gravel road. At the two locations, where the gravel road and the county road intersect, an automated gate will be installed to replace existing manual gates. The existing manual gates and their foundations will be removed from the sites. The automated gates are being installed to limit access to the gravel road along this stretch of the levee and for security of the release sites and operators. The gravel road will be improved during the RD's levee improvements.

For ease of the authorized vehicles using the fish release facilities, the gates will be automated vertical swing gates operated using a remote control. Each of the automated gates will require

a footprint of approximately 25 feet by 10 feet for installation of a gate post, operating system, and protective guard posts. The posts and operating systems will be supported using localized, below-grade reinforced concrete pad foundations.

Schematics of the two sites are shown in Figures 3, 4 and 5, Little Baja and Manzo Ranch sites respectively, which show the proposed gate locations. The current county road and the levee crown roads are shown. These roads will be modified and the county road will be realigned by the RD's levee improvements.

Figure 3: Little Baja Fish Release Site Schematic

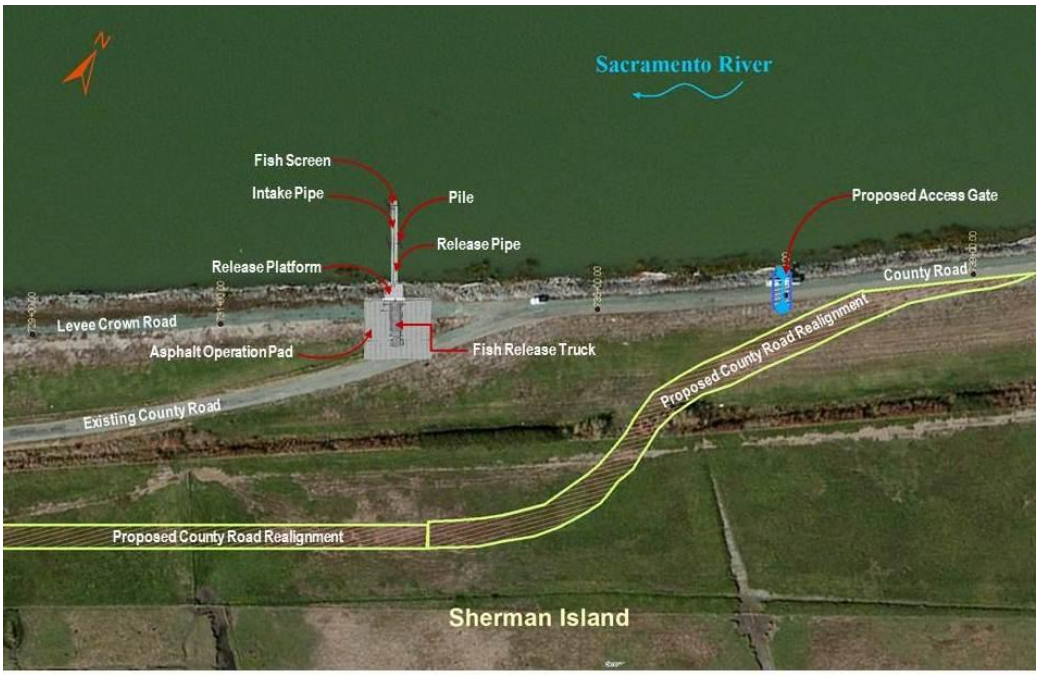

Figure 4: Manzo Ranch Fish Release Site Schematic

2.2.3 Paved Operation Areas for Fish Release Truck

The fish release sites will be used at any hour of the day and night and in all types of weather. The entire gated section of levee crown, approximately 0.7 miles in length, will be converted to asphalt concrete road from aggregate base road. The set-up of the release operations requires the truck operator to drive in reverse and make tight turns. To enhance the safety of operation, an asphalt concrete paved truck operation area will be built at each site to aid the truck operator's use of the release facilities.

At each site, the asphalt concrete paved truck operation area will be approximately 3,200 square feet in area, covering a 50 foot wide by 64 foot long area over the levee crown. The RD's levee improvements will widen the levee crown at each of the release sites to accommodate the asphalt concrete operation pad. The pad will have an edge curb along its length on the landside and waterside. Additionally, pre-cast concrete wheel stops will be placed on the pad to assist the truck operator for positioning the truck for releases. The wheel stops will be located near the waterside edge of the pad. The operation area will be sloped at 6.7 percent from the crown high point to the waterside edge to facilitate the emptying of the fish truck. From the crown high point to the landside edge, the pad will be sloped 2 percent. See Figures 3, 4, and 5 for a schematic showing the operation pads at each of the sites.

2.2.4 Concrete Foundations

Concrete foundations to support newly installed light poles and down spouts will be built adjacent to the edge of the operation pad, set in from the approximate location of the waterside levee hinge. The foundations will be cast-in-place reinforced concrete and will be

approximately 36 inches in diameter, embedded within the levee freeboard, and will extend above the operation pad approximately 12 inches. There will be three at each site.

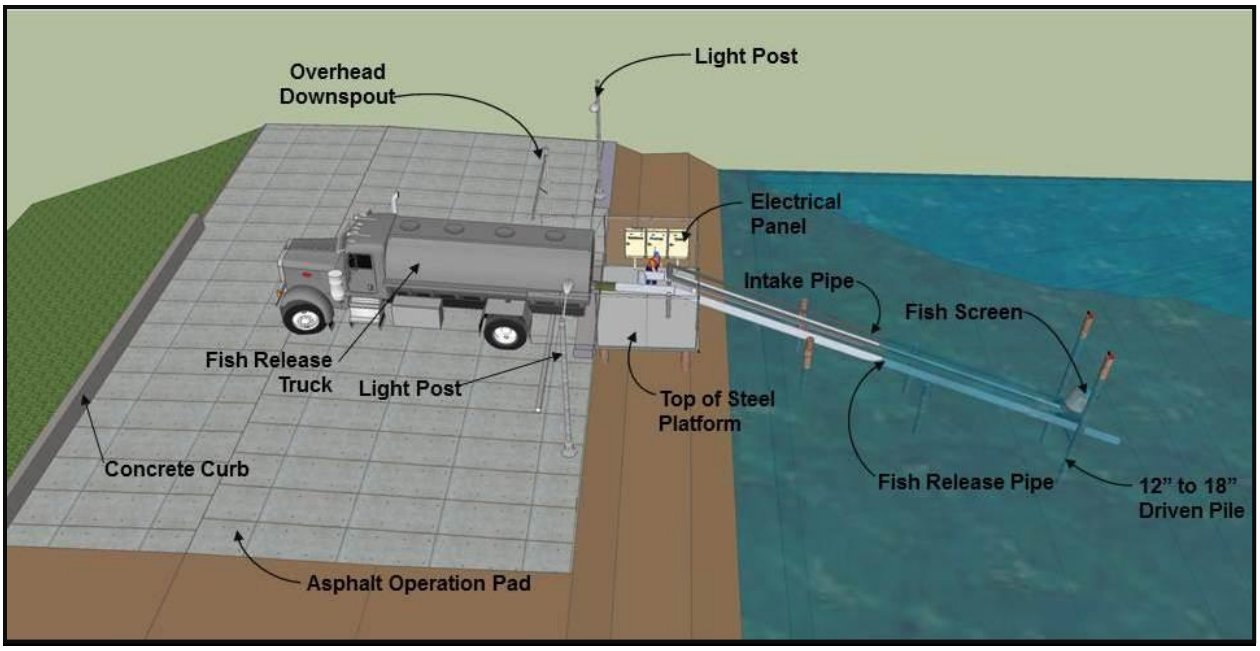

Figure 5: Fish Release System Layout Cross Section

2.2.5 Fish Release System

A fish release system will be built at each site. The fish release system will consist of a pile-supported grated steel-framed equipment platform, a fish release pipe, a water intake pump with a water intake pipe, a retrievable fish screen for the intake pipe, supporting in-water steel framing and piles, and an overhead downspout. Figure 5 provides an illustration of the basic layout of a fish release system.

The grated steel-framed equipment platform will be adjacent to and on the waterside of the operation pad. The platform will be framed with steel members and will have a steel grate walking surface. The platform is approximately 20 feet by 12 feet and is supported on up to six driven steel pipe piles, one in each corner of the platform and two centered on the long dimension of the platform. The platform will be used for personnel access, support of the fish release and water intake pipes, support of the fish screen retrieval track, and for housing pumps, electrical panels and control panels. An 8-foot tall chain link fence topped with barbed wire and razor wire will be provided around the perimeter of the platform for security. An automated, remote-controlled single swing gate, supported on the steel platform, will be provided on the landside of the platform. The gate will be a 15 foot wide swing chain link gate. The fish release pipe will extend from the platform into the water for the releasing of fish from the fish release truck's tank into the Sacramento River. The approximate dimensions of the pipe will be a nominal 16-inch diameter pipe that transitions to a nominal 12-inch diameter stainless steel pipe and will be approximately 100 feet long set at a slope of approximately 2.75 to 3.73H:1V. The fish release truck will back up to the platform and attach a hose to the end of the fish release pipe to empty the contents of the truck into the pipe.

To aid in the release of the truck contents, a water intake pump and pipe will be used to draw water out of the Sacramento River and into the fish release pipe. The water intake pipe will be adjacent and parallel to the fish release pipe, set at the same slope. The intake pipe will be nominal 16-inch diameter stainless steel, will be approximately 93 feet long, and will house a submersible turbine pump for withdrawing flows of up to 3.5 cubic feet per second (cfs) out of the Sacramento River. The pump will have a capacity of 3.5 cfs, which will be used for final flushing of the release pipe following the release of fish. During the release of fish, the pump flow will be throttled to approximately 1.75 cfs. The pump will discharge at the platform end of the water intake pipe and will connect to the fish release pipe using a manifold in a manner that will direct the water down the fish release pipe to facilitate flushing. The manifold will be designed to evenly distribute water from the intake pipe into the fish release pipe, directing the water down the length of the release pipe. The water end of the intake pipe will terminate approximately 5 feet before the end of the fish release pipe. A docking manifold will be installed at the end of the intake pipe for docking of a fish screen. The fish screen will be designed for Delta Smelt screening criteria and will have an automatic interior and exterior brushed screen cleaning system. The screen will be cylindrical, positioned in a vertical orientation, perpendicular to the flow of the river. The screen will be removable via a track system that straddles the water intake pipe. An automatic closing device at the entry end of the intake pipe will be provided to ensure water intake does not occur when the screen is not in the docked position.

The equipment platform, pipes, fish screen, and track will be supported by steel beams that span between piles driven into the waterside slope of the levee. It is anticipated that six steel pipe piles will support the equipment platform and six piles will support the pipes, fish screen, and track. The tops of the piles will terminate at the underside of the steel framing, except for the two most waterside piles, which will extend approximately to the top of the fish screen in its docked position. The bottoms of the piles will terminate at a tip elevation (elevation at the bottom tip of the pile) that provides the required vertical and lateral capacity. The piles, as well as the pipes, debris screen track, and support framing, will be designed for current code flood forces, including drag loads, breaking wave loads, and debris impact forces. Piles located in or within 15 feet of the levee prism will either be pre-drilled or will be cast-in-drilled-hole (CIDH) piles. Piles will be inserted into a pre-drilled hole that is drilled through the softer levee material. The drilled hole will terminate at the top of harder strata under the levee and from there the pile will be driven to its tip elevation. Piles that are over 15 feet from the levee prism will be driven to their tip elevation for their full length. It is anticipated that the piles will be nominal 12-inch to 18-inch diameter steel pipe piles, however, if CIDH piles are necessary the casing required may be greater than 18-inch diameter. The tip elevation, based on the in-river soil borings taken at the release sites, will be 56 feet to 80 feet below ground surface. An overhead downspout will be located adjacent to the equipment platform within the truck operation area. The overhead downspout will be provided for the washing out of the tank of the fish release truck. The overhead downspout will consist of piping and a hose wheel. A vertical pipe will extend up from the grade and will have a horizontal extension set at an elevation (approximately 15 feet above the truck operation area) that is convenient for cleaning

the inside of the tank. A hose will be attached to the end of the horizontal extension. Water for the overhead downspout will be provided by a connection to the water intake pipe. The downspout piping will be supported by a steel frame with a concrete foundation. The piping and frame will be protected by bollards.

A boom float protection system would not be constructed initially but will be added to the facility if it is deemed necessary and thus it is included as part of this project. The boom float protection system will be set approximately 60 feet out from each fish release system, on the upstream, downstream, and water sides of the structure.

Each protection system will consist of approximately four clusters of 3 piles used to anchor the boom float system, creating a 60 foot perimeter of debris protection around each fish release system. The exact location and orientation of the protection system will be determined as the project moves forward.

Each cluster would consist of three 12-inch diameter driven steel piles that are interconnected using steel framing. A floating log boom with hanging debris screens (approximately 6 feet deep) will be connected and span between each pile cluster. The piles will be driven as noted above for the piles supporting the fish release system.

2.2.6 Power at New Sites

In order to run the facilities, operate the gates, and provide lighting for the equipment platform and paved operation area, power needs to be brought to the new sites. The closest existing power source is a PG&E power pole near the Rio Viento RV Park located approximately 2,000 feet upstream from the Manzo Ranch release site. New power lines will be routed from this pole to the new sites, first to the Manzo Ranch site and then on to the Little Baja site. The new power line will run parallel to the levee and, where the county road runs along the levee toe, adjacent to the county road. The power line will consist of a 30 foot easement (15 feet on either side of the pole line) with wooden power poles along the centerline set approximately 350 feet apart (approximately 14 poles total) with a PG&E service road along the extent of the new pole line. A pedestal will be set near the power line at a point parallel to each of the release sites and from there the lines will be trenched underground, perpendicular to the levee, going up the landside levee slope to junction boxes adjacent to the operation pad. From the junction boxes, conduit will be trenched underground to electrical panels placed on the fish release platforms. From the electrical panels conduit will be trenched underground to the site lighting and the access gates. All trenching will be parallel or perpendicular to the levee, within the levee freeboard, with a minimum of 24 inches of cover for the conduit. Two light poles supported on concrete foundations will be installed near the waterside hinge at each site. The PG&E service road must be constructed of a minimum 6-inch-thick gravel base, be at least 10 feet wide, with 18 feet of clearance above, and have a 30-foot radial hammer head turn-around area at the end of the road if the road is only accessible from one entry point. The turn-around area may not be necessary if the road can be accessed from both ends.

2.2.7 Staging and Spoil Areas

During construction, designated staging and spoil areas will be available to the contractor as described in Section 1.3 Project Location and identified in Figure 2. The primary staging and temporary spoil site downstream of the Little Baja site is approximately 700 feet by 150 feet. The secondary staging and temporary spoil site along the levee toe is approximately 1,525 feet by 150 feet. These sites are shown in Figure 2.

2.2.8 Construction Equipment

During construction a variety of equipment is anticipated to be used. Backhoes, dozers, sheepsfoot rollers, water trucks, scrapers, excavators, compactors, and truck transport may be required for earthwork and the RD's levee modifications. Rubber tired backhoes and trenchers will excavate trenches for the new power and electrical lines and for preparing the foundation for the operation area, concrete foundations, and access gate. Compactors will compact the backfill material for the foundations and trenches. Dump trucks and paving machines will be needed to transport, feed, and pave the operation area and the road. Concrete trucks will deliver concrete to the site. Loaders and trucks will move soil materials during trenching operations and construction of the operation area. Cranes and rough terrain forklifts will hoist rebar, steel framing materials, piles, and construction materials from delivery trucks and place them into the work area. Welders may be needed to weld steel framing for the equipment platform and fish release system support. Measures will be taken to prevent debris from falling into the river due to any over-water welding work. A barge, or several barges, equipped with a crane and a pile driver or drilling equipment will be needed for the in-water piling operations. Piles driven from the landside will require a crane and a pile driver or drilling equipment. Highway trucks will be used to deliver materials such as pile sections, framing, rebar, gravel, and to mobilize and demobilize equipment. Generators will be used to power the construction field office and will be needed for electric powered tools. Air compressors will be needed for air powered tools. Supervision and service trucks will be needed on the site throughout the duration of the contract.

