Initial Study/Proposed Mitigated Negative Declaration

Clifton Court Forebay Fishing Facility

Prepared for:

California Department of Water Resources

AECOM

June 2013

Initial Study/Proposed Mitigated Negative Declaration

Clifton Court Forebay Fishing Facility

Prepared for:

California Department of Water Resources
Bay-Delta Office
Delta Conveyance Branch
1416 Ninth Street
Sacramento, CA 95814

Contact:

Bijaya Shrestha
Project Manager
916/653-9444

Prepared by:

AECOM
2020 L Street, Suite 400
Sacramento, CA 95811

Contact:

Andrea Shephard
916/414-5800

AECOM

60249760
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June 2013

Date: June 17, 2013

To: Responsible and Trustee Agencies, Interested Parties, and Organizations

Subject: INITIAL STUDY AND NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE CLIFTON COURT FOREBAY FISHING FACILITY

The California Department of Water Resources (DWR) has directed the preparation of an initial study (IS) and intends to adopt a mitigated negative declaration (MND) for the proposed project in compliance with the California Environmental Quality Act (CEQA) and CEQA Guidelines.

Project Title: Clifton Court Forebay Fishing Facility

Lead Agency: DWR, Bay-Delta Office

Project Location: The project site is located on the southeast corner of Clifton Court Forebay, north of the radial gates, within the Clifton Court Forebay U.S. Geological Survey (USGS) 7.5-minute quadrangle in Contra Costa County.

Project Description: The proposed project consists of installing a fishing pier extending approximately 500 feet into Clifton Court Forebay that is compliant with the Americans with Disabilities Act (ADA). Other appurtenant features to be installed include a staging area; concrete pad and retaining wall; security fencing, and gates; ADA-compliant public restroom; bicycle rack; equipment shed; ADA-compliant boat dock and road section on West Canal; two ADA-compliant parking spaces next to the Clifton Court Forebay public entrance gate; and lighting and signage.

Environmental Review Process: DWR has directed the preparation of an IS/MND on the proposed project in accordance with the requirements of CEQA. The IS/MND describes the proposed Clifton Court Forebay Fishing Facility. The IS/MND provides an assessment of the proposed project's potential significant adverse impacts on the environment. The IS/MND concludes the proposed project would not have any significant adverse effects on the environment after implementation of mitigation measures.

Public Review Period: The IS/MND is being circulated for public review and comment for a review period of 30 days starting June 18, 2013. Written comments should be submitted and received at the following address no later than close of business (4:00 p.m.) on July 17, 2013.

Bijaya Shrestha, Ph.D., P.E.
Project Manager
California Department of Water Resources
Bay-Delta Office
P.O. Box 942836
1416 Ninth Street, 252-19
Sacramento, CA 94236-0001
Fax: (916) 653-9574
E-mail: Bijaya.Shrestha@water.ca.gov

To Review or Obtain a Copy of the Environmental Document: Copies of the draft IS/MND may be reviewed at the following locations:

DWR Web site – http://baydeltaoffice.water.ca.gov/

California Department of Water Resources
Bay-Delta Office
1416 Ninth Street, 252-19
Sacramento, CA 94236-0001

Contra Costa County Library – Brentwood Branch
104 Oak Street
Brentwood, CA 94513

PROPOSED MITIGATED NEGATIVE DECLARATION

Project: Clifton Court Forebay Fishing Facility

Lead Agency: California Department of Water Resources (DWR), Bay-Delta Office

PROJECT DESCRIPTION

DWR is proposing to approve construction of a fishing facility and appurtenant features at Clifton Court Forebay (CCF).

The proposed project consists of installing a fishing pier extending approximately 500 feet into CCF that is compliant with the Americans with Disabilities Act (ADA). Other appurtenant features to be installed include a staging area; concrete pad and retaining wall; security fencing, and gates; ADA-compliant public restroom; bicycle rack; equipment shed; ADA-compliant boat ramp and road section on West Canal; two ADA-compliant parking spaces next to the CCF public entrance gate; and lighting and signage.

FINDINGS

An initial study/mitigated negative declaration (IS/MND) has been prepared to assess the project's potential effects on the environment and the significance of those effects. Based on the IS/MND, it has been determined that the proposed project would not have any significant adverse effects on the environment after implementation of mitigation measures. This conclusion is supported by the following findings:

1. The proposed project would have no effects related to agriculture and forestry resources, land use and planning, mineral resources, or population and housing.

2. The proposed project would have a less-than-significant impact on aesthetics, geology and soils, greenhouse gases (GHGs), hazards and hazardous materials, hydrology and water quality, noise, public services, recreation, transportation/traffic, and utilities and service systems. This less-than-significant impact conclusion assumes that the following environmental protection measures and preconstruction and final design best management practices (BMPs) would be implemented as part of the proposed project.

   Fish Protection Measures: To avoid, minimize, and mitigate potential impacts on sensitive fish species during in-water construction activities at the project site, DWR will implement the following measures:

   - In-water work will be conducted during the period of August 1 through October 31.
   - A biological monitor will be on call to assist the construction crew with environmental monitoring and protection issues as necessary.

   Swainson's Hawk and Other Raptor Protection Measures: To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors (not including burrowing owl) at the project site, DWR proposes to implement the following measures:

- A qualified biologist will conduct preconstruction surveys and identify active nests within ¼ mile of the project site. The surveys will be conducted prior to the initiation of construction activities during the recommended survey periods outlined in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley, concentrating on modified period 3 surveys. If no nests are found, no further mitigation is required. Active nests for other raptors, other than burrowing owls, shall be targeted during the surveys for Swainson's hawk, but only within 250 feet of the project site. Any construction activity that occurs outside the nesting season for Swainson's hawk or other raptors (August 16 to March 14) shall not require surveys.

- If nesting Swainson's hawks or other raptors are located, impacts shall be minimized by establishing an appropriate non-disturbance buffer zone around active nests in coordination with California Department of Fish and Wildlife (CDFW) guidelines. Buffer zones shall be determined in consultation with CDFW and will depend on the species involved, site conditions, and type of work proposed. No new project activity shall commence within the buffer zones until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or that reducing the buffer would not result in nest abandonment. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. Should an appropriate buffer not be feasible, coordination with CDFW will be pursued to guide further action.

Burrowing Owl Protection Measures: To avoid, minimize, and mitigate potential impacts on burrowing owl along the levee roads used for project site ingress and egress or adjacent to the project site, DWR proposes to implement the following measures, based on recent guidance by CDFW:

- A qualified biologist will conduct preconstruction surveys within 30 days prior to the start of construction activities to ensure that burrowing owls will not be affected by project activities.

- If an active burrow is found during the breeding season (February 1 through August 31), clear, visible markers will be placed on the roadways to clearly demarcate the burrow location so vehicles traveling either direction on the road and workers at the project site will avoid disturbing the area.

- An awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection will be developed and implemented by a qualified biologist prior to commencing any construction-related activities on the project site. This training shall instruct workers on how to identify burrowing owls and their habitat and how to best avoid disturbing burrows and/or nests.

- Where feasible, buffer zones, visual screens or other site-specific measures will be implemented to minimize disturbance impacts while construction activities are occurring.

- Monitoring of active burrows will be conducted by a qualified biologist throughout the construction phase to determine the effectiveness of buffers, visual screens, or other measures, and to determine if the vehicle traffic is jeopardizing an active nest.

- DWR shall consult with CDFW and other burrowing owl experts for assistance in developing site-specific solutions, as needed, and to determine if the owls are sensitized to human disturbance and the survey effort can be reduced.

Migratory Bird Protection Measures: To avoid, minimize, and mitigate potential impacts to migratory birds, DWR proposes to implement the following measures:

- A qualified biologist will conduct preconstruction surveys and identify active migratory bird nests within 250 feet of the proposed project site. Preconstruction surveys shall be conducted during the nesting season (March 15 to August 15) no less than 14 days and no more than 30 days before any construction activity begins. If no nests are found, no further mitigation is required. Any construction activity that occurs between August 16 and March 14, outside the nesting season, shall not require preconstruction surveys.

- If nests are located, impacts shall be minimized by establishing an appropriate non-disturbance buffer zone around active nests in coordination with CDFW guidelines. Buffer zones shall be determined in consultation with CDFW and will depend on the species involved, site conditions, and 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.

San Joaquin Kit Fox Protection Measures: Although San Joaquin kit fox (SJKF) are unlikely to utilize the staging area, DWR proposes to implement the following measures to avoid, minimize, and mitigate potential impacts on SJKF in the staging area and along the levee roads used for project site ingress and egress:

- All site access and staging shall limit disturbance to the CCF dam and outer levee as much as possible and avoid sensitive habitats. Existing ingress and egress points shall be used.

- Project activities will not take place at night when kit foxes are most active. Off-road traffic outside of designated project areas should be prohibited.

- A biological monitor will be on-site to assist the construction crew with environmental issues as necessary. If kit foxes are encountered by a biological monitor during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

- To prevent inadvertent entrapment of kit foxes or other animals during construction of the project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.

- All construction pipes, culverts, or similar structures with a diameter of 4 -inches or greater that are stored at a construction site for one or more overnight periods shall be capped prior to placement or thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until U.S. Fish and Wildlife Service (USFWS) has been consulted. If necessary, and under the direct supervision of the

biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

- No firearms shall be allowed on the project site.
- Noise shall be minimized to the extent feasible at the work site to avoid disturbing kit foxes.
- No pets shall be permitted on the project site.
- Use of rodenticides and herbicides for this project shall be restricted. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide shall be used because of a proven lower risk to kit fox.
- DWR shall notify USFWS immediately if any SJKF are found onsite, and shall submit a report to include date(s), location(s), habitat description, and any collective measures taken to protect the species. If an SJKF is inadvertently injured or killed, DWR shall notify USFWS immediately. All land-based construction activities must cease if SJKF are encountered and all land-based construction must remain stopped until it moves out of the work area unassisted. The biological monitor will be required to report any take to USFWS immediately by telephone and, within 1 day of the incident, by electronic mail or written letter. Capture and relocation of trapped or injured listed species can only be attempted by USFWS-permitted personnel.

Water Quality Protection Measures: To avoid, minimize, and mitigate potential impacts on water quality during construction, DWR proposes to implement the following measures:

- DWR shall require the construction contractor to prepare and implement a storm water pollution prevention plan (SWPPP) that is consistent with the National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction required by the Central Valley Regional Water Quality Control Board. The SWPPP will identify the activities that may cause pollutant discharge (including sediment) during storms and the BMPs that will be employed to control pollutant discharge. Construction techniques will be identified and implemented to reduce the potential for runoff, including minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. In addition, the SWPPP will include an erosion control plan and BMPs that specify the erosion and sedimentation control measures to be implemented such as silt fences, trench plugs, terraces, water bars, and seeding and mulching. The SWPPP will also include a spill prevention, control, and countermeasure plan and applicable hazardous materials business plans, and will identify the types of materials used for equipment operation (including fuel and hydraulic fluids), and measures to prevent, and materials available to clean up, hazardous material and waste spills. The SWPPP will also identify emergency procedures for responding to spills.

  BMP designations will be based on those used by the California Stormwater Quality Association's Construction BMP Handbook. BMPs that may be implemented are as follows:

- Proper scheduling will minimize disturbed areas, allowing for a reduction in the active project area requiring protection and also minimizing the length of time disturbed soils are exposed to erosive processes.
- Existing vegetation will be preserved to the maximum extent practicable to protect surfaces from erosion and also to provide sediment control benefits.
- The use of various mulches (i.e., hydraulic, straw, wood) is a temporary soil stabilization method that will be used on surfaces with little or no slope.
- Geotextiles, plastic covers, and erosion control blankets/mats will be used on flat or, usually, sloped surfaces, channels, and stockpiles if needed.
- A graveled area or pad will be built where vehicles enter and leave the project site to stabilize construction entrances and exits. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to control dust.
- A temporary sediment barrier (silt fence, gravel-filled or sand- and gravel-filled fabric bags), designed to retain sediment from small disturbed areas by reducing the velocity of sheet flow, will be used as needed to prevent sediment from entering water bodies.
- All construction workers will be trained to be aware of permit requirements and proper installation methods for BMPs specified in the SWPPP.

Furthermore, as per the California Stormwater Quality Association's Construction BMP Handbook, the following measures will be implemented:

- A copy of the approved SWPPP will be kept on the construction site.
- Clearing and grading will be limited to the minimum necessary to complete the proposed project and will be confined to the established project right-of-way. Boundaries of clearing will be clearly marked. Under the erosion control plan, the project site will be stabilized when construction is completed, and post construction BMPs and monitoring will be implemented to ensure that sediment from disturbed areas does not mobilize.

The spill prevention, control, and countermeasure plan will be developed and implemented to ensure that all pollutants are controlled and contained. This will be achieved through BMPs incorporated into the plan, which will include, but will not be limited to the following:

- To prevent exposure to storm water, covered storage for materials, especially toxic or hazardous materials, will be provided. Toxic or hazardous materials also will be stored on impervious surfaces to provide secondary containment for spills. Vehicles and equipment used for material delivery and storage will be parked in designated areas. In the event of unexpected rainfall, all toxic or hazardous materials will be contained and prevented from leaving the construction or staging areas.
- Spill prevention and control BMPs will be implemented to ensure that spills and releases of materials are cleaned up immediately and thoroughly. BMPs will ensure that appropriate spill response equipment, such as spill kits preloaded with absorbents in an overpack drum, will be provided at convenient locations throughout the site. Spent absorbent material will be managed and disposed of

in accordance with applicable regulations. In particular, absorbents used to clean up spills of hazardous materials or waste will be managed as hazardous waste unless characterized as nonhazardous.

- A sufficient number of conveniently located trash and scrap receptacles will be provided at the construction site to promote the proper disposal of solid wastes. Receptacles will be provided with lids or covers to prevent windblown litter. Material removed from the project site will be transported to a permitted landfill.
- A designated vehicle and equipment fueling area with proper containment and spill cleanup materials will be established within the staging area at least 25 feet from any drainages or water features if onsite fueling is required.
- Any on-site vehicle and equipment maintenance areas will be protected from stormwater runoff to or from the area.
- Toxic debris requiring disposal, including discarded chemical containers, will be disposed of in a landfill designed to satisfy the standards for protecting groundwater, as described in the design criteria and associated performance standards in 40 Code of Federal Regulations 258.
- Barges used by the contractor will include appropriate protections to prevent construction-related materials from spilling into waterways. Construction staff will immediately stop any activities that result in construction-related materials entering waterways and will implement appropriate corrective actions.

- DWR shall file a Notice of Intent and a SWPPP before allowing construction to begin. DWR or its designated agent will routinely inspect the active project area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. Inspection reports will be included in project files. Construction staff will immediately stop any activities that result in noncompliance and will implement appropriate corrective actions.

Fire Protection Measures: To guard against fire dangers in the project area that could result from construction activities in the vicinity of flammable materials (e.g., vegetation), DWR shall ensure that the construction contractor develops a fire protection and prevention plan which incorporates fire protection measures (e.g., spark arrestors, mufflers) on all equipment with the potential to create a fire hazard. The plan shall ensure that fire suppression equipment is onsite and that all construction employees have received appropriate fire safety training.

Greenhouse Gas Emissions Best Management Practices

Preconstruction and final design BMPs are designed to ensure that individual projects are evaluated and their unique characteristics taken into consideration when determining if specific equipment, procedures, or material requirements are feasible and efficacious for reducing GHG emissions from the project. The proposed project would implement the following preconstruction and final design BMPs:

- 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, if applicable, and specify, as appropriate, 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 5 minutes when not in use (as required by the State airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). 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 tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every 2 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/or 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 SmartWay27 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% 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.

3. The proposed project would have potentially significant impacts related to air quality, biological resources, and cultural resources, but mitigation measures are proposed that would reduce these effects to less-than-significant levels.

   Following are the mitigation measures that would be implemented by the state to avoid or minimize environmental impacts. Implementation of these mitigation measures would reduce the environmental impacts of the proposed project to a less-than-significant level.

   Mitigation Measure AQ-1: Reduce Construction-Related Emissions from Off-Road Equipment and Heavy-Duty Vehicles.

   The following measures recommended by the Bay Area Air Quality Management District shall be implemented to reduce construction-related emissions associated with off-road equipment and heavy-duty vehicles:

   - *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, as necessary to control fugitive dust.*

   - *All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*

   - *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*

   - *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*

   - *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*

   - *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*

- *A publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints shall be posted at the construction site. The person identified as the contact shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.*

- *The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.*

- *Idling time of diesel-powered construction equipment shall be no more than 5 minutes.*

- *The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20% nitrogen oxides (NO_X) reduction and 45% particulate matter (PM) reduction compared to the most recent California Air Resources Board (ARB) fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.*

- *Low volatile organic compound (i.e., reactive organic gases) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings) shall be used.*

- *All construction equipment, diesel trucks, and generators shall be required to be equipped with Best Available Control Technology for emission reductions of NO_X and PM.*

- *All contractors shall be required to use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines.*

Mitigation Measure Bio-1: Avoid Disturbing or Removing Special-Status Plants.

The following measures shall be implemented to avoid, minimize, and mitigate potential impacts on special-status plants at the project site:

- *Before the initiation of any ground-disturbing or vegetation-clearing activities, a qualified botanist shall conduct focused surveys in the project area for crownscale, woolly rose-mallow, and Mason's lilaeopsis. The botanist shall conduct surveys for these special-status plant species at the appropriate time of year when the target species would be in bloom, and therefore, clearly identifiable. Surveys shall be conducted following the approved CDFW protocol for surveying for special-status plant species.*

- *The known occurrence of woolly rose-mallow in the riprap near the existing boat dock shall be clearly flagged and demarcated by erecting exclusionary fencing or clearly flagging an exclusion zone around the individual or population. This area shall be avoided during the removal of the existing dock and the construction of the new dock. If necessary, DWR shall consider moving the location of the new boat dock to avoid adversely affecting this occurrence. If Mason's lilaeopsis or additional occurrences of woolly rose-mallow are found along this stretch of shoreline, the same methods will be used to avoid these species. If a population of crownscale is*

found along the levee slopes or along the edges of road, these occurrences shall also be clearly flagged and protected by exclusionary fencing where feasible.

- *If it is determined that avoidance is not possible for any of these species, DWR shall consult with the CDFW to determine the appropriate mitigation measures for any population that may be affected by the project. Mitigation measures may include creation of off-site populations on project mitigation sites through seed collection or transplanting, preserving and enhancing existing populations, or restoring or creating suitable habitat in sufficient quantities to compensate for the impact.*

Mitigation Measure Bio-2: Develop and Implement a Pile Driving Plan to Minimize and Monitor Underwater Sound Pressures.

The following measures shall be implemented to avoid and minimize potential adverse effects that could otherwise result from pile-driving activities in CCF and West Canal:

- *The contractor shall develop a plan for pile-driving activities in CCF and West Canal to minimize impacts on fish and shall allow sufficient time in the schedule for coordination with regulatory agencies. Measures shall be implemented to minimize underwater sound pressure to levels below thresholds for peak pressure and accumulated sound exposure levels (SEL). Threshold levels established by USFWS and National Marine Fisheries Service (for fish greater than 2 grams) that shall not be exceeded are:*
  - *Peak pressure = 206 decibels (dB)*
  - *Accumulated SEL = 187 dB*
- *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.*
- *The contractor shall perform any in-water construction activities during the identified in-water work window (August 1 through October 31). When in-water work is conducted, the qualified biologist shall be present to monitor construction activities and ensure compliance with mitigation requirements and the permit terms and conditions.*
- *Piles shall be driven by vibratory or nonimpact methods (hydraulic) that result in sound pressures below threshold levels to the extent feasible. If underlying soil conditions require the use of impact hammers for pile driving, underwater sound reduction measures shall be employed, as needed, to ensure that levels do not exceed the thresholds identified above. These underwater sound reduction measures shall include one or more of the following:*
  - *Use of hammers only during daylight hours and initially at low energy levels and reduced impact frequency. Applied energy and frequency shall be gradually increased until necessary full force and frequency are achieved.*
  - *Use of pipe caissons to isolate the piles from waters to buffer underwater sound pressure. 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.*

- *Use of impact hammer cushion blocks.*
- *Use of a bubble curtain. The pile shall be driven using impact methods with the pile surrounded by the bubble curtain.*

Mitigation Measure Bio-3: Avoid Impacts to Western Pond Turtle.

The following measures shall be implemented to avoid, minimize, and mitigate potential impacts on western pond turtle at the project site:

- *To minimize potential habitat disturbance during construction, clearing and grading shall be confined to the minimum area necessary to facilitate construction activities. Exclusionary fencing shall be installed between the construction zone and suitable aquatic habitat for this species, at the discretion of a qualified biologist. Temporary construction fencing shall be placed perpendicular to the levees at the north and south ends of the construction zone and will prohibit movement parallel on the levees.*

- *All construction personnel shall receive worker environmental awareness training from an approved biologist prior to commencing any construction-related activities on the project site. This training shall instruct workers on how to identify the western pond turtle and its habitat, and what to do if a turtle is encountered during construction activities.*

- *Within 24 hours prior to commencement of construction activities, the site shall be inspected for western pond turtles by a qualified biologist. The construction area shall be re-inspected whenever a lapse in construction activity of 2 weeks or greater has occurred. If a turtle is encountered on the project site, any construction activity that could result in harm of the turtle shall immediately cease and shall not resume until the monitoring biologist has determined that the turtle has moved away from the construction-site on their own volition or a qualified biologist has moved the turtle to a safe location.*

Mitigation Measure Bio-4: Minimize Fill of 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 compensate for placement of structures in navigable waters of the United States:

- *Minimize placement of structures (i.e., reduce numbers and/or size of piles; reduce footprint size of temporary rock platform) 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.*

- *Implement any additional mitigation measures determined necessary during the Clean Water Act (CWA) Section 404 and 401, or Rivers and Harbors Act Section 10 permitting processes prior to and/or during project construction. Additional mitigation measures may include, but may not be limited to, implementation of additional construction BMPs to avoid potential for sedimentation and erosion to impact waters of the United States and waters of the state, and restoring the site to preexisting conditions after material is removed.*

Mitigation Measure Cul-1: Halt Ground-Disturbing Construction Activities if Cultural Materials Are Discovered.

The following measures shall be implemented to avoid or minimize potential impacts to cultural materials:

- *If a discovery of cultural materials (e.g., unusual amounts of shell, animal bone, flaked stone, bottle glass, ceramics, structure/building remains) is encountered during project construction, ground disturbances in the immediate vicinity of the find shall be halted immediately and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant as per the California Register of Historical Resources and identify appropriate management steps needed to protect and secure identified resources.*

Mitigation Measure Cul-2: Halt Construction Activities if Any Human Remains Are Discovered.

The following measures shall be implemented to avoid or minimize potential impacts to human remains.

- *The procedures for the treatment of discovered human remains are contained in Sections 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the California Public Resources Code. In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, such activities that may affect the remains shall be halted and DWR or its designated representative shall be notified. DWR shall immediately notify the county coroner and a qualified professional archaeologist. If the coroner determines that the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (Health and Safety Code, Section 7050[c]).*

- *DWR's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in Section 5097.9 of the California Public Resources Code. DWR or its appointed representative and the professional archaeologist shall consult with a Most Likely Descendant determined by the NAHC regarding the removal or preservation and avoidance of the remains and shall determine whether additional burials could be present in the vicinity.*

Written comments regarding the IS/MND may be addressed to:

Bijaya Shrestha, Ph.D., P.E.
Project Manager
California Department of Water Resources
Bay-Delta Office
P.O. Box 942836
1416 Ninth Street, 252-19
Sacramento, CA 94236-0001
Fax: (916) 653-9574
E-mail: Bijaya.Shrestha@water.ca.gov

ADOPTION OF INITIAL STUDY/MITIGATED NEGATIVE DECLARATION AND APPROVAL OF INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Certification by Those Responsible for Preparation of This Document. The California Department of Water Resources, Bay-Delta Office has been responsible for the preparation of this proposed mitigated negative declaration and the incorporated initial study. I believe this document meets the requirements of the California Environmental Quality Act, is an accurate description of the proposed project, and that the lead agency has the means and commitment to implement the project design measures that will assure the project does not have any significant, adverse effects on the environment. I recommend approval of this document.