2.3 Environmental Commitments

In order to avoid and minimize impacts to special status species, this project has been planned to correspond with work windows for special status fish and for giant garter snakes. In-water work will be restricted to occur between August 1 and October 31 to minimize impacts to migrating and spawning fish. Excavation/filling of the irrigation/drainage ditches will occur between May 1 and October 1, which is when giant garter snakes are active and more capable of avoiding construction activities; upon completion of ditch activities on-land work will continue on a year-round basis until work is complete.

Greenhouse gas emissions (GHG) have the potential to adversely affect the environment because they contribute, on a cumulative basis, to global climate change. In May 2012, DWR adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Reduction Plan (GGERP). According to the GGERP, all DWR projects are expected to implement all construction Best Management Practices (BMPs) outlined in the plan unless a variance is approved by the DWR

CEQA Climate Change Committee. Therefore the proposed project will incorporate the following BMPs to avoid and minimize impacts related to greenhouse gas emissions:

BMP 1. Evaluate project characteristics, including location, project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the project or specific elements of the project.

BMP 2. Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.

BMP 3. Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.

BMP 4. Evaluate the feasibility and efficacy of producing concrete on-site and specify that batch plants be set up on-site or as close to the site as possible.

BMP 5. Evaluate the performance requirements for concrete used on the project and specify concrete mix designs that minimize GHG emissions from cement production and curing while preserving all required performance characteristics.

BMP 6. Limit deliveries of materials and equipment to the site to off-peak traffic congestion hours.

BMP 7. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure Cal. Code of Regs., tit. 13, §2485). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 8. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

BMP 9. Implement a tire inflation program on the jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

BMP 10. Develop a project specific ride share program to encourage carpools, shuttle vans, transit passes, and secure bicycle parking for construction worker commutes.

BMP 11. Reduce electricity use in temporary construction offices by using high efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business.

BMP 12. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box type trailer is used for hauling, a SmartWay2 certified truck will be used to the maximum extent feasible.

BMP 13. Minimize the amount of cement in concrete by specifying higher levels of cementitious material alternatives, larger aggregate, longer final set times, or lower maximum strength where appropriate.

BMP 14. Develop a project specific construction debris recycling and diversion program to achieve a documented 50 percent diversion of construction waste.

BMP 15. Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution, minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

2.4 Construction Schedule

As stated above, to avoid impacts to special status species, this project has been planned to be constructed during work windows for special status fish and for giant garter snakes. In-water work will be done between August 1 and October 31 to minimize impacts to migrating and spawning fish. The fish release site construction will require work to be done in the water and on the land. The levee and road improvements will only require on-land work. Excavation/filling within the irrigation/drainage ditches will be done between May 1 and October 1 to minimize impacts to giant garter snakes, but levee improvement work and other on-land work will continue on a year-round basis until the work is complete.

On-land work, construction of the levee and road improvements and on-land components of the fish release sites, is scheduled to begin May 1-October 1, 2014 or May 1- October 1, 2015 and be completed by the end of December 2016. In-water work for the two fish release sites is scheduled to occur during August 1-October 31, 2015 but may continue, in the established work window, in subsequent years, if needed.

3 Environmental Checklist

The environmental factors checked below would potentially be affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

Determination:

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 to 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 an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature _____ Date _____

Printed Name _____ For _____

3.1 Aesthetics

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project:				
a.	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?	☐	☐	☒	☐
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d.	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

3.1.1 Environmental Setting

The project site currently consists of a small portion of the Sacramento River, a gated levee crown covered in aggregate base, the landside and waterside slope of the Sherman Island levee, and a portion of irrigated pasture. There are several structures along this particular stretch of the Sherman Island Levee (West Sherman Island Road) that would be similar in size and aesthetics to the proposed fish release sites. Following the levee northeast of the Manzo Ranch Site at approximately 0.32 miles there is a Siphon structure extending approximately 90 feet into the river and supported by approximately 8 in-water piles, at approximately 0.67 miles there is a boat dock extending approximately 85 feet into the river, at approximately 2.17 miles is a federally owned and maintained fish release site with similar design to the ones proposed. Following the levee southwest at approximately 0.69 miles, within the county park, there is a boat dock and boat launch.

3.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

Less-than-significant. The levee road around Sherman Island is considered a scenic corridor in the Sacramento County General Plan because of views of the Sacramento River. During temporary construction activities, views would not be eliminated and after construction

activities construction equipment would be removed. The proposed fish release site structures would not alter the view of the Sacramento River for those traveling along the corridor since the county road follows the levee toe for the portion of levee where the structures will be placed. Improvements made to the levee will be similar to improvements made all around the Delta to improve levee integrity. This impact would be less-than-significant.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings along a scenic highway?

Less-than-significant. Highway 160 is officially designated as a state scenic highway from the Contra Costa County line to south city limit of Sacramento. While on Sherman Island, the project site is not visible from Highway 160. Additionally, aesthetic changes made to the project site will not be significantly different from similar structures along the Sherman Island Levee, therefore this impact would be less-than-significant.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less-than-significant impact. As noted in sections (a) and (b) above, the proposed project would not result in substantial changes to the existing visual character of the site and impacts would therefore be less-than-significant.

d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Less-than-significant. The project will require lighting at the proposed fish release sites. These new outdoor lighting poles will be designed to have LED (light emitting diodes) lighting that has a dimming /control sensor capability with sharp intensity/focus on a lighted area thus allowing for focused light and non-glare. The changes made to lighting will not create a new source of substantial light therefore the impact would be less-than-significant.

3.2 Agricultural & Forest Resources

In determining whether impacts on agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest 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.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b.	Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?	☐	☐	☐	☒
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))	☐	☐	☐	☒
d.	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?	☐	☐	☒	☐

3.2.1 Environmental Setting

The general project area, including the project site itself, is mapped as Farmland of Local Importance by the California Department of Conservation.

3.2.2 Discussion

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?

No Impact. There is no Prime Farmland, Unique Farmland or Farmland of Statewide Importance mapped within the project site; therefore there would be no impact.

b) Conflict with existing zoning for agricultural use or conflict with a Williamson Act contract?

No impact. Sacramento County representatives confirmed that the parcels within the project area are not currently under the Williamson Act. The fish release sites would be constructed on the levee and will therefore not impact agriculture. The toe berm and county road realignment will impact a minor section of irrigated pasture but would not conflict with existing zoning and would not conflict with any Williamson Act contract; therefore there would be no impact.

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))

No impact. There are no forest land or timberland zones within or near the project site; therefore there would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No impact. For the reasons noted in (b) above, there would be no impact.

e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

Less-than-significant. The proposed project will result in the conversion of a maximum of 10 acres of irrigated pasture that qualifies as farmland of local importance to levee toe berm, county road and a new power line with a PG&E service road. This conversion is not due to urban encroachment and will not result in the conversion of more than 50 acres of farmland and so mitigation due to policy AG-5 of the Sacramento County General Plan is not required. These parcels are zoned Agricultural 80 acres and will still be well above 80 acres in size despite conversion of irrigated pasture. The impact due to conversion of Farmland of Local Importance would be less than significant.

3.3 Air Quality

When 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.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e.	Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Environmental Setting

The proposed project is located within the Sacramento Valley Air Basin, Sacramento Metropolitan Air Quality Management District. With the exception of ozone, coarse particulate matter (PM10) and fine particulate matter (PM2.5), Sacramento County is in attainment for all state and federal ambient air quality standards (AAQS). Sacramento County does not meet the air quality standards for ozone, Sacramento County as part of the larger Sacramento Federal Ozone Nonattainment Area (SFNA) is designated a “severe” nonattainment area for the *federal eight hour ozone standard*, and is designated a “serious” nonattainment area for the *state one hour ozone standard*. Sacramento County is designated nonattainment for the state PM10 and PM2.5 standards and for the federal PM10 standard. However, air quality monitoring data shows that Sacramento County does meet the federal PM10 standard. Sacramento County does not meet the federal PM2.5 standard.

3.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

No impact. The proposed project does not include a land use development proposal nor would the project be growth-inducing therefore there would be no impact.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less-than-significant with mitigation incorporated. Construction emissions are temporary in nature but would be less-than significant with mitigation incorporated.

Mitigation Measure AQ-1: Reduce Construction-Related Emissions

The DWR and/or the contractor shall implement the following measures recommended by the Sacramento Metropolitan Air Quality Management District to reduce construction related emissions.

- Water all exposed surfaces two times daily or as necessary to control fugitive dust. 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 shall 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 or as necessary. 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 would be completed as soon as possible. In addition, building pads would be laid as soon as possible after grading unless seeding or soil binders are used.
- 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.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications.

c) Result in cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Less-than-significant. With the incorporation of Mitigation Measure AQ-1 emissions would not exceed applicable standards therefore cumulative impacts would be less-than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant. Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses or others who are especially sensitive to the effects of pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors. The project is not near any hospitals, schools, or convalescent facilities. The nearest residential area is about half mile north east of the location from which the new powerline would start and approximately 0.8 miles from the proposed Manzo Ranch fish release site. While there are residences near the project footprint, the majority of construction will be concentrated at and between the two fish release sites. However, air quality pollutants from these construction activities would not be substantial, therefore impacts would be less-than-significant.

e) Create objectionable odors affecting a substantial number of people?

Less-than-significant. Human response to odors is subjective, and sensitivity to odors varies greatly. Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestation of a person‘s reactions to foul odors can range from psychological (e.g., irritation, anger, anxiety) to physiological (e.g., circulatory, and respiratory effects, nausea, vomiting, headaches).

A potential source of odor during construction activities is equipment exhaust. However, equipment exhaust would be localized and generally confined to the immediate area surrounding the proposed project site. The proposed project would use typical construction techniques, and the odors would be temporary and typical of most constructions sites. Operation of the proposed project would not have any significant odor sources. Therefore the project would not create objectionable odors that would affect a substantial number of people; impacts would be less than significant.

3.4 Biological Resources

	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f.	Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

3.4.1 Environmental Setting

Prior to conducting field surveys, DWR biologists compiled a list of sensitive species and plant communities that may be in this project area. The list was developed from a review of the California Natural Diversity Database (CNDDB), Sacramento U.S. Fish and Wildlife Service website (USFWS), and the California Native Plant Society (CNPS) on-line Inventory of Rare and Endangered Plants for the following nine quads: Denverton, Birds Landing, Rio Vista, Honker Bay, Antioch North, Jersey Island, Clayton, Antioch South, and Brentwood USGS 7.5' quadrangles.

The complete list in Table 1 includes information on species status, habitat description, whether potential habitat occurs in the project area, and whether impacts to the species are expected due to the project. Expected species impacts were developed through a review of CNDDB GIS records (Figure 6) and information collected during DWR site surveys. DWR Environmental Scientists conducted a site visit in the area in July 2012 and preconstruction surveys on June 26, 2013 for geotechnical investigations which were completed in August 2013. A site visit for this specific project was conducted by DWR Environmental Scientists on December 13, 2013.

No listed wildlife were observed in the project area during the aforementioned site visits. Suisun Marsh aster and Mason's lilaeopsis, special status plant species, were identified during pre-construction surveys on June 2013 at the specific fish release site locations. The waterside levee hinge contains few trees primarily black walnut. The waterside levee slope was historically rip-rapped but currently the levee slope has benches and some areas devoid of rip-rap. The landside levee slope is mowed regularly, and there is a county road that runs along the existing levee toe for this section of levee, interior to the island is irrigated pasture. The landside slope and irrigated pasture are comprised mainly of weedy, non-native annual vegetation. Few to no small mammal burrows were identified within the project area on any of the site visits. The irrigation/drainage ditches at the levee toe contain minimal to no water and only some sections were vegetated. In these areas vegetation was dominated mainly by non-native blackberry.

Table 1: Complete Special Status Species List

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
INVERTEBRATES						
Lange's metalmark butterfly	*Apodemia mormo langei*	FE/-/-		Antioch dunes area	No effect	No appropriate habitat in the project area.
Conservancy fairy shrimp	*Branchinecta conservatio*	FE/-/-	IUCN: EN	Vernal pools on many landforms and soil types	No effect	Not known to occur in the project area, and no habitat will be affected by the proposed actions
Longhorn fairy shrimp	*Branchinecta longiantenna*	FE, X/-/-	IUCN: EN	Vernal pools in grasslands and on sandstone outcrops	No effect	Not known to occur in the project area, and no habitat will be affected by the proposed actions
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT, X/-/-		Vernal pools and other ephemeral habitats on many landforms and soil types	No effect	Not known to occur in the project area, and no habitat will be affected by the proposed actions
San Bruno elfin butterfly	*Callophrys mossii bayensis*	FE/-/-		Coastal mountains of northern San Mateo County: in the fog-belt on steep, north facing slopes	No effect	project area is outside the species' range and no habitat will be affected by the proposed actions
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/-/-		Elderberry shrubs in riparian and oak savanna habitats	No effect	No host plants occur within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Delta green ground beetle	*Elaphrus virdis*	FT/-/-	IUCN:CR	Grassland habitat with interspersed vernal pools or playa pools	No effect	Not known to occur in the project area, and no habitat will be affected by the proposed actions
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE/-/-	IUCN: EN	Vernal pools and other ephemeral habitats on many landforms and soil types	No effect	Not known to occur in the project area, and no habitat will be affected by the proposed actions
PLANTS						
Large-flowered fiddleneck	*Amsinckia grandiflora*	FE/SE/1B.1		Cismontane woodland, Valley and foothill grassland	No effect	Available habitat is poor quality, and species is not known or likely to occur in the project area
California androsace	*Androsace elongate* ssp. *acuta*	-/-/4.2		Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland	No effect	No appropriate habitat within the project area
Slender silver moss	*Anomobryum julaceum*	-/-/2.2		Broadleaved upland forest, lower montane coniferous forest, North coast coniferous forest	No effect	No appropriate habitat within the project area
Coast rockcress	*Arabis blepharophylla*	-/-/4.3		Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Mt. Diablo Manzanita	*Arctostaphylos auriculata*	-/-/1B.3		Chaparral, cismontane woodland	No effect	No appropriate habitat within the project area
Contra Costa Manzanita	*Arctostaphylos manzanita* ssp. *laevigata*	-/-/1B.2		Chaparral	No effect	No appropriate habitat within the project area
Alkali milk-vetch	*Astragalus tener* var. *tener*	-/-/1B.2		Playas, Valley and foothill grasslands (adobe clay), vernal pools	No effect	No appropriate habitat within the project area
Heartscale	*Atriplex cordulata* var. *cordulata*	-/-/1B.2	BLM: S	Chenopod scrub, meadows and seeps, Valley and foothill grasslands (sandy)	No effect	Available habitat is poor quality, and species is not known or likely to occur in the project area
Crownscale	*Atriplex coronata* var. *coronata*	-/-/4.2		Alkaline, often clay chenopod scrub, Valley and foothill grassland, vernal pools	No effect	Soils are not alkaline, available habitat is poor quality, and species is not known or likely to occur in the project area
Brittlescale	*Atriplex depressa*	-/-/1B.2		Alkaline, clay chenopod scrub, meadows and seeps, playas, Valley and foothill grassland, vernal pools	No effect	No appropriate habitat within the project area
San Joaquin spearscale	*Atriplex joaquiniana*	-/-/1B.2		Alkaline, chenopod scrub, meadows and seeps, playas, Valley and foothill grassland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Big tarplant	*Blepharizonia plumosa*	-/-/1B.1		Valley and foothill grassland	No effect	Available habitat is poor quality, and species is not known or likely to occur in the project area
Brewer's calandrinia	*Calandrinia breweri*	-/-/4.2		sandy or loamy disturbed sites and burns, chaparral, coastal scrub	No effect	No appropriate habitat within the project area
Round-leaved filaree	*California macrophylla*	-/-/1B.1	BLM: S	Cismontane woodland, Valley and foothill grassland	No effect	Available habitat is poor quality, and species is not known or likely to occur in the project area
Mt. Diablo fairy-lantern	*Calochortus pulchellus*	-/-/1B.2		Grassy slopes within chaparral, cismontane woodland, and riparian woodland	No effect	Project area is outside species' range
Chapparal harebell	*Campanula exigua*	-/-/1B.2	BLM: S	Chaparral (rocky, usually serpentinite)	No effect	No appropriate habitat within the project area
Congdon's tarplant	*Centromadia parryi* ssp. *congdonii*	-/-/1B.2	BLM: S	Alkaline Valley and foothill grassland	No effect	Soils are not alkaline, available habitat is poor quality, and species is not known or likely to occur in the project area
Pappose tarplant	*Centromadia parryi* ssp. *paryi*	-/-/1B.2	BLM:S	Often alkaline; chapparal, coastal prairie, marsh and swamp, meadow and seep, valley and foothill grassland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Parry's rough tarplant	*Centromadia parryi* ssp. *rudis*	-/-/4.2		Alkaline, vernally mesic, seeps, sometimes roadsides, valley and foothill grassland, and vernal pools	No effect	Soils are not alkaline, available habitat is poor quality, and species is not known or likely to occur in the project area
Hispid bird's beak	*Chloropyron molle* ssp. *hispidum*	-/-/1B.1	BLM:S	Alkaline. Meadows and seeps, playas, valley and foothill grassland	No effect	Soils are not alkaline, available habitat is poor quality, and species is not known or likely to occur in the project area
Soft bird's beak	*Chloropyron molle* ssp. *molle*	FE/R/1B.2		Coastal salt marshes and swamps	No effect	Available habitat is poor quality since salinity is much higher at nearest occurrences, and species is not known or likely to occur in the project area
Bolander's water-hemlock	*Cicuta maculate* var. *bolanderi*	-/-/2.1		Coastal, fresh, or brackish water marshes and swamps	May adversely affect	Known to occur near the project area, avoidance and minimization measures will be implemented

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Suisun thistle	*Cirsium hydrophilum* var. *hydrophilum*	FE/-/1B.1		Marshes and swamps (salt)	No effect	Available habitat is poor quality since salinity is much higher at nearest occurrences, and species is not known or likely to occur in the project area
Serpentine collomia	*Collomia diversifolia*	-/-/4.3		Serpentinite, rocky or gravelly, chaparral, cismontane woodland	No effect	No appropriate habitat within the project area
Small-flowered morning glory	*Convolvulus simulans*	-/-/4.2		Clay, serpentinite seeps, chaparral (openings), coastal scrub, and valley and foothill grassland	No effect	No appropriate habitat within the project area
Mt. Diablo bird's beak	*Cordylanthus nidularis*	-/R/1B.1	BLM:S	Chaparral (serpentinite)	No effect	No appropriate habitat within the project area
Hoover's cryptantha	*Cryptantha hooveri*	-/-/1A		Inland dunes, sandy valley and foothill grassland	No effect	No appropriate habitat within the project area
Hospital canyon larkspur	*Delphinium californicum* ssp. *interius*	-/-/1B.2		Chaparral (openings), cismontane woodland (mesic), coastal scrub	No effect	No appropriate habitat within the project area
Norris' beard moss	*Didymodon norrisii*	-/-/2.2		Intermittently mesic, rock: cismontane woodland, lower montane coniferous forest	No effect	No appropriate habitat within the project area
Dwarf downingia	*Downingia pusilla*	-/-/2.2		Valley and foothill grassland, vernal pools	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Lime Ridge eriastrum	*Eriastrum ertterae*	-/-/1B.1		Alkaline or semi-alkaline, sandy, and chaparral (openings or edges)	No effect	No appropriate habitat within the project area, known only from Lime Ridge area
Antioch Dunes buckwheat	*Eriogonum nudum* var. *psychicola*	-/-/1B.1		Interior dunes	No effect	No appropriate habitat within the project area
Mt. Diablo buckwheat	*Eriogonum truncatum*	-/-/1B.1		Chaparral, coastal scrub, valley and foothill grassland	No effect	No appropriate habitat within the project area
Jepson's woolly sunflower	*Eriophyllum jepsonii*	-/-/4.3		Sometimes serpentinite, chaparral, cismontane woodland, coastal scrub	No effect	No appropriate habitat within the project area
Contra Costa wallflower	*Erysimum capitatum* var. *angustatum*	FE/SE/1B.1		Inland Dunes	No effect	No appropriate habitat within the project area
Diamond-petaled California poppy	*Eschscholzia rhombipetala*	-/-/1B.1	BLM: S	Alkaline, clay Valley and foothill grassland	No effect	No appropriate habitat within the project area
Stinkbells	*Fritillaria agrestis*	-/-/4.2		Clay, sometimes serpentinite chaparral, cismontane woodland, pinyon and juniper woodland, Valley and foothill grassland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Fragrant fritillary	*Fritillaria liliacea*	-/-/1B.2	USFS:S	Coastal prairie, coastal scrub, ultramafic, valley and foothill grassland; often serpantinite	No effect	No appropriate habitat within the project area
Phlox-leaf serpentine bedstraw	*Galium andresii* ssp. *gatense*	-/-/4.2		Chapparal, cismontane woodland, lower montane coniferous forest; serpentinite, rocky.	No effect	No appropriate habitat within the project area
Diablo helianthella	*Helianthella castanea*	-/-/1B.2	BLM: S	Broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, Valley and foothill grassland	No effect	No appropriate habitat within the project area
Hogwallow starfish	*Hesperevax caulescens*	-/-/4.2		Mesic, clay Valley and foothill grassland, shallow vernal pools	No effect	No appropriate habitat within the project area
Brewer's western flax	*Hesperolinon breweri*	-/-/1B.2	BLM: S	Usually serpentinite chaparral, cismontane woodland, Valley and foothill grassland	No effect	No appropriate habitat within the project area
Woolly rose-mallow	*Hibiscus lasiocarpos* var. *occidentalis*	-/-/1B.2		Marshes and swamps (freshwater)	May adversely affect	Potential to occur near the project area, avoidance and minimization measures will be implemented

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Carquinez goldenbush	*Isocoma arguta*	-/-/1B.1		Valley and foothill grassland	No effect	Available habitat is poor quality, and species is not known or likely to occur in the project area
Northern California black walnut	*Juglans hindsii*	-/-/1B.1		Riparian forest, riparian woodland	No effect	Black walnutwere observed during the site visits but they are not within the range of the extant population of the listed species and are likely hybridized specimens. The listed species is not known to occur in the project area
Contra Costa goldfields	*Lasthenia conjugens*	FE, X/-/1B.1		Mesic cismontane woodland, alkaline playas, Valley and foothill grassland, vernal pools	No effect	No appropriate habitat within the project area
Delta tule pea	*Lathyrus jepsonii* var. *jepsonii*	-/-/1B.2		Freshwater and brackish marshes and swamps	May adversely affect	Potential to occur near the project area, avoidance and minimization measures will be implemented

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Legenere	*Legenere limosa*	-/-/1B.1	BLM: S	Wet areas, vernal pools, ponds	Not likely to adversely affect	Potential to occur near the project area, avoidance and minimization measures will be implemented
Woolly-headed lessingia	*Lessingia hololeuca*	-/-/3		Clay, serpentinite: broadleaved upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland	No effect	No appropriate habitat within the project area
Mason's lilaeopsis	*Lilaeopsis masonii*	-/R/1B.1		Freshwater and brackish marshes and swamps, riparian scrub	May adversely affect	Known to occur near the project area, avoidance and minimization measures will be implemented
Delta mudwort	*Limosella australis*	-/-/2B.1		Marshes and swamps	May adversely affect	Known to occur near the project area, avoidance and minimization measures will be implemented
Showy golden madia	*Madia radiata*	-/-/1B.1	BLM: S	Cismontane woodland, Valley and foothill grassland	No effect	Poor quality habitat within the project area
Hall’s bush-mallow	*Malacothamnus hallii*	-/-/1B.2		Chaparral, coastal scrub, ultramafic	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Woodland woolly threads	*Monolopia gracilens*	-/-/1B.2		Serpentinite: Broadleaved upland forest (openings), chaparral (openings), cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland	No effect	No appropriate habitat within the project area
Lime ridge navarretia	*Navarretia gowenii*	-/-/1B.1		Chaparral	No effect	No appropriate habitat within the project area
Tehama navarretia	*Navarretia heterandra*	-/-/4.3		Valley and foothill grassland (mesic), and vernal pools	Not likely to adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented
Baker's navarretia	*Navarretia leucocephala* ssp. *bakeri*	-/-/1B.1	BLM: S	Mesic, cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools	Not likely to adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented
Adobe navarretia	*Navarretia nigelliformis* ssp. *nigelliformis*	-/-/4.2		Clay vernally mesic Valley and foothill grassland, and vernal pools	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Shining navarretia	*Navarretia nigelliformis* ssp. *radians*	-/-/1B.2	BLM: S	Sometimes clay, cismontane woodland, valley and foothill grassland, and vernal pools	Not likely to adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented
Colusa grass	*Neostapfia colusana*	FT/SE/1B.1		Vernal pools (adobe, large)	No effect	No appropriate habitat within the project area
Antioch Dunes evening-primrose	*Oenothera deltoids* ssp. *howellii*	FE/SE/1B.1		Interior dunes	No effect	No appropriate habitat within the project area
Mt. Diablo phacelia	*Phacelia phaceloides*	-/-/1B.2	BLM: S	Rocky: chaparral, cismontane woodland	No effect	No appropriate habitat within the project area
Bearded popcorn-flower	*Plagiobothrys hystriculus*	-/-/1B.1		Valley foothill grassland, vernal pool, wetland	No effect	No appropriate habitat within the project area
Eel-grass pondweed	*Potamogeton zosteriformis*	-/-/2.2		Marsh and swamp, wetland	No effect	No appropriate habitat within the project area
Lobb's aquatic buttercup	*Ranunculus lobbii*	-/-/4.2		Mesic, cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools	Not likely to adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Sandford's arrowhead	*Sagittaria sanfordii*	-/-/1B.2	BLM:S	Marshes and swamps (assorted shallow freshwater)	May adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented
Rock sanicle	*Sanicula saxatilis*	-/R/1B.2		Rocky: broadleaved upland forest, chaparral, valley and foothill grassland	No effect	No appropriate habitat within the project area
Side-flowering skullcap	*Scutellaria lateriflora*	-/-/2.2		Marsh and swamp, meadow and seep, wetland	Not likely to adversely affect	Species is not known or likely to occur in the project area but potential habitat exists, avoidance and minimization measures will be implemented
Chaparral ragwort	*Senecio aphanactis*	-/-/2.2		Chaparral, cismontane woodland, coastal scrub	No effect	No appropriate habitat within the project area
Sweet marsh ragwort	*Senecio hydrophiloides*	-/-/4.2		Mesic, lower montane coniferous forest, meadows and seeps	No effect	No appropriate habitat within the project area
Keck's checkerbloom	*Sidalcea keckii*	FE/-/1B.1	FS:S	Cismontane woodland, valley and foothill grassland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Most beautiful jewel-flower	*Streptanthus albidus* ssp. *peramoenus*	-/-/1B.2		Serpentinite: Chaparral, cismontane woodland, valley and foothill grassland	No effect	No appropriate habitat within the project area
Mt. Diablo jewel-flower	*Streptanthus hispidus*	-/-/1B.3		Rocky: chaparral, valley and foothill grassland	No effect	No appropriate habitat within the project area
Slender-leaved pondweed	*Stuckenia filiformis* ssp. *alpina*	-/-/2.2		Marshes and swamps (assorted shallow freshwater)	No effect	No appropriate habitat within the project area
Suisun Marsh aster	Symphyotrichu m lentum	-/-/1B.2		Brackish and freshwater marshes and swamps	May adversely affect	Known to occur in the project area, avoidance and minimization measures will be implemented
Saline clover	*Trifollium hydrophilum*	-/-/1B.2		Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools	Not likely to adversely affect	Potential to occur near the project area, avoidance and minimization measures will be implemented
Coastal triquetrella	*Triquetrella californica*	-/-/1B.2	FS:S	Coastal bluff scrub, coastal scrub	No effect	No appropriate habitat within the project area
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	-/-/1B.1		Valley and foothill grassland (alkaline hills)	No effect	No appropriate habitat within the project area
Oval-leaved viburnum	*Viburnum ellipticum*	-/-/2.3		Chaparral, cismontane woodland, lower montane coniferous forest.	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
FISH						
North American Green Sturgeon - southern DPS	*Acipenser medirostris*	FT/-/-	AFS: VU, CDFW: SSC, IUCN: NT, NMFS: SC	Sacramento River Basin, Sacramento-San Joaquin Delta	Not likely to adversely affect	This species is highly mobile and has the capability of leaving an area when pile driving is occurring and returning when activities cease.
Sacramento Perch	*Archoplites interruptus*	-/-/-	CDFW: SSC	Vegetated sloughs, pools of sluggish rivers and lakes; common in ponds and impoundments	No effect	No habitat will be affected by the proposed actions
Delta Smelt	*Hypomesus transpacificus*	FT, X/SE/-	AFS: TH, IUCN: EN	Rivers and sloughs in the Suisun Bay and the Sacramento-San Joaquin Delta	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.
Steelhead - Central Valley DPS	*Oncorhynchus mykiss irideus*	FT, X/-/-	AFS: TH	Central Valley rivers and streams, Delta, SF Bay estuary	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Chinook Salmon - Central Valley spring-run ESU	*Oncorhynchus tshawytscha*	FT/ST/-	AFS: TH	Central Valley rivers and streams, Delta, SF Bay estuary	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.
Chinook Salmon - Sacramento River winter-run ESU	*Oncorhynchus tshawytscha*	FE/SE/-	AFS: EN	Central Valley rivers and streams, Delta, SF Bay estuary	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.
Sacramento Splittail	*Pogonichthys macrolepidotus*	-/-/-	IUCN: EN AFS: VU DFG:SSC	San Francisco Bay Delta and lower Sacramento River	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.
Longfin Smelt	*Spirinchus thaleichthys*	-/ST/-	CDFW: SSC	San Francisco Bay north to Lake Earl, near the Oregon border.	Not likely to adversely affect	Work will take place August 1-October 31 when the species is considered least likely to be within the project area.