_____ _____

Victor Pacheco, Chief
Bay-Delta Office, Delta Conveyance Branch
California Department of Water Resources

Date

*(*To be signed upon completion of the public review process and preparation of a final project approval package including responses to comment, if any, on the environmental document and any necessary modifications to project design measures.)*

Approval of the Project by the Lead Agency. Pursuant to Section 21082.1 of the California Environmental Quality Act, the California Department of Water Resources has independently reviewed and analyzed the initial study and proposed mitigated negative declaration for the proposed project and finds that the initial study and proposed mitigated negative declaration reflect the independent judgment of the California Department of Water Resources. The lead agency finds that the project design features will be implemented as stated in the mitigated negative declaration.

I hereby approve this project:

_____ _____

Katherine F. Kelly, Chief
Bay-Delta Office
California Department of Water Resources

Date

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INITIAL STUDY

Clifton Court Forebay Fishing Facility

1. Project Title	Clifton Court Forebay Fishing Facility
2. Lead Agency Name and Address	California Department of Water Resources 1416 Ninth Street Sacramento, CA 95814
3. **Contact Person and Phone Number**	Bijaya Shrestha, Ph.D., P.E. Project Manager California Department of Water Resources Bay-Delta Office P.O. Box 942836 1416 Ninth Street, 252-19 Sacramento, CA 94236-0001 Fax: (916) 653-9574 E-mail: Bijaya.Shrestha@water.ca.gov
4. Project Location	The project area is located on the southeast corner of Clifton Court Forebay, within the Clifton Court Forebay U.S. Geological Survey (USGS) 7.5-minute quadrangle in Contra Costa County.
5. Project Sponsor's Name	California Department of Water Resources
6. General Plan Designation	Parks and Recreation, Delta Recreation, Water
7. Zoning	Institutional (Public/Quasi-public)
8. Description of Project	The proposed project consists of installing an Americans with Disabilities Act-compliant (ADA-compliant) fishing pier extending approximately 500 feet into Clifton Court Forebay. Other appurtenant features to be installed include a staging area; concrete pad and retaining wall; security fencing, and gates; ADA-compliant public restroom; bicycle rack; equipment shed; ADA-compliant boat dock and road section on West Canal; two ADA-compliant parking spaces next to the Clifton Court Forebay public entrance gate; and lighting and signage.
9. Surrounding Land Uses and Setting	Surrounding land uses include agriculture, recreation and open space areas, and State Water Project and Central Valley Project fish salvage and pumping facilities. See *Environmental Setting discussion under each issue area in Chapter 3, "Environmental Checklist."*
10. Other Public Agencies Whose Approval Is Required	U.S. Army Corps of Engineers, U.S. Coast Guard, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife, California State Lands Commission, Central Valley Regional Water Quality Control Board, San Francisco Bay Area Air Quality Management District, State Office of Historic Preservation.

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ACRONYMS AND OTHER ABBREVIATIONS

°F	degrees Fahrenheit
AB	Assembly Bill
ADA	Americans with Disabilities Act
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
Banks Pumping Plant	Harvey O. Banks Pumping Plant
BMPs	best management practices
BO	Biological Opinion
B.P.	Before Present
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CBC	California Building Standards Code
CCAP	Communitywide Climate Action Plan
CCF	Clifton Court Forebay
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CH_4	methane
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Cortese List	Hazardous Waste and Substances Sites List
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSLC	California State Lands Commission
CVFPB	Central Valley Flood Protection Board
CVP	Central Valley Project
CWA	Clean Water Act
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
Delta	Sacramento–San Joaquin Delta
diesel PM	temporary, short-term emissions of particulate exhaust from off-road heavy-duty diesel equipment
DNL	day-night average noise level
DPS	Distinct Population Segment
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources

EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
FFP	Fishing Facility Project
FTA	Federal Transit Administration
GGERP	Greenhouse Gas Emissions Reduction Plan
GHG	greenhouse gas
HCP/NCCP	Habitat Conservation Plan/Natural Community Conservation Plan
HFC	hydrofluorocarbons
in/sec	inches per second
IS	initial study
L_{dn}	day-night average noise level
L_{eq}	average noise level
L_{max}	maximum noise level
MCAP	Municipal Climate Action Plan
MLD	Most Likely Descendant
MND	mitigated negative declaration
MTC	Metropolitan Transportation Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NMFS	National Marine Fisheries Service
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity unit
PFC	perfluorocarbons
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
PPV	peak particle velocity
RBDD	Red Bluff Diversion Dam
RHA	Rivers and Harbors Act
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SEL	sound exposure level
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFPF	John E. Skinner Delta Fish Protective Facility
SJKF	San Joaquin kit fox
SWP	State Water Project
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant

USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USGS	U.S. Geological Survey
USFWS	U.S. Fish and Wildlife Service
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compound

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1 INTRODUCTION

1.1 BACKGROUND

The California Department of Water Resources (DWR) is proposing to construct a fishing pier and appurtenant facilities to improve angler access in Clifton Court Forebay (CCF). The Fishing Facility Project (FFP) would be implemented as one measure to reduce prescreen losses of federal Endangered Species Act (ESA) designated salmon, steelhead, and sturgeon within the CCF to comply with the reasonable and prudent alternative action (IV.4.2(2)) required in the National Marine Fisheries Service (NMFS) Biological Opinion (BO) and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project (NMFS BO) (NMFS 2009). The FFP would also improve the security of the CCF's radial intake gates and other facilities.

As described more fully in Chapter 2, "Project Description," the FFP would involve installation of a 500-foot-long fishing pier that is compliant with the Americans with Disabilities Act (ADA) and other appurtenant facilities, including a staging area; a concrete pad and retaining wall; security fencing, and gates; an ADA-compliant public restroom; bicycle rack and equipment shed; an ADA-compliant boat dock; ADA-compliant parking spaces; and lighting and signage.

The California Environmental Quality Act (CEQA)[1] requires state and local governmental agencies to consider the potential adverse environmental effects of projects over which they have discretionary authority before taking action on those projects and prohibits public agencies from approving projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen a proposed project's significant environmental effects (Public Resources Code Section 21002). Under CEQA, there is one lead agency, which is the public agency with primary responsibility over approval of the proposed project. DWR is the lead agency for this proposed project and has responsibilities that it must fulfill before committing itself to certain courses of action. DWR considers CEQA review to be a prerequisite to approving and executing the proposed project.

1.2 PURPOSE OF DOCUMENT

An initial study (IS) is prepared by a lead agency to determine whether a project may have a significant effect on the environment (CEQA Guidelines Section 15063, subd. (a)) and thus to determine which environmental document should ultimately be prepared. In accordance with CEQA Guidelines Section 15070, a:

> public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level.

[1] Public Resources Code Section 21000 *et seq.;* California Code of Regulations Title 14, Section 15000, *et seq.* (hereafter referred to as the CEQA Guidelines).

Under this circumstance, the lead agency prepares a written statement describing its reasons for concluding that implementing the proposed project would not have a significant effect on the environment and, therefore, does not require the preparation of an environmental impact report.

As described in Chapter 3, "Environmental Checklist," of this IS, implementing the FFP might result in significant environmental impacts, but those impacts, if they would occur, would be reduced to a less-than-significant level by implementing revisions to the FFP (in the form of mitigation measures) that have been agreed to and would be implemented by DWR. Therefore, an IS and mitigated negative declaration (MND) are the appropriate documents for compliance with CEQA requirements. This IS and the proposed MND conform to these requirements and to the content requirements of Section 15071 of the CEQA Guidelines.

The primary purpose of this document is to present decision makers and the public with the environmental consequences of implementing the FFP. This disclosure document is being made available to the public for a 30-day public review period: from June 18, 2013 through July 17, 2013.

Written comments should be addressed to:

Bijaya Shrestha, P.E., Ph.D.
Project Manager
California Department of Water Resources
Bay-Delta Office
P.O. Box 942836
1416 Ninth Street, 252-19
Sacramento, CA 94236-0001
Fax: (916) 653-9574
E-mail: Bijaya.Shrestha@water.ca.gov

After comments are received from the public and reviewing agencies, DWR may (1) adopt the MND and approve the FFP, (2) undertake additional environmental studies, or (3) abandon the project. If the project is approved, DWR could proceed to implement all or part of the project.

A copy of this IS and the proposed MND are available for public review at the following locations:

DWR Website – http://baydeltaoffice.water.ca.gov/

California Department of Water Resources
Bay-Delta Office
1416 Ninth Street, 252-19
Sacramento, CA 94236-0001

Contra Costa County Library – Brentwood Branch
104 Oak Street
Brentwood, CA 94513

1.3 DOCUMENT ORGANIZATION

This IS is organized as follows:

Chapter 1, "Introduction." This chapter provides an introduction and background to the environmental review process and the purpose of the project. It describes the purpose and organization of this document and presents a summary of findings.

Chapter 2, "Project Description." This chapter describes the purpose of and need for the FFP, identifies project objectives, and provides a detailed description of the FFP.

Chapter 3, "Environmental Checklist." This chapter presents an analysis of environmental issues identified in the CEQA Environmental Checklist and states whether implementing the project would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, a potentially significant impact, or a significant and unavoidable impact.

Chapter 4, "References." This chapter lists the references used in preparation of this IS/MND.

Chapter 5, "Report Preparers." This chapter identifies the report preparers.

Chapter 6, "Report Distribution List." This chapter identifies the names and addresses of all parties who received copies of the IS and proposed MND.

This IS also includes three appendices: Appendix A, "Air Quality"; Appendix B, "Biological Resources"; and Appendix C, "Greenhouse Gases."

A guide to acronyms and other abbreviations is presented, after the table of contents.

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2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND EXISTING FACILITIES

The CCF is a component of the California State Water Project (SWP) operated by DWR. The facility is located approximately 50 miles south of the city of Sacramento near the town of Byron, in Contra Costa County. The CCF was created in 1969 by inundating a 2,200 acre tract of land approximately 2.6 miles long and 2.1 miles across in the Sacramento–San Joaquin Delta (Delta) (Exhibit 2-1) (Kano 1990).

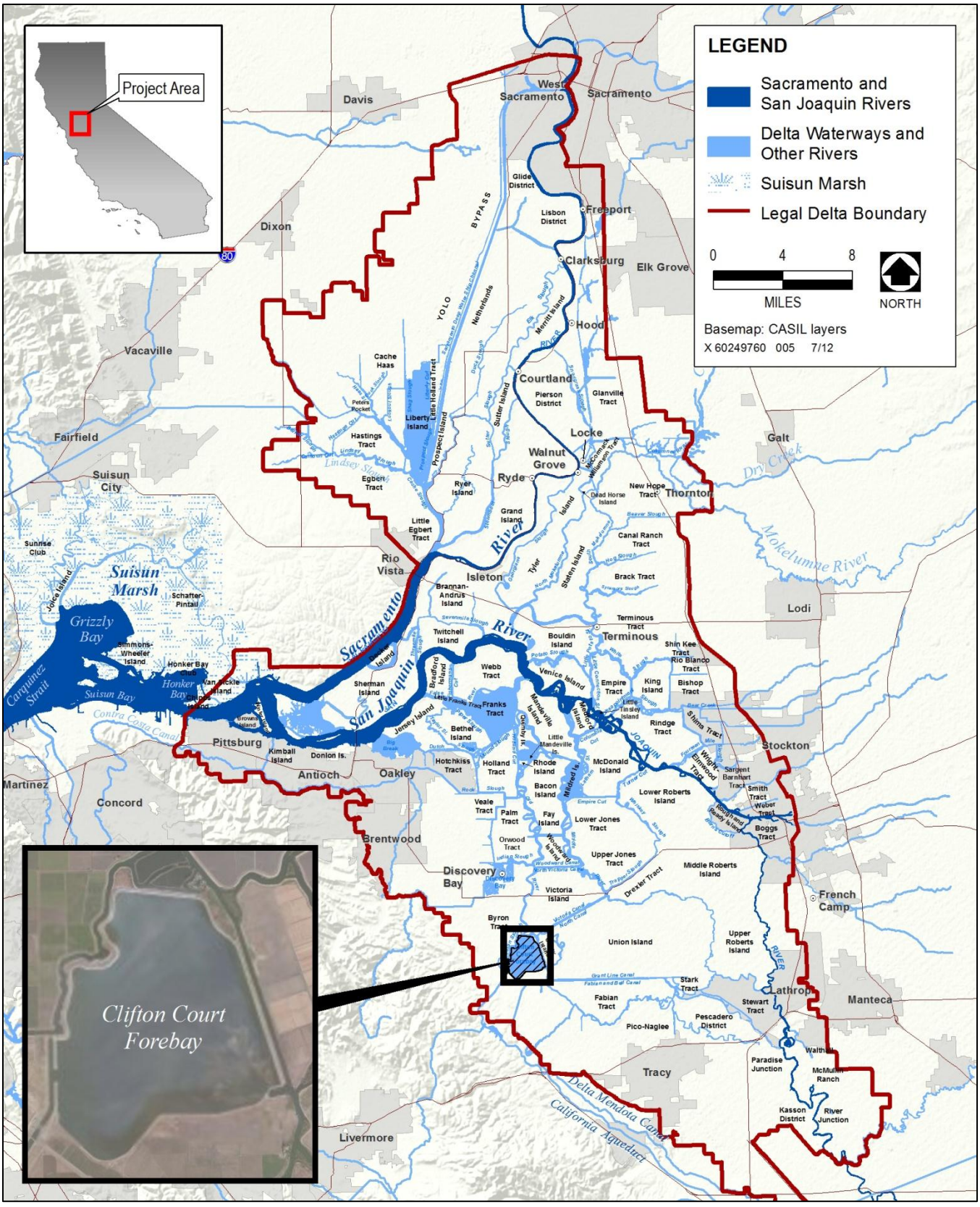
Exhibit 2-2 shows the location of existing facilities and features of the CCF. The CCF is surrounded by a 15-foot-high earthen dam which is bounded by a thin strip of land on the north, east, and west sides, and by agricultural lands on the south. The strip of land bordering the north, east, and west sides is surrounded by waterways and protected by a levee, hereafter referred to as the "outer levee." Old River is located to the north, Old River/West Canal to the east, Italian Slough to the northwest, and the intake canal that leads to the SWP Harvey O. Banks Pumping Plant (Banks Pumping Plant) is to the southwest.

The dam surrounding the CCF has a 3:1 waterside design slope, a 3:1 landside design slope, and a paved crown approximately 20 feet wide. The waterside slope of the dam is treated with sprayed concrete or mortar, or riprap. Several concrete block mattresses and concrete ramps on the waterside provide access to the CCF for DWR management and maintenance purposes. However, the CCF is not open for public boat access, although non-motorized boats are allowed during duck hunting season. This varies year to year, generally occurring just a couple of days per week between October and February. The design waterside and landside slope of the outer levee along Old River/West Canal is 3:1. An unpaved gravel road approximately 20 feet wide comprises the crown of the outer levee. A small boat dock exists along the outer levee near the southern end of West Canal.

At the southeast corner of the CCF, a radial gate structure consisting of five radial gates, each 20 feet wide, controls the flow of water into the CCF. A concrete apron enclosed by wing walls is located on the CCF-side of the radial gate structure. The wing walls are approximately 100 feet long. A one lane bridge over the gates can accommodate light vehicle traffic.

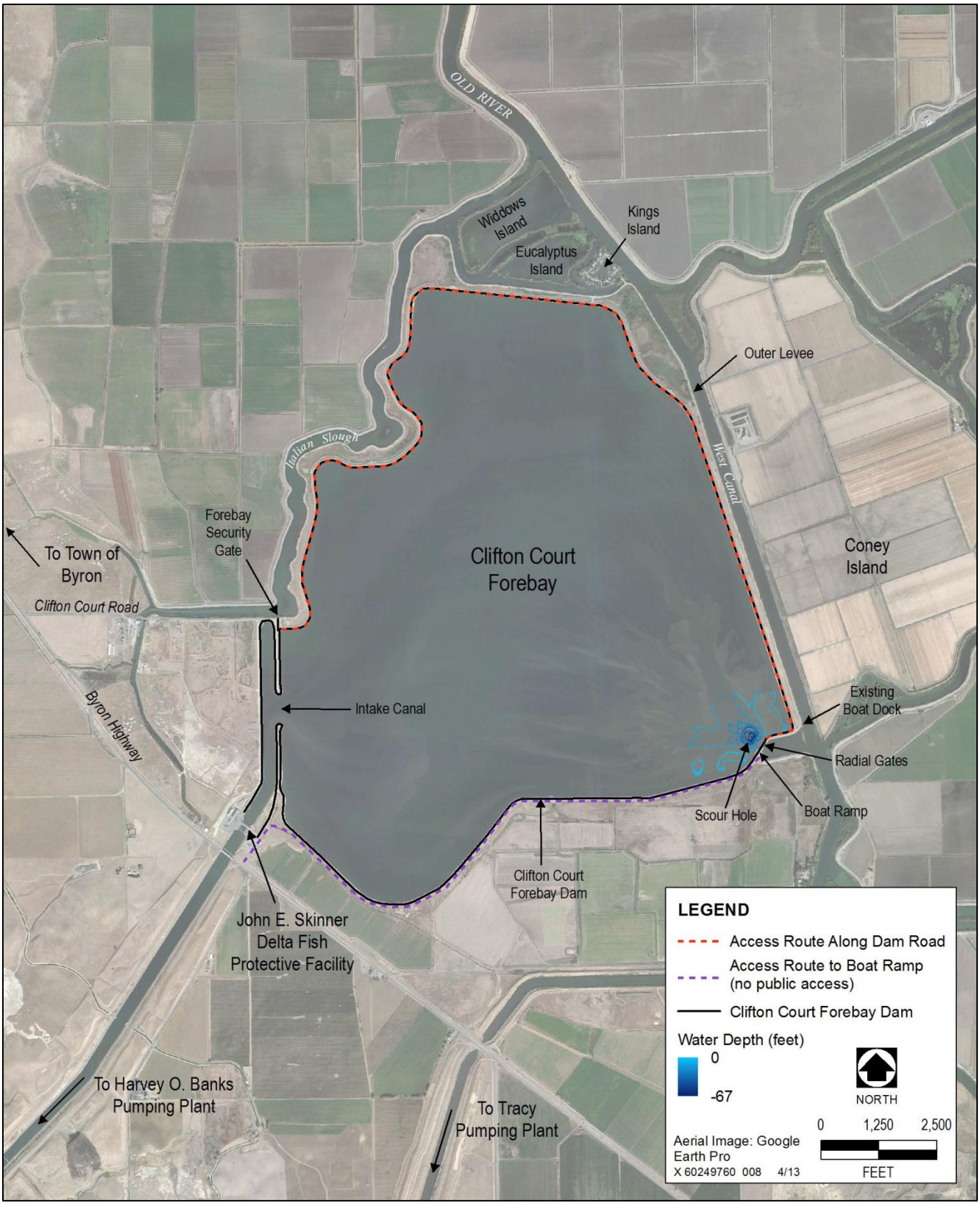
The CCF operates as a regulating reservoir to improve operations of the Banks Pumping Plant and water diversions to the SWP California Aqueduct. During high tide cycles when the elevation of water in Old River is greater than that in the CCF, the radial gates may be opened to allow water to be diverted from Old River/West Canal into the CCF. Daily operation of the gates depends on scheduled water exports, tides, and storage availability within the CCF (Le 2004).

The CCF is generally shallow with depths ranging from 4-10 feet in most places except a location in front of the radial gates where a scour hole has formed with a diameter of approximately 200 feet, depths approaching 70 feet, and steep side slopes (Exhibit 2-2). The radial gate structure is operated on a daily basis and the maximum operating range of water levels in the CCF may be as high as 8 feet (from +0.36ft to +8.36ft NAVD88). The gate is designed to allow a maximum water velocity of 3 feet per second entering the CCF. This entrance velocity creates an eddy current within the concrete apron in front of the radial gate structure, but drops off rapidly beyond the scour hole. The water circulation pattern within the CCF is usually in a counterclockwise direction with a velocity of about 0.5 foot per second.



Source: Data provided by DWR and adapted by AECOM in 2012

Exhibit 2-1 **Location of Clifton Court Forebay in the Sacramento–San Joaquin Delta**



Source: Data provided by DWR and adapted by AECOM in 2012

Exhibit 2-2 **Aerial View of the Clifton Court Forebay**

The CCF is a popular fishing spot for anglers. Angler use is mostly concentrated at and around the radial gate structure and on the north bank of the intake canal on the west side of the CCF. Unrestricted public access to the north bank of the intake canal is provided via Clifton Court Road. However, only foot and bicycle traffic are allowed along the paved road atop the dam and the gravel road atop the outer levee leading to the radial gate structure. Public vehicle access to the radial gate structure and other parts of the CCF is restricted by a gate at the end of Clifton Court Road near the west side of the CCF. Pedestrians and bicyclists generally access the radial gate structure by entering through a narrow access-way at the Clifton Court Road gate and travelling approximately 4.75 miles along the paved road on top of the dam. The public may also travel by boat to the existing boat dock on Old River/West Canal, which is located east of the radial gate structure along the West Canal levee. From this point, the public must walk approximately 0.17 mile to the radial gate structure. Currently anglers are known to fish from the CCF shoreline and the wing walls located on both sides of the radial gate structure. Fishing from the wing walls is not safe..

2.2 NEED FOR THE PROPOSED PROJECT

Diversion of SWP water from Old River into the CCF entrains numerous species of fish, including Central Valley steelhead (*Oncorhynchus mykiss*), winter and spring-run Chinook salmon (O. tshawytscha), delta smelt (*Hypomesus transpacificus*), longfin smelt (*Spirinchus thaleichthys*), and green sturgeon (*Acipenser medirostris*; Southern Distinct Population Segment [DPS]), which have all been listed under the California Endangered Species Act and/or the ESA. Operation of the SWP is performed in compliance with the terms and conditions of the NMFS 2009 BO, U.S. Fish and Wildlife Service (USFWS) 2008 BO on the Long-Term Operational Criteria and Plan (USFWS 2008), and the California Department of Fish and Wildlife (CDFW) 2009 longfin smelt incidental take permit.

Approximately 2.1 miles across the CCF is the entrance to the intake canal leading to the Banks Pumping Plant and entrance to the California Aqueduct. Before reaching the pumps, the intake canal delivers water past a fish screen and fish salvage facility (John E. Skinner Delta Fish Protective Facility [SFPF]). The SFPF was designed to prevent fish from entrainment into the California Aqueduct, by diverting them into holding tanks where they can be salvaged and returned to the Delta. Fish that enter the CCF may move across the CCF to the intake canal and then be screened to be salvaged at the SFPF.

Loss of fish as they move across the CCF (classified as prescreen loss), results from predation by fish and birds. Studies conducted by DWR and CDFW have shown that losses result primarily from predation by striped bass (*Morone saxatilis*). These studies indicated that the prescreen losses of juvenile Chinook salmon ranged from 63% to 99% and the losses of juvenile steelhead were about 82% (Clark et al. 2009). Other studies by the Interagency Ecological Program have also found that predation by adult and sub-adult striped bass may account for much of the prescreen loss (Gingras 1997).

Studies conducted by Kano between March 1983 and February 1984, found that white catfish and striped bass were the two most abundant predators with population estimates for striped bass ranging from 35,000 to 118,000 within the CCF (Kano 1990). In 2007, a DWR study determined that only about 20% of steelhead that initially enter the CCF successfully cross to the intake canal, with the remaining 80% lost, primarily to predation. Striped bass were found to be one of the significant fish predators (Clark et al. 2009).

The NMFS 2009 BO requires that DWR implement the reasonable and prudent alternative action (IV 4.2(2)) to reduce prescreen losses of ESA-designated salmon, steelhead, and sturgeon within the CCF. The CCF FFP is being proposed as one measure to reduce predation and increase the survival of ESA-listed salmon, steelhead, and sturgeon within the CCF.

As mentioned in Section 2.1, access to fishing in the CCF is restricted currently to the shoreline. However, some anglers also fish illegally from atop the wing walls adjacent to the radial gate structure. The FFP is also being proposed to improve security of the radial gates and provide better angling access in the CCF to recreational users.