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Wildlife						
Tricolored Blackbird (nesting colony)	*Agelaius tricolor*	-/-/-	ABC: WLBCC, BLM: S, DFG: SSC, FWS: BCC, IUCN: EN	Nest in a variety of substrates, most are either flooded or armored, forage in shrub lands, pastures, and wetlands	No effect	No known nesting colonies within several miles of project area
California tiger salamander	*Ambystoma californiense*	FT, X/ST/-	IUCN: VU	Grasslands and oak savannas with vernal pools or seasonal ponds	No effect	No critical habitat within project area, and species is not known or likely to occur in the project area
Silvery legless lizard	*Anniella pulchra pulchra*	-/-/-	DFG: SSC, FS: S	Vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks	No effect	No appropriate habitat within the project area
Pallid bat	*Antrozous pallidus*	-/-/-	BLM: S, DFG: SSC, FS: S, IUCN: LC, WBWG: H	Roost in rock crevices, old buildings, bridges, caves, mines, and hollow trees within grasslands, shrub lands, woodlands, and forests	No effect	No roosting habitat will be affected by the proposed actions, and foraging habitat will not be impacted

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Golden Eagle	*Aquila chrysaetos*	-/-/-	DFG: FP BLM: S FWS: BCC IUCN: LC	found primarily in mountains up to 12,000 feet, canyonlands, rimrock terrain, and riverside cliffs and bluffs	No effect	No appropriate nesting habitat within the project area
Short-eared Owl	*Asio flameus*	-/-/-	ABC: WLBCC DFG: SSC IUCN: LC	Open country, including prairie, meadows, tundra, moorlands, marshes, savanna, and open woodland	Not likely to adversely affect	Available habitat is poor quality, and species is not known or likely to occur in the project area, avoidance and minimization measures will be implemented
Burrowing Owl (burrow sites & some wintering sites)	*Athene cunicularia*	-/-/-	BLM: S, DFG: SSC, FWS: BCC, IUCN: LC	Grasslands, deserts, and scrublands characterized by low-growing vegetation and suitable burrows	No effect	Available habitat is poor quality due to high water table, and species is not known or likely to occur in the project area
Swainson's Hawk (nesting)	*Buteo swainsoni*	-/ST/-	ABC: WLBCC, BLM: S, FS: S, FWS: BCC, IUCN: LC	Nest peripheral to riparian systems or lone trees in agricultural fields or along roadsides when adjacent to suitable foraging habitat such as grasslands or agricultural fields, particularly alfalfa	Not likely to adversely affect	Potential to occur near the project area, avoidance and minimization measures will be implemented

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Mountain Plover (wintering)	*Charadrius montanus*	-/-/-	ABC: WLBCC, BLM: S, DFG: SSC, FWS: BCC, IUCN: NT	Open grasslands, plowed fields with little vegetation, and open sagebrush areas	No effect	No appropriate habitat within the project area
White-tailed Kite (nesting)	*Elanus leucurus*	-/FP/-	BLM: S, IUCN: LC	Open areas such as grasslands, oak savannahs and woodlands, scrublands, and marshes	No effect	No appropriate habitat within the project area
Western pond turtle	*Emys* (= *Actinemys*) *marmorata*	-/-/-	BLM: S, DFG: SSC, FS: S, IUCN: VU	Ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation in woodland, forest, and grassland	Not likely to adversely affect	May occur within the project area but unlikely to be disturbed by work on levee crown or in open water , avoidance and minimization measures will be implemented
Saltmarsh Common Yellowthroat	*Geothlypis thichas sinuosa*	-/-/-	CDFW: SSC, FWS:BCC	Marsh and swamp	No effect	No appropriate habitat within the project area
Loggerhead Shrike (nesting)	*Lanius ludovicianus*	-/-/-	DFG: SSC, FWS: BCC, IUCN: LC	Open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Not likely to adversely affect	Available habitat is poor quality, and species is not known or likely to occur in the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Western red bat	*Lasiurus blossevillii*	-/-/-	DFG: SSC, FS: S, IUCN: LC, FS: S, WBWG: H	Roost in riparian habitats, particularly mature stands of cottonwood, sycamore, or oak greater than 50 m wide, often in edge habitats adjacent to streams, fields, or urban areas	No effect	No roosting habitat will be affected by the proposed actions, and foraging habitat will not be impacted
California Black Rail	*Laterallus jamaicensis coturniculus*	-/ST, FP/-	ABC: WLBCC, BLM: S, FWS: BCC, IUCN: NT	Saline, brackish, and freshwater emergent wetlands	No effect	No appropriate habitat within the project area
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT, X/ST/-		Open areas in canyons, rocky hillsides, chaparral scrublands, open woodlands, pond edges, stream courses in a small area within Contra Costa and Alameda Counties	No effect	Project area is outside the species' range
Song Sparrow ("Modesto" population)	*Melospiza melodia*	-/-/-	CDFW: SSC	Emergent freshwater marsh, riparian willow, riparian forests	Not likely to adversely affect	Available habitat is poor quality
Suisun Song Sparrow	*Melospiza melodia maxillaris*	-/-/-	CDFW: SSC, FWS: BCC	Marsh and swamp, wetland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Coast horned lizard	*Phyrnosoma blainvillii*	-/-/-	DFG: SSC BLM: S FS: S IUCN: LC	Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil	No effect	Not known or likely to occur in the project area, not known to occur on interior islands
California Clapper Rail	*Rallus longirostris obsoletus*	FE/SE, FP/-	ABC:WLBCC	Salt and brackish water marshes	No effect	No appropriate habitat within the project area
California red-legged frog	*Rana draytonii*	FT, X/-/-	DFG: SSC, IUCN: VU	Still water in streams and ponds with deep pools and emergent vegetation in grasslands, woodlands, and forests	No effect	No critical habitat within the project area, and species is not known or likely to occur in the project area
Salt marsh harvest mouse	*Reithrodontomys raviventris*	FE/SE, FP/-	IUCN:EN	Saline emergent wetlands of San Francisco Bay and its tributaries. Grasslands adjacent to pickleweed marsh are used, but only when new grass growth affords suitable cover in spring and summer months.	No effect	No appropriate habitat within the project area
Bank Swallow	*Riparia riparia*	-/ST/-	BLM:S, IUCN:LC	Riparian scrub, riparian woodland	No effect	No appropriate habitat within the project area

Common Name	Scientific Name	Federal/ State/ CNPS Status	Other Status	Habitat/Range	Effect Determination	Reason for Effect Determination
Suisun shrew	*Sorex ornatus sinuosus*	-/-/-	CDFW: SSC	salt and brackish marshes around the northern margins of San Pablo and Suisun bays	No effect	Project area is outside of species range, no appropriate habitat within the project area
California Least Tern	*Sternula antillarum browni*	FE/SE, FP/-	ABC:WLBCC	Along the coast, on open beaches	No effect	No appropriate habitat within the project area
American badger	*Taxidea taxus*	-/-/-	DFG: SSC, IUCN: LC	Variety of open, arid habitats, most commonly associated with grasslands, savannas, mountain meadows, and open areas of desert scrub	No effect	No appropriate habitat within the project area
Giant garter snake	*Thamnophis gigas*	FT/ST/-	IUCN: VU	Marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks	Not likely to adversely affect	Not likely to occur within the project area, available habitat is poor quality, landside work is limited to snakes active season (May 1st to Oct 1st), avoidance and minimization measures will be implemented
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/ST/-		Variety of habitats, primarily grasslands and scrublands, with loose-textured soil	No effect	No appropriate habitat within the project area

FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
X = Critical Habitat has been designated under the federal Endangered Species Act
SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
R = listed as Rare under the California Native Plant Protection Act
FP = listed as Fully Protected under the California Fish and Wildlife Code
1A = ranked as presumed extinct in California by the CNPS
1B.1 = ranked as rare, threatened, or endangered in California and elsewhere (seriously threatened in CA) by the CNPS
1B.2 = ranked as rare, threatened, or endangered in California and elsewhere (fairly threatened in CA) by the CNPS
2.1 = ranked as rare, threatened, or endangered in California, but more common elsewhere (seriously threatened in CA) by the CNPS
2.2 = ranked as rare, threatened, or endangered in California, but more common elsewhere (fairly threatened in CA) by the CNPS
3.1 = ranked as plants requiring more information in California that are under review (seriously threatened in CA) by the CNPS
4.2 = ranked as plants having a limited distribution within California that should be watched (fairly threatened in CA) by the CNPS

Other Status Key:
ABC: WLBCC = American Bird Conservancy's Watch List of Birds of Conservation Concern
AFS: EN = American Fisheries Society Endangered
AFS: TH = American Fisheries Society Threatened
AFS: VU = American Fisheries Society Vulnerable
BLM: S = U.S. Bureau of Land Management Sensitive
CDF: S = California Department of Forestry and Fire Protection Sensitive
CDFW: SSC = California Department of Fish and Wildlife Species of Special Concern
CDFW: WL = California Department of Fish and Wildlife Watch List of Birds Species of Special Concern
FS: S = U.S.D.A. Forest Service Sensitive
FWS: BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern
IUCN: CR = International Union for Conservation of Nature Critically Endangered
IUCN: EN = International Union for Conservation of Nature Endangered
IUCN: LC = International Union for Conservation of Nature Least Concern
IUCN: NT = International Union for Conservation of Nature Near Threatened
IUCN: VU = International Union for Conservation of Nature Vulnerable

NMFS: SC = National Marine Fisheries Service Species of Concern
FS: S = U.S.D.A. Forest Service Sensitive
FWS: BCC = U.S. Fish and Wildlife Service Birds of Conservation Concern
WBWG: H = Western Bat Working Group High Priority
WBWG: M = Western Bat Working Group Medium Priority

* List was compiled from January 27, 2014 CNDDB, USFWS, and CNPS searches of 9 quads around the project site (Denverton, Birds Landing, Rio Vista, Honker Bay, Antioch North, Jersey Island, Clayton, Antioch South, and Brentwood) . Species were removed from the list of species evaluated if they had no special status ranking by any agencies or organizations with jurisdiction over this project area (e.g., CDF, BLM, or FS listed sensitive only).

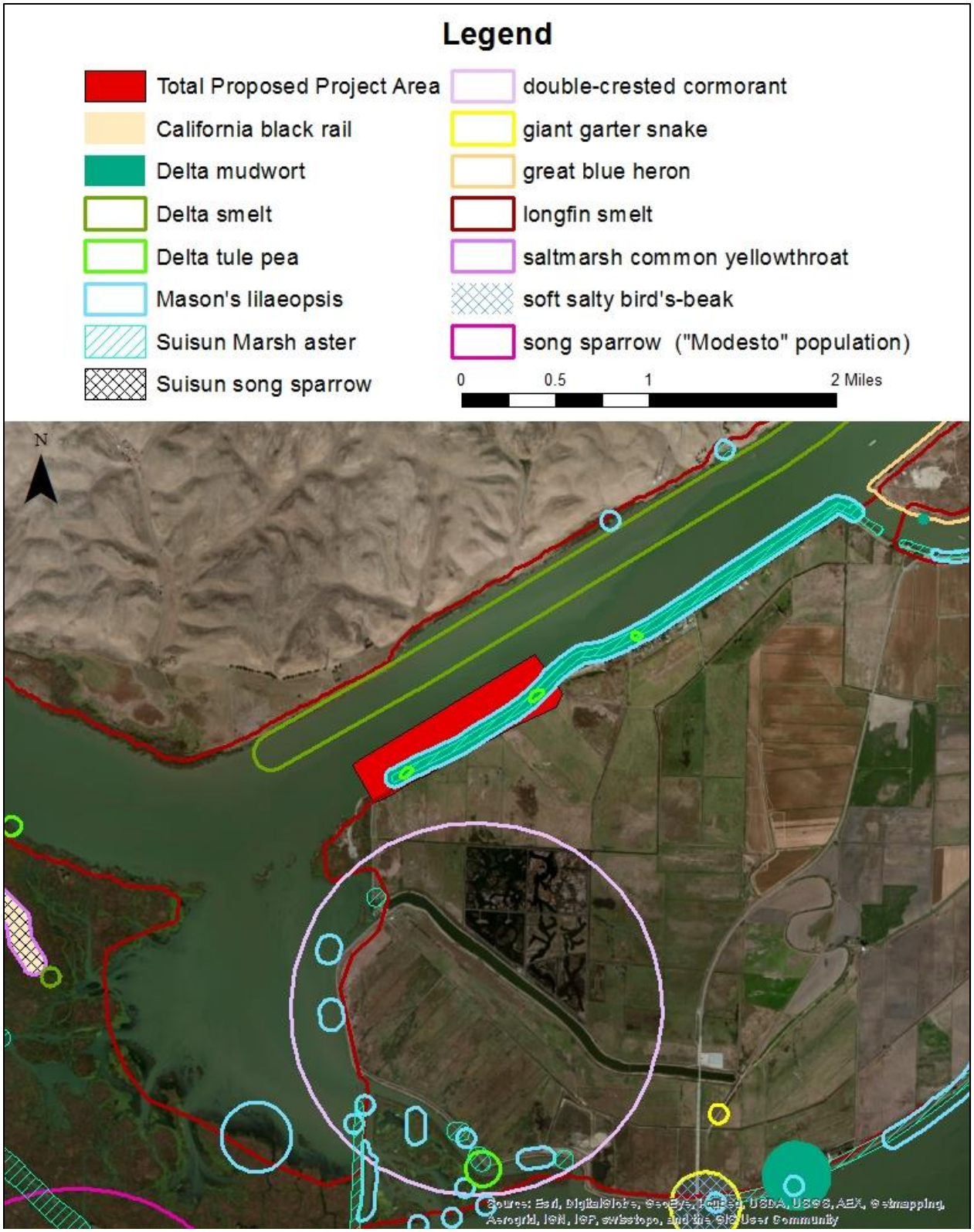

Figure 6: Map of CNDDD occurrences as of February 3, 2014

3.4.1.1 Special Status Plants

There are seven plant species identified in Table 1 with effects determinations of "may effect" and seven with effect determinations of "not likely to adversely affect". Listed below are species accounts for all fourteen special status plant species that have potential to be affected by project activities.

Bolander's Water-hemlock (*Cicuta maculata* var*. bolanderi*)

Habitat for this perennial herb includes coastal, fresh or brackish marshes and swamps. The blooming period is typically July-September (CNPS 2014). The nearest CNDDB occurrence is approximately 2.5 miles west of the project area. This plant has not been observed on site but there is potential habitat along the water side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect Bolander's water-hemlock but impacts will be less than significant with mitigation incorporated.

Woolly rose-mallow (*Hibiscus lasiocarpos* var*. occidentalis*)

Habitat for this perennial rhizomatous herb includes marshes and swamps. The blooming period is typically June-September (CNPS 2014). The nearest CNDDB occurrence is approximately 6.3 miles east of the project area. This plant has not been observed on site but there is potential habitat along the water side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect woolly rose-mallow but impacts will be less than significant with mitigation incorporated.

Delta Tule Pea (*Lathyrus jepsonii* var*. jepsonii*)

Habitat for this perennial herb includes marshes and swamps. The blooming period is typically February-May (CNPS 2014). There are CNDDB occurrences within the potential project boundaries, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect Delta tule pea but impacts will be less than significant with mitigation incorporated.

Legenere (*Legenere limosa*)
Habitat for this annual herb includes wet areas and vernal pools. The blooming period is April-June (CNPS 2014).The nearest CNDDB occurrence is approximately 11.7 miles northwest of the project area. This plant has not been observed on site but the grassland on the landside of the levee could provide potential habitat. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if propagation measures are warranted. This project is not likely to adversely affect legenere and impacts will be less than significant with mitigation incorporated.

Mason's Lilaeopsis (*Lilaeopsis masonii*)
Habitat for this perennial rhizomatus herb includes brackish or freshwater marshes and swamps, and riparian scrub. The blooming period is typically April-November (CNPS 2014). There is a CNDDB occurrence that runs along the waterside levee for the length of the project boundaries. This plant was also observed by DWR Environmental Scientists on June 26, 2013 in the same general location. Since this plant is known to occur within the project area, avoidance and minimization measures will be implemented; however, loss of individuals due to the placement of piles may be unavoidable. Based on local abundance of this plant species and the proximity of other individuals, impacts to the populations would be less than significant.

A botanist will conduct pre-construction surveys for Mason's lilaeopsis; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, an attempt to transplant them via a CDFW approved method will be made. This project may adversely affect Mason's lilaeopsis but impacts will be less than significant with mitigation incorporated.

Delta Mudwort (*Limosella australis*)
Habitat for this perennial stoloniferous herb includes marshes and swamps. The blooming period is typically May-August (CNPS 2014). There is a CNDDB occurrence that runs along the waterside levee for the length of the project boundaries. Since this plant is known to occur within the project area, avoidance and minimization measures will be implemented; however, loss of individuals due to the placement of piles may be unavoidable. Based on local abundance of this plant species and the proximity of other individuals, impacts to the populations would be less than significant. Additionally, recent research suggests that delta mudwort is not native to California (Baldwin et. al. 2012) and protection measure may not be warranted.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect Delta mudwort but impacts will be less than significant with mitigation incorporated.