2.3 PROJECT OBJECTIVES

DWR is proposing to implement the FFP to achieve the following objectives:

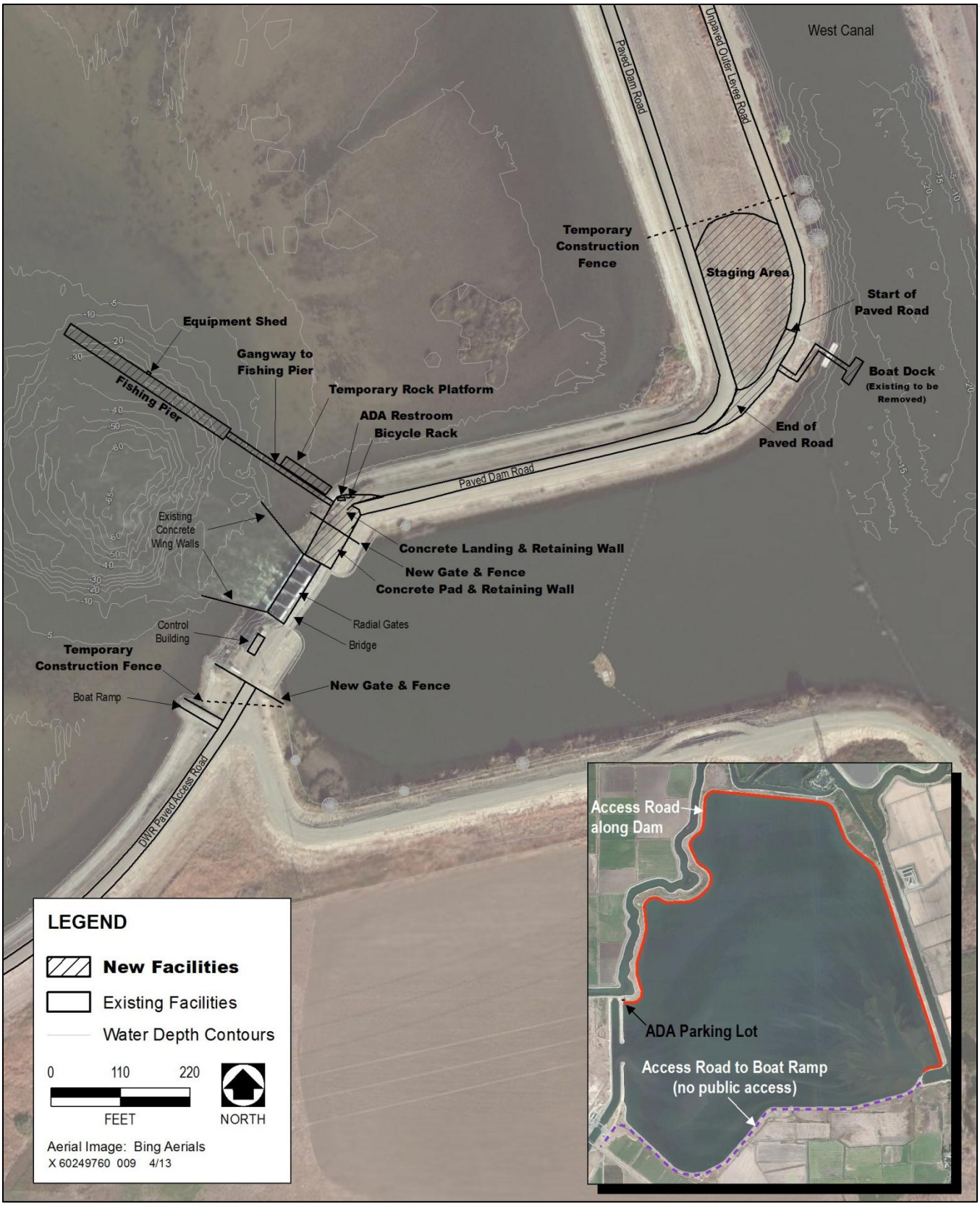
- Improve the survival of at-risk Delta fish species designated under the federal ESA within CCF; and
- Provide anglers safer fishing access to the scour hole to reduce the number of predators in CCF and improve security around the radial gates.

2.4 DESCRIPTION OF THE PROPOSED PROJECT

The proposed fishing facility consists of installing a floating fishing pier extending approximately 500 feet into the CCF. Other appurtenant features are shown in Exhibit 2-3 and include:

- **Staging Area** – Install a staging area up to 1.0-acre in size in an approximate 1.5-acre area located northeast of the radial gates between the dam and outer CCF levee on West Canal. During construction of the FFP, the area will be used as a staging area to store equipment and materials for the project. Upon completion of project construction, this area would remain and serve as a maintenance and gathering area for DWR personnel and vehicles while performing maintenance on, or other activities in the vicinity of, the radial gate structure.
- **Fishing Pier and Concrete Landing** – Install a modular prefabricated floating fishing pier approximately 500 feet long by 20 feet wide on the northeast side of the radial gates that would extend into the CCF in a northwest direction toward the scour hole. The pier could consist of modules designed to float on the water surface; although, a gangway approximately 5-feet wide and partially supported at the low elevation to maintain maximum ADA-compliant slope requirements could comprise up to 200 feet of the pier from the CCF dam out to the floating portion of the pier.

  Individual floating modules, 30–40 feet long and 10–20 feet wide, would be anchored in place by steel pipe piles. Up to 44 piles, 22 on each side, spaced as much as 40 feet apart would be required. Piles would be driven with an embedment of approximately 30 to 70 feet into the underlying CCF sediments, depending on the depth of competent soil layers, and would be designed to extend up to elevation +20 feet (NAVD88), or about 12 feet above the CCF design water surface elevation of +8.36ft (NAVD88). This would allow the pier to float up and down with tidally-induced and/or operations-related fluctuations in CCF water surface levels. Final design of the piles would be based on geotechnical parameters obtained from drilling and sampling logs to be performed inside CCF along the recommended alignment.



Source: Data provided by DWR and adapted by AECOM in 2013

Exhibit 2-3 **Proposed Project Elements**

- **Concrete Pad and Retaining Wall** – Construct a 60-foot-long by 40-foot-wide concrete pad extending out from the dam to enable future use of maintenance equipment in the vicinity of the gates. The concrete pad would be used to support a 100-ton crane that would be used to lift the gates for maintenance purposes. Up to a 200-foot-long retaining wall approximately 10 feet tall by 10 feet wide at the base would be required on the water side of the dam to support the concrete pad. The retaining wall foundation would be above the design high water mark of +8.36ft (NAVD88) for CCF. The final design of the concrete pad would be based on boring logs and geotechnical soil parameters after conducting a subsurface geotechnical exploration. Any excavation would be higher than the design water surface elevation of the dam and any excavation which alters the dam, levee, or channel bank cross-section, either temporarily or permanently, would be checked to verify slope stability. Placement of stockpiles, heavy equipment, or other surcharges would be considered in the final design to avoid channel bank instabilities. The additional weight of the concrete pad plus the 100-ton crane and the radial gates would also be factored into the analysis of the stability of the existing concrete wall.

- **Equipment Shed, ADA-Compliant Restroom, and Bicycle Rack** – Erect a prefabricated equipment shed approximately 6 feet long by 6 feet wide on the fishing pier for use by DWR. An ADA-compliant accessible public restroom would be installed on the extended dam crown, near the concrete pad and adjacent to the pier. A temporary portable restroom facility service would be used or a prefabricated restroom would be installed and maintained by DWR. The restroom would include a lined waste pit that would be periodically emptied. A 20-foot-long bicycle rack for public use would also be installed next to the restroom facilities and anchored in place.

- **Security Fencing, Gates, and Cameras** – Erect new fencing and gates to prevent unauthorized access to the existing radial gates and control structure. The new gates would be either manual or electric. DWR may also install a video surveillance system within the radial gate facility for added security. A gate will also be installed at the entrance of the fishing pier to prevent unauthorized access during off hours and maintenance of the pier.

- **ADA-Compliant Boat Dock and Road Section** – replace the existing floating dock outside the CCF northeast of the radial gates on West Canal with a new ADA-compliant boat dock that would extend from the levee crown out approximately 100 feet into West Canal. This boat dock would serve as a drop-off point for the public to gain access to the proposed fishing pier inside the CCF. It would be prefabricated and designed to float on the water surface. Near the levee, the gangway would be supported to maintain ADA-compliant slope requirements. The boat dock would be anchored in place by approximately 30 steel pipe piles. Final design of the piles would be based on geotechnical parameters obtained from drilling and sampling logs to be performed in West Canal along the recommended alignment.

  To provide ADA-compliant access from the new West Canal boat dock to the new fishing pier, the 20-foot-wide by 400-foot-long section of existing gravel outer levee road from the boat dock to the fishing pier would be graded, compacted, and paved.

- **ADA-Compliant Parking Lot** – Add two ADA-compliant parking spaces (approximately 500 square feet) adjacent to the Clifton Court Road gate on the northwest side of the CCF and upgrade the entrance gate to be ADA compliant.

- **Lighting and Signage** – Install lighting for the new fishing pier and associated facilities and repair or replace any existing lighting as needed. ADA-compliant signage, along with information and warning signs would also be installed at certain locations in the vicinity of the fishing facility and the ADA-compliant parking lot. Anchoring for the signage would be based on California Building Code design requirements.

2.5 CONSTRUCTION ACTIVITIES AND SCHEDULE

Construction of the FFP would take place during select periods intended to minimize potential environmental conflicts in 2014 or 2015. In-water work, including installation of the new fishing pier, as well as removal of the existing boat dock on West Canal and installation of a new ADA-compliant boat dock in this area, would occur between August 1 and October 31. Construction would occur during daylight hours. Prior to construction, approximately 900 feet of temporary construction fencing would be installed to enclose the construction area and radial gates. Upon completion of project construction, this fencing would be dismantled and removed. Below is a summary of construction activities. The type of construction equipment and the anticipated duration of use for each piece of equipment during project construction are summarized in Appendix A.

- **Staging Area** – This area would be cleared and grubbed, and then filled with material exported from the Skinner Fish Science Building project site prior to the start of the FFP. The clearing, grubbing, and initial filling activity has been evaluated in a CEQA addendum prepared for the Skinner Fish Science Building project (State Clearinghouse no. 2011122048) (DWR 2012a). Some additional fill may be imported to obtain the desired grade for up to 1.0 acre of the filled as part of the proposed project. The fill would then be graded, compacted, and graveled to create the staging area. A water truck, grader, loader, and sheep foot compactor would be used to place the fill in accordance with Division of Safety of Dams (DSOD) requirements.

- **Fishing Pier and Boat Dock** – The pier would be prefabricated and delivered to the site by truck. It would be designed to float on the water surface; although, near the dam, the pier would be partially supported at the low elevation to avoid exceeding maximum ADA-compliant slope requirements. Pipe piles driven into the CCF sediments would be used to anchor the pier in place. A work boat, modular barge, and crane would be used for pile driving and also to lift the modular pier sections into place.

  The work boat would be launched from an existing boat ramp inside the CCF to assist with pier construction. Several boat ramps exist within the CCF. Some minor improvements such as widening, lengthening, or other repairs may be required to launch a boat or walk a crane to a modular barge from one of these boat ramps. Articulating concrete block mats were used to make the existing boat ramps. The same material would be used to replace any damaged or potholed portions. If widening or lengthening is necessary, rock and gravel would be dumped, compacted, and graded to match the existing ramp, and then topped with articulating concrete block mats. A crane would be needed to offload the articulating concrete block mats from a truck and set the materials in place.

  If the water surface elevation in the shallow region of the proposed pier alignment is not sufficient to allow use of a modular barge to support the crane, a temporary rock platform may be installed adjacent to the pier alignment to support the crane during construction of the pier. The temporary rock platform would be approximately 100 feet long with an average height of 5 feet, a crest width of approximately 30 feet, a base width of approximately 50 feet, and 2:1 side slopes. The platform would be constructed of primarily 24-inch (or smaller) rock that is clean (free from contamination), hard, dense, durable, and free from cracks, seams,

and other defects. Approximately 1,000 cubic yards (cy) of rock would be transported to the project site to construct the temporary platform.

The rock would be purchased from a commercial source within 50 miles of the project site, and would be hauled by dump truck to the project site. These trucks would access the project site by entering the CCF through the gate at Clifton Court Road off Byron Highway. The rock would be temporarily stockpiled in the staging area. A loader would move rocks from the stockpile to the platform location. The temporary rock platform would be shaped and constructed using a dragline or long reach excavator. The platform would be constructed starting near the toe of the CCF dam and working out into the water.

When pier construction is complete, the temporary rock platform would be removed. The dragline (or excavator) would remove rocks from the end of the platform and work its way back to the shoreline. Once removed, the rock would be hauled away by dump truck for stockpiling at DWR's existing Howard Yard rock stockpile located on Union Island near the corner of South Tracy Road and Howard Road.

The new boat dock on West Canal would be constructed using a barge mounted crane towed by boat to the site on West Canal, and/or by a crane located on the levee. The crane would be used for pile driving and also to lift the boat dock sections into place. The existing boat dock would be removed using the same construction equipment and disposed of at a nearby landfill.

Work in the CCF waters near the radial gates (i.e., within approximately 2,000 feet) would require gate closure. The gate closure would be coordinated through the DWR Joint Operations Center.

- **Retaining Walls, Concrete Pad, and Other Facilities** – Prior to any excavation to construct the retaining wall, the preexisting conduit line that lies approximately 18 inches below grade at the north side of the gate structure would be relocated or protected in-place. Approximately 120 cy of concrete would be imported to construct the retaining wall and concrete pad. Approximately 1,000 cy of engineered backfill material would be transported to the project site by dump truck from a commercial source up to 50 miles away to fill the area behind the retaining wall. These trucks would access the project site by entering the CCF through the gate at Clifton Court Road off Byron Highway or possibly by entering from Byron Highway near the fish salvaging facilities and traveling along the dam on the south side of the CCF.

  If a semi-permanent restroom is chosen over a temporary portable restroom facility service, the prefabricated toilet, equipment shed, gates, and bicycle rack would be delivered to the site using a haul truck and off-loaded using a forklift or crane. The prefabricated toilet and bicycle rack would be anchored in place to a concrete slab. To install the restroom and retaining wall, an excavator, loader, and dump trucks would be used for excavation and placement of the backfill. A motor grader, sheep foot roller, vibratory roller, and water trucks would also be used during backfill placement to achieve the proper compaction and moisture content. Concrete pump trucks would be used during placement of the concrete retaining wall and the 40 feet by 60 feet concrete pad.

  If an electric gate is selected, trenching along the top of the levee would be required to tap into the existing power source at the control structure.

- **Access Road Repair** – Upon completion of the project, the existing roadway on top of the dam would be graded, compacted, and paved or graveled as needed to repair damaged sections and restore the site to preproject conditions. An asphalt paver and tandem steel wheel roller would be used for placement and repair of the asphalt. A grader, roller, and water truck would be used to repair the gravel road.

2.6 ENVIRONMENTAL PROTECTION MEASURES AND BEST MANAGEMENT PRACTICES

To reduce potential environmental impacts, the proposed project includes the following environmental protection measures and best management practices (BMPs) that will be adopted and implemented by DWR as part of the design and construction process. In addition to these environmental protection measures and BMPs, DWR will adopt and implement the mitigation measures identified in Chapter 3, "Environmental Checklist," and incorporate them into the project design.

2.6.1 FISH PROTECTION MEASURES

To avoid, minimize, and mitigate potential impacts on sensitive fish species during in-water construction activities at the project site, DWR will implement the following measures:

- In-water work will be conducted during the period of August 1 through October 31.
- A biological monitor will be on call to assist the construction crew with environmental monitoring and protection issues as necessary.

2.6.2 SWAINSON'S HAWK AND OTHER RAPTOR PROTECTION MEASURES

To avoid, minimize, and mitigate potential impacts on Swainson's hawk and other raptors (not including burrowing owl) at the project site, DWR proposes to implement the following measures:

- A qualified biologist will conduct preconstruction surveys and identify active nests within ¼ mile of the project site. The surveys will be conducted prior to the initiation of construction activities during the recommended survey periods outlined in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley (Swainson's Hawk Technical Advisory Committee 2000), concentrating on modified period 3 surveys, as described by Mike Bradbury (pers. comm., 2012). If no nests are found, no further mitigation is required. Active nests for other raptors, other than burrowing owls, shall be targeted during the surveys for Swainson's hawk, but only within 250 feet of the project site. Any construction activity that occurs outside the nesting season for Swainson's hawk or other raptors (August 16 to March 14) shall not require surveys.
- If nesting Swainson's hawks or other raptors are located, impacts shall be minimized by establishing an appropriate non-disturbance buffer zone around active nests in coordination with CDFW guidelines. Buffer zones shall be determined in consultation with CDFW and will depend on the species involved, site conditions, and type of work proposed. No new project activity shall commence within the buffer zones until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or that reducing the buffer would not result in nest abandonment. Monitoring of the nest by a

qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. Should an appropriate buffer not be feasible, coordination with CDFW will be pursued to guide further action.

2.6.3 BURROWING OWL PROTECTION MEASURES

To avoid, minimize, and mitigate potential impacts on burrowing owl along the levee roads used for project site ingress and egress or adjacent to the project site, DWR proposes to implement the following measures, based on recent guidance by the CDFW (CDFW 2012):

- A qualified biologist will conduct preconstruction surveys within 30 days prior to the start of construction activities to ensure that burrowing owls will not be affected by project activities.
- If an active burrow is found during the breeding season (February 1 through August 31), clear, visible markers will be placed on the roadways to clearly demarcate the burrow location so vehicles traveling either direction on the road and workers at the project site will avoid disturbing the area.
- An awareness program to increase the on-site worker's recognition of and commitment to burrowing owl protection will be developed and implemented by a qualified biologist prior to commencing any construction-related activities on the project site. This training shall instruct workers on how to identify burrowing owls and their habitat and how to best avoid disturbing burrows and/or nests.
- Where feasible, buffer zones, visual screens or other site-specific measures will be implemented to minimize disturbance impacts while construction activities are occurring.
- Monitoring of active burrows will be conducted by a qualified biologist throughout the construction phase to determine the effectiveness of buffers, visual screens, or other measures, and to determine if the vehicle traffic is jeopardizing an active nest.
- DWR shall consult with CDFW and other burrowing owl experts for assistance in developing site-specific solutions, as needed, and to determine if the owls are sensitized to human disturbance and the survey effort can be reduced.

2.6.4 MIGRATORY BIRD PROTECTION MEASURES

There is a potential for migratory birds and raptors (e.g., hawks, owls) to nest on or adjacent to the project site. For instance, killdeer could nest on open disturbed areas, often with gravel or similar surface cover, passerines could nest in small shrubs or trees and freshwater marsh habitat, and wading and water birds could nest in similar habitat or on or near the edge of waterways. To avoid, minimize, and mitigate potential impacts to migratory birds, DWR proposes to implement the following measures:

- A qualified biologist will conduct preconstruction surveys and identify active migratory bird nests within 250 feet of the proposed project site. Preconstruction surveys shall be conducted during the nesting season (March 15 to August 15) no less than 14 days and no more than 30 days before any construction activity begins. If no nests are found, no further mitigation is required. Any construction activity that occurs between August 16 and March 14, outside the nesting season, shall not require preconstruction surveys.

- If nests are located, impacts shall be minimized by establishing an appropriate non-disturbance buffer zone around active nests in coordination with CDFW guidelines. Buffer zones shall be determined in consultation with CDFW and will depend on the species involved, site conditions, and 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.

2.6.5 San Joaquin Kit Fox Protection Measures

While there is evidence of ground squirrel burrowing in the staging area, none of the burrows are suitable for San Joaquin kit fox (SJKF) (greater than 4 inches in diameter for at least 1 foot depth). The nearest SJKF occurrence is approximately 2 miles from the site. Although SJKF are unlikely to utilize the staging area, DWR proposes to implement the following measures to avoid, minimize, and mitigate potential impacts on SJKF in the staging area and along the levee roads used for project site ingress and egress:

- All site access and staging shall limit disturbance to the CCF dam and outer levee as much as possible and avoid sensitive habitats. Existing ingress and egress points shall be used.

- Project activities will not take place at night when kit foxes are most active. Off-road traffic outside of designated project areas should be prohibited.

- A biological monitor will be on-site to assist the construction crew with environmental issues as necessary. If kit foxes are encountered by a biological monitor during construction, activities shall cease until appropriate corrective measures have been completed or it has been determined that the species will not be harmed.

- To prevent inadvertent entrapment of kit foxes or other animals during construction of the project, all excavated, steep-walled holes or trenches more than 2 feet (0.6 meter) deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals.

- All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods shall be capped prior to placement or thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

- No firearms shall be allowed on the project site.

- Noise shall be minimized to the extent feasible at the work site to avoid disturbing kit foxes.

- No pets shall be permitted on the project site.

- Use of rodenticides and herbicides for this project shall be restricted. All uses of such compounds shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency (EPA), California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide shall be used because of a proven lower risk to kit fox.

- DWR shall notify USFWS immediately if any SJKF are found onsite, and shall submit a report to include date(s), location(s), habitat description, and any collective measures taken to protect the species. If an SJKF is inadvertently injured or killed, DWR shall notify USFWS immediately. All land-based construction activities must cease if SJKF are encountered and all land-based construction must remain stopped until it moves out of the work area unassisted. The biological monitor will be required to report any take to USFWS immediately by telephone and, within 1 day of the incident, by electronic mail or written letter. Capture and relocation of trapped or injured listed species can only be attempted by USFWS-permitted personnel.

2.6.6 WATER QUALITY PROTECTION MEASURES

The State Water Resources Control Board (SWRCB) and Central Valley Regional Water Quality Control Board (RWQCB) have adopted specific National Pollutant Discharge Elimination System (NPDES) permits for a variety of activities that have potential to discharge wastes to waters of the state. Construction activities subject to General Permit for Storm Water Discharges Associated with Construction include clearing, grading, and disturbances to the ground such as stockpiling, or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility (SWRCB 2013).

To avoid, minimize, and mitigate potential impacts on water quality during construction, DWR proposes to implement the following measures:

- DWR shall require the construction contractor to prepare and implement a storm water pollution prevention plan (SWPPP) that is consistent with the NPDES permit required by the Central Valley RWQCB. The SWPPP will identify the activities that may cause pollutant discharge (including sediment) during storms and the BMPs that will be employed to control pollutant discharge. Construction techniques will be identified and implemented to reduce the potential for runoff, including minimizing site disturbance, controlling water flow over the construction site, stabilizing bare soil, and ensuring proper site cleanup. In addition, the SWPPP will include an erosion control plan and BMPs that specify the erosion and sedimentation control measures to be implemented such as silt fences, trench plugs, terraces, water bars, and seeding and mulching. The SWPPP will also include a spill prevention, control, and countermeasure plan and applicable hazardous materials business plans, and will identify the types of materials used for equipment operation (including fuel and hydraulic fluids), and measures to prevent, and materials available to clean up, hazardous material and waste spills. The SWPPP will also identify emergency procedures for responding to spills.

  BMP designations will be based on those used by the California Stormwater Quality Association's Construction BMP Handbook (CASQA 2009). BMPs that may be implemented are as follows:

  - Proper scheduling will minimize disturbed areas, allowing for a reduction in the active project area requiring protection and also minimizing the length of time disturbed soils are exposed to erosive processes.

- Existing vegetation will be preserved to the maximum extent practicable to protect surfaces from erosion and also to provide sediment control benefits.

- The use of various mulches (i.e., hydraulic, straw, wood) is a temporary soil stabilization method that will be used on surfaces with little or no slope.

- Geotextiles, plastic covers, and erosion control blankets/mats will be used on flat or, usually, sloped surfaces, channels, and stockpiles if needed.

- A graveled area or pad will be built where vehicles enter and leave the project site to stabilize construction entrances and exits. This BMP provides a buffer area where vehicles can drop their mud and sediment to avoid transporting it onto public roads, to control erosion from surface runoff, and to control dust.

- A temporary sediment barrier (silt fence, gravel-filled or sand- and gravel-filled fabric bags), designed to retain sediment from small disturbed areas by reducing the velocity of sheet flow, will be used as needed to prevent sediment from entering water bodies.

- All construction workers will be trained to be aware of permit requirements and proper installation methods for BMPs specified in the SWPPP.

Furthermore, as per the California Stormwater Quality Association's Construction BMP Handbook, the following measures will be implemented:

- A copy of the approved SWPPP will be kept on the construction site.

- Clearing and grading will be limited to the minimum necessary to complete the proposed project and will be confined to the established project right-of-way. Boundaries of clearing will be clearly marked. Under the erosion control plan, the project site will be stabilized when construction is completed, and post construction BMPs and monitoring will be implemented to ensure that sediment from disturbed areas does not mobilize.