Tehama Navarretia (*Navarretia heterandra*)
Habitat for this annual herb includes valley and foothill grassland (mesic) and vernal pools. The blooming period is typically April-June (CNPS 2014). This plant is CNPS list rank 4.3 and therefore not included in the CNDDB database. It is not known or likely to occur in the project area but potential habitat exists within the grassland on the land side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if propagation measures are warranted. This project is not likely to adversely affect Tehama navarretia and impacts will be less than significant with mitigation incorporated.

Baker's Navarretia (*Navarretia leucocephala* ssp*. bakeri*)
Habitat for this annual herb is mesic including cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grasslands, and vernal pools. The blooming period is typically April-July (CNPS 2014). The nearest CNDDB occurrence is approximately 9.5 miles northwest of the project area. This plant has not been observed on site but the grassland on the landside of the levee could provide potential habitat. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if propagation measures are warranted. This project is not likely to adversely affect Baker's navarretia and impacts will be less than significant with mitigation incorporated.

Shining Navarretia (*Navarretia nigelliformis* ssp*. radians*)
Habitat for this annual herb is sometimes clay including cismontane woodland, valley and foothill grassland, and vernal pools. The blooming period is typically April-July (CNPS 2014). The nearest CNDDB occurrence is approximately 6.8 miles south west of the project area. This plant has not been observed on site but the grassland on the landside of the levee could provide potential habitat. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if propagation measures are warranted. This project is not likely to adversely affect shining navarretia and impacts will be less than significant with mitigation incorporated.

Lobb's Aquatic Buttercup (*Ranunculus lobbii*)
Habitat for this annual herb is mesic including cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pools. The blooming period is typically February-

May (CNPS 2014). This plant is CNPS list rank 4.2 and therefore not included in the CNDDB database. It is not known or likely to occur in the project area but potential habitat exists within the grassland on the land side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if propagation measures are warranted. This project is not likely to adversely affect Lobb's aquatic buttercup and impacts will be less than significant with mitigation incorporated.

Sanford's Arrowhead (*Sagittaria sanfordii*)
Habitat for this perennial rhizomatous herb includes marshes and swamps and assorted shallow freshwater. The blooming period is typically May-October (CNPS 2014). The nearest CNDDB occurrence is approximately 9.1 miles north east of the project area. It is not known or likely to occur in the project area but potential habitat exists along the waterside of the levee, and within the ditches on the land side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect Sanford's arrowhead but impacts will be less than significant with mitigation incorporated.

Side-flowering Skullcap (*Scutellaria lateriflora*)
Habitat for this perennial rhizomatous herb includes mesic meadows, seeps and marshes, and swamps. The blooming period is typically July-September (CNPS 2014). The nearest CNDDB occurrence is 7.9 miles east of the project area. It is not known or likely to occur in the project area but potential habitat exists on the waterside of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project is not likely to adversely affect side-flowering skullcap and impacts will be less than significant with mitigation incorporated.

Suisun Marsh Aster (*Symphyotrichum lentum*)
Habitat for this perennial rhizomatous herb includes marshes and swamps. The blooming period is typically May-November (CNPS 2014). There is a CNDDB occurrence that runs along the waterside levee for the length of the project boundaries. This plant was also observed by DWR Environmental Scientists on June 26, 2013 in the same general location. Since this plant is known to occur within the project area, avoidance and minimization measures will be

implemented; however, loss of individuals due to the placement of piles may be unavoidable. Based on local abundance of this plant species and the proximity of other individuals, impacts to the population would be less than significant.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project may adversely affect Suisun Marsh aster but impacts will be less than significant with mitigation incorporated.

Saline Clover (*Trifolium depauperatum* var. *hydrophilum*)
Habitat for this annual herb includes marshes and swamps, mesic and alkaline valley foothill grassland, and vernal pools. The blooming period is typically April-June (CNPS 2014). The nearest CNDDB occurrence is 17.4 miles west of the project area. It is not known or likely to occur in the project area but potential habitat exists within the grassland and ditches on the land side of the levee. Therefore, avoidance and minimization measures will be implemented.

A botanist will conduct pre-construction surveys for special status plants; if any are identified, they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting is warranted. This project is not likely to adversely affect saline clover and impacts will be less than significant with mitigation incorporated.

3.4.1.2 Special Status Fish

As noted in Table 1, North American Green Sturgeon, Delta Smelt, Central Valley Steelhead, Central Valley spring-run Chinook Salmon, Sacramento River winter-run Chinook Salmon, Sacramento Splittail, and Longfin Smelt all have effects determinations of “not likely to adversely affect”. Listed below are species accounts for all six special status fish species that have potential to be affected by project activities.

North American Green Sturgeon (*Acipenser medirostris*)
Green Sturgeon are believed to spend the majority of their lives in near shore oceanic waters, bays, and estuaries. Adults typically migrate into fresh water beginning in late February; spawning occurs from March-July. Juvenile Green Sturgeon spend 1-4 years in fresh and estuarine waters before dispersal to saltwater (NMFS 2009). The waters off of Sherman Island lie within known habitat for the species. This species is highly mobile and has the capability of leaving an area when pile driving is occurring and returning when activities cease (CALTRANS 2009). This project is not likely to adversely affect North American Green Sturgeon and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Delta smelt (*Hypomesus transpacificus*)
The habitat for Delta Smelt includes Delta Waters. The project is located within Critical Habitat for Delta Smelt (SFWO 2009). Prior to spawning, adults will migrate farther upstream from the

brackish water habitat, dispersing widely into river channels and tidally influenced backwater sloughs. This migration will normally occur during late winter into early summer (CVBDB 2009). They will then spawn in shallow, fresh or slightly brackish water upstream of the mixing zone, in approximately February through June when freshwater temperatures are between 7-15 degrees Celsius (Federal Register Vol. 58 no. 42). Most spawning will occur in tidally-influenced backwater sloughs and channel edge waters of the western Delta (Federal Register Vol. 58 no. 42). Although spawning has not been observed in the wild, the eggs are thought to attach to substrates such as cattails, tules, tree roots and submerged branches. Most of their one year life span will be spent along the freshwater mixing zone where the salinity is approximately 2 parts per thousand (SFWO 2009). Most smelt will then die in the early spring after spawning (CVBDB 2009). The waters off of Sherman Island are within critical Habitat for Delta Smelt and may offer Delta Smelt migration routes, spawning habitat and holding areas but project activities will not coincide with the time of Delta Smelt migration or spawning. This project is not likely to adversely affect Delta Smelt and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Steelhead-Central Valley Distinct Population Segment (*Oncorhynchus mykiss*)
Habitat for the Central Valley Steelhead distinct population segment (DPS) includes the Sacramento-San Joaquin Delta and its tributaries (Federal Register Vol. 65 no. 32). Peak spawning occurs from December through April (McEwan 2001). Spawning habitat will include shallow water depths (from 6-36 inches) with gravel sized material as spawning habitat (McEwan 2001). Although these sites provide poor spawning habitat, lacking the shallow water habitat and gravel used for spawning, the waterways do provide for potential migration routes throughout the Delta. Again the timing of in-water work (August 1 –October 31) will not coincide with migration timing. This project is not likely to adversely affect Steelhead (Central Valley DPS) and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Chinook Salmon-Central Valley Spring-run Evolutionarily Significant Unit (*Oncorhynchus tshawytscha*)
The Delta provides habitat for this threatened Evolutionarily Significant Unit (ESU) during migration into and out of the Sacramento River drainage. Spring-run Chinook adults migrate from the ocean from March through May. Spawning takes place in Deer and Mill Creeks from late August to mid-October (CDFW 1995). Even though the proposed project area has the potential to be a migration route for this ESU, the timing of in-water work (August 1–October 31) will not coincide with migration. This project is not likely to adversely affect Chinook Salmon (Central Valley spring-run ESU) and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Chinook Salmon- Sacramento River Winter-run ESU (*Oncorhynchus tshawytscha*)
The Delta provides habitat for this endangered ESU during migrations into and out of the Sacramento River drainage. Winter–run Chinook tend to migrate from the ocean January through May, peaking in mid-March. Spawning is known to occur in the main stem of the

Sacramento River from Redding downstream to Tehama just below the Red Bluff Diversion Dam, from late April to mid-August peaking in May and June (NMFS 1996). Although the proposed project is located in this ESU's migratory pathway, the timing of in-water work (August 1–October 31) should not conflict with migration. This project is not likely to adversely affect Chinook Salmon (Sacramento River winter-run ESU) and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Sacramento Splittail (*Pogonichthys macrolepidotus*)

Sacramento Splittail are typically they are found in estuarine environments and prefer slow moving rivers, sloughs, and alkaline lakes. Sacramento Splittail feed on bottom dwelling invertebrates and detritus in low to moderate currents. Young splittail focus their feeding on benthic crustaceans and they show an ability to swim against strong tides and currents. In the Sacramento-San Joaquin Delta, splittail feed opportunistically during the day with peak feeding early in the morning. Prey items include clams, crustaceans, insect larvae, and other invertebrates. During winter and spring adult splittail move upstream to forage and later spawn between late February and early July. Peak reproduction occurs in March and April. Young-of-year splittail move into the estuary in April-August where they occupy water less than 2 meters deep (UC Davis 2014). The timing of in-water work (August 1-October 31) will not coincide with spawning. This project is not likely to adversely affect Sacramento Splittail and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

Longfin Smelt (*Spirinchus thaleichthys*)

Habitat for Longfin Smelt includes slightly upstream from Rio Vista, including the Cache Slough region and Medford Island, downstream through Suisun Bay and Suisun Marsh. Most live only for two years. They spend their adult life in bays, estuaries, and nearshore coastal areas, and migrate into freshwater rivers to spawn. Spawning occurs primarily from January through March after which most adults die (CDFW 2009a). The timing of in-water work (August 1-October 31) will not coincide with spawning. This project is not likely to adversely affect Longfin Smelt and impacts will be less than significant with the incorporation of mitigation measures and Environmental Commitments for all special status fish species.

3.4.1.3 Special Status Wildlife

As noted in Table 1, western pond turtle, Short-eared Owl, Swainson's hawk, loggerhead shrike, song sparrow ("Modesto" population), and giant garter snake have effect determinations of "not likely to adversely affect". Listed below are species accounts for all six special status wildlife species that have potential to be affected by project activities.

Western Pond Turtle (*Actinemys marmorata*)

Western pond turtles prefer slow flowing or slack water aquatic habitats. Aerial and aquatic basking sites are necessary for thermoregulation. Use of shallow water habitat with relatively dense submerged or short emergent vegetation is required for hatchlings in order to forage. Upland oviposition sites are also required in the vicinity of the aquatic habitat. Mating typically

occurs in late April or early May, but may occur year-round (CDFW 1994). The nearest CNDDB occurrence is 3.8 miles west of the project site. Pond turtles may occur in the project area but are unlikely to be disturbed by project activities on the levee crown and in open water. Since the turtles will typically bask on the banks of the levee, no permanent disturbance to basking sites is expected; however, best management practices and avoidance and minimization measures will be employed. This project is not likely to adversely affect western pond turtle and impacts will be less than significant with mitigation incorporated.

Short-eared Owl (*Asio flameus*)
Short-eared Owls are usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Breeding range includes coastal areas in Del Norte and Humboldt counties, the San Francisco Bay Delta, northeastern Modoc plateau, the east side of the Sierra from Lake Tahoe south to Inyo county, and the San Joaquin valley. Migrants arrive in California in September or October and leave in April. They nest on dry ground in a depression concealed in vegetation, and lined with grasses, forbs, sticks and feathers. (CDFW 2005)

The nearest CNDDB occurrence is about 5.8 miles northwest of the project site. Habitat within the project site is poor quality but could still be considered potential habitat for the species. Therefore, avoidance and minimization measures will be implemented. This project is not likely to adversely affect Short-eared Owl and impacts will be less than significant with mitigation incorporated.

Swainson's Hawk (*Buteo swainsonii*)
Nesting habitat for Swainson's Hawk includes oaks or cottonwoods in or near riparian habitat. They forage in grasslands, irrigated pastures and grain fields. Within California, Swainson's Hawks begin nesting in late March and young usually leave the nest (fledge) by July. The nearest CNDDB occurrence is 3.3 miles northeast of the project site. There are few trees and no large trees within 0.25 miles of the levee improvements/proposed fish release site locations but there are some large trees in the most eastern section of the project area, where the new electrical pole line will begin. Therefore, avoidance and minimization measures will be implemented. This project is not likely to adversely affect Swainson's Hawk and impacts will be less than significant with mitigation incorporated.

Loggerhead Shrike (*Lanius ludovicianus*)
The Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. The species prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. Nesting occurs from February-September.

The nearest CNDDB occurrence is 6.5 miles south east of the project site. There are no CNDDB occurrences for Loggerhead Shrike on Sherman Island; however, there is potential habitat near the project area, thus avoidance and minimization measures will be implemented. This project is not likely to adversely affect Loggerhead Shrike and impacts will be less than significant with mitigation incorporated.

Song Sparrow ("Modesto" population)
The Song Sparrow ("Modesto" population) only resides in the north-central portion of the Central Valley. Song Sparrows in the Delta are locally numerous along riparian corridors, such as the Cosumnes and Stanislaus rivers, and sparse along vegetated irrigation canals and levees (Shuford et al. 2008). This species breeds from mid-March to early August. The nearest CNDDB occurrence is 2.4 miles south west of the project area but DWR biologists have observed this species approximately 0.9 miles south of the project area. Habitat within the proposed project area is of poor quality since the levee and most of the irrigation/drainage ditches in the area are sparsely vegetated; however, avoidance and minimization measures will be implemented. This project is not likely to adversely affect Song Sparrows and impacts will be less than significant with mitigation incorporated.

Giant Garter Snake (*Thamnophis gigas*)
Giant garter snakes (GGS) inhabit natural and artificial wetlands, including irrigation and drainage canals, ricelands, marshes, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands within their historical range (SFWO 2008).

In 2009, extensive GGS trapping efforts by DWR across Sherman Island for the Bay Delta Conservation Plan found no GGS. There are two existing CNDDB occurrences on Sherman Island south of the project area. These include a location recorded in 1987 and based on a museum specimen from 60-70 years ago that is approximately 2.6 miles away and an occurrence recorded in 2010, approximately 2.3 miles away of the project area and is described as being on a road adjacent to irrigation ditches on both sides, the quality of habitat and condition of the population at this occurrence is described as poor. Additionally there is one CNDDB occurrence approximately 2.5 miles east of the project area; this individual was observed in the horseshoe bend area off of the main channel of the Sacramento River, along a sand bar surrounded by lots of water hyacinth and some tule. Comparatively, the project area contains very poor quality habitat not likely to be utilized by GGS, the Sacramento River in this area is not considered suitable habitat since it is high flow and very turbulent. The irrigation/drainage ditches in the project area are about 4 feet wide, these ditches have steep slopes and are bare in certain areas and any vegetated areas are dominated by non-native blackberry. Long stretches of the main toe drain ditch are only about 15 feet from the existing county road. These ditches are often dry or contain very little water and there is little to no evidence of small mammal burrows in the surrounding area. These ditches would be considered very poor quality habitat.

In addition to the information discussed above, a GGS expert in the area was consulted and added the following information to this assessment. GGS do poorly in purely linear systems, especially in systems such as these that do not have variable enough topography or vegetation. Therefore, these ditches are not likely to support viable populations of GGS. However, Sherman Island is a questionable area regarding GGS habitat and there are potentially suitable wetlands on the island itself, thus GGS could potentially move about the Island in ditches such as the toe drainage ditch which does have some vegetation and is not as frequently disturbed as the irrigation ditches (Personal Communication, Eric C Hansen).

This project is not likely to adversely affect giant garter snakes since habitat is very poor quality and the presence of this species within the project area is unlikely; avoidance and minimization measures will be implemented and impacts will be less than significant with mitigation incorporated.

3.4.2 Discussion

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less-than-significant with mitigation incorporated.

Special Status Plants

Special status plants have been previously identified on the waterside of the levee at various locations along the project area and potential habitat exists for several other special status plants in the grassland and ditches on the land side portion of the project area. However, with the incorporation of Mitigation Measure Bio-1 impacts would be reduced to less than significant.