The spill prevention, control, and countermeasure plan will be developed and implemented to ensure that all pollutants are controlled and contained. This will be achieved through BMPs incorporated into the plan, which will include, but will not be limited to the following:

- To prevent exposure to storm water, covered storage for materials, especially toxic or hazardous materials, will be provided. Toxic or hazardous materials also will be stored on impervious surfaces to provide secondary containment for spills. Vehicles and equipment used for material delivery and storage will be parked in designated areas. In the event of unexpected rainfall, all toxic or hazardous materials will be contained and prevented from leaving the construction or staging areas.

- Spill prevention and control BMPs will be implemented to ensure that spills and releases of materials are cleaned up immediately and thoroughly. BMPs will ensure that appropriate spill response equipment, such as spill kits preloaded with absorbents in an overpack drum, will be provided at convenient locations throughout the site. Spent absorbent material will be managed and disposed of in accordance with

applicable regulations. In particular, absorbents used to clean up spills of hazardous materials or waste will be managed as hazardous waste unless characterized as nonhazardous.

- A sufficient number of conveniently located trash and scrap receptacles will be provided at the construction site to promote the proper disposal of solid wastes. Receptacles will be provided with lids or covers to prevent windblown litter. Material removed from the project site will be transported to a permitted landfill.

- A designated vehicle and equipment fueling area with proper containment and spill cleanup materials will be established within the staging area at least 25 feet from any drainages or water features if onsite fueling is required.

- Any on-site vehicle and equipment maintenance areas will be protected from stormwater runoff to or from the area.

- Toxic debris requiring disposal, including discarded chemical containers, will be disposed of in a landfill designed to satisfy the standards for protecting groundwater, as described in the design criteria and associated performance standards in 40 Code of Federal Regulations 258.

- Barges used by the contractor will include appropriate protections to prevent construction-related materials from spilling into waterways. Construction staff will immediately stop any activities that result in construction-related materials entering waterways and will implement appropriate corrective actions.

► DWR shall file a Notice of Intent and a SWPPP before allowing construction to begin. DWR or its designated agent will routinely inspect the active project area to verify that the BMPs specified in the SWPPP are properly implemented and maintained. Inspection reports will be included in project files. Construction staff will immediately stop any activities that result in noncompliance and will implement appropriate corrective actions.

2.6.7 Fire Protection Measures

To guard against fire dangers in the project area that could result from construction activities in the vicinity of flammable materials (e.g., vegetation), DWR shall ensure that the construction contractor develops a fire protection and prevention plan which incorporates fire protection measures (e.g., spark arrestors, mufflers) on all equipment with the potential to create a fire hazard. The plan shall ensure that fire suppression equipment is onsite and that all construction employees have received appropriate fire safety training.

2.6.8 Greenhouse Gas Emissions Best Management Practices

Preconstruction and final design BMPs are designed to ensure that individual projects are evaluated and their unique characteristics taken into consideration when determining if specific equipment, procedures, or material requirements are feasible and efficacious for reducing greenhouse gas (GHG) emissions from the project. The proposed project would implement the following preconstruction and final design BMPs:

► 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, if applicable, and specify, as appropriate, 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.

According to the Greenhouse Gas Emissions Reduction Plan, all DWR projects are expected to implement all construction BMPs unless a variance is granted and approved by the DWR CEQA Climate Change Committee. Therefore, the proposed project will incorporate the following BMPs into the project design:

- BMP 7. Minimize idling time by requiring that equipment be shut down after 5 minutes when not in use (as required by the State airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). 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 tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every 2 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/or 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 SmartWay27 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% 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.

2.7 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

As the lead agency, DWR has the principal responsibility for approving and carrying out the proposed project and for ensuring the requirements of CEQA and all other applicable regulations are met. Other permitting agencies that may have permitting approval or review authority over portions of the project are listed below.

- **U.S. Army Corps of Engineers (USACE)** – Authorization to modify navigable waters under Section 10 of the Rivers and Harbors Act of 1899 (RHA); Authorization for fill of Waters of the United States under Section 404 of the Clean Water Act (CWA).

- **U.S. Coast Guard (USCG)** – Notice to Mariners for activities that may occur in navigable waterways.

- **U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS)** – Consultation under Section 7 of the ESA.

- **California Department of Fish and Wildlife (CDFW)** – Streambed Alteration Agreement under Section 1602 of the California Fish and Game Code.

- **California Department of Water Resources, Division of Safety of Dams (DSOD)** – Dam alteration permit to modify the CCF embankment.

- **California State Lands Commission (CSLC)** – Notification of use of state lands held in the Public Trust.

- **Central Valley Flood Protection Board (CVFPB)** – Notification of levee construction and encroachment permit.

- **Central Valley Regional Water Quality Control Board (RWQCB)** – Water quality certification under Section 401 of the CWA; NPDES permit (for construction) under Section 402 of the CWA.

- **Bay Area Air Quality Management District (BAAQMD)** – Authority-to-construct permits; depending on the location of sources of construction materials, compliance with regulations of other air districts may also be required.

3 ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

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

3.1.1 ENVIRONMENTAL SETTING

The Delta is considered a major scenic resource of Contra Costa County. The CCF is identified as a scenic waterway of the Delta in the Open Space Element of the Contra Costa County General Plan and shown on the Scenic Ridges and Waterways figure (Contra Costa County 2005a). The following policies and implementation measure in the Open Space Element apply to the proposed project:

- Policy 9-16: Providing public facilities for outdoor recreation should remain an important land use objective in the County, as a method of promoting high scenic quality, for air quality maintenance, and to enhance outdoor recreation opportunities of all residents.
- Policy 9-28: Maintenance of the scenic waterways of the County shall be ensured through public protection of the marshes and riparian vegetation along the shorelines and delta levees, as otherwise specified in this Plan.
- Measure 9-e: Develop and enforce guidelines for development along scenic waterways to maintain the visual quality of these areas.

The existing visual character of the CCF is similar to other water bodies in the Delta region with levees, canals, water diversion/conveyance, and recreational infrastructure. The CCF is a 2,200 acre inundated tract that is tidally influenced. The CCF is surrounded by a 15-foot high dam and an outer levee and contains several concrete block mattresses and concrete ramps on the waterside of the dam. A radial gate structure is adjacent to the proposed fishing pier location. A concrete apron enclosed by wing walls is located on the CCF-side of the radial gate structure. A one lane bridge over the gates can accommodate light vehicle traffic.

Anglers utilize the CCF similar to many waterways in the Delta, fishing from the shore or illegally wading in the CCF. Public access is available to boaters via a boat dock on the West Canal/Old River, located east of the radial

gate structure along the outer levee. Pedestrians or bicyclist also access the CCF at the Clifton Court Road gate. The landscape consists of a mixture of trees and ruderal vegetation along the banks of levees, shorelines, and open areas.

3.1.2 DISCUSSION

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

Less-than-significant impact. The project site is not located in an area that is considered a scenic vista in the Contra Costa County General Plan. However, the CCF is considered a scenic waterway as noted in the Open Space Element. During temporary construction activities, views of the CCF would not be eliminated or blocked and water would not be drained during in-water work. After construction activities are completed, the construction equipment would be removed. As such, impacts to the scenic waterway during construction would be temporary in nature and would not be considered significant. The presence of the proposed pier and associated structures would not alter the overall view of the CCF or affect a scenic vista. Therefore, this impact would be less than significant.

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

No impact. The closest roadway to the project site is Byron Highway, which is located to the west and south of the project site. Byron Highway is not an officially designated State Scenic Highway (Caltrans 2007). Additionally, no trees or outcroppings would be removed during construction of the proposed project. Following construction of the proposed project, the CCF would continue to operate in the same manner as before implementation of the project and would not damage trees, outcroppings, or historic buildings. Accordingly, no impacts would occur to scenic resources as a result of the proposed project.

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

Less-than-significant impact. The proposed project would develop a fishing pier, concrete pad, new boat dock, bicycle rack, and restroom. During construction, the presence of construction equipment would degrade the visual character of the site. However, these impacts would be temporary in nature and would not be considered significant. Operationally, the fishing pier and other new amenities would create new visual components for the CCF. These features would be consistent with other Delta waterway fishing facilities and Policy 9-16 in the Contra Costa County General Plan, and their presence would not substantially degrade the visual quality or character of the site. This impact would be less than significant.

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

No impact. The proposed project would include new electrical systems and site lighting. However, the lighting would generally replace existing lighting sources and would not illuminate areas beyond the CCF. In addition, the site is surrounded by levees, canals, and mostly open space and no residences or other uses would be affected by the lighting. Accordingly, no impacts would result from an increase in light or glare from the proposed project.

3.2 AGRICULTURAL AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. Agricultural and Forest Resources.				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997, as updated) 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 and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (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 a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 ENVIRONMENTAL SETTING

The CCF is surrounded by a dam, levee, canals, and farmland. Land surrounding the project site is mapped as prime farmland by the California Department of Conservation and the CCF lies within an area designated as the Delta Primary Zone (California Department of Conservation 2010). The "Primary Zone" includes Delta land and

water areas of primary state concern and statewide significance as described in Section 12220 of the Water Code, but is not within either the urban limit or sphere of influence of any local government's General Plan.

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. The proposed project, with the exception of the boat dock, would be located entirely within DWR property associated with the CCF. No farmland exists on the project site and no conversion of farmland would occur as a result of the project. As such, no impacts resulting from the conversion of farmland would occur.

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

No impact. As discussed, the project site is located within DWR property and is surrounded by the CCF and associated land and infrastructure. No agricultural zoning or uses occur on or within the vicinity of the project site. The project site is zoned as Institutional (Public/Quasi-public) and designated as Parks and Recreation, Delta Recreation and Water in the Contra Costa County General Plan. In addition the current DWR use and Delta waterway would not allow for an existing or new Williamson Act contract. Accordingly, no impacts to land designated under the Williamson Act would occur.

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. The project site is zoned as Institutional (Public/Quasi-public) and designated as Parks and Recreation, Delta Recreation and Water in the Contra Costa County General Plan. No forest land exists on the project and the current DWR use and historic Delta waterway would preclude farming on the project site. As such, no forest land or timberland would be affected by the construction of the project. There would be no impact.

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

No impact. As noted in topic (c) above, the project site does not include any forest land. Therefore, there would be no impact.

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

No impact. The construction of the proposed project would not alter the existing land use of the project site and no impacts to farmland or forest land would occur. Therefore, there would be no impact.

3.3 AIR QUALITY

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

3.3.1 ENVIRONMENTAL SETTING

The proposed project is located in Contra Costa County, which is within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, the southern portion of Sonoma County, and the southwestern portion of Solano County.

The SFBAAB is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and bays that distort normal wind flow patterns. The Coast Range mountains trending northwest along the western side of the SFBAAB have two major open areas at the Golden Gate and the Carquinez Strait that allow air to flow in and out of the SFBAAB and the Central Valley. During the summertime, temperature inversions can cause pollutant concentrations to build to unhealthy levels because of the lack of dispersion. During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. In the winter, the Pacific high pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential. The Pacific high pressure cell periodically becomes dominant, bringing strong inversions, light winds, and high pollution potential (BAAQMD 2012).

National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone, sulfur dioxide, nitrogen

dioxide, particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and lead. These standards have been established with a margin of safety to protect the public's health. Both EPA and the California Air Resources Board (ARB) designate areas of the state as attainment, nonattainment, maintenance, or unclassified for the various pollutant standards according to the federal Clean Air Act and the California Clean Air Act, respectively.

An "attainment" designation for an area signifies that pollutant concentrations did not violate the NAAQS or CAAQS for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as identified in the criteria. A "maintenance" designation indicates that the area was previously non-attainment and is currently attainment for the applicable pollutant; the area must demonstrate continued attainment for a specified number of years prior to redesignation as an "attainment" area. An "unclassified" designation signifies that data do not support either an attainment or nonattainment status.

The SFBAAB is designated as a nonattainment area for the State and federal 8-hour ozone standards, the state PM_{10} standard, and the state and national $PM_{2.5}$ standards. The SFBAAB is considered an attainment area or unclassified for the other criteria pollutants.

The BAAQMD is the agency responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies in the SFBAAB. In June 2010, BAAQMD adopted its updated CEQA Air Quality Guidelines, which included new thresholds of significance for construction-related and operational emissions of criteria air pollutants and precursors. On March 5, 2012 the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance contained in the Air Quality Guidelines. The Superior Court issued a writ of mandate that ordered the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD had complied with CEQA (BAAQMD 2012). In view of the Superior Court's order, the BAAQMD recommends that lead agencies continue to rely on the thresholds of significance in the BAAQMD's 1999 CEQA Guidelines. The BAAQMD issued new guidelines in May 2012 that include assistance in calculating air pollution emissions, obtaining information regarding the health impacts of air pollutants, and identifying potential mitigation measures, but does not include thresholds of significance.

3.3.2 DISCUSSION

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

Less-than-significant impact. Air quality plans describe air pollution control strategies to be implemented by an air district, city, county or region. The primary purpose of an air quality plan is to maintain and/or achieve attainment of a CAAQS or NAAQS.

BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB, including ozone attainment plans for the national ozone standard and clean-air plans for the California standard, in coordination with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments. On September 15, 2010, the BAAQMD Board of Directors adopted the final Bay Area 2010 Clean Air Plan, an update to the 2005 Bay Area Ozone Strategy. The 2010 plan describes current conditions; reviews the SFBAAB's progress in reducing ozone levels to attain the State 1-hour and 8-hour ozone standards; and describes how the SFBAAB's

proposed control strategy fulfills the California Clean Air Act's planning requirements for the State 1-hour ozone standard, and its mitigation requirements for transport of ozone and ozone precursors to neighboring air basins. The control strategies include stationary-source control measures to be implemented through BAAQMD regulations; mobile-source control measures to be implemented through incentive programs and other activities; and transportation control measures to be implemented through programs operated in cooperation with the MTC, local governments, and transit agencies.

Two criteria are applicable to determine if the proposed project would conflict with or obstruct implementation of the air quality plan. The first criteria is whether the project would exceed the estimated air basin emissions used as the basis of the air quality plans, which are based, in part, on population and vehicle miles traveled (VMT) projections developed by the MTC. While the air quality plan includes mobile sources, minor changes in the assumptions relative to these sources would not obstruct the successful implementation of the strategies for improvement of the SFBAAB's air quality. The proposed project would only result in minor changes to VMT as a result of additional recreational visitors to the project site.

The second criteria is whether the project would increase the frequency or severity of violation of existing air quality violations, contribute to new violations, or delay the timely attainment of air quality standards. As discussed in item (b) below, operational emissions associated with the proposed project would not exceed the BAAQMD thresholds of significance. Because the project would not significantly increase VMT and would not exceed the thresholds of significance, the project would not conflict with or obstruct the implementation of the applicable air quality plan. Therefore, the impact would be less than significant.

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

Construction Emissions

Less-than-significant impact with mitigation incorporated. Construction emissions are described as "short-term" or temporary in duration, but have the potential to represent a significant impact with respect to air quality. Construction-related emissions of ozone precursors, reactive organic gases (ROG) and nitrogen oxides (NO_X), are primarily associated with mobile vehicle and equipment exhaust. Fugitive dust emissions are primarily associated with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and VMT by construction vehicles on- and off-site.

Construction of the proposed project would result in the temporary generation of ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions from construction work described in the project description. Off-site vehicle trips related to construction would be associated with material delivery, equipment delivery, and worker commutes.

Construction-related emissions for the proposed project were estimated using emission factors from ARB's off-road and on-road emissions inventory models, OFFROAD 2007 (ARB 2012a) and EMFAC 2011 (ARB 2012b), respectively.

Construction emissions and emission concentrations can vary substantially from day to day, depending on the level of activity, the specific type of operation and the prevailing weather conditions. Modeling of emissions from the proposed project was based on project-specific data, when available. Equipment used for construction of the proposed project was provided by DWR. In addition to the use of off-road equipment, on-road heavy-duty

vehicles would be required to haul materials to the project site. Constructing the staging area would require approximately 700 haul trips for fill material. The retaining wall would require approximately 150 haul trips for the structural backfill behind the retaining wall. Installation and removal of the temporary rock platform, if used, would require a total of 90 haul trips. During in-water work, tugboats and barges would be operating up to 10 hours per day.

Table 3.3-1 presents the construction emissions associated with off-road equipment and on-road motor vehicles for the proposed project.

Table 3.3-1
Estimated Construction Emissions

Construction Activity	Estimated Emissions (lbs/day)				
	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$
Staging Area	9.51	80.85	45.58	3.78	3.36
Concrete Pad and Retaining Wall	10.67	85.30	49.89	4.19	3.77
Work in Water (Off-Road)	7.20	55.38	37.37	2.85	2.57
Work in Water (Boat and Barge)	17.60	153.63	72.88	5.29	4.87

Source: Compiled by AECOM in 2012 based on modeling

BAAQMD does not currently have established numeric thresholds for criteria air pollutants. According to the 1999 BAAQMD CEQA Guidelines, the determination of impact significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. If feasible control measures would be implemented, then air pollutant emissions from impacts from construction activities would be considered less than significant. If all of the appropriate measures would not be implemented, then construction impacts would be considered to be significant (unless the lead agency provides a detailed explanation as to why a specific measure is unnecessary or not feasible). Because BAAQMD-recommended control measures have not been included in the proposed project, construction-related emissions for the proposed project would be considered significant. In order to reduce construction-related emissions to a less-than-significant level, the proposed project shall implement the following mitigation measure:

Mitigation Measure AQ-1: Reduce Construction-Related Emissions from Off-Road Equipment and Heavy-Duty Vehicles

The following measures recommended by the BAAQMD shall be implemented to reduce construction-related emissions associated with off-road equipment and heavy-duty vehicles (BAAQMD 2012):

- *All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, as necessary to control fugitive dust.*
- *All haul trucks transporting soil, sand, or other loose material off-site shall be covered.*
- *All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.*

- *All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.*
- *All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.*
- *All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.*
- *A publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints shall be posted at the construction site. The person identified as the contact shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.*
- *The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.*
- *Idling time of diesel-powered construction equipment shall be no more than 5 minutes.*
- *The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a projectwide fleet-average 20% NO_X reduction and 45% PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.*
- *Low volatile organic compound (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings) shall be used.*
- *All construction equipment, diesel trucks, and generators shall be required to be equipped with Best Available Control Technology for emission reductions of NOx and PM.*
- *All contractors shall be required to use equipment that meets ARB's most recent certification standard for off-road heavy-duty diesel engines.*

Timing: *Before and during construction as appropriate*

Responsibility: *DWR*

According to the BAAQMD, implementation of these control measures is sufficient to reduce construction-related emissions to a less-than-significant level. Therefore, the proposed project's construction activities would not violate any air quality standard or contribute substantially to an existing or projected air quality violation, and this impact would be reduced to less than significant.

Operational Emissions

Less-than-significant impact. Maintenance-related traffic associated with DWR vehicles is not expected to change with implementation of the proposed project. While the new fishing pier may increase the popularity of the site, recreational use of the project site is not anticipated to change significantly. Therefore, the proposed project is not anticipated to generate new vehicle trips and would not generate any additional activities related to maintenance or operations that would exceed existing levels. This impact would be less than significant.

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

Less-than-significant impact. The analysis of cumulative effects focuses on whether a specific project would result in cumulatively considerable emissions. By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development within the SFBAAB, and this regional impact is cumulative rather than being attributable to any one source. A project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The thresholds of significance are relevant to whether a project's individual emissions would result in a considerable incremental contribution to the existing cumulative air quality conditions. If a project's emissions would be less than these threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

As discussed earlier, construction-generated and long-term operational emissions would result in a less than significant impact. Therefore, emissions associated with the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact. This impact would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less-than-significant impact. Land surrounding the project site is primarily agricultural. The nearest residential property is located approximately 2,500 feet south of the project site. Pollutants that could be generated by the proposed project, and that could result in adverse health effects on sensitive receptors include CO, respirable particulate matter (i.e., PM_{10} and $PM_{2.5}$), and toxic air contaminants (TACs).

Construction activities would result in temporary, short-term emissions of particulate exhaust from the off-road heavy-duty diesel equipment (diesel PM). Diesel PM was identified as a TAC by ARB in 1998. The risks estimated for an exposed receptor are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments should be based on a 70-year exposure period.

The possible sensitive receptor exposure period from the proposed project's construction activities is short (i.e., approximately 6 months) and would be less than 1% of the minimum exposure period for a health risk assessment. Haul trucks and off-road equipment would not operate in the immediate proximity of any sensitive receptor for an extended period of time. Thus, because the use of off-road, heavy-duty equipment would occur for a relatively small

period of time and would not be in the immediate proximity of sensitive receptors, construction-related TAC emissions would not be anticipated to expose sensitive receptors to substantial concentrations of TACs.

Construction of the proposed facilities would not generate any major operational sources of TACs or diesel PM. According to BAAQMD, if the receptor does not have any significant roadway sources with less than 10,000 vehicles per day within a 1,000-foot radius, then no further single-source roadway-related air quality evaluation is recommended. As mentioned earlier, the nearest sensitive receptor is approximately 2,500 feet from the project site and nearest roadway. Therefore, this impact would be less than significant.

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

Less-than-significant impact. 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, manifestations of a person's reaction 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 construction 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

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

3.4.1 ENVIRONMENTAL SETTING

INTRODUCTION AND METHODS

The Delta supports an assemblage of terrestrial and aquatic species including many that are protected under the Federal and State endangered species act. The CCF is located at the southern end of the Delta and regulates water flows/deliveries to the Banks Pumping Plant and subsequently the California Aqueduct (see Exhibit 2-2). Several listed terrestrial species occur in the vicinity of CCF. In addition, numerous listed fish species enter CCF and are lost due to predation by non-native predatory fish species while moving across CCF towards the SFPF. Numerous scientific studies (Kano 1990; Gingras 1997; and Clark et al. 2009) show predation rates of Central Valley steelhead and winter- and spring-run Chinook salmon within CCF range from 63% to 99%. By providing

fishing access to the scour hole and a new floating fishing pier in CCF, DWR proposes to decrease predation and increase the survival of salmon, steelhead, sturgeon, and other listed fish species.

An AECOM biologist conducted a reconnaissance level field survey of the project site on May 9, 2012, to identify habitat that may be suitable for special-status plant and wildlife species. The survey was conducted by traversing the entire site and searching for special-status plants and wildlife, and habitat with the potential to support special-status wildlife. Swift Ultra Light 8 x 42 binoculars were used during the survey to search for nesting bird activity and nests in the riparian trees along the West Canal and the freshwater marsh in the southeast corner of CCF, and for special-status plants within offshore freshwater marsh habitat. Plant communities and land cover features were mapped on aerial photography and photographed with a Sony Cyber-shot digital camera; this documentation later served as reference material for addressing impacts and mitigation in the environmental checklist questions. The following descriptions of listed plant, fish, and wildlife resources with potential to occur in the project footprint were developed after reviewing existing literature and research programs; consulting the California Natural Diversity Database (CNDDB 2012), the USFWS Endangered Species database (USFWS 2012), the California Native Plant Society's Inventory of Rare and Endangered Plants (CNPS 2012); contacting local experts; and conducting the reconnaissance-level site visit on May 9, 2012. The database searches included the following nine U.S. Geological Survey 7.5-minute quadrangles: Brentwood, Woodward Island, Holt, Byron Hot Springs, Clifton Court Forebay, Union Island, Altamont, Midway, and Tracy.

TERRESTRIAL PLANT COMMUNITIES

Terrestrial plant communities on the project site include annual grassland, riparian woodland, and freshwater marsh. The CCF dam and outer levee are disturbed and were constructed with engineered fill and aggregate base. The watersides of these features are characterized by shotcrete and limited riprap.

Annual grassland occurs between the dam and outer levee and is composed of non-native grass and broadleaf weed species. Dominant species include ripgut grass, rye grass, and Mediterranean barley; however, short-spiked canary grass, Italian thistle, wild oats, milk thistle, and other species were also occasionally present. Annual grasslands generally support a variety of small mammals such as ground squirrel, black-tailed jackrabbit, and mice, gophers, and voles; amphibians and reptiles such as snakes, lizards, and salamanders; and numerous seed-eating and insect-eating birds such as dove, finches, sparrows, and western scrub-jay. This habitat is also important foraging grounds for bats, and raptors such as owls, and hawks that feed on small mammals.

Riparian vegetation occurs along the waterside of the outer levee on West Canal to the north of the existing and proposed new boat dock and is composed of several alder trees, button willow, and non-native Himalayan blackberry and giant reed. Wildlife species that generally occur in this habitat include a variety of birds (passerine, non-passerine, wading, swimming, and raptors) that rest, forage, and/or nest in the trees and shrubs; and mammals amphibians, and reptiles that mainly use the understory cover for resting and foraging.

Freshwater marsh occurs in the southeast corner of CCF, on the waterside of the dam opposite the existing dock on West Canal, and a few smaller patches of emergent, submerged, and floating aquatic vegetation are scattered along the waterline of West Canal. The dominant freshwater marsh plant species include tule and cattail, and a number of other common herbaceous species were observed within or adjacent to this habitat. Freshwater marsh habitat is very important for wildlife in that it offers water, food, and cover for a variety of species. Rails, song sparrows, and other bird species often use freshwater marsh for foraging and nesting. Egrets, herons, and a variety of waterfowl

shorebirds also forage in this habitat, feeding on small fish, mollusks, amphibians, reptiles, and arthropods. Aquatic habitat is present within West Canal and CCF. Emergent and submerged aquatic vegetation primarily provide rearing habitat for juvenile life stages of many fish species including several special-status species (see discussion below). Land use surrounding CCF is predominately row crop agriculture, although, a small area of land immediately to the southwest and larger areas of land further west are largely undeveloped.

SPECIAL-STATUS PLANTS

Twenty-seven special status plant species were identified that have the potential to occur in the project vicinity based on previous documented occurrences and habitat suitability. Special status plants that were identified to have the potential to occur in habitats present at the project site—foothill and valley grassland and freshwater marsh—are listed below in Table 3.4-1, and a complete species list is included in Appendix B.

Although all of the special-status plant species listed in Table 3.4-1 have the potential to occur on the project site, the soils on the site have been disturbed, aggregate base was incorporated when the dam, levee, and roads were constructed, and the waterside of the dam and outer levee are characterized by shotcrete and riprap. These attributes contribute to the project area being only marginally suitable for these species; and with the exception of crownscale, woolly rose-mallow, and Mason's lilaeopsis, floristic surveys conducted in past years in the project area have not detected the occurrence of any of the above species.

Crownscale (*Atriplex coronata* var. *coronata*)

Crownscale is a California Rare Plant Rank (CRPR) 4.2 species that is known to occur around CCF along the edges of roads and in concave depressions between the dam and outer levee. It prefers alkaline soils and often is found in clay, and its blooming period extends from March to October. A DWR botanist (Hamamoto, pers. comm., 2012) indicated that crownscale has been observed in habitat similar to that around the proposed staging area and along the edges of roads at CCF, but during a survey conducted on May 9, 2012, by an AECOM biologist, no individuals were observed and non-native grasses dominated the proposed staging area.

Woolly Rose-Mallow (*Hibiscus lasiocarpos* var. *occidentalis*)

Woolly rose-mallow is a CRPR 1B.2 species known to occur on the project site, on the levee bordering West Canal and adjacent to the existing boat dock. The California Natural Diversity Database (CNDDB) also lists a few other species occurrences located to the north on West Canal and one to the south near the confluence of Old River and Grant Line Canal. It generally occurs in freshwater marsh habitat and has a blooming period from June to September. While the biological field survey was conducted in early May, this species was observed in its vegetative state growing in riprap near the existing boat dock. It was also observed in bloom during a later visit by DWR biologists.

Mason's Lilaeopsis (*Lilaeopsis masonii*)

Mason's lilaeopsis is a State-listed rare species and a CRPR 1B.1 species that has been documented near the confluence of West Canal and Old River, approximately 700 feet from the project site. CNDDB also lists numerous other occurrences located to the north on West Canal and to the south on Old River and Grant Line Canal. This species tends to occur on mudflat habitat near the waterline but also occurs on snags and other wood material found in these waterways. Its blooming period extends from April to November, and no individuals were observed during the plant survey conducted on May 9, 2012.

Table 3.4-1
Special-Status Plant Species with Potential to Occur in the Project Vicinity

Common Name	Scientific Name	Listing Status
Large-flowered fiddleneck	*Amsinckia grandiflora*	FE, SE, CRPR 1B.1
Bent-flowered fiddleneck	*Amsinckia lunaris*	CRPR 1B.2
Alkali milk-vetch	*Astragalus tener* var. *tener*	CRPR 1B.2
Heartscale	*Atriplex cordulata* var. *cordulata*	CRPR 1B.2
Crownscale	*Atriplex coronata* var. *coronata*	CRPR 4.2
Brittlescale	*Atriplex depressa*	CRPR 1B.2
San Joaquin spearscale	*Atriplex joaquiniana*	CRPR 1B.2
Lesser saltscale	*Atriplex minuscula*	CRPR 1B.1
Big-scale balsamroot	*Balsamorhiza macrolepis*	CRPR 1B.2
Big tarplant	*Blepharizonia plumosa*	CRPR 1B.1
Round-leaved filaree	*California macrophylla*	CRPR 1B.1
Mt. Diablo fairy-lantern	*Calochortus pulchellus*	CRPR 1B.2
Lemmon's jewel-flower	*Caulanthus lemmonii*	CRPR 1B.2
Congdon's tarplant	*Centromadia parryi* ssp. *congdonii*	CRPR 1B.2
Palmate-bracted bird's beak	*Chloropyron palmatum*	FE, SE, CRPR 1B.1
Recurved larkspur	*Delphinium recurvatum*	CRPR 1B.2
Diamond-petaled California poppy	*Eschscholzia rhombipetala*	CRPR 1B.1
Stinkbells	*Fritilaria agrestis*	CRPR 4.2
Diablo helianthella	*Helianthella castanea*	CRPR 1B.2
Woolly rose-mallow	*Hibiscus lasiocarpos* var. *occidentalis*	CRPR 1B.2
Delta tule pea	*Lathyrus jepsonii* var. *jepsonii*	CRPR 1B.2
Mason's Lilaeopsis	*Lilaeopsis masonii*	Rare, CRPR 1B.1
Delta mudwort	*Limosella subulata*	CRPR 2.1
Showy golden madia	*Madia radiata*	CRPR 1B.1
Suisun Marsh aster	*Symphyotrichum lentum*	CRPR 1B.2
Saline clover	*Trifolium hydrophilum*	CRPR 1B.2
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	CRPR 1B.1

Listing Status: **FE** = Federally Endangered, **SE** = State Endangered, **Rare** = CA Rare; **CRPR 1A** = Plants presumed extinct in CA, **CRPR 1B** = rare, threatened, or endangered in California and elsewhere; **CRPR 2** = rare, threatened, or endangered in California, but more common elsewhere, **CRPR 4** = limited distribution- a watch list; **CRPR Suffixes** (.1, .2., .3) for all rankings = **.1** = Seriously endangered in California, **.2** = Fairly endangered in California, **.3** = Not very threatened in California

Sources: CNDDB 2012; CNPS 2012; USFWS 2012

FISH SPECIES

Special-Status Fish

The sources mentioned above were used to determine that seven special-status fish species occur within the vicinity of the project footprint during various times of the year. Table 3.4-2 lists each special-status species occurring within the project area and its state and federal listing status (see Appendix B for complete species list).

Table 3.4-2
Special-Status Fish Species with Potential to Occur in the Project Vicinity

Common Name	Scientific Name	Listing Status
Green Sturgeon (Southern DPS)	*Acipenser medirostris*	FT, SSC
Delta Smelt	*Hypomesus transpacificus*	FT, SE
Central Valley Steelhead	*Oncorhynchus mykiss*	FT
Central Valley Spring-run Chinook Salmon	*Oncorhynchus tshawytscha*	FT, ST
Sacramento River Winter-run Chinook Salmon	*Oncorhynchus tshawytscha*	FE, SE
Sacramento splittail	*Pogonichthys macrolepidotus*	SSC
Longfin Smelt	*Spirinchus thaleichthys*	ST, SSC

Listing Status: **FE** = Federally Endangered, **FT** = Federally Threatened, **SE** = State Endangered, **ST** = State Threatened, **SSC** = State Species of Special Concern
Source: USFWS 2012

Below is a brief description of each species listed in Table 3.4-2.

Green Sturgeon (*Acipenser medirostris*)

The Southern Distinct Population Segment (DPS) of green sturgeon includes all green sturgeon populations south of the Eel River, with the only known spawning population being in the Sacramento River. Juvenile green sturgeon from the Southern DPS have been collected at the SWP and CVP salvage facilities throughout the year. Based on the salvage records from 1981 through 2007, green sturgeon may be present during any month of the year, but most prevalent during July and August. However, green sturgeon are not commonly observed at the salvage facilities. Their numbers are considerably lower than for other species of fish monitored at the facilities. These fish have a fork length of less than 39 inches and average 13 inches with a range of 5 inches to 30 inches. The size range indicates that these are sub-adult fish rather than adult or larval/juvenile fish. It is believed that these sub-adult fish utilize the Delta for rearing for approximately 3 years.

Delta Smelt (*Hypomesus transpacificus*)

Delta smelt are endemic to the Delta estuary and inhabit freshwater portions of the Delta, the Sacramento and San Joaquin Rivers, and low-salinity areas of Suisun Bay. Substantial declines in delta smelt abundance indices in recent years, as well as declines in the abundance of other pelagic fish species, have led to widespread concern regarding the pelagic fish community of the Bay-Delta estuary. Recent and ongoing analyses have focused on identifying the factors potentially influencing the status and abundance of delta smelt and other pelagic fish species in the estuary.

Delta smelt have a relatively short fork length (2 to 4 inches) and a one year life cycle, although some individuals may live 2 years. Delta smelt live their entire life cycle in the Bay-Delta estuary. Adult delta smelt migrate upstream into channels and sloughs of the Delta during winter to prepare for spawning. Spawning occurs between February and July with peak spawning occurring from April through mid-May (Moyle 2002). Juveniles and adults typically inhabit open waters of the Delta.

Juvenile and adult delta smelt are usually most abundant in the central, west, and south Delta (including CCF) during winter and early summer as reflected in CVP and SWP fish salvage records. Juveniles and adults do not typically inhabit the south Delta during summer when water temperatures exceed approximately 25 degrees Celsius. High water clarity tends to keep delta smelt out of the south Delta during fall (Nobriga et al. 2008; Feyrer et al. 2007). Adults spawn in the Delta during late winter and spring, and larvae occur in the Delta during spring.

Central Valley Steelhead (*Oncorhynchus mykiss*)

Central Valley steelhead generally leave the ocean from August through April (Busby et al. 1996), and spawn from December through April with peaks from January through March in small streams and tributaries where cool, well oxygenated water is available year-round (Hallock et al. 1961; McEwan and Jackson 1996). Spawning occurs during winter and spring months. Fry emerge several weeks after hatching and move to the shallow, protected areas associated with the stream margin (McEwan and Jackson 1996) and then to other areas of the stream where they establish defended feeding locations (Shapovalov and Taft 1954). Juvenile steelhead emigrate episodically from natal streams during fall, winter, and spring high flows. Emigrating Central Valley steelhead use the lower reaches of the Sacramento River and the Delta for rearing and as a migration corridor to the ocean. Some may use tidal marsh areas, non-tidal freshwater marshes, and other shallow water areas in the Delta as rearing areas for short periods prior to their final emigration to the sea. Central Valley steelhead occur within CCF as reflected in CVP and SWP fish salvage records.

Central Valley Spring-run Chinook Salmon (*Oncorhynchus tshawytscha*)

Historically, the spring-run Chinook salmon were the second most abundant salmon run in the Central Valley (CDFW 1998). Currently, three extant populations exist in Mill, Deer, and Butte creeks on the upper Sacramento River. However, Central Valley spring-run Chinook salmon occasionally occur within CCF as reflected in CVP and SWP fish salvage records.

Adult Central Valley spring-run Chinook salmon leave the ocean to begin their upstream migration in late January and early February (CDFW 1998) and enter the Sacramento River between March and September, primarily in May and June (Yoshiyama et al. 1998; Moyle 2002). Spawning occurs between September and October depending on water temperatures. Spring-run Chinook salmon fry emerge from the gravel from November to March (Moyle 2002) and the emigration timing is highly variable, extending from November to early May, with up to 69% of the young-of-the-year fish outmigrating through the lower Sacramento River and Delta during this period (CDFW 1998).

Juvenile Central Valley spring-run Chinook salmon first begin to appear in the south Delta in January. A significant presence of fish does not occur until March (17.2% of average annual salvage) and peaks in April (65.9% of average annual salvage). By May, the salvage of Central Valley spring-run Chinook salmon juveniles declines sharply (15.5% of average annual salvage) and essentially ends by the end of June (1.2% of average annual salvage).

Sacramento River Winter-run Chinook Salmon (*Oncorhynchus tshawytscha*)

Adult winter-run Chinook salmon enter San Francisco Bay from November through June (Hallock and Fisher 1985) and migrate past the Red Bluff Diversion Dam (RBDD) from mid-December through early August (NMFS 1997). The majority of the run passes RBDD from January through May, with the peak passage occurring in mid-March (Hallock and Fisher 1985). Spawning occurs primarily from mid-April to mid-August, with the peak activity occurring in May and June in the Sacramento River reach between Keswick Dam and RBDD (Vogel and Marine 1991). Sacramento River winter-run Chinook salmon fry begin to emerge from the gravel in late June to early July and continue through October (Fisher 1994). Emigration of juvenile Sacramento River winter-run Chinook salmon past RBDD may begin as early as mid-July, typically peaks in September, and can continue through March in dry years (Vogel and Marine 1991; NMFS 1997). Juvenile Sacramento River winter-run Chinook salmon occur in the Delta primarily from November through early May based on data collected from trawls in the Sacramento River at West Sacramento (RM 57) (USFWS 2001a, 2001b). Winter-run Chinook salmon juveniles remain in the Delta until they reach a fork length of approximately 118 millimeters (mm) and are from 5 to 10 months of age, and then begin emigrating to the ocean as early as November and continue through May (Fisher 1994; Myers et al. 1998). Winter-run Chinook salmon occasionally occur in CCF as reflected in CVP and SWP fish salvage records.

Sacramento Splittail (*Pogonichthys macrolepidotus*)

Splittail currently occur in the San Francisco estuary and its tributaries and are found most often in slow moving sections of rivers and sloughs including dead end sloughs and shallow edge habitats (Moyle 2002; Daniels and Moyle 1983; Feyrer et al. 2005). The splittail's range includes the Sacramento, San Joaquin, Napa, Mokelumne, and Petaluma rivers (Sommer et al. 2007). The species is fairly common within CCF.

Splittail populations fluctuate annually, depending on spawning success, which is positively correlated with freshwater outflow and the availability of shallow water habitat with submerged vegetation (Daniels and Moyle 1983; Sommer et al. 1997). Splittail are a migratory species that travel upstream into freshwater floodplain habitat to spawn. The onset of spawning is associated with rising water levels, increasing water temperatures, and increasing day length. Peak spawning occurs from February through May, although records of spawning exist for late January to early July (Wang 1986).

Longfin Smelt (*Spirinchus thaleichthys*)

Longfin smelt is a small, planktivorous fish found in several Pacific coast estuaries from San Francisco Bay to Prince William Sound, Alaska. The Bay-Delta supports the largest longfin smelt population in California. Longfin smelt are more broadly distributed throughout the Bay-Delta estuary and are found in water with higher salinities when compared to delta smelt. Longfin smelt are most often concentrated in Suisun, San Pablo, and north San Francisco Bay during non-spawning periods (Moyle 2002). Various life stages of longfin smelt also occur in the south Delta including CCF.

Spawning occurs in the lower portions of the Sacramento and San Joaquin Rivers and adjacent sloughs typically between November and June with peak spawning occurring from February through April (Baxter 1999; DWR 2009a; Moyle 2002; Wang 1986). Newly hatched larvae are 5 mm to 8 mm long, are buoyant, and are quickly swept downstream, as part of the planktonic drift community, into brackish nursery areas. Larvae are distributed

near the surface of the water column with highest densities occurring in close association with the position of X2 which is defined by the 2 parts per thousand isohaline (Wang 1986; Dege and Brown 2004). Competent-swimming young juveniles disperse toward more-saline and deeper-water habitats. Juvenile and sub-adults are widely distributed throughout the year in brackish and marine environments and typically in deeper water >7 m (Rosenfield and Baxter 2007). Both life stages apparently have seasonal migrations tending to move downstream during summer months and upstream in late-fall and winter (Rosenfield 2010).

Other Fish Species

Also present within the CCF are a number of popular sport fish species that are harvested by recreational anglers. These recreational fisheries are discussed in Section 3.16, "Recreation."

SPECIAL-STATUS WILDLIFE

Table 3.4-3 provides a list of four special-status wildlife species with reasonable potential to occur within the project vicinity. This list was developed based on the aforementioned sources and on habitat requirements for the species known to occur in the region (see Appendix B for complete list of species).

Table 3.4-3
Special-Status Wildlife Species with Potential to Occur in the Project Vicinity

Common Name	Scientific Name	Listing Status
Reptiles		
Western pond turtle	*Actinemys marmorata*	SSC
Giant Garter Snake	*Thamnophis gigas*	FT, ST
Birds		
Western burrowing owl	*Athene cunicularia*	SSC
Swainson's Hawk	*Buteo swainsoni*	ST
Mammals		
San Joaquin kit fox	*Vulpes macrotis mutica*	FE, ST

Listing Status: **FE** = Federally Endangered, **FT** = Federally Threatened, **ST** = State Threatened, SSC = State Species of Special Concern
Source: USFWS 2012

Reptiles

Western Pond Turtle (*Actinemys marmorata*)

Western pond turtle, a State species of special concern, is uncommon to common in aquatic habitats throughout California. This species is normally associated with permanent ponds, lakes, streams, irrigation ditches, and permanent pools on ephemeral streams. It requires basking sites, such as submerged logs, rocks, or muddy banks, and quickly retreats underwater when humans or predators approach. During spring, females move overland usually within 325 feet to find suitable sites for laying eggs but occasionally nest up to 1,300 feet away.

Western pond turtle is known to occur in the project vicinity and is documented at several locations in the intake canal and outside CCF. A basking turtle has been observed immediately past the fish screen louvers in the intake

canal, and this species has been observed near the trash rack at the fish salvage facilities as well (Wunderlich, pers. comm., 2012). The closest occurrence outside CCF is documented by the CNDDB approximately 0.9 mile west of the project site in a seepage pond lined with emergent wetland vegetation. CNDDB documents two other occurrences beyond the north end of CCF, one in a similar seepage pond and the other in riparian habitat with emergent vegetation and woody debris for basking. A fourth occurrence is documented by the CNDDB west of CCF near Byron Highway.

Suitable aquatic habitat is present immediately adjacent to the project site in CCF and along West Canal, and basking sites exist on the small areas of emergent vegetation within CCF and along the riprap, vegetation, and debris found along the shorelines. Western pond turtle also has a moderate potential to occur on the terrestrial portions of the project site during movement between the aquatic habitats. Little to no suitable nesting habitat is present on the project site due to the engineered fill and aggregate base used across the site. While the small patches of freshwater marsh and annual grassland on and adjacent to the project site could provide suitable nesting habitat, eggs and hatchlings would likely be preyed on by fish, wading birds, bullfrogs, snakes, and mammals.

Giant Garter Snake (*Thamnophis gigas*)

The giant garter snake is federally and State listed as threatened. Giant garter snakes are endemic to the Central Valley and adjacent foothills up to an elevation of approximately 300 feet mean sea level. Although the boundaries of its original distribution are uncertain, records coincide with the historical distribution of the large flood basins, freshwater marshes, and tributary streams of the Central Valley. There is a 60- to 70-mile gap in observations (historical and current) of giant garter snakes in the northern San Joaquin Valley between Stockton and Merced County, where the floodplain of the San Joaquin River is restricted to a relatively narrow trough by alluvium from tributary rivers and streams (Hansen and Brode 1980). They 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. Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter.

The closest CNDDB record of a giant garter snake is a shed skin found in 1996 about 12 miles northeast of the project area on Medford Island.

This project is not likely to adversely affect giant garter snakes considering the distance between the project site and the location of any known historical or recently recorded species occurrences, and because of the limited amount of suitable habitat present and the marginal quality of this habitat on the site.

Birds

Western Burrowing Owl (*Athene cunicularia*)

Western burrowing owl is a State species of special concern. In California, burrowing owl is a yearlong resident in dry grasslands and desert regions throughout the state. It is also found in grasses, forbs, and shrubs of pinyon juniper and ponderosa pine habitats up to an elevation of approximately 5,200 feet. Most burrowing owls in

California occur in the Central and Imperial Valleys (Klute et al. 2003). Burrowing owls nest in ground cavities, usually in abandoned rodent burrows. Primary prey consists of insects, but they also consume small mammals, reptiles, birds, and carrion. Breeding occurs from March through August, peaking in April and May. The primary threat to burrowing owl is habitat loss, but pesticide use in agricultural areas that owls inhabit may reduce their reproductive success (Klute et al. 2003).

The habitat on and around CCF, including the project site, has been surveyed for owls on numerous occasions in the last 20 years for various project and maintenance reasons. Burrowing owl nests have not been documented within the project site, but owls are regularly sighted along the outer levees and roads around the west side of CCF. CNDDB documents several occurrences of nesting owls one mile or less west of CCF, but the potential for this species to occur on or directly adjacent to the project site is low due to the lack of suitable burrows in this area, the regular vehicle traffic on the roads, and constant foot traffic and presence of anglers at the site. A small number of ground squirrel burrows were observed on the project site, on or near the edge of the roads and within the swale area between the paved and unpaved levee roads; however, no signs (whitewash, feathers, owl pellets, or prey remains) of burrowing owl were present, and the location of the burrows are unlikely to support this species.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is State listed as threatened. In the Central Valley, they arrive each year to breed as early as March and typically depart by October. Swainson's hawk usually nests in large native trees, such as valley oak, cottonwood, walnut, and willow; however, they nest less frequently in non-native trees, such eucalyptus or pine. Nests occur in riparian woodlands, roadside trees, trees along field borders, isolated trees, small groves, and on the edges of remnant oak woodlands. Today, narrow bands of remnant riparian forest along drainages contain most of the known nests in the Central Valley; however, this appears to be a function of the availability of nest trees instead of a dependence on riparian forest (Estep 1984; Schlorff and Bloom 1984; England et al. 1997). Swainson's hawks are essentially plains or open-country hunters, requiring large areas of open landscape for foraging. With substantial conversion of grasslands to farming operations, Swainson's hawks have shifted their nesting and foraging into those agricultural lands that provide low, open vegetation and high rodent prey populations, such as alfalfa fields.

According to the CNDDB, no records of Swainson's hawk nests occur within the project site, but several occur within a mile to the south, along the Old River. The closest documented occurrence is approximately 0.40 mile away in riparian habitat, and two other occurrences are documented approximately 0.5 mile further south on Grant Line Canal. Two other occurrences are documented approximately 1.5 miles north and northeast of the project site on Old River. The small group of alder trees along the West Canal, approximately 200 feet north of the existing boat dock, provide low quality habitat relative to the larger and intact riparian habitat to the south; however, because this species has been observed in this group of trees and is known to nest in the area, there is at least a low potential for it to occur.

Mammals

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

The SJKF inhabits a highly fragmented landscape of scattered remnants of native habitat and adoptable, altered lands within and on the fringe of development. The largest extant populations are in western Kern County on and

around the Elk Hills and Buena Vista Valley and in the Carrizo Plain Natural Area in San Luis Obispo County. The most northerly current distribution records include the Antioch area of Contra Costa County (EPA 2010). Because the kit fox requires dens for shelter, protection, and reproduction, a habitat's soil type is important. Loose-textured soils are preferable, but modification of the burrows of other animals facilitates denning in other soil types. SJKF can use small remnants of native habitat interspersed with development provided there is minimal disturbance, dispersal corridors, and sufficient prey-base (EPA 2010).