> **Mitigation Measure Bio-1: Avoid and minimize impacts to special status plants**
> A botanist will conduct pre-construction surveys for special status plants, if any are identified (i.e., Bolander's water-hemlock, woolly rose-mallow, Delta tule pea, legenere, delta mudwort, Tehama navarretia, Baker's navarretia, shining navarretia, Lobb's aquatic buttercup, Sanford's arrowhead, side-flowering skullcap, Suisun Marsh aster, and/or saline clover), they will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, CDFW will be consulted to determine if transplanting or propagation measures are warranted.
>
> If Mason's lilaeopsis is identified, it will be flagged and avoided to the greatest extent feasible. If individuals cannot be avoided, an attempt to transplant them via a CDFW approved method will be made.

Special Status Fish

Impacts to fish will be avoided through the Environmental Commitment of restricting in-water work to August 1–October 31. This work period has been discussed with National Marine Fisheries Service (Personal Communication), and is outside of migration and spawning times for Green Sturgeon, Delta Smelt, Steelhead – Central Valley DPS, Chinook Salmon- Central valley spring-run ESU, Chinook Salmon-Sacramento river winter-run ESU, Sacramento Splittail, and Longfin Smelt.

Due to regulations in place to protect delta levees, piles will need to be driven with an impact hammer. As a result, associated underwater sound pressures could potentially result in direct impacts to fish. The Environmental Commitments addressed in section 2.1.3, limiting in-water

work to August 1- October 31, and Mitigation Measure Bio-2 would reduce impacts to a less-than significant level.

Mitigation Measure Bio-2: Avoid and minimize underwater sound pressure due to pile driving

Underwater sound monitoring shall be performed during pile-driving activities. A qualified biologist or natural resource specialist shall be present during such work to monitor construction activities and compliance with terms and conditions of permits.

Underwater sound reduction measures shall be employed, as needed, to ensure that levels do not exceed the threshold levels established by USFWS and NMFS (for fish greater than 2 grams).

Peak pressure	=	206 decibel
Accumulated Sound Exposure Level	=	187 decibel

These underwater sound reduction measures shall include use of an impact hammer cushion block. Additionally, hammers shall be used only during daylight hours and initially shall be used at low energy levels and reduced impact frequency. Applied energy and frequency shall be gradually increased until necessary full force and frequency are achieved.

If necessary, one or more of the following shall be implemented to further reduce sound:

- Pipe caissons shall be used to isolate the piles from waters to buffer underwater sound pressure levels if underwater sound monitoring indicates that underwater sound levels exceed threshold levels. The caissons shall be driven below the mud line using vibratory or hydraulic methods and the interior area dewatered before pipe piles are installed using impact methods.
- The use of a bubble curtain surrounding the pile to be driven.

Special Status Wildlife

In addition to the Environmental Commitments addressed in Section 2.1.3, the incorporation of the Mitigation Measures Bio-3 will reduce impacts to a less-than-significant level.

Mitigation Measure Bio-3: Avoid and minimize impacts to special status wildlife

An environmental awareness training will be conducted by the environmental monitor for key construction personnel prior to commencement of construction. This training will include a brief overview of the life history of western pond turtle, Short-eared Owl, Swainson's Hawk, Loggerhead Shrike, Song Sparrow ("Modesto" population), and giant garter snake (GGS), legal protections and penalties, and explain the relevant Environmental Commitments and Mitigation Measures. Additionally, pre-construction surveys and buffers shall be implemented as follows:

- Western pond turtle: A pre-construction survey for western pond turtles will be conducted immediately prior to construction. Construction personnel will be alerted during a tailgate meeting that western pond turtles may be present in the area and should be avoided. If a western pond turtle is identified within the work zone, work will not proceed until the turtle has moved out of the work zone.
- Swainson's Hawk: If work is to be conducted during the nesting season (April 1-August 31), pre-construction surveys will be completed, between 30 and 14 days prior to construction, within a radius of 1/2 mile of the project site to identify any active nests (eggs or juveniles). Surveys will be completed in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (SWHA TAC 2000). If an active nest is identified, work will be postponed until September 1 or after the young have fledged. If that area cannot be avoided or work postponed, an appropriate buffer will be established and, if necessary, a qualified biologist will monitor the nesting pair for behavioral indications of disturbance during construction, upon CDFW consultation and approval.
- Migratory birds, Short-eared Owl, Loggerhead Shrike, and Song Sparrow ("Modesto" population): If work is scheduled to take place during the nesting season (April 1-August 31), a pre-construction survey will be conducted within a radius of 250 feet of all activities for nests. If active nests are found in the project area, an appropriate non-disturbance buffer will be established in consultation with CDFW and will depend on the species involved, site conditions, and the type of work proposed. No new project activity shall occur within the buffer zone until the young have fledged, until the nest is no longer active, or until a qualified biologist has determined in consultation with CDFW that reducing the buffer would not result in nest abandonment. Monitoring of the nest by a qualified biologist during construction shall be required to ensure that nests are not jeopardized.
- Giant garter snake: Standard construction BMP's such as limiting speeds on the project site will be implemented. Additionally, exclusion fencing will be placed along the southern boundaries of the project area to prevent GGS from entering the work areas during the active season (May 1 – October 1). Exclusion fencing will be maintained throughout the entirety of the project until completion. Pre-construction surveys for GGS will occur 24 hours prior to construction activities and after any lapse in construction of two weeks or greater has occurred. The irrigation/drainage ditches will be dewatered and will remain dry for at least 30 consecutive days after April 15 and prior to excavation or filling of the dewatered habitat. Excavation/Filling of the irrigation/drainage ditches will be conducted between May 1 and October 1, during the snake's active season. An environmental monitor will either be present or on call during on-land work activities. If a GGS is identified in the work zone, work will not proceed until the snake has moved on its own out of the work zone and USFWS and CDFW have

been consulted. If deemed necessary by USFWS or CDFW, loss of potential GGS habitat will be mitigated.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No impact. The project site consists primarily of disturbed land (levee and levee road) with no woody vegetation, open water, and irrigated pasture therefore the project will not have a substantial adverse effect on a sensitive natural community and there would be no impact.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?

Less-than-significant with mitigation incorporated. The proposed project would require piles to be driven into the sediments in Sacramento River. This activity would disturb the sediment, and therefore, would have the potential to adversely affect water quality.

Impacts will occur to waters of the United States from pile driving in the Sacramento River. Although the Sacramento River is considered waters of the United States and waters of the State, according to Regulatory Guidance Letter 90-08 (Applicability of Section 404 to Piling) issued by the USACE (1990) and CFR 323.3 (c), installation of pilings does not constitute fill or the discharge of fill. However the Sacramento River is regulated by USACE under Section 10 of the Rivers and Harbors Act (RHA) of 1899 (RHA), therefore, RHA Section 10 authorization from USACE would be required for the proposed project. Additionally, the irrigation/drainage ditches in the project area may be determined to be jurisdictional waters by USACE. If so, impacts would be potentially significant. However, with implementation of Mitigation Measure Bio-4, the impacts associated with placement of structures within navigable waters and any additional impacts to waters would be reduced to a less-than-significant level.

Mitigation Measure Bio-4: Minimize impacts to jurisdictional waters of the United States and waters of the state during construction, and compensate for unavoidable impacts.

The following measures shall be implemented to minimize impacts to jurisdictional waters and navigable waters of the U.S., DWR shall implement the following measures:

- Minimize placement of structures in waters of the United States and waters of the state to the greatest extent feasible.
- Locate all staging areas, parking areas, equipment, and storage areas for fuel, lubricants, and solvents in areas away from waters of the United States and waters of the State.
- Comply with mitigation required by the USACE, if deemed necessary, to mitigate for loss of waters of the U.S.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less-than-significant. The work period of August 1-October 31 is outside of migration and spawning times for Delta Smelt, Steelhead – Central Valley DPS, Chinook Salmon- Central valley spring-run ESU, and Chinook Salmon-Sacramento river winter-run ESU. North American Green Sturgeon are highly mobile and have the capability of leaving an area when pile driving is occurring and returning when activities cease.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No impact. This project would not conflict with any county ordinances protecting biological resources in Sacramento County therefore there would be no impact.

f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?

No impact. The project area is not currently covered by a habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan, therefore there would be no impact.

3.5 Cultural Resources

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☐	☒
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d.	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

3.5.1 Environmental Setting

AECOM archaeologists wrote an Archaeological Survey Report (ASR) for DWR in August of 2012 covering geotechnical investigations that took place in 2013. The 2012 ASR included the same Area of Potential Effects (APE) as required for the project herein. A records search was conducted by the staff at the North Central Information Center (NCIC) at California State University, Sacramento. An intensive pedestrian inventory was conducted on July 25, 2012. Based on the information gathered during the field visit and records search process, a single resource, a span of the Sherman Island Levee, was identified and a previously unrecorded portion of this resource was documented. A second records search, requested by DWR Cultural Staff for all of Sherman Island, was conducted at the NCIC on July 3, 2013. The records search identified eight cultural resources studies that were conducted in the current APE and one cultural resource, CA-SAC-496H, the Sherman Island Levee, that was recorded and then updated within the current APE. As the APE was previously surveyed in July 2012 and the Sherman Island Levee was the only resource identified, a pedestrian survey was not conducted at this time.

Levee failures in the project vicinity in the late 19th and early 20th centuries resulted in major levee modifications that have continued into contemporary times. Although the levees, along with other land reclamation features within the Delta, have contributed to the overall development of agriculture and settlement in the region and although Sherman Island was the first peat island to be reclaimed, remnants of the initial levee construction have long since

either eroded or been replaced; therefore, elements of construction dating to the original period of construction and significance (late 19th century to early 20th century) no longer exist. The current structures (various spans of CA-SAC- 496H) are not unique examples of reclamation technology but are ordinary examples of river levees and are the same as numerous levees found in other reclamation districts in the Delta. Sherman Island levees, like many throughout the Delta region, were not specifically engineered but were largely opportunistic structures intended to hold back Delta floodwaters in an attempt to reclaim previously flooded land and swampland and to provide large tracts of acreage suitable for agriculture.

Because the levee segments on Sherman Island lack the necessary historical associations and integrity to their period of significance, they do not appear to meet criteria A, B, or C of the National Register of Historic Places (NRHP) or criteria 1, 2, or 3 of the California Register of Historical Resources (CRHR). None of the levee segments possess stability-enhancing features or other design elements found in more formally engineered water control structures and systems. In addition, the levees are unlikely to contain information that may further contribute to well-documented historic information that is readily available and that would qualify the resources as eligible under Criterion D of the NRHP or Criterion 4 of the CRHR. For these reasons, the levee segment located on Sherman Island within the proposed project APE does not meet the criteria for eligibility or significance for inclusion in the NRHP or CRHR, respectively.

Numerous prehistoric archaeological sites have been recorded in the Delta region, including many that were situated on landforms resulting from natural processes (Cook and Elsasser 1956; Moratto 1984; Holson et al. 1993; West and Welch 1996; Waechter 2006). The potential that such sites would be discovered on Sherman Island is limited, however, because of the geophysical characteristics of the islands. Piper soil formations in the Delta have been found to have a high correlation with prehistoric occupation sites, including those with human remains. These soils are associated with late Pleistocene and early Holocene dune and mound formations, which did not stabilize and show evidence of vegetative cover until the late Holocene, approximately 3,000–2,000 B.C. (Cook and Elsasser 1956; Dietz 1979). These dry landforms appear to have supported numerous Native American activities during the late Holocene and were likely attractive places from which to exploit what would have been a rich floral and faunal resource base in the Delta (Cook and Elsasser 1956; Moratto 1984; Holson et al. 1993; West and Welch 1996; Waechter 2006). However, in the APE and the general project area, such soils and their accompanying landforms do not appear. Specifically, the sediments present in the project vicinity consist of Rindge soils (mucky silt loam), Gazwell soils (mucky clay), and Sailboat Variant soils (silty clay loam). The lack of Piper soils on Sherman Island indicates that the possibility of subsurface finds is unlikely in the APE (U.S. Soil Conservation Service 1991).

In addition, no prehistoric sites have been recorded in the Delta in peat-dominated soils (>50 percent organics), such as those at Sherman Island, or at elevations below 5 feet above mean sea level on USGS topographic quadrangle maps (West 1994). Aside from the artificial levees, Sherman Island is located at or up to 10 feet below mean sea level.

Research into whether submerged cultural resources are located in the project vicinity was conducted with a records search of the CSLC's shipwrecks database. No record of shipwrecks was identified within the APE, or in the immediate vicinity. The closest shipwreck identified by the database was the Neptune, a dredge ship that went down in 1980 approximately 3 miles upriver from the APE.

Because of the geophysical characteristics of the APE and the findings of documentary research, it is unlikely that subsurface prehistoric or historic-era cultural deposits are present in the APE. However, it is possible that cultural resources that were not encountered during the intensive inventory could be encountered during project implementation. If unrecorded cultural resources are identified during project ground-disturbing activities, all potentially destructive work in the immediate vicinity of the find must cease until a qualified archaeologist can assess the significance of the find and, if appropriate, provide recommendations for treatment. Subsurface prehistoric resources could take the form of stone tool and tool fragments, rock concentrations, burned or unburned shell or bone, and darkened sediments containing some of the above-mentioned constituents. Historic period deposits can include fragments of glass, ceramic and metal objects, milled and split lumber, and structure and feature remains, such as building foundations and dumps.

The 2012 ASR recommended a finding of "No Historic Properties Affected" pending the results of consultation with the Native American community. Archaeological surveys conducted in the APE resulted in the recording of a Sherman Island Levee Segment (CA-SAC496H update). This resource does not appear eligible for NRHP listing or meets the criteria for significance under CEQA.

Additionally, a similar project on the southern portion of Sherman Island determined that the Sherman Island Levee was not eligible for listing on the National Register of Historic Places. The State Historic Preservation Officer concurred with that determination in a letter to William Guthrie of the USACE dated October 11, 2013.

3.5.2 Discussion

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

No impact. No resources were determined to be eligible as historical resources as defined in Section 15064.5, thus there would be no impact.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

No impact. No archaeological resources were identified within the project area, thus there would be no impact. As a standard practice, if any archaeological resources area discovered during this project the appropriate federal and state agencies will be notified.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No impact. No paleontological resources or unique geologic features were identified on site, thus there would be no impact.

d) Disturb any human remains, including those interred outside of formal cemeteries?

No impact. No human remains are expected to be found within the project site. As a standard practice, if human remains are uncovered while engaging in construction activities, all work must stop immediately and the appropriate County Coroner must be contacted pursuant to California Health and Human Safety Code 7050.5(b).

3.6 Geology and Soils

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

3.6.2 Environmental Setting

The project site is located in the Great Valley Geomorphic province. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago). Great oil fields have been found in the southernmost San Joaquin Valley and along anticlinal uplifts on its southwestern margin. In the Sacramento Valley, the Sutter Buttes, the remnants of an isolated Pliocene volcano, rise above the valley floor.

Geotechnical drilling was conducted on site by DWR's Geotechnical Services Branch beginning on July 8, 2013 and completed on August 16, 2013. Based on the historical information on the geology in that area and on site specific information garnered from these explorations it has been determined that there would not be any impacts to geologic resources.

Rio Vista Fault lies approximately 2.4 miles northeast of the project site and Davis Fault lies approximately 4.8 miles south of the project site. They are both quaternary faults.

3.6.3 Discussion

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.

No impact. Sacramento County is not in an Earthquake Fault Zone and therefore there would be no impact.

ii) Strong seismic ground shaking?

Less than-significant. There is no known evidence of activity on the Rio Vista fault line for the last 1.6 million years. The closest fault lines that have been active in the last 200 years are the Concord Fault and the Marsh Creek Fault. The Concord fault is approximately 15.6 miles west of the project site. In 1955 there was a magnitude 5.4 earthquake on the central part of the Concord Fault but it has 3 percent or less probability of producing a magnitude 6.7 or greater earthquake in the next 30 years (USGS 2002). The Marsh Creek Fault is approximately 27 miles south of the project site and had a magnitude 5.8 earthquake in 1980.