A survey in Contra Costa County and Alameda Counties within the known range of the SJKF found no evidence of recent occupancy (Clark et al. 2003). This study used a combination of ground surveys on public lands using trained dogs to find fox scat and aircraft surveys over the entire area in search of active dens. The closest CNDDB documented occurrence of kit fox is approximately 3 miles west of the project site and 1 mile west of CCF and the proposed haul routes. The occurrence record is estimated from between 1972 and 1975 and is based on maps showing SJKF distribution and abundance. A second occurrence documented in 2000 exists approximately 1.5 miles south of CCF, but this record had no visual or DNA confirmation. A number of older occurrences are documented in further outlying areas.

The soil on the project site is introduced and composed of tightly packed aggregate base. Due to the lack of native soils, the small number of ground squirrel burrows, the regular vehicle traffic on the roads, and the constant foot traffic and presence of anglers at the site, SJKF is not expected to establish dens on the project site, and there is a low potential that it would migrate through the area.

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, the U.S. Fish and Wildlife Service, or the National Marine Fisheries Service?

Less-than-significant impact with mitigation incorporated. The proposed project could have potential adverse effects on special-status species as described below. However, with implementation of the environmental protection measures identified in Chapter 2, and adoption of other mitigation measures included below, these impacts would be reduced to a less-than-significant level.

SPECIAL-STATUS PLANTS

Construction activities associated with replacement of the existing boat dock and the construction of the new floating pier and facilities have the potential to impact three special-status plant species: crownscale, woolly rose-mallow, and Mason's lilaeopsis.

Crownscale was not observed during the biological survey conducted on May 9, 2012, but has been observed in the past around CCF by DWR botanists on the concave depressions between levees and along the edges of roads and levees (Hamamoto, pers. comm., 2012). Therefore, activities such as grading, vehicle traffic, staging, and construction could impact this species. However, with implementation of Mitigation Measure Bio-1, potential impacts to these special-status plants would be reduced to a less-than-significant level.

Woolly rose-mallow was observed growing out of the riprap on the outboard side of the levee bordering West Canal, near the existing boat dock during the biological survey conducted on May 9, 2012. It has also been observed in the past in the same location by DWR botanists (Hamamoto, pers. comm., 2012). Therefore, activities associated with the replacement of the boat dock on the West Canal could impact this species. However, with implementation of Mitigation Measure Bio-1, potential impacts to these special-status plants would be reduced to a less-than-significant level.

Mason's lilaeopsis was not observed during the biological survey conducted on May 9, 2012 and has not been observed in CCF or adjacent to the project site in the West Canal by DWR botanists. This species, however, is known to occur near the confluence of West Canal and Old River, approximately 700 feet from the project site and to the south on Old River and Grant Line Canal and has been observed along the waterside of the levee along Italian Slough. This species typically occurs on mudflat habitat near the waterline, but it can also occur on snags and other wood material in waterways. Therefore, activities associated with the replacement of the boat dock on the West Canal have the potential to impact this species. However, with implementation of Mitigation Measure Bio-1, potential impacts to these special-status plants would be reduced to a less-than-significant level.

Mitigation Measure Bio-1: Avoid Disturbing or Removing Special-Status Plants

The following measures shall be implemented to avoid, minimize, and mitigate potential impacts on special-status plants at the project site:

- *Before the initiation of any ground-disturbing or vegetation-clearing activities, a qualified botanist shall conduct focused surveys in the project area for crownscale, woolly rose-mallow, and Mason's lilaeopsis. The botanist shall conduct surveys for these special-status plant species at the appropriate time of year when the target species would be in bloom, and therefore, clearly identifiable. Surveys shall be conducted following the approved CDFW protocol for surveying for special-status plant species.*

- *The known occurrence of woolly rose-mallow in the riprap near the existing boat dock shall be clearly flagged and demarcated by erecting exclusionary fencing or clearly flagging an exclusion zone around the individual or population. This area shall be avoided during the removal of the existing dock and the construction of the new dock. If necessary, DWR shall consider moving the location of the new boat dock to avoid adversely affecting this occurrence. If Mason's lilaeopsis or additional occurrences of woolly rose-mallow are found along this stretch of shoreline, the same methods will be used to avoid these species. If a population of crownscale is found along the levee slopes or along the edges of road, these occurrences shall also be clearly flagged and protected by exclusionary fencing where feasible.*

- *If it is determined that avoidance is not possible for any of these species, DWR shall consult with the CDFW to determine the appropriate mitigation measures for any population that may be affected by the project. Mitigation measures may include creation of off-site populations on project mitigation sites through seed collection or transplanting, preserving and enhancing existing populations, or restoring or creating suitable habitat in sufficient quantities to compensate for the impact.*

Timing: *Before and during construction as appropriate*

Responsibility: *DWR*

SPECIAL-STATUS FISH

Project activities associated with replacement of the existing dock and construction of the new floating pier have the potential to cause direct adverse effects to special-status fish species that may occur within the project footprint (see Table 3.4-2 in Section 3.4.1 for a list of species). Construction activities also may cause localized, short-term habitat modifications and impact water quality which in turn may adversely affect special-status fish. Over the long term, the project would be expected to provide benefits to special-status fish species by increasing angling pressure and associated potential harvest of nonnative predator species that are known to cause losses to special-status fish species through predation; however, the extent and/or magnitude of these benefits is uncertain. Additional discussion of long-term fisheries impacts related to nonnative game fish species is provided in Section 3.16, "Recreation."

Construction would require land- and water-based activities, including land disturbance resulting from activities such as grading, excavation, and filling and compaction. These activities would increase the potential for erosion, may result in the release of sediment into CCF and West Canal, and could result in the release of and exposure to construction-related contaminants. Wind and rainfall could cause erosion of disturbed materials and increase sedimentation in CCF and West Canal.

In-water pile driving would also be required in CCF and West Canal. The placement and subsequent removal of approximately 1,000 cubic yards of temporary rock may be required in the CCF for use as a platform to support a crane for pile driving in the shallow sections of the pier alignment (see Exhibit 2-3). The platform would be constructed of primarily 24-inch (or smaller) rock that is clean (free from contamination) and would be purchased from a commercial source. When pier construction is complete, the temporary rock platform would be removed and hauled away to DWR's existing Howard Yard rock stockpile.

Placement of the temporary rock platform and pile driving could temporarily increase turbidity levels. These effects could occur periodically throughout the construction period. Movement of fish species through the construction area may be affected through a behavioral change or avoidance of areas with elevated disturbance and turbidity. All in-water work would occur during the specified in-water work window when the likelihood of adverse effects on special-status species would be substantially reduced. All life stages of special status fish species are frequently exposed to naturally occurring increases in suspended sediment concentrations; typically have high tolerance for these increases; and would be able to avoid temporary, localized exposure to a suspended sediment plume, thereby reducing the risk of adverse impacts.

During construction, the potential also exists for contaminants such as fuels, oils, hydraulic fluids, concrete, paint, and other chemicals/compounds used in construction activities to be introduced accidentally through spills into the waterway directly, incrementally through surface runoff from staging areas, or as a result of a discharge from any water-based equipment. Contaminants in sufficient concentrations would be toxic to fish and prey organisms occupying CCF and West Canal or could alter oxygen diffusion rates and cause acute and chronic toxicity to aquatic organisms, thereby reducing growth and survival and possibly causing mortality.

To address potential adverse effects to special-status fish species during construction, environmental protection measures involving in-water work windows and the development and implementation of a SWPPP with comprehensive BMPs and hazardous materials handling and containment requirements (see Section 2.6.1, "Fish Protection Measures," and Section 2.6.6, "Water Quality Protection Measures") would be incorporated into the

proposed project. With implementation of these measures, the potential construction-related impacts to special-status fish species described above would be less than significant.

One construction-related effect of particular concern is the direct effect on fish and other aquatic resources resulting from increases in underwater sound pressures. Steel pipe piles would be used as foundations for the fishing facility. An interagency working group, including members from NMFS and USFWS, has established interim criteria for evaluating underwater noise impacts from pile driving on fish. These criteria are defined in the document entitled "Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities," dated June 12, 2008 (Fisheries Hydroacoustic Working Group 2008). This agreement identifies a peak sound pressure level of 206 decibels (dB) and an accumulated sound exposure level (SEL) of 187 dB as thresholds for injury to fish. For fish weighing less than 2 grams, the accumulated SEL threshold is reduced to 183 dB. Although there has been no formal agreement on a "behavioral" threshold, NMFS uses 150 dB as the threshold for adverse behavioral effects (NMFS 2009).

If a high-intensity percussion hammer would be required for pile installation, potential adverse effects may not be avoided. As a result, pile driving, and associated underwater sound pressures, could result in a potentially significant direct impact. However, with implementation of Mitigation Measure Bio-2 along with environmental protection measures identified in Section 2.6, the potentially significant direct impact associated with temporary habitat disturbance would be reduced to a less-than-significant level.

Mitigation Measure Bio-2: Develop and Implement a Pile Driving Plan to Minimize and Monitor Underwater Sound Pressures

The following measures shall be implemented to avoid and minimize potential adverse effects that could otherwise result from pile-driving activities in CCF and West Canal:

- *The contractor shall develop a plan for pile-driving activities in CCF and West Canal to minimize impacts on fish and shall allow sufficient time in the schedule for coordination with regulatory agencies. Measures shall be implemented to minimize underwater sound pressure to levels below thresholds for peak pressure and accumulated SELs. Threshold levels established by USFWS and NMFS (for fish greater than 2 grams) that shall not be exceeded are:*

  Peak pressure = 206 dB
  Accumulated SEL = 187 dB

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

- *The contractor shall perform any in-water construction activities during the identified in-water work window (August 1 through October 31). When in-water work is conducted, the qualified biologist shall be present to monitor construction activities and ensure compliance with mitigation requirements and the permit terms and conditions.*

- *Piles shall be driven by vibratory or nonimpact methods (hydraulic) that result in sound pressures below threshold levels to the extent feasible. If underlying soil conditions require the use of impact hammers for pile*

driving, underwater sound reduction measures shall be employed, as needed, to ensure that levels do not exceed the thresholds identified above. These underwater sound reduction measures shall include one or more of the following:

- *Use of hammers only during daylight hours and initially at low energy levels and reduced impact frequency. Applied energy and frequency shall be gradually increased until necessary full force and frequency are achieved.*
- *Use of pipe caissons to isolate the piles from waters to buffer underwater sound pressure. 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.*
- *Use of impact hammer cushion blocks.*
- *Use of a bubble curtain. The pile shall be driven using impact methods with the pile surrounded by the bubble curtain.*

Timing: *Before and during pile driving activities*

Responsibility: *DWR*

SPECIAL-STATUS WILDLIFE

Reptiles

Western Pond Turtle

The value of western pond turtle habitat on the project site is considered low due to lack of ponded water, basking sites, and upland breeding habitat. The CCF dam and outer levee along West Canal are lined with shotcrete and riprap and the flow rates associated with the water operations are unfavorable for this species. However, there are small areas of emergent vegetation within CCF and along West Canal, and these areas contain surface water of sufficient depths to provide potential habitat for this species. The activity associated with the construction of the new boat dock, pier (including the temporary rock platform), and facilities has the potential to impact this species. However, implementation of Mitigation Measure Bio-3 would avoid and minimize impacts to western pond turtle and would reduce impacts to a less-than-significant level.

Mitigation Measure Bio-3: Avoid Impacts to Western Pond Turtle

The following measures shall be implemented to avoid, minimize, and mitigate potential impacts on western pond turtle at the project site:

- *To minimize potential habitat disturbance during construction, clearing and grading shall be confined to the minimum area necessary to facilitate construction activities. Exclusionary fencing shall be installed between the construction zone and suitable aquatic habitat for this species, at the discretion of a qualified biologist. Temporary construction fencing shall be placed perpendicular to the levees at the north and south ends of the construction zone and will prohibit movement parallel on the levees.*

- *All construction personnel shall receive worker environmental awareness training from an approved biologist prior to commencing any construction-related activities on the project site. This training shall instruct workers on how to identify the western pond turtle and its habitat, and what to do if a turtle is encountered during construction activities.*

- *Within 24 hours prior to commencement of construction activities, the site shall be inspected for western pond turtles by a qualified biologist. The construction area shall be re-inspected whenever a lapse in construction activity of 2 weeks or greater has occurred. If a turtle is encountered on the project site, any construction activity that could result in harm of the turtle shall immediately cease and shall not resume until the monitoring biologist has determined that the turtle has moved away from the construction-site on their own volition or a qualified biologist has moved the turtle to a safe location.*

Timing: *Before and during construction*

Responsibility: *DWR*

Birds

Migratory Birds (excluding Western Burrowing Owl and Swainson's Hawk)

Migratory birds, excluding western burrowing owl and Swainson's hawk, are known to occur on or adjacent to the project site. Numerous species could nest and forage in the freshwater marsh and riparian habitat adjacent to the project site in CCF or along the West Canal, and ground-nesting species could nest and forage in the annual grassland that occurs in the concave areas between levees. Marsh wrens are known to occur adjacent to the project site and were recently observed nesting in the freshwater marsh habitat in the southeast corner of CCF (Wunderlich, pers. comm., 2012).

Ground disturbances from project construction would be limited to the tops of the levees and areas inside the levees where facilities would be constructed, and pile driving would occur for the new fishing pier and boat dock in CCF and the West Canal. Disturbance from these construction activities has the potential to indirectly affect migratory bird nesting habitat; however, environmental protection measures to minimize, avoid, or mitigate potential impacts to migratory birds have been included in the proposed project (See Section 2.6.4, "Migratory Bird Protection Measures"). Implementation of these measures would reduce impacts to migratory birds to a less-than–significant level.

Western Burrowing Owl

The value of the western burrowing owl habitat on CCF dam, levee roads, and within the ruderal vegetation and riprap immediately around the project site is considered low due to ongoing disturbance associated with the water operations, movement of maintenance vehicles along the roads, and the regular presence of anglers at these locations. Nevertheless, a small number of low-quality ground squirrel burrows were observed during the field survey, and this species appears to have become habituated to the back and forth passing of motor vehicles, at least along the outer levee and roads around CCF.

Therefore, due to the potential for burrowing owl to occur on or near the dam and outer levee along the ingress and egress routes and near the proposed new facilities, environmental protection measures to minimize, avoid, or

mitigate potential impacts on this species have been included in the proposed project (see Section 2.6.3, "Burrowing Owl Protection Measures"). Implementation of these measures would reduce impacts to burrowing owl to a less-than–significant level.

Swainson's Hawk

Although, no nests have been confirmed on or immediately adjacent to the project site, a DWR biologist (Bradbury, pers. comm., 2012) reported seeing a raptor-sized nest in one of the alder trees located approximately 200 feet north of the existing boat dock on West Canal in 2011. The biologist also observed a Swainson's hawk exiting the same tree in 2011 but did not confirm if the nest was active or the hawk was associated with the nest. In 2012, the same DWR biologist confirmed that no nests were present, but he observed a Swainson's hawk on the opposing side of West Canal. The tree in question is located alongside two other alder trees and some smaller riparian shrubs, but it is otherwise isolated relative to the riparian habitat that supports nests further south. The proximity of the tree to the existing boat dock and the activity associated with the water operations and the dock further decrease the habitat quality and the likelihood of it serving as a favorable nesting site for Swainson's hawk.

Nevertheless, due to the potential for Swainson's hawk to nest in the alder trees north of the existing and proposed new dock on West Canal, environmental protection measures to avoid, minimize, or mitigate potential impacts on this species have been incorporated into the proposed project (see Section 2.6.2, "Swainson's Hawk and Other Raptor Protection Measures"). Implementation of these measures would reduce impacts to Swainson's hawk to a less-than–significant level.

Mammals

San Joaquin Kit Fox

The nearest SJKF occurrence is approximately 3 miles from the site. During a survey conducted on May 9, 2012, by an AECOM biologist, a small number of ground squirrel burrows were observed on the project site; however, none of the burrows appeared large enough (over 4 inches in diameter) for kit fox. Because no evidence that kit fox occupy the project site was observed, and soil on the project site is tightly packed fill and aggregate base that provides low quality habitat for burrowing rodents, the project site is considered very poor quality habitat for SJKF. Nevertheless, kit fox have the potential to occur on or near the dam and levee along the ingress and egress route or near the proposed new facilities. Therefore, environmental protection measures have been incorporated into the proposed project to avoid, minimize, or mitigate potential impacts to SJKF (see Section 2.6.5, "San Joaquin Kit Fox Protection Measures"). Implementation of these measures would reduce impacts to SJKF to a less-than-significant level.

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 the U.S. Fish and Wildlife Service?

No impact. The project site consists of previously developed and disturbed land that includes a dam and levee constructed with fill and aggregate base. The watersides of the dam and levee are characterized by having surfaces covered by shotcrete and riprap. An isolated area of riparian vegetation occurs near the base of the levee on West Canal to the north of the existing and proposed new boat dock. The area includes several alder trees, one button willow, and non-native blackberry and giant reed. Two small patches of freshwater marsh occur near the

southeast corner of CCF, and occasional small patches of emergent and invasive floating aquatic vegetation occur at the base of the levee along West Canal. While these areas are small, patchy, and provide limited habitat values to wildlife, they could be considered sensitive natural communities. Regardless, these small areas of riparian vegetation and freshwater marsh are outside the impact footprint and would be avoided to assure no adverse effects occur from project implementation.

Additionally, Section 2.6.1, "Fish Protection Measures," and Section 2.6.6, "Water Quality Protection Measures," require that riparian and existing vegetation be preserved to the maximum extent practicable. Therefore, no impact would occur.

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

Less-than-significant impact with mitigation incorporated. The proposed project would require piles to be driven into the sediments in West Canal and CCF to construct the boat dock and fishing pier. This activity would disturb the sediment, and therefore, would have the potential to adversely affect water quality in West Canal and CCF.

Freshwater marsh (wetlands) that occurs adjacent to the project site in CCF and along the West Canal will be avoided; as a result, potential impacts will only occur to waters of the United States from pile driving and placement (and subsequent removal) of the temporary rock platform associated with the new fishing pier and boat dock. Although the West Canal and CCF are 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), installation of pilings does not constitute fill or the discharge of fill. However, temporary placement of material for the rock platform would require a permit under Section 404 of the CWA, and water quality certification pursuant to Section 401 of the CWA from the Central Valley RWQCB. Furthermore, Old River, and therefore West Canal and CCF, are considered traditional navigable waters of the United States, and placement of structures in traditionally navigable waters is regulated by USACE under Section 10 of the RHA. Therefore, CWA Section 404 and RHA Section 10 authorization from USACE, and CWA Section 401 water quality certification from the Central Valley RWQCB would be required for the proposed project. This impact would be potentially significant. However, with implementation of Section 2.6.1, "Fish Protection Measures," Section 2.6.6, "Water Quality Protection Measures," and Mitigation Measure Bio-4, the impact associated with placement of structures within navigable waters would be reduced to a less-than-significant level.

Mitigation Measure Bio-4: Minimize Fill of 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 compensate for placement of structures in navigable waters of the United States:

- *Minimize placement of structures (i.e., reduce numbers and/or size of piles; reduce footprint size of temporary rock platform) 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.*

- *Implement any additional mitigation measures determined necessary during the CWA Section 404 and 401, or RHA Section 10 permitting processes prior to and/or during project construction. Additional mitigation measures may include, but may not be limited to, implementation of additional construction BMPs to avoid potential for sedimentation and erosion to impact waters of the United States and waters of the state, and restoring the site to preexisting conditions after material is removed.*

Timing: *Before and during construction*

Responsibility: *DWR*

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 with mitigation incorporated. Land-based construction activities that would occur at the project site include creation of a staging area, construction of a concrete pad, concrete landing for the pier, and retaining walls, construction of a restroom, and installation of a bike rack and fencing. Soil disturbance through excavations, backfilling, grading, compacting, and vehicle traffic have the potential to temporarily interfere with the movements of and have adverse effects to wildlife that may utilize the lands surrounding CCF as migratory or foraging corridors. However, with implementation of the measures in Section 2.6, "Environmental Protection Measures and Best Management Practices," these impacts would be less than significant.

In-water construction activities include barge traffic, boat traffic, and pile driving. These activities would not interfere with the movements of wildlife species. However, interference with localized movements of fish may occur from underwater sound pressures and alterations to water quality associated with pile driving and increased boat traffic during construction. These impacts would be less than significant with implementation of the fish protection measures in Section 2.6, "Environmental Protection Measures and Best Management Practices," and the pile driving mitigation measure (Mitigation Measure Bio-2) described above because all in-water work would be conducted during in-water work windows and the development and implementation of a SWPPP with comprehensive BMPs and hazardous materials handling and containment requirements would be incorporated into the proposed project, and the project would require the development and implementation of a pile driving plan to minimize and monitor underwater sound pressures.

As discussed under item a) above, over the long term, the project could provide benefits to native fish species, including special-status species, by increasing angling pressure and associated potential harvest of nonnative predator species that otherwise result in losses to native fish species through predation.

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

No impact. The Conservation Element of the Contra Costa County General Plan (Contra Costa County 2005b) lists and discusses vegetation and wildlife, including important trees, natural vegetation, wildlife resources, and significant ecological resources; and water resources, including urban and rural creeks. The overall conservation goals are to protect ecological resources and to conserve natural resources through controlled growth. Overall conservation policies include planning development to maintain healthy attractive environments, protecting and preserving agricultural land, and preserving and enhancing natural waterways, watersheds, and open space.

The goals of the Vegetation and Wildlife section include protecting wetlands, plant, and wildlife habitats; and rare and threatened fish, wildlife, and plants, plant communities; and the list of protected species includes the special-status plants, fish, and wildlife addressed in this report. The policies and measures stress the preservation and protection of these resources, as well as significant trees, and especially target significant ecological resource areas—the closest being Eucalyptus Island, which is located immediately north of CCF. This area is listed as a freshwater marsh with tidal fluctuation that supports a variety of wildlife and habitat for woolly rose-mallow.

The goals of the Water Resources section include conserving, managing, and enhancing water resources; protecting water quality; assuring there will be a long-term supply for domestic, fishing, industrial, and agricultural land use; preserving or restoring the ecology and hydrology of natural waterways while at the same time preventing flooding, erosion, and danger to life; and enhancing opportunities for public accessibility and recreational uses of waterways. The policies and measures address preservation and protection of surface and groundwater, riparian habitat (with specific mention of habitat along shorelines in the Delta), and water quality.

Environmental protection measures and/or mitigation measures are presented above for the special-status plants, fish, and wildlife addressed in this report, which are also listed in the Vegetation and Wildlife section of the Contra Costa County General Plan. No trees, wetland or riparian habitat, or agricultural land would be removed or impacted; and only temporary impacts to water resources would occur, and these would be mitigated by the water quality protection measures identified in Section 2.6, "Environmental Protection Measures and Best Management Practices." Therefore, species addressed in the Vegetation and Wildlife section of the Contra Costa County General Plan would not be adversely affected by the proposed project, and there would be no conflicts with the Contra Costa County General Plan or other Contra Costa County ordinances. No impact would occur.

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 East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) is intended to provide regional conservation and development guidelines to protect natural resources in the region while improving and streamlining the permit process for endangered species and wetland regulations. The project site is directly adjacent to, but not within the area covered by this HCP/NCCP. The East Contra Costa County HCP/NCCP addresses the preservation and protection of natural vegetation communities; wetlands, streams, and other sensitive aquatic resources; biological diversity, and special-status species in the area covered by the plan. Because the project includes protection measures for fish and wildlife species, (see Section 2.6, "Environmental Protection Measures and Best Management Practices") and additional mitigation is available as described above to avoid, minimize, and mitigate potential impacts on plants, fish, and wildlife species, and water quality, and the project site is outside the area directly covered by the East Contra Costa County HCP/NCCP, the proposed project would not conflict with provisions in an HCP/NCCP, and there would be no impact.

3.5 CULTURAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	Cultural Resources. Would the project:				
a)	Cause a substantial adverse change in the significance of a historical resource as defined in 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

PREHISTORIC CONTEXT

The following discussion of the regional prehistoric background is adapted from Rosenthal et al. (2007). The earliest well-documented entry and spread of humans into California occurred at the beginning of the Paleo-Indian Period (12,000 to 10,500 Before Present [B.P.]). Characteristic artifacts recovered from archaeological sites of this time period have included fluted projectile points (often compared to Clovis points), cobble cores, and biface rough-outs. Social units are thought to have been small and highly mobile.

The beginning of the Lower Archaic Period (10,500 to 7,500 B.P.) coincides with that of the Middle Holocene climatic change which resulted in widespread floodplain deposition. This episode resulted in most of the early archaeological deposits being buried. Most tools during this Period were manufactured of local materials, and distinctive artifact types include large dart points and the milling slab and handstone.

The Middle Archaic (7,500 to 2,500 B.P.) is characterized by warm, dry conditions which brought about the drying up of pluvial lakes. Economies were more diversified and may have included the introduction of acorn processing technology, although hunting remained an important source of food. Artifacts characteristic of this Period include milling stones and pestles and a continued use of a variety of implements interpreted as large dart points.

The Upper Archaic Period (2,500 to 850 B.P.) corresponds with a sudden turn to a cooler, wetter, and more stable climate. The development of status distinctions based upon wealth is well documented in the archaeological record. The development of specialized tools, such as bone implements and stone plummets as well as manufactured goods (e.g., *Olivella* saucer and saddle beads, *Haliotis* ornaments) were prolific during this time. The regional variance of economies was largely due to the seasonality of resources which were harvested and processed in large quantities.

Several technological and social changes distinguish the Emergent Period (850 B.P. to Historic) from earlier cultural manifestations. The bow and arrow were introduced, ultimately replacing the large dart points, and territorial boundaries between groups became well established. In the latter portion of this Period (1800 to 450 B.P.), exchange relations became highly regularized and sophisticated. The clam disk bead developed as a monetary unit of exchange, and increasing quantities of goods moved greater distances. It was at the end of this Period that contact with Euro-Americans became commonplace, eventually leading to intense pressures on Native American populations.

More specific to the San Joaquin Valley is a series of four cultural complexes based on distinct artifact types and mortuary practices from site Mer-S-94 defined by Olsen and Payen (1969) (cited in Moratto 1984:191-193):

1. Positas Complex – (3,300-2,600 Before Christ [B.C.]) the deepest sediments from the site produced small mortars, pestles, millingstone and spire-lopped *Olivella* shell beads.

2. Pacheco Complex (2,600 B.C.- 300 Anno Domini [A.D.]) this component is characterized by rectangular *Haliotis* pendants, thick rectangular *Olivella* shell beads, perforated canine teeth, bone awls, stemmed and side-notched projectile points and many millingstones, mortars and pestles.

3. Gonzaga Complex (300-1,000 A.D.) – characterized by flexed burials, *Haliotis* ornaments, thin, rectangular, oval, and split punched *Olivella* shell beads, tapered stemmed projectile points, bone awls, and bowl mortars and shaped pestles.

4. Panoche Complex (1,500-1,850 A.D.) – this complex is characterized by large, circular houses, flexed burials and cremations, few millingstones, side-notched projectile points, clamshell disk beads, *Haliotis* epidermis disk beads, and *Olivella* lipped, side-ground, and disk beads.

ETHNOGRAPHIC CONTEXT

The project area is situated within the area occupied and used by the Northern Valley Yokuts. Their territory expands from the San Joaquin River and the Delta to south of Mendota. The Diablo range most likely marked the Yokuts' western boundary (Wallace 1978) and the Sierra foothills marked the eastern edge. Yokuts' occupation of the northern parts of the range may be relatively recent, as linguistic evidence points towards an earlier Miwok occupation. The Yokuts gradually expanded their range northwards, and clearly occupied the area during the Spanish Colonial period, as evidenced by mixed historic and prehistoric artifact assemblages. The late prehistoric Yokuts may have been the largest ethnic group in precontact California.

The Northern Valley Yokuts settlement locations depended primarily on proximity to water and other resources. Dwellings constructed of tule stalks were built along the natural levees and the shores of rivers and sloughs. Their primary subsistence consisted of acorns, salmon, and water fowl, in addition to harvesting wild plants, seeds, and roots (Wallace 1978: 464).

Euro-American contact with the Northern Valley Yokuts began in the late 1700s to early 1800s, and continued through the gold rush era which led to significant reductions in the Native populations due to disease and violent relations with the settlers. Though there was no gold within the Yokuts territory, miners passing through on their way to the diggings caused a certain amount of upheaval. Former miners, who had seen the richness of the San Joaquin Valley on their way east, later returned to settle and farm the area, (Wallace 1978: 469) further displacing the remaining Native populations.

HISTORIC CONTEXT

The SWP was a massive project in the state of California that includes aqueducts, canals, pipelines, and storage and pumping facilities. The purpose of the SWP was to address efforts to control the distribution of water to meet California's rising population and the demands for this resource.

State Water Project

The idea of a statewide water project was first discussed in 1919, when Lt. Robert B. Marshall, chief hydrographer of the U.S. Geological Survey, proposed to California's governor a redistribution of water from the Sacramento River to the San Joaquin Valley and then over the Tehachapi Mountains to southern California. Marshall's plan was met with resistance, but it served as the basis for what eventually became the SWP (Cooper 1968:50–52; DWR 2011).

Planning for the SWP began in earnest after World War II, during a period when California experienced a population surge. Local governments and water officials quickly realized that their water supplies could not meet the growing demand of their communities. Farmers were also draining regional groundwater basins to irrigate their land (DWR 2011). State engineer Arthur D. Edmonston published a proposal that suggested building a multipurpose dam, reservoir, and power plant on the Feather River, northeast of the small town of Oroville in the northern Sacramento Valley; an aqueduct to transport water from the Delta to Santa Clara and Alameda Counties; and a second aqueduct to serve the San Joaquin Valley and southern California (DWR 2011).

The storage of water would reduce flooding hazards, and the stored water could be released into the Sacramento River at planned intervals and then deposited into the Delta. Here it would be able to check the flow of salt water from the San Francisco Bay, which during droughts had seeped as far inland as Sacramento. The project would be paid for in part by the electricity generated at the dam's power plant. Edmonston also proposed constructing a giant aqueduct fed by massive, custom-designed pumps that would force the water from the Delta southward, where it could be used to water the dry southern valley and the cities of southern California after pumps lifted it over the Tehachapi Mountains at the southern end of the San Joaquin Valley (DWR 1974a:7). Financing for the SWP was approved by the voters of California in 1960 as a result of the Burns-Porter Act (DWR 2010).

This act authorized the issuance of $1.75 billion in general obligation bonds to assist with funding for building necessary water facilities for the SWP. Construction began shortly thereafter, and the first phase of the SWP was completed between 1961 and 1974 (DWR 1974a:8; Cooper 1968:201–204; JRP and Caltrans 2000:82; Rarick 2005:205–228).

Clifton Court Forebay and the California Aqueduct

The CCF is a 28,653-acre-foot reservoir designed to regulate the flow of water that enters the California Aqueduct and the SWP Banks Pumping Plant. The CCF's regulation reduces the surges and drawdown created during peak-pumping periods. The CCF features gates that can be closed to prevent backflow into the Delta during low tides (DWR 1974b:201). Construction of the CCF began on December 12, 1967, and was completed in 1969 (Gilbert 2012:1). The CCF is at the head of the California Aqueduct, a critical component of the SWP. The California Aqueduct serves as the primary delivery system of the SWP. The main line of the California Aqueduct has five divisions: North San Joaquin, San Luis, South San Joaquin, Tehachapi, and the East Branch (previously the Mojave

and Santa Ana Divisions). It stretches 444 miles, from the CCF to Perris Reservoir in Riverside County (DWR 1974a:52). The Banks Pumping Plant also delivers water to the South Bay Aqueduct (Golze 1965:7).

The California Aqueduct and the CCF were essential to the development of California. The water serves users in the San Joaquin Valley where the aqueduct allowed thousands of acres of land to be cultivated, thereby dramatically increasing California's agricultural efforts in the region and propelling the state to the top in nationwide agricultural production. In Southern California, the aqueduct serves municipal users by supplying drinking water.

The SWP is the largest state-built water conveyance system in the United States, spanning more than 600 miles between northern and southern California. In 2001, the American Society of Civil Engineers recognized the SWP as one of the greatest American engineering achievements of the 20th century, listing it as one of only 10 internationally ranked "Monuments of the Millennium" for its remarkable engineering aspects and for the positive impact it had on regional economic trade and development. Today, the SWP provides drinking water for 25 million people; irrigates approximately 750,000 acres; and features 34 storage facilities, 20 pumping plants, four pumping-generating plants, five hydroelectric power plants, and 700 miles of open canals and pipelines (American Society of Civil Engineers 2011; DWR 2010).

3.5.2 REGULATORY SETTING

CEQA provides a broad definition of what constitutes a cultural or historical resource. Cultural resources can include traces of prehistoric habitation and activities, historic-era sites and materials, and places used for traditional Native American observances or places with special cultural significance. In general, it is required to treat any trace of human activity more than 50 years in age as a potential cultural resource.

CEQA states that if a project would have significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources (termed "historical resources") need to be addressed. The CEQA Guidelines define a historical resource as a resource listed or eligible for listing on the California Register of Historical Resources (CRHR) (Public Resources Code Section 5024.1). A resource may be eligible for inclusion in the CRHR if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

The CEQA Guidelines also require consideration of unique archaeological resources (Section 15064.5). As used in the Public Resources Code (Section 21083.2), the term "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type, or

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition to meeting one or more of the above criteria, resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (Office of Historic Preservation 1999:71).

3.5.3 METHODS

Efforts to locate cultural resources within the project area consisted of records search review, Native American consultation, an architectural field survey of the proposed project area, and research in AECOM's cultural library. Because the proposed project area was previously surveyed as part of the Archaeological Survey Report: Clifton Court Forebay Pump, Sump, and Seep Maintenance Project (DWR 2011), an archaeological survey was not necessary.

RECORDS SEARCH RESULTS AND FINDINGS

Technical studies conducted by AECOM for the proposed FFP at the CCF began with a review of records searches conducted for previous studies by DWR, which were included, or were adjacent to, the proposed project area. The records searches included documents and maps on file at the Northwest Information Center and a review of the State's database of cultural resources studies and recorded cultural resources for the CCF Pump, Sump, and Seep Maintenance Project and New Spoils Site Location for the Fish Science Building and Warehouse. These record searches were conducted on August 17, 2011, December 12, 2011, and March 9, 2012. Other sources consulted included the national and state inventories and registers of cultural resources and pertinent historic maps.

No cultural resources have been previously recorded within the project area. Within ¼-mile to the south of the project area, five cultural resources were identified, including segments of two transmission lines and a segment of the Southern Pacific Railroad. Another 22 reports summarizing the results of searches in the study area or within ¼ mile of the study area exist, but either did not have a field component, were missing maps, or lacked adequate locational information.

NATIVE AMERICAN COORDINATION

On May 29, 2012, AECOM, on behalf of DWR, consulted with the Native American Heritage Commission (NAHC) requesting information for the Sacred Lands File & Native American Contacts List pertinent to the project area. A response from the NAHC noted that a search of the sacred land files failed to indicate the presence of Native American cultural resources or traditional cultural places in or near the project site. The NAHC also provided contact information for Ramona Garibay, representative for the Trina Marine Ruano Family, Katherine Erolinda Perez, and Andrew Galvan of the Ohlone Indian Tribe. Letters were sent to these

groups or individuals on June 27, 2012, requesting information on any traditional cultural properties or values within or near the project area. Since completion of the September 2012 report no responses have been received.

ARCHITECTURAL FIELD SURVEY

On May 9, 2012, an AECOM architectural historian who meets the Secretary of the Interior's Professional Qualifications Standards for Architectural History conducted a survey of the proposed project site, documenting the CCF by means of digital photographs and written notes. Although the CCF is less than 45 years of age, it was recorded for its potential to meet the special consideration for resources achieving significance within the past 50 years or exceptional significance. No other cultural resources were identified as a result of the May 9, 2012, survey.

3.5.4 DISCUSSION

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

Less-than-significant impact. The CCF consists of levees, radial gates, and utility buildings constructed between 1967 and 1969. The CCF is a contributing resource to the California Aqueduct and the larger SWP, which are considered eligible for the CRHR for the purposes of CEQA. The SWP and the California Aqueduct are significant as a comprehensively planned and publicly sanctioned water conveyance public works project that facilitated development throughout California, and for its complex design necessary to redistribute water throughout California. Although the CCF and portions of the SWP are less than 50 years old, the CCF is a feature of a planned comprehensive water redistribution system that helped shape the agricultural development of much of California following the mid-20th century by allowing farmers to cultivate large new tracts of land, particularly in the western and southern San Joaquin Valley (Jelinek 1982:89).

Water development is an important and ongoing historic theme within the history of the west. Added to this is the magnitude of planned change to the California landscape brought about by this single engineered public works project and the ability for the SWP and the California Aqueduct to meet the definition of "exceptional importance" at the statewide level is clear. The proposed project would not substantially alter the design of the CCF. Nor would the proposed installation of a fishing pier and boat dock diminish the character-defining features (embankment slope, depth, size, concrete radial gates) of the CCF. It will continue to function as a storage facility and remain a critical component of the SWP. The proposed project would only marginally alter the CCF's integrity of materials because new materials would be introduced, but the CCF would retain sufficient historic materials to reflect its period of significance. The CCF would continue to retain integrity of location because the proposed project would not relocate the resource. Integrity of design would be retained because it would continue to reflect its historic function and aesthetics. Workmanship would be retained because key exterior materials from its period of significance would not be altered. Lastly, integrity of setting, feeling, and association would not be lost because the proposed project would not alter the character of the place and would still provide a sense of place and time. Therefore, the CCF would still convey its historical significance, and the impact on this cultural resource would be less-than-significant.

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

Less-than-Significant with Mitigation Incorporated. Archival and field research revealed no archaeological resources within the project site, and it is extremely unlikely that buried archaeological resources are present. Furthermore, project activities do not require excavation which would have the potential to unearth buried archaeological deposits. Nevertheless, it is possible that previously undiscovered or unknown cultural remains exist at the site and could be encountered or uncovered during project construction. Therefore, this impact would be considered potentially significant. However, with implementation Mitigation Measure Cul-1 in the unlikely event that archaeological resources are discovered during project-related construction activities, this potential impact would be reduced to a less-than-significant level.

Mitigation Measure Cul-1: Halt Ground-Disturbing Construction Activities if Cultural Materials Are Discovered.

The following measures shall be implemented to avoid or minimize potential impacts to cultural materials:

- *If a discovery of cultural materials (e.g., unusual amounts of shell, animal bone, flaked stone, bottle glass, ceramics, structure/building remains) is encountered during project construction, ground disturbances in the immediate vicinity of the find shall be halted immediately and a qualified professional archaeologist shall be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant as per the CRHR and identify appropriate management steps needed to protect and secure identified resources.*

Timing: *During construction*

Responsibility: *DWR*

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

No impact. Project-related earth-moving activities (i.e., grading) would take place in imported soils that were filled and compacted to form the existing dam and levee or would be filled and compacted as part of the project to facilitate construction of the proposed retaining walls. Any unique paleontological resources that may have been present in those fill materials would have been destroyed during the previous construction process. Installation of the proposed fishing pier and replacement boat dock would occur in Holocene-age mud and silt deposits that would not contain unique paleontological resources. Therefore, the project would have no impact on unique paleontological resources.

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

Less-than-Significant with Mitigation Incorporated. No evidence of human remains at the project site was found in documentary research, and it is extremely unlikely that buried human remains are present. Furthermore, project activities do not require excavation which would have the potential to unearth buried human remains. Nevertheless, it is possible that presently unknown prehistoric burials exist, and could be uncovered during project construction. Therefore, this impact would be considered potentially significant. However, with implementation Mitigation Measure Cul-1 in the unlikely event that archaeological resources are discovered

during project-related construction activities, this potential impact would be reduced to a less-than-significant level. Nevertheless, proposed ground-disturbing activities on the project site could adversely affect presently unknown prehistoric burials. California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. In light of the potential to uncover unknown or undocumented Native American burials, this impact would be potentially significant. Implementation of Mitigation Measure Cul-2 would reduce this impact to a less-than-significant level.

Mitigation Measure Cul-2: Halt Construction Activities if Any Human Remains Are Discovered.

The following measures shall be implemented to avoid or minimize potential impacts to human remains:

- *The procedures for the treatment of discovered human remains are contained in Sections 7050.5 and 7052 of the California Health and Safety Code and Section 5097 of the California Public Resources Code. In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, such activities that may affect the remains shall be halted and DWR or its designated representative shall be notified. DWR shall immediately notify the county coroner and a qualified professional archaeologist. If the coroner determines that the remains are those of a Native American, the coroner must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code, Section 7050[c]).*

- *DWR's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in Section 5097.9 of the California Public Resources Code. DWR or its appointed representative and the professional archaeologist shall consult with a Most Likely Descendant (MLD) determined by the NAHC regarding the removal or preservation and avoidance of the remains and shall determine whether additional burials could be present in the vicinity.*

Assuming that an agreement can be reached between the MLD and DWR or their representative with the assistance of the archaeologist, these steps would minimize or eliminate adverse impacts on the uncovered human remains.

Timing: *During construction*

Responsibility: *DWR*

3.6 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. Geology and Soils. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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 California Geological Survey 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

3.6.1 ENVIRONMENTAL SETTING

The project site is located in the Delta at the western edge of the Central Valley, approximately 9 miles east the Coast Ranges. Numerous seismically active faults such as the Greenville, Hayward, and San Andreas are located within the Coast Ranges. Project facilities would primarily be constructed within existing levee materials that were created from imported soil that was filled and compacted in place. In addition, the proposed fishing pier and boat dock would be anchored in Holocene-age mud and silt deposits under water within the CCF and the West Canal. The topography at the project site consists of slopes along the waterside and landsides of the levees, with level ground on the tops of the levees and along the levee roads.

3.6.2 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 California Geological Survey Special Publication 42.)

No impact. CCF and the project vicinity are not located within an Alquist-Priolo Earthquake Fault Zone Map (California Geological Survey 2010). Furthermore, there are no known faults that pass through or are immediately adjacent to the project site. Therefore, loss, injury, or death would not occur as a result of rupture of a known earthquake fault on or adjacent to the project site. There would be no impact.

ii) Strong seismic ground shaking?

Less-than-significant impact. The project facilities would be constructed approximately 4.5 miles southeast of the Midland Fault; however, the Midland Fault has not been active in the last 1.6 million years (Jennings 1994). The Greenville Fault, approximately 9 miles west of the project site, is the closest active fault. In January of 1980, two earthquakes of Richter magnitude 5.5 and 5.8 occurred along this fault in the Livermore Valley (McJunkin and Ragsdale 1980). Other active faults, such as the Calaveras, Hayward, and San Andreas are located approximately 25, 35, and 55 miles west, respectively (Jennings 1994). Therefore, strong seismic ground shaking is a potential at the project site. However, all project facilities would be designed and constructed in accordance with the California Building Standards Code (CBC), which contains requirements specifically designed to reduce earthquake damage to the maximum extent feasible. Therefore, this impact would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less-than-significant impact. The proposed pier facilities would be anchored underwater by pilings driven into the sediments, and the temporary rock platform that may be used to construct a portion of the pier would rest on the bottom directly adjacent to the pier alignment. The sediments in this area of the CCF are loose, unconsolidated, Holocene mud and silt that may be susceptible to liquefaction. The proposed facilities on land would be constructed on the dam and levee, which consist of engineered, compacted fill material. Although liquefaction could pose a hazard at the project site, all project facilities would be designed and constructed in accordance with the CBC, 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. While the project site is located in an area containing landslide deposits and is identified in the Contra Costa County General Plan to be a landslide hazard area, the project site is relatively flat with little topography. The levee and dam do have slopes on their land and water side, but these embankments have been specifically engineered and constructed by DWR to retain structural integrity. Because the project site is not in an area of hilly or mountainous topography where landslides would occur, and the

dam and levee are not at risk of sliding, there would be no impact related to exposing people to the risk of loss, injury, or death associated with landslides.

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

Less-than-significant impact. Construction of the project would involve grading for several proposed facilities, including approximately 1.5 acres to accommodate the proposed 1.0-acre staging area (see Exhibit 2-3). Therefore, the project would disturb an area of land greater than 1 acre and would, accordingly, be subject to SWRCB requirements to prepare and implement a SWPPP for control of erosion, sedimentation, and runoff during construction (see Section 2.6.6, "Water Quality Protection Measures," and Section 3.9, "Hydrology and Water Quality"). The SWPPP includes a site map and description of construction activities, and also identifies the BMPs that would be employed to prevent soil erosion, runoff, and discharge of construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. 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 on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less-than-significant impact. With regard to the pier proposed within the CCF and dock proposed on West Canal, such facilities would be anchored into Holocene-age deposits that could render them susceptible to damage from liquefaction or collapse. The temporary rock platform, if used to construct the shallow section of the pier in the CCF, also would rest on Holocene-age deposits while in place. However, these proposed facilities, including the temporary rock platform, would be designed by a licensed engineer in accordance with all applicable requirements of the CBC, which contains requirements specifically designed to reduce damage from liquefaction to the maximum extent feasible. Therefore, the potential impact associated with damage to in-water project facilities from liquefaction or collapse would be less than significant.

With regard to those facilities that would be constructed on land, such facilities would be built within the existing dam and levee. The dam and levee consist of compacted, engineered fill, which is a stable material. The proposed staging area would be placed on land between the outer levee and the dam; installation of the staging area would only require minor site grading and installation of crushed rock. Therefore, the staging area would have no effect on the stability of the underlying rock or soil types. All proposed landside facilities would be designed by a licensed engineer in accordance with DWR requirements for construction on levees and dams, and also would be designed in accordance with all applicable requirements of the CBC. Therefore, this impact would be less than significant.

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

No impact. Those facilities that are proposed in the CCF and West Canal would be anchored by piers or pilings driven into the sediments under water. Because the sediments are perpetually wetted, they would not be susceptible to expansion. Furthermore, the piers and pilings would be designed in accordance with all applicable requirements of the CBC. The temporary rock platform that may be installed adjacent to the pier alignment to support the crane during construction of the pier would be constructed of approximately 1,000 cy of primarily 24-inch (or smaller) rock that is clean (free from contamination), hard, dense, durable, and free from cracks, seams, and other defects. Because the rock material would not contain clay soils, the platform would not have expansive properties. With

regard to those facilities that would be constructed on land, such facilities would be built within the existing dam and levee. The dam and levee consist of engineered, compacted fill material that does not contain expansive soils. There would be no impact.

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

No impact. The proposed project would not require the use of septic tanks or alternative wastewater disposal systems, because the proposed restroom facilities would not discharge to the soil. As stated in Chapter 2, "Introduction," either a temporary portable restroom facility service would be used or a semi-permanent restroom would be constructed in the staging area. The semi-permanent restroom would include a concrete-lined waste pit that would be periodically emptied. In either case, waste would be collected regularly and transported offsite to an existing wastewater treatment facility for processing. Therefore, there would be no impact.

3.7 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. Greenhouse Gas Emissions. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
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

Global warming is the name given to the increase in the average temperature of the Earth's near-surface air and oceans since the mid-20th century and its projected continuation. Warming of the climate system is now considered to be unequivocal (IPCC 2007) with global surface temperature increasing approximately 1.33 degrees Fahrenheit (°F) over the last 100 years. Continued warming is projected to increase the global average temperature between 2°F and 11°F over the next 100 years.

The causes of this warming have been identified as both natural processes and as the result of human actions. The Intergovernmental Panel on Climate Change concludes that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming from pre-industrial times to 1950 and had a small cooling effect afterward. However, after 1950, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase. These basic conclusions have been endorsed by more than 45 scientific societies and academies of science, including all of the national academies of science of the major industrialized countries, and since 2007, no scientific body of national or international standing has maintained a dissenting opinion (Doran and Zimmerman 2011).

Increases in GHG concentrations in the Earth's atmosphere are thought to be the main cause of human induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reflected back into space. Some GHGs occur naturally and are necessary for keeping the Earth's surface habitable. However, increases in the concentrations of these gases in the atmosphere during the last hundred years have decreased the amount of solar radiation that is reflected back into space, intensifying the natural greenhouse effect and resulting in the increase of global average temperature.

The principal GHGs are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFC), hydrofluorocarbons (HFC), and water vapor. Each of the principal GHGs has a long atmospheric lifetime (1 year to several thousand years). In addition, the potential heat trapping ability of each of these gases varies significantly from the others. CH_4 is 23 times as potent as CO_2, while SF_6 is 22,200 times more potent than CO_2. Conventionally, GHGs have been reported as CO_2 equivalents (CO_2e). CO_2e take into account the relative potency of non-CO_2 GHGs to convert their quantities to an equivalent amount of CO_2 so that all emissions can be reported as a single quantity.