The Midland Fault and the Pittsburg-Kirby Hills Fault are Quaternary faults and are located 7.2 miles to the east and 7.2 miles west respectively. The Midland fault has been active in Cenozoic time and has a range of long-term average slip rates between 0.1 mm/yr to 1.0 mm/year and estimated maximum magnitudes up to about M 6.6 (USGS 2009). The Sherman Island Fault is located approximately 1.0 mile east of the project site and is considered a Cretaceous-Tertiary

fault (USGS 2009). The Clayton Hills Fault is a Holocene fault located 12.0 miles southwest of the project site.

There is potential for strong seismic ground shaking at the site but the platform and all other structures out of the water will be designed and constructed in accordance with the California Building Standards Code which contains requirements specifically designated to reduce earthquake damage to the Maximum extent feasible. Additionally the levee work will act to stabilize this segment of the levee. Therefore this impact would be less-than-significant.

iii) Seismic-related ground failure, including liquefaction?

Less-than-significant. Liquefaction is not considered to pose a hazard at the project site, all project facilities would be designed and constructed in accordance with the California Building Code, which contains requirements specifically designed to reduce damage from liquefaction to the maximum extent feasible therefore this impact would be less-than-significant.

iv) Landslides?

No impact. Landslide is a general term used for a falling mass of soil and rock. According to the Sacramento County General Plan, only a narrow strip along the eastern boundary, from the Placer County line to the Cosumnes River, is considered to have landslide potential. The project site does not fall within the aforementioned area therefore there would be no impact.

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

Less-than-significant impact. The contractor will adhere to requirements of the General Permit for Discharges of Storm Water Associated with Construction Activity General Permit Order 2009-0009-DWQ (Construction General Permit) which may include a Storm Water Pollution Prevention plan for control of erosion, sedimentation, and runoff during construction. Therefore this impact would be less-than-significant.

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

No impact. Based on information gathered from the geotechnical borings there would be no impact.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

No impact. The proposed facilities would be built in accordance with California Building Code, limiting risks to life or property. Facilities constructed on land would be built on the levee which consists of engineered, compacted fill material that has a low potential for expansion. Therefore there would be no impact.

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

No impact. The proposed project would not require the use of septic tanks or alternative wastewater disposal systems. Therefore there would be no impact.

3.7 Greenhouse Gas Emissions

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

3.7.1 Environmental Setting

In May 2012, DWR adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (GGERP), which details DWR's efforts to reduce its greenhouse gas (GHG) emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32). DWR also adopted the Initial Study/Negative Declaration prepared for the GGERP in accordance with the CEQA Guidelines review and public process. Both the GGERP and Initial Study/Negative Declaration are incorporated herein by reference and are available at: http://www.water.ca.gov/climatechange/CAP.cfm. The GGERP provides estimates of historical (back to 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g. building-related energy use). The GGERP specifies aggressive 2020 and 2050 emission reduction goals and identifies a list of GHG emissions reduction measures to achieve these goals.

DWR specifically prepared its GGERP as a "Plan for the Reduction of Greenhouse Gas Emissions" for purposes of CEQA Guidelines section 15183.5. That section provides that such a document, which must meet certain specified requirements, "may be used in the cumulative impacts analysis of later projects." Because global climate change, by its very nature, is a global cumulative impact, an individual project's compliance with a qualifying GHG Reduction Plan may suffice to mitigate the project's incremental contribution to that cumulative impact to a level that is not "cumulatively considerable." (See CEQA Guidelines, § 15064, subd. (h)(3).) More specifically, "[l]ater project-specific environmental documents may tier from and/or incorporate by reference" the "programmatic review" conducted for the GHG emissions reduction plan. "An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable,

incorporate those requirements as mitigation measures applicable to the project." (CEQA Guidelines § 15183.5, subd. (b)(2)).

Section 12 of the GGERP outlines the steps that each DWR project will take to demonstrate consistency with the GGERP. These steps include: 1) analysis of GHG emissions from construction of the proposed project , 2) determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP, 3) incorporation into the design of the project DWR's project level GHG emissions reduction strategies (Section 2.1.3 Environmental Commitments), 4) determination that the project does not conflict with DWR's ability to implement any of the "Specific Action" GHG emissions reduction measures identified in the GGERP, and 5) determination that the project would not add electricity demands to the State Water Project system that could alter DWR's emissions reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

Consistent with these requirements, a GGERP Consistency Determination Checklist is attached (Appendix A) documenting that the project has met each of the required elements.

3.7.2 Discussion

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less-than-significant impact. Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the GGERP (as shown in the attached Consistency Determination Checklist, Appendix A), DWR as the lead agency has determined that the proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs is less than cumulatively considerable and, therefore, less than significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

No impact. DWR's GGERP is in compliance with all applicable plans and policies. This project is in compliance with the GGERP and all Best Management Practices suggested in the GGERP are outlined in Section 2.1.3 Environmental Commitments as part of the Project, as such there would be no impact.

3.8 Hazards and Hazardous Materials

	Would the project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c.	Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e.	For a project located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f.	For a project located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

h.	Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

3.8.1 Environmental Setting

The site is not included on a list of hazardous materials sites, compiled pursuant to Government Code Section 65962.5 (DTSC 2013, SWRCB 2013), nor are there any listed sites within two miles of the project footprint.

3.8.2 Discussion

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

Less-than-significant with mitigation incorporated. Hazardous chemicals used during project implementation could include, but are not limited to, fuel, motor oil, and lubricants for construction equipment. The threshold for determining significance was based on professional judgment as to whether or not the handling of hazardous materials during the project construction would pose 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. If hazardous chemicals such as fuel or motor oil were to be mishandled, leaking or spilled hazardous chemicals could potentially result in contamination of the soil or water in the project area. However, contractors would provide spill containment for vehicles and the containment would adhere to all required State and federal standards. Considering the small amount of hazardous chemicals that would be used for the project and the mitigation measures that the project contractor will be required to use, the project would not create a significant hazard to the public due to exposure to hazardous chemicals when the following mitigation measures are adhered to.

In order to minimize potential for impacts due to hazards and hazardous materials the following mitigation measures will be implemented:

> **Mitigation Measure HM-1:** All personnel involved in use of hazardous materials will be trained in emergency response and spill control. Diesel fuel and oil will be used, stored and disposed of in accordance with standard protocols for the handling of hazardous materials. Contracts will require contractors to prepare and make available to DWR, for review and acceptance, a spill prevention and control plan.
>
> **Mitigation Measure HM-2:** Soils and water contaminated by any hazardous materials spills during construction would be excavated, removed or mopped up from the site and disposed of at an appropriate regional landfill.

There is always the potential for the release of hazardous substances during construction activities; however, by implementing these mitigation measures, any potential of accidental releases would be less than significant.

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?

Less than significant. As noted in (a) above, similar hazardous material associated with operations and maintenance of the existing facility would continue to be used during construction and operation of the project. Therefore implementation of the proposed project would not increase the risk of the release of hazardous materials into the environment, and this impact would be less than significant.

c) Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. This project is not located within one-quarter mile of an existing or proposed school and therefore there would be no impact.

d) Be located on a site that 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?

No impact. Both the California State Water Resources Control Board GeoTracker and California Department of Toxic Substances Control EnviroStor databases were consulted, on December 24, 2013, to determine if there were any recorded sites of concern within an approximate two mile radius of the project area. No sites within that search radius were identified on either database; therefore there would be no impact.

e) For a project located within an airport land use plan area or, where such a plan has not been adopted, be within 2 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?

No impact. There are no public or private airports within three miles of the project site therefore there would be no impact.

f) For a project located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?

No impact. As noted in (e), above, this project is not located within the vicinity of a private airstrip therefore there would be no impact.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than significant. The proposed project will not require any public road or land closures during construction but may result in traffic delays along the county road during its realignment. Since there would only be minor delays and no closures this impact would be less than significant.

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?

Less-than-significant with mitigation incorporated. The project site is not located within a wildland fire area or a high fire hazard zone. However fire may occur in the levee improvements area and in the staging areas, which are comprised of mostly weedy non-native vegetation. Therefore the impact would be less than significant with mitigation incorporated.

Mitigation Measure HM-3: The project contractor will be required to develop a fire protection and prevention plan which incorporates fire safety measures (e.g., spark arrestors, mufflers) on all equipment with the potential to create a fire hazard. The plan will ensure that fire suppression equipment is on site and that all construction employees have received appropriate fire safety training.

3.9 Hydrology and Water Quality

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

	other flood hazard delineation map?				
h.	Place within a 100-year flood hazard area structures that would impede or redirect floodflows?	☐	☐	☒	☐
i.	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j.	Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.1 Environmental Setting

Levee modifications would be made in conjunction with the local Reclamation District to meet criteria set forth by the USACE. These improvements to the levee crest and toe berm are intended to buttress the levee system to support the additional weight added to the levee system as a result of the fish release facilities, and the anticipated traffic on the levee crest associated with operation of the facilities. The levee improvements are designed to maintain the integrity of the Sherman Island levee system, and its ability to withstand flood flows.

3.9.2 Discussion

a) Violate any water quality standards or waste discharge requirements?

Less-than-Significant. The fish release facility construction activities have the potential to result in localized, short-term impacts to water quality due to potential fuel, oil leaks, or spills at fuel or oil transfer areas. However, mitigation measures for hazards and hazardous materials will be followed to minimize this risk. Siltation is likely to occur as a result of the pile driving, however, this is expected to be a temporary disturbance of the river that may slightly increase turbidity, but is not considered significant.

This project will adhere to requirements under the Construction General Permit from the Regional Water Quality Control Board (RWQCB). Either a Low Erosivity Waiver or a Storm Water Pollution Prevention Plan (SWPPP) is necessary to meet the requirements of a Construction General Permit. Additionally, this project would also adhere to requirements under a Water Quality Certification from the RWQCB, issued pursuant to Section 401 of the Clean Water Act; therefore impacts related to water quality during construction would be less than significant.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted)?

Less-than-Significant. This project would not use groundwater during construction or operations. The proposed project would result in an increase in the total amount of impervious surface at the project site through addition asphalt concrete paving on the levee crown and the increase in width of the county road from approximately 17 feet to 20 feet (a requirement of the County). This increase would be minor and would not interfere with groundwater recharge on the already compacted project site. Therefore, this impact would be less than significant.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?

Less-than-Significant. This proposed project would create new runoff due to the increase in impervious surface described in (b), above, this increase in runoff would be minor and would not substantially alter the existing drainage patterns of the area. Additionally, improvements made to the toe berm will require minor alterations or re-routing of existing drainage and irrigation ditches near the existing toe of the levee.

Implementation of erosion control as part of a Construction General Permit would ensure that sediment from disturbed areas would not be mobilized. Therefore, this impact would be less than significant.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site?

Less-than-Significant. Because the increase in impervious surface would be relatively small, and runoff would be expected to be minor, the proposed project would not be expected to contribute to an increase in on- or off-site flooding. This impact would be less than significant.

e) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less-than-Significant. The release of pollutants into adjacent waters during construction of the proposed project would be minimized by acquiring and implementing restrictions under a SWPPP and by following the requirements of a Construction General Permit. Therefore this impact would be less-than-significant.

f) Otherwise substantially degrade water quality?

Less-than-Significant. As discussed in (c) and (e), above, the proposed project would not substantially degrade water quality and this impact would be less than significant.

g) Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No impact. The proposed project would not provide new housing and therefore there would be no impact.

h) Place within a 100-year flood hazard area structures that would impede or redirect floodflows?

Less-than-Significant. This project is within a 100-year flood hazard area, however, this project is being designed to accommodate tidal variations in the Sacramento River and the placement of piles along with the rest of the appurtenant structures would not impede, redirect, or cause flood flows. This impact would be less than significant.

i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

Less-than-Significant. The project would require review by the Army Corps of Engineers for modifications made to a project levee, and encroachment permits from both the Reclamation District and the Central Valley Flood Protection District. Therefore the project would be in compliance with all regulations and policies implemented for modifications to levees and the impact would be less-than significant.

j) Contribute to inundation by seiche, tsunami, or mudflow?

No impact. The project will not affect the existing risk for seiche, tsunami or mudflows therefore there would be no impact.

3.10 Land Use and Planning

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

3.10.1 Environmental Setting

The two fish release sites are on the northwest side of Sherman Island, in Sacramento County. Surrounding land uses include, agriculture, recreation, and open space. The project site is mainly comprised of open water, a graded and rip-rapped levee, the mowed landside slope of the levee, the county road, and irrigated pasture and associated drainage and irrigation ditches.

3.10.2 Discussion

a) Physically divide an established community?

No impact. The project area does not include any established communities. This project will not divide an established community, therefore there would be no impact.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No impact. The project would not change the existing land use, therefore there would be no impact.

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

No impact. The project area is not covered by a habitat conservation plan or natural community conservation plan. Therefore there would be no impact.

3.11 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 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?	☐	☐	☐	☒

3.11.1 Environmental Setting

Mineral resources in Sacramento County, according to the Sacramento County General Plan, include natural gas, petroleum, sand, gravel, clay, gold, silver, peat, topsoil, and lignite. The principal resources which are in production are aggregate (sand and gravel) and natural gas.

3.11.2 Discussion

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No impact. The Sacramento County General Plan maps aggregate and mineral resource areas within the county. The project site is not identified as an area with aggregate and mineral resources and therefore there is no impact.

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?

No impact. The Sacramento County General plan does not identify any mineral resources on the project site. Therefore there would be no impact to locally important mineral resources.

3.12 Noise

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project result in:				
a.	Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☐	☒	☐
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e.	For a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f.	For a project located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1 Environmental Setting

Existing noise sources in the project area include distant traffic, agricultural operations, wildlife and livestock vocalizations, boating activities, wind, and moving water in the Sacramento River.

Section 6.68.090(e) of Sacramento County Code states that noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property are exempt from applicable standards. This exemption is provided if said activities do not take place

between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

3.12.2 Discussion

a) Exposure of persons to or generation of noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Less-than-significant. Construction noise would fluctuate depending on the particular types, number, and duration of usage of the varying equipment. The effects of construction noise largely depend on the construction activity, distances to sensitive noise receptors, and ambient noise near that receptor. Given that construction noise in Sacramento County, within set daily hours, is exempt from applicable standards, the impact would be less-than-significant.

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

Less-than-significant. Construction activities in the project area may result in varying degrees of temporary ground vibrations, depending on the equipment and activity. Due to daily time restrictions of work and the proximity of the nearest residence the impact would be less-than-significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant. The use of the new fish release sites would result in noise increases, from the use of entrance gates and the flushing of the trucks, which are short in duration. However these short increases in ambient noise would be considered less-than-significant due to the proximity of the nearest sensitive receptor.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less-than-significant. Temporary increases in noise are associated with construction activities. Operation noise levels should not be significantly different from noise levels of existing agricultural activities.

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?

No impact. This project is not within 2 miles of a public airport. Therefore, there would be no impact related to airport noise.

f) For a project located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

No impact. This project is not located in the vicinity of a private airstrip. Therefore, there would be no impact related to private airstrip noise.

3.13 Populations 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 (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b.	Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c.	Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.1 Environmental Setting

The area surrounding the project site is rural with few residences.

3.13.2 Discussion

a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?

No impact. This project includes improvements that would not result in direct or indirect population growth; therefore there would be no impact.

b) Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?

No impact. This project would not affect substantial existing housing; therefore there would be no impact.

c) Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?

No impact. This project would not displace a substantial number of people; therefore there would be no impact.

3.14 Public Services

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

3.14.1 Environmental Setting

The project area is serviced by the Delta Fire District, Sacramento County Sheriff's Department, and River Delta Unified School District.

3.14.2 Discussion

Fire protection?

No impact. The project site would continue to be serviced by Delta Fire District and access to the site would be maintained during construction therefore there would be no impacts.