The primary man-made processes that release these gases include the following: burning of fossil fuels for transportation, heating, and electricity generation; agricultural practices that release CH_4, such as livestock grazing and crop residue decomposition; and industrial processes that release smaller amounts of high global warming potential gases such as SF_6, PFCs, and HFCs. Deforestation and land cover conversion have also been identified as contributing to global warming by reducing the Earth's capacity to remove CO_2 from the air and altering the Earth's albedo (or surface reflectance) allowing more solar radiation to be absorbed.

CRITERIA FOR DETERMINING SIGNIFICANCE OF EFFECTS

It is unlikely that any single project by itself could have a significant impact on the environment. However, the cumulative effect of human activities has been clearly linked to quantifiable changes in the composition of the atmosphere, which in turn have been shown to be the main cause of global climate change (IPCC 2007). Therefore, the environmental effects of GHG emissions from this project will be addressed cumulatively.

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 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 IS/negative declaration prepared for the GGERP in accordance with the CEQA Guidelines review and public process. Both the GGERP and IS/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 developed construction emission thresholds in order to distinguish between typical construction projects that are analyzed and addressed under the GGERP and Extraordinary Construction Projects whose construction emissions are not analyzed or addressed under the GGERP. A construction project will be considered to be an Extraordinary Construction Project if either:

- The project emits more than 25,000 metric tons (MT) CO_2e in total during the construction phase of the project; or
- The project emits more than 12,500 MT CO_2e in any single year of construction.

These thresholds represent a level of GHG emissions that by themselves could potentially adversely affect DWR's ability to achieve its GHG emissions reduction goals. However, a project exceeding either of these thresholds would represent construction activities exceeding the typical level of construction activity performed by DWR and, therefore, exceeding the level of cumulative effects analysis done for the GGERP. Construction emissions that exceed either of these thresholds are, therefore, not analyzed or addressed under the GGERP and projects which exceed these thresholds will not be eligible to rely on the analysis in GGERP for project-specific cumulative impacts analyses under CEQA. For projects where construction emissions exceed this threshold, a project-specific impacts analysis for construction GHG emissions following the CEQA Guidelines and DWR policy may need to be conducted. Depending on the results of the impacts analysis, the project may need to consider mitigation for potential impacts.

At the time of this writing, no Federal, State, regional, or local air quality regulatory agency has adopted a quantitative threshold of significance for construction-related GHG emissions. DWR states that including the thresholds in the GGERP does not constitute a determination that these are generally applicable as thresholds of significance for CEQA purposes. Each project is evaluated on a case-by-case basis using the most up-to-date calculation and analysis methods. However, since the proposed project only involves construction-related emissions, it is appropriate to use the GGERP thresholds to evaluate whether the GHG emissions contribution from the project to the global impact of climate change would reach the level of a considerable incremental contribution to a significant cumulative impact.

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. Construction-related GHG exhaust emissions would be generated by sources such as heavy-duty off-road equipment, trucks hauling materials to the project site, and worker commute vehicles. GHG emissions generated by construction activities would be primarily in the form of CO_2. Although emissions of other GHGs such as CH_4 and N_2O are important with respect to global climate change, the emission levels of these other GHGs from on- and off-road vehicles used during construction are relatively small compared with CO_2 emissions, even when factoring in the relatively larger global warming potentials of CH_4 and N_2O.

Construction-related emissions for the proposed project were estimated using fuel consumption rates for off- and on-road vehicles and emission factors for diesel fuel. Estimated GHG emissions from construction of the proposed project would be approximately 956 metric tons of CO_2 (see Appendix C). Many air districts recommend that construction emissions associated with a project be amortized over the life of the project (typically 30 years) and added to the operational emissions. Amortized over the life of the project, the construction-related GHG emissions are approximately 32 MT CO_2 per year.

Operational GHG emissions may be both direct and indirect emissions and would be generated by area and mobile sources. Direct emissions are those that would occur at the point of consumption or activity such as natural gas combustion for building or water heating. Indirect emissions are those that would occur at a location away from where the consumption activity is occurring. The best example of an indirect emission is electricity-related emissions because although the electricity consumption would occur on the project site, the electricity and associated GHG emissions would likely be generated in another location. As discussed in Section 3.3, "Air Quality," the proposed project is not anticipated to generate new vehicle trips and would not generate any additional activities related to maintenance or operations that would exceed existing levels. The proposed project would not significantly increase the generation or use of electricity, water, wastewater, and solid waste.

The total construction-related and operational CO_2e emissions of 956 MT CO_2e associated with the proposed project would be less than any of the GHG thresholds discussed earlier in this section. Therefore, the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. This impact would be less than significant.

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

Less-than-significant impact. The CEQA Guidelines require environmental analyses to evaluate both the level of GHG emissions associated with construction and operation of a project and the project's consistency with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Assembly Bill (AB) 32 directed ARB to develop a Scoping Plan and identify a list of early action GHG reduction measures. ARB's Scoping Plan includes a comprehensive set of actions designed to reduce overall GHG emissions in California. The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems. Emission reductions assumed as part of the Scoping Plan include light-duty vehicle GHG standards ("Pavley standards"), low carbon fuel standard, and energy efficiency measures. The Scoping Plan did not directly create any regulatory requirements related to the proposed project.

ARB's Scoping Plan includes measures that would indirectly address GHG emissions levels associated with construction activity, including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard. Policies formulated under the mandate of AB 32 that are applicable to construction-related activity, either directly or indirectly, are assumed to be implemented during construction of the proposed project if those policies and laws are developed before construction begins. Therefore, it is assumed that project construction would not conflict with the Scoping Plan.

The Contra Costa County Board of Supervisors formed a Climate Change Working Group in May 2005 to develop a Climate Protection Report, which included a list of existing and potential GHG reduction measures. In October 2007, the county established a long-term GHG reduction target, which calls for the County to work with local, state, and federal governments and other local leaders to jointly reduce countywide GHG emissions to 80% below baseline levels by 2050.

In December 2008, the Contra Costa County Board of Supervisors adopted a Municipal Climate Action Plan (MCAP), which includes municipal emissions reduction targets and quantifies GHG reductions from existing municipal programs as well as potential reductions from the implementation of additional programs. In April 2012, the Contra Costa County Board of Supervisors directed the Department of Conservation and Development to return to the Board of Supervisors with a recommended Communitywide Climate Action Plan and associated GHG emissions inventory and near-term reduction target upon completion in 2012. The Communitywide Climate Action Plan (CCAP) is intended to address the GHG emissions generated within the entire unincorporated county area. The CCAP will also include a near-term reduction target for the year 2020. According to the county, an updated GHG emissions inventory and establishment of a reduction target for 2020 are critical elements in order to ensure consistency with AB 32 and BAAQMD Guidelines. The proposed project does not conflict with any measures in the MCAP, which is the only currently approved GHG reduction plan for the county.

DWR has developed the GGERP to guide its efforts in reducing GHG emissions (DWR 2012b). The GHG emissions reduction measures proposed in the plan were developed for the purpose of reducing emissions of GHGs in California as directed by Executive Order (EO) S-3-05 and AB 32. DWR has established the following GHG Emissions Reduction Goals:

- Reduce GHG emissions from DWR activities by 50% below 1990 levels by 2020; and
- Reduce GHG emissions from DWR activities by 80% below 1990 levels by 2050.

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, Section 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 Section 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, (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 SWP 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 has been completed documenting that the project has met each of the required elements (Appendix C).

Preconstruction and final design BMPs are designed to ensure that individual projects are evaluated and their unique characteristics taken into consideration when determining if specific equipment, procedures, or material requirements are feasible and efficacious for reducing GHG emissions from the project. The proposed project would implement the following preconstruction and final design BMPs:

- 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, if applicable, and specify, as appropriate, 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.

According to the GGERP, all DWR projects are expected to implement all construction BMPs unless a variance is granted and approved by the DWR CEQA Climate Change Committee (DWR 2012b). Therefore, the proposed project will incorporate the following BMPs into the project design:

- 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 [Title 13, Section 2485 of the California Code of Regulations]). 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 tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every 2 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/or 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 SmartWay27 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% 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.

The proposed project would not conflict with the AB 32 Scoping Plan, the MCAP, GGERP, or any other plans, policies, or regulations for the purpose of reducing GHG emissions. Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the GGERP (as shown in Appendix C), 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, the impact would be less than significant.

3.8 HAZARDS AND HAZARDOUS MATERIALS

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

3.8.1 ENVIRONMENTAL SETTING

The DWR owns and operates the facilities at the CCF. Minor amounts of hazardous materials are required for maintenance and operation of the facilities at CCF including the control building, radial gates and the bridge. The CCF also includes an earthen dam and levee. Typically, DWR does not store, transport, or use significant amounts of hazardous materials to maintain such facilities.

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 impact. Construction of the proposed project would not require extensive or on-going use of acutely hazardous materials or substances. Construction activities of the FFP would be short-term during work windows in 2013 or 2014, and would involve the limited transport, storage, use, or disposal of hazardous materials. Some examples of hazardous materials handling include fueling and servicing construction equipment on-site, and the transport of fuels, lubricating fluids, and solvents. These types of materials, however, are not acutely hazardous, and all storage, handling, and disposal of these materials is regulated by the California Department of Toxic Substances Control (DTSC), EPA, the Occupational Safety & Health Administration.

Operation of the proposed project would continue to involve the use of minor amounts of hazardous materials associated with maintenance of the CCF existing facilities and the new facilities of the FFP, including oil and lubricants. However, all hazardous materials would be stored and used in accordance with applicable federal, state, and local regulations. In addition, proper spill management, including response plans and spill kits, would be implemented and maintained onsite by site contractors and DWR staff, as is currently required by DWR. None of the project components would generate new sources of hazardous materials. Accordingly, impacts related to the routine use of hazardous materials would be less than significant for the proposed project.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less-than-significant impact. As noted in (a) above, similar hazardous materials associated with operations and maintenance of the CCF facilities would continue to be used during construction and operation of the FFP. 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 handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No impact. The nearest school within the project vicinity is Excelsior Middle School, located in Byron over 5 miles northwest of the proposed FFP. There is no potential for hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Therefore, there would be no impact.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No impact. The Hazardous Waste and Substances Sites List (Cortese List) is compiled by the DTSC in accordance with California Government Code Section 65962.5. A search of the Cortese List and search for sites with reported hazardous material spills, leaks, ongoing investigations and/or remediation near the project site was performed using the DTSC online EnviroStor database (DTSC 2012). The search of site listings within the

EnviroStor database did not identify any potential hazardous contamination sites in the vicinity of the project site. No impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No impact. The project site is not located within 2 miles of a public airport. The Contra Costa County Byron Airport is located within the project vicinity and is over 3 miles west from the project site. The Contra Costa County Airport Land Use Compatibility Plan (Contra Costa County Airport Land Use Commission 2000) describes all Byron Airport compatibility polices to ensure safety hazards are addressed within the plan area. Because all project activities would be located outside of the Byron Airport Land Use Compatibility Plan area and the project would not involve any aircraft or helicopter uses for construction or operations, there would be no impact.

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

No impact. As noted in item (e) above, the closest airport to the proposed FFP would be the Byron Airport, which is a public airport. No private airstrips are in the vicinity of the project site. Thus, no impacts to private airstrips or people residing near an airstrip would occur.

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

No impact. During the project construction period, emergency response routes and plans would not be impacted by construction activities at the project site or by the transport of imported material by trucks. The proposed project would not require any road or land closures during construction. The proposed project would not impair or interfere with emergency access to the CCF on Byron Highway and Clifton Court Road and other local roads, including any emergency response or evacuation routes, would remain open. No impact would occur.

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 impact. The project site is not located within a wildland fire area or a high fire hazard zone; however, fire may occur in the area surrounding the staging area with ruderal vegetation and trees along West Canal. Project features described in Section 2.6.7, "Fire Protection Measures," would ensure that the project construction contractor would develop a fire protection and prevention plan which incorporates fire protection measures (e.g., spark arrestors, mufflers) on all equipment with the potential to create a fire hazard. The plan would ensure that fire suppression equipment is onsite and that all construction employees have received appropriate fire safety training. With implementation of the fire protection measures, the impact would be less than significant.

3.9 HYDROLOGY AND WATER QUALITY

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX.	Hydrology and Water Quality. Would the project:				
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level 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 which would result in substantial on- or off-site erosion or siltation?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j)	Result in inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

3.9.1 ENVIRONMENTAL SETTING

The CCF is located within the tidally influenced region of the Delta and was created in 1969 by inundating a 2,200 acre tract of land approximately 2.6 miles long and 2.1 miles wide (DWR 2009b:1). The CCF is surrounded by a 15-foot high earthen dam with an approximately 20-foot-wide gravel crown. The dam is bounded by a thin strip of land on the north, east, and west sides which is surrounded by waterways and protected by an outer levee.

Old River is located to the north, Old River/West Canal to the east, Italian Slough to the northwest, and the intake canal that leads to the SWP Banks Pumping Plant is to the southwest.

CCF is operated as a regulating reservoir to improve operations of the SWP Banks Pumping Plant and water diversions to the California Aqueduct. Hydrodynamics in CCF can vary substantially within and between days depending on factors such as water export rates, radial gate operations, tidal conditions, weather conditions, and water storage within CCF (DWR 2009b:10). During high tide cycles when water elevation in West Canal is greater than the water elevation in CCF, water is diverted from West Canal into CCF through five radial gates. When the radial gates are open, water flow into CCF has been estimated to average approximately 10,000 cubic feet per second (cfs) and maximum flows have been estimated at approximately 15,000 cfs. The radial gate structure is operated on a daily basis and the maximum operating range of water levels in the CCF may be as high as 8 feet (from +0.36ft to +8.36ft NAVD88). The CCF is generally shallow with depths ranging from 4 to 10 feet in most places except for an area located immediately adjacent to the radial gates where a scour hole has formed with a diameter of approximately 200 feet, depths up to 60 feet, and steep side slopes.

The Delta is the primary source of the State's freshwater, providing drinking water for two-thirds of the State. Various water quality and flow objectives have been established to ensure that the quality of Delta water is sufficient to satisfy all designated uses. Water quality in the Delta is affected by a multitude of factors including upstream reservoir releases; tidal changes; the discharge of agricultural diverters; and the export rates of the SWP and the Central Valley Project (CVP) (Contra Costa County 2005b:8-42). The EPA and the Central Valley RWQCB have classified the Delta Waterways (Export Area) where the proposed project area is located as 303(d) impaired for chlorpyrifos, DDT, diazinon, electrical conductivity, Group A pesticides, invasive species, mercury, and unknown toxicants (SWRCB and EPA 2011).

3.9.2 DISCUSSION

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

Less-than-significant impact. Construction of the proposed project would require ground-disturbing work within and adjacent to CCF and West Canal including demolition, grading, compaction, rock fill and removal, and pile driving that could result in the discharge of sediment into receiving waters and/or increased turbidity. Construction of the proposed project would include the use of fuels, oils, and lubricants to operate construction equipment. Equipment could be operated on barges, on a temporary rock platform in the water, or on land and have the potential for accidental spills. The placement and subsequent removal of approximately 1,000 cy of temporary rock may be required in the CCF for use as a platform to support a crane for pile driving in the shallow sections of the pier alignment. Placement and subsequent removal of rock material in the CCF could result in increased turbidity, water quality impacts if the rock material is contaminated, and/or accidental spills of fuels, oils, and lubricants from the machinery used to construct the platform. The platform would be constructed of primarily 24-inch (or smaller) rock that is clean (free from contamination) and would be purchased from a commercial source. When pier construction is complete, the temporary rock platform would be removed and hauled away to DWR's existing Howard Yard rock stockpile.

Pile driving would be used during construction to anchor the fishing pier and new boat dock into place and has the potential to temporarily increase water turbidity in the immediate vicinity. Pile driving is expected to occur for a total of 345 hours. Turbidity levels in the vicinity of the new dock in West Canal and surrounding Delta channels

would not be expected to increase substantially as a result of pile driving activities associated with dock construction because pile driving in this location would be intermittent (pile driving would cease for a period of time between piles) and temporary (3 months) and conditions would be similar to conditions in other parts of the Delta where pile driving activity has been shown to have less than significant effects on turbidity. Monitoring results from similar pile driving activities during construction of the Georgiana Slough Non-Physical Barriers project did not show an increase in turbidity level in excess of 20%, a threshold derived from the Sacramento and San Joaquin Rivers Basin Plan (Central Valley Regional Water Quality Control Board 1998), immediately downstream of the pile driving activities compared to upstream measurements (DWR 2012c, 2012d).

For the fishing pier, up to 44 piles spaced as much as 40 feet apart would be required. Any pile driving, as well as placement and removal of the temporary rock platform (if required), in the CCF waters near the radial gates (i.e. within approximately 2,000 feet) would require gate closure. The gate closure would have to be coordinated through the DWR Joint Operations Center and Delta Field Division.

Because pile driving during construction of the proposed pier within the CCF, as well as placement and removal of the temporary rock platform (if required), would occur only during periods when the radial gates were closed, any increase in turbidity associated with these construction activities would not have the potential to affect Delta waterways outside the CCF. Pile driving associated with construction of the pier inside the CCF, as well as rock platform placement and removal (if required), could occur during periods of pumping at the Banks Pumping Plant. The CCF acts as a settling basin for suspended sediment due to the low velocity of water in the reservoir compared to the channels that feed it (DWR 2012a). Therefore, any turbidity in the water column as a result of pile driving activities or rock placement and removal within the CCF would have some time to settle out before reaching the pumps since the intake channel for the Banks Pumping Plant is approximately 2 miles from the radial gates.

Moreover, pile driving activities and rock placement and removal in the CCF would not be expected to generate turbidity in excess of conditions already encountered in the CCF. According to DWR (2012a), turbidity in CCF ranges from about 5 to 20 nephelometric turbidity units (NTUs), with a max measured of 25 NTUs. Peak turbidity levels at the Banks Pumping Plant generally occur between May and July, with June having the highest levels. This peak is generally due to the re-suspension of sediment in CCF caused by high winds in the Delta typical of this time of year. High pumping rates in the summer also create high velocities in the CCF which may re-suspend sediment and lead to higher turbidity (DWR 2012a). Lastly, the velocities of flow into CCF when the radial gates are open can be high, as much as 13 feet per second, which results in scour and resuspension of sediments (Gingras 1997). Because the increase in turbidity level from the proposed pile driving and rock placement and removal would likely be small relative to other sources of turbidity in the CCF, this impact would be less than significant.

Movement of a barge, tug boat, or other boats associated with pier and dock construction activities could also temporarily disturb the CCF and West Canal bottom and thereby temporarily increase suspended solids and turbidity in the project area. Boating is already allowed in West Canal, so the use of boats or barges during construction would not be expected to increase turbidity above levels already encountered in West Canal. In addition, for similar reasons discussed above with respect to pile driving and rock placement and removal, the operation of boats during construction adjacent to the radial gates would also not be expected to generate turbidity in excess of what is already generated by operation of the radial gates.

Construction would involve the grading of up to 1.5 acres to accommodate the 1.0-acre staging area, in addition to grading for access road repairs, outer levee road paving, and creation of the ADA-compliant parking spots. As such, the proposed project would disturb greater than one acre of land and would, therefore, be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity General Permit Order 2009-0009-DWQ (Construction General Permit). Please see Section 2.6.6, "Water Quality Protection Measures," for a description of the Environmental Commitment included as part of the project to reduce potential environmental impacts. The Construction General Permit requires the development and implementation of a SWPPP, which would include an erosion control plan and would list BMPs that would be used to protect stormwater runoff. The SWPPP would contain a visual monitoring program and a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs. The adoption of an erosion control plan and a spill prevention, control, and countermeasure plan would provide measures to avoid, minimize, and contain accidental spills, thus minimizing the potential for impacts on water quality.

Because the proposed project would be required to adhere to all applicable requirements of the Construction General Permit with regard to erosion control and spill prevention and control, as described in Section 2.6.6, "Water Quality Protection Measures," impacts related to water quality during construction would be less than significant.

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

Less-than-significant impact. The proposed project would not use groundwater during construction (e.g., dust control, vehicle washing) or operations. Additionally, although the proposed project would result in an increase in the total amount of impervious surface at the project site through paving of a 400-foot-long section of roadway, compaction of the gravel staging area and installation of a 60 by 40 foot concrete pad, 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 which would result in substantial on- or off-site erosion or siltation?

Less-than-significant impact. The proposed project would create new runoff due to the increase in impervious surface described in b). This increase in runoff would be minor and is therefore, not expected to result in substantial on- or off-site erosion or siltation. Implementation of the water quality protection measures described in Section 2.6.6 would preserve existing vegetation to the maximum extent practicable. Disturbed soils would also be stabilized following construction and post construction BMPs and monitoring would be implemented as part of the erosion control plan to 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 which would result in on- or off-site flooding?

Less-than-significant impact. The proposed project would increase the area of impervious surface and would generate a minor increase in potential runoff, particularly due to the location of the proposed concrete pad directly adjacent to the waters inside the CCF. 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. Water levels in the CCF are known to fluctuate by as much as 8 feet. The CCF is operated on a tidal cycle through the opening and closing of radial gates and any increase in runoff from the project site would not be of substantial volume to cause an increased risk of flooding. This impact would be less than significant.

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

Less-than-significant impact. The release of pollutants into adjacent waters during construction of the proposed project would be minimized with implementation of the water quality protection measures described in Section 2.6.6. In addition, the proposed staging area would be designed to direct runoff landward where it could infiltrate to minimize the potential for runoff to enter adjacent waters.

As described in c), the area of impervious surface would increase upon completion of the proposed project with the addition of 400 linear feet of paved levee road surface and the new concrete pad, and uses at the project site following construction, including gate maintenance, vehicle traffic, and equipment storage, could result in the release of oils and other pollutants to receiving waters. However, the potential for such releases would be low and any release would likely be minor due to the restrictions on public vehicle access to the site, the small number of trucks visiting the site on a regular basis (sewage pumpout trucks, DWR maintenance vehicles), and the infrequent need to conduct maintenance activities at the site. Furthermore, Section 2.6.6, "Water Quality Protection Measures," identifies implementation of postconstruction BMPs and monitoring. Therefore, the proposed project would not likely contribute substantial additional sources of polluted runoff, and this impact would be less than significant.

f) Otherwise substantially degrade water quality?

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

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 develop the FFP at the CCF and would not provide new housing. Because the proposed project would not include the addition of any housing, there would be no impact.

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

Less-than-significant impact. The project area is located within the 200-year floodplain. The proposed project would place a floating fishing pier and boat dock within the CCF and West Canal, respectively, involving steel pipe piles to anchor them in place. The proposed project is being designed to accommodate tidal variation in the CCF and West Canal through the floating nature of the fishing pier and fishing dock. The fishing pier would be designed to allow the pier to float up and down with tidally-induced and/or operations-related fluctuations in CCF water levels. The proposed boat dock within West Canal would replace a similar boat dock in the same location. The placement of piles in CCF and West Canal would not impede or redirect flood flows.

Construction of the proposed project may also require temporary installation of a rock platform within the CCF to support a crane for pile driving in the shallow sections of the pier alignment. If required, the rock platform would be installed adjacent to the pier alignment and would be approximately 100 feet long with an average height of 5 feet, a crest width of approximately 30 feet, a base width of approximately 50 feet, and 2:1 side slopes. The placement of the rock platform would be temporary in nature and all rock would be removed and hauled away to DWR's existing Howard Yard rock stockpile when pier construction is complete. Because the placement of rock in the CCF would be temporary and the CCF is operated as a regulating reservoir that can already accommodate tidal- and operations-related fluctuations in water levels, the temporary rock platform would not be expected to impede or redirect flood flows in the CCF. All other structures (restroom, bicycle rack, equipment shed, gate and fence) associated with the proposed project are relatively small and 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 impact. The proposed project could increase the existing risk of levee or dam failure. Most of the land-based facilities associated with the proposed project, including the staging area, restroom, and bicycle rack, lighting, and the touchdown for the fishing pier and boat dock are relatively small and would not compromise the stability of the outer levee or earthen CCF dam. However, the construction of the concrete pad and retaining wall adjacent to the radial gates could result in slope failure. The proposed project is located in a high seismic zone and the proposed retaining wall would be located on the waterside slope of the CCF dam. The construction of the concrete pad and retaining wall would entail excavating into the existing levee