Police protection?

No impact. The project site would continue to be serviced by the Sacramento County Sheriff's Department and access to the site would be maintained during construction, therefore there would be no impacts.

Schools?

No impact. The project would not provide new housing therefore there would be no impact to school services.

Parks?

No impact. The project would not affect park services; therefore there would be no impact.

Other public facilities?

No impact. No other public facilities exist in the project area that would be affected by construction or operation of the improved fish release site, therefore there would be no impact to other public facilities.

3.15 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?	☐	☐	☐	☒
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.1 Environmental Setting

The project does not include recreation facilities, however public access and recreation on navigable waters is protected under the Public Trust. Boating, wind surfing, kite boarding and fishing do occur near the project site along the Sacramento River. The project will not extend far enough into the river to require alternate access points for boaters and will only temporarily (during construction) result in restricted access within the project site for recreation. Improvements to the county road will require a county approved detour but will not result in loss of access.

3.15.2 Discussion

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?

No impact. The project would not result in significant increases in housing or population; therefore there would be no impact to existing recreational facilities.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. The project does not include recreational facilities; therefore there would be no impacts due to construction or expansion of recreational facilities.

3.16 Transportation/Traffic

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
	Would the project:				
a.	Conflict with and 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 no-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b.	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d.	Substantially increase hazards because of a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e.	Result in inadequate emergency access?	☐	☐	☐	☒
f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

3.16.1 Environmental Setting

The construction of the fish release facilities will be along the levee crown in an area currently closed to traffic; however, the Project will include a toe berm which will require the realignment of existing Sacramento County Sherman Island West Levee Road, currently located at the toe of the existing levee. Construction along this roadway would consist of removal and reconstruction of the existing road and alignment away from the proposed new levee toe. The newly constructed portion of the roadway would meet minimum County agricultural road standards for Sherman Island, 20 foot wide asphalt with 2 foot shoulders.

3.16.2 Discussion

a) Conflict with and 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 no-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?

Less-than-significant impact. During construction there will be haul trucks delivering fill and other construction materials. Haul trucks would be staggered throughout the day to avoid peak commute hours. Trucks will also deliver construction equipment but once equipment is brought on site it will be stored in staging areas. For construction of the levee toe berm and realignment of the county road, a Traffic Control Plan will be submitted to Sacramento County for approval. A County approved detour will be provided. Operations would not result in any significant changes in traffic. Therefore, this impact would be less-than-significant.

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?

Less-than-significant impact. With an approved Traffic Control Plan, impacts to traffic are expected to be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No impact. This project would not affect air traffic patterns therefore there would be no impact.

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

No impact. Realignment of the existing public roads will actually make the area safer due to the straightening of existing curves and general improvements to the road condition; therefore there would be no impact.

e) Result in inadequate emergency access?

No impact. This project will not result in any road closures therefore there would be no impact.

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?

No Impact. Public transit, bicycle, or pedestrian facilities do not exist within the immediate vicinity of the project therefore there would be no impact.

3.17 Utilities and Service Systems

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

3.17.1 Environmental Setting

The fish release site does not generate wastewater or require the use of a wastewater treatment facility.

3.17.2 Discussion

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No impact. No wastewater will be generated by this project therefore there would be no impact.

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?

No impact. This project will not impact any current wastewater treatment facilities therefore there would be no impact.

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?

No impact. While some existing drainages will be modified, no new drainage facilities are being installed for this project. Therefore there would be no impact.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?

No impact. The project will not affect existing water entitlements therefore there would be no impact.

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No impact. The project will not require consultation with a waste water treatment provider therefore there would be no impact.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

No impact. The amount of debris generated from construction of this project is not expected to significantly impact landfill capacities. Operations would not be expected to generate solid waste. Therefore there would be no impact.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No impact. The solid waste generated by this project will be transported and disposed of in accordance with all applicable federal, state, and local regulations. Therefore, there would be no impact.

3.18 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?	☐	☒	☐	☐
b.	Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" meant that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of the other current projects and the effects of probable future projects)?	☐	☐	☒	☐
c.	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.18.1 Discussion

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?

Less- than-significant with mitigation incorporated. As discussed in Sections 3.1-3.18 of this Initial Study, the proposed project would not significantly affect the environment. The project

could have potential adverse effects on biological resources but those impacts would be reduced to less-than-significant with mitigation incorporated.

b) Does the project have impacts that are individually limited but cumulatively considerable?

Less-than-significant impact. Construction of the proposed project would result in short-term temporary impacts that would mainly be limited to the project area. While impacts for resource areas such as air quality and greenhouse gas emissions would contribute to more regional impacts, these impacts would not be cumulatively considerable because of the relative size of the proposed project.

Impacts to air quality, biological resources, and hazards and hazardous materials for the proposed project have been determined to be less-than-significant with mitigation incorporated and would not be considered cumulatively considerable. Impacts to all other resources identified in this Initial Study have either been identified at less-than significant or no impacts. Therefore cumulative impacts would be less-than-significant.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less-than-significant impact. Mitigation measures have been provided to reduce the project's potential effects on air quality, biological resources, and hazards and hazardous materials and all other impacts to resources in this Initial Study are less-than-significant or no impact. Thus, this impact would be less-than-significant.

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Department of Water Resources (Lead Agency)

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Appendix A: GHG Consistency Determination and GHG Inventory

DWR GHG Emissions Reduction Plan Consistency Determination Form

For Projects Using Contractors or Other Outside Labor

Print Form

This form is to be used by DWR project managers to document a DWR CEQA project's consistency with the DWR Greenhouse Gas Emissions Reduction Plan. This form is to be used only when DWR is the Lead Agency and when contractors or outside labor and equipment are use to implement the project.

Additional Guidance on filling out this form can be found at:
dwrclimatecange.water.ca.gov/guidance_resources.cfm

The DWR Greenhouse Gas Emissions Reduction Plan can be accessed at:
http://www.water.ca.gov/climatechange/CAP.cfm

California Department of Water Resources
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Sacramento, CA
95814
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www.water.ca.gov/climatechange

Project Name:	Little Baja and Manzo Ranch Fish Release Sites
Environmental Document type:	Mitigated Negative Declaration
Manager's Name:	Kathleen Buchnoff
Manager's email:	Kathleen.Buchnoff@water.ca.gov
Division:	Bay-Delta Office
Office, Branch, or Field Division	Delta Conveyance Branch

Short Project Description:

This project consists of constructing two new fish release facilities to comply with the 2009 NMFS Biological Opinion. These fish release sites are located on the NW side of Sherman Island, Rio Vista, California, on the levee along the Sacramento River. The Manzo Ranch site Latitude/Longitude coordinates are 38°04'0.33"N /121°46'18.79"W. The Little Baja site, southwest of Manzo Ranch, Latitude/Longitude coordinates are 38°03'48.27"N /121°46'45.83"W. The project area is approximately 30 acres. Construction work includes levee improvements and county road realignment by the Reclamation District 341; installing two automated access gates for access to the sites; replacing the aggregate base road on the levee crown with asphalt concrete paving, and providing electrical service to the release sites, via a new PG&E pole line with service road. At each release site, installing an asphalt concrete operation pad on top of the levee, construction of concrete foundations for support site lighting and a downspout; construction of a fish release system (including piles, a screened intake pipe, and a release pipe) with security fencing and a gate; and construction of a log boom for protection of the fish facility. Staging and spoil areas, and access routes will be designated for construction activities. Construction equipment includes backhoes, dozers, sheepsfoot rollers, water trucks, scrapers, excavators, compactors, highway trucks, concrete trucks, loaders, trucks, forklift, cranes, barge, pile driver, generators, compressors, welders, and drilling equipment for in-water and on land piles.

Project GHG Emissions Summary

Total Construction Emissions	1,627	$mtCO_2e$
Maximum Annual Construction Emissions	1,223	$mtCO_2e$

☒ All other emissions from the project not accounted for above will occur as ongoing operational, maintenance, or business activity emissions and therefore have already been accounted for and analyzed in the GGERP.

Extraordinary Construction Project Determination

Do total project construction emissions exceed 25,000 $mtCO_2e$ for the entire construction phase or exceed 12,500 $mtCO_2e$ in any single year of construction.

○ Yes - Addition analysis is required, consult with C4

◉ No - Additional analysis not required

Project GHG Reduction Plan Checklist

☒ All Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project. (Project Level GHG Emissions Reduction Measures)

Or

☐ All feasible Project Level GHG Emissions Reduction Measures have been incorporated into the design or implementation plan for the project and and Measures not incorporated have been listed and determined not be apply to the proposed project (include as an attachment)

☒ Project does not conflict with any of the Specific Action GHG Emissions Reduction Measures (Specific Action GHG Emissions Reduction Measures)

Would implementation of the project result in additional energy demands on the SWP system of 15 GWh/yr or greater?

○ Yes ◉ No

If you answered Yes, attach a Renewable Power Procurement Plan update approval letter from the DWR SWP Power and Risk Office.

Is there substantial evidence that the effects of the proposed project may be cumulatively considerable notwithstanding the proposed project's compliance with the requirements of the DWR GHG Reduction Plan?

○ Yes ◉ No

If you answered Yes, the project is not eligible for streamlined analysis of GHG emissions using the DWR GHG Emissions Reduction Plan. (See CEQA Guidelines, section 15183.5, subdivision (b)(2).)

Based on the information provided above and information provided in associated environmental documentation completed pursuant to the above referenced project, the DWR CEQA Climate Change Committee has determined that the proposed project is consistent with the DWR Greenhouse Gas Reduction Plan and the greenhouse gasses emitted by the project are covered by the plan's analysis.

Project Manager Signature: Kathleen Pouchnoff Date: 4/3/14

C4 Approval Signature: Date: 7/10/14

Attachments:

☒ GHG Emissions Inventory

☐ List and Explanation of excluded Project Level GHG Emissions Reduction Measures

☐ Plan to update Renewable Energy Procurement Plan from DWR SWP Power and Risk Office

Little Baja and Manzo Ranch Fish Release Sites DWR, PG&E & RD 341 Work - Inventory and Calculation of Greenhouse Gas Emissions

Line	Emissions from Construction Equipment							
1	Type of Equipment	Maximum Number per Day	Total Operation Days	Total Operation Hours[1]	Fuel Consumption Per Hour[2]	Total Fuel Consumption (gal. diesel)	CO_2e/gal diesel[3]	Total CO_2 Equivalent Emissions (metric tons)
2	Concrete Truck	1	6	48	10	480	0.010	5
3	Bore/Drill Rigs	1	13	104	8.5	884	0.010	9
4	Jack Hammer	1	5	40	3.15	126	0.010	1
5	Tractor/Loader / Backhoe	2	31	496	4.63	2,296	0.010	24
6	Compactor	1	30	240	2	480	0.010	5
7	On-Land Crane	1	41	328	5.09	1,670	0.010	17
8	Barge Crane Large	2	30	480	8.18	3,926	0.010	41
9	Barge Crane Small	2	60	960	5.09	4,886	0.010	51
10	Barge & Tug Large	2	30	480	43.5	20,880	0.010	217
11	Barge & Tug Small	2	60	960	31.7	30,432	0.010	316
12	Pile Driver	2	10	160	10	1,600	0.010	17
13	Excavator	1	40	320	5.12	1,638	0.010	17
14	Dump Truck	3	130	3120	7	21,840	0.010	227
15	Welder	1	60	480	7.19	3,451	0.010	36
16	Trencher	1	20	160	6.58	1,053	0.010	11
17	Scraper	1	12	96	9.52	914	0.010	9
17	Dozer	1	20	160	12.11	1,938	0.010	20
19	Grader	1	60	480	7.81	3,749	0.010	39
20	Water Truck	3	100	2400	5	12,000	0.010	125
21	Roller	2	20	320	2.71	867	0.010	9
22	Generator	2	120	1920	4.32	8,294	0.010	86
23	Air Compressor	2	120	1920	1.41	2,707	0.010	28
24	Forklift	2	25	400	2.86	1,144	0.010	12
25	Supervisor Truck	2	50	800	4	3,200	0.010	33
26	Concrete/ Industrial Saw	1	25	200	1.4	280	0.010	3
27	Bucket Lift	2	3	48	12.35	593	0.010	6
28	Cement & Morter Mixer	1	5	40	0.8	32	0.010	0
29	Alsphalt Paver	1	34	272	5.78	1,572	0.010	16
30	Signal Boards	2	120	1920	2.92	5,606	0.010	58
31	TOTAL					**138,540**		**1,440**

32 [1] An 8-hour work day is assumed.

33 [2] California Air Resource Board Offroad 2007 Emissions Inventory fuel consumption factors

34 [3] World Resources Institute-Mobile combustion CO_2 emissions tool, June 2003 Version 1.2

35

36 **Emissions from Transportation of Construction Workforce**

37	Average Number of Workers per Day	Total Number of Workdays	Average Distance Travelled (round trip)	Total Miles Travelled	Average Passenger Vehicle Fuel Efficiency[4]	Total Fuel Consumption (gal. gasoline)	CO_2e/gal Gasoline[3]	Total CO_2 Equivalent Emissions (metric tons)
38	23	310	55	392150	20.8	**18853.4**	0.009	**170**

39 [4] United States Environmental Protection Agency. 2008. Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008. [EPA420-R-08-015]

40

41 **Emissions from Transportation of Construction Materials**

42	Trip Type	Total Number of Trips	Average Trip Distance	Total Miles Travelled	Average Semi-truck Fuel Efficiency	Total Fuel Consumption (gal. diesel)	CO_2e/gal Diesel[3]	Total CO_2 Equivalent Emissions (metric tons)
43	Delivery	128	80	10240	6	1706.7	0.010	17.73
44	Spoils	21	1.5	31.5	6	5.25	0.010	0.05
45	TOTAL							**17.8**

46

47 **Construction Electricity Emissions**

48		MWh of electricity	$mtCO2_e$/ MWh[5]	CO_2 e emissions
49	Electricity Needed		0.310	0

50 [5] eGRID2010 Version 1.0, February 2011 (Year 2007 data) *CAMX-WECC sub-region* .

51

52 **Total Construction Activity Emissions** 1,627.3 (from lines 29, 36, 43, and 47)

53 **Total Years of Construction** 1.33

54 **Expected Start Date of Construction** May-15

55

56 **Estimated Project Useful life** 20 Years

57 **Average Annual Total GHG Emissions[7]** 81.4 **MT CO_2 equivalents**

58 [7]short-term construction emissions amortized over life of project

59

60	**Operational Emissions**					
61		**MWH of electricity per year**	**MT $CO2_e$/MWH[5]**	**CO_2 e emissions per year**		
62	Average Annual Electricity Needed	4	0.33	1.32	Electricity consumed each year	Lights, pumps
63						
64	**Greenhouse Gas**	**Average Annual Production Emissions (MT)**	**Global Warming Potential[6]**	**CO_2 e emissions per year**		
65	CO2	126.42	1	126.42	73000	
66	CH4		23	0.00	miles	
67	N2O		296	0.00	Inspection,	
68	SF6		22000	0.00	Operation	
69	*Others as necessary*			0		
70	TOTAL ANNUAL OPERATIONAL EMISSIONS			127.74		
71	[5] eGRID2007 Version 1.1, December 2008 (Year 2005 data) *CAMX-WECC sub-region .*					
72	[6] IPCC Third Assessment Report (2001)					
73						
74	Construction Equipment Emissions			1439.6	(from line 31 above)	
75	Workforce Transportation Emissions			169.9	(from line 38 above)	
76	Construction Materials Emissions			17.8	(from line 48 above)	
77	Operational Emissions, total lifespan			2,554.9	(from line 70 & 79)	
78	**Total Greenhouse Gas Emissions**			**4,182.1**	**MT CO_2 equivalents**	
79	**Estimated Project Useful life**			20	Years	
80	**Average Annual Total GHG Emissions[7]**			209.1	**MT CO_2 equivalents**	
81	[7] emissions amortized over life of project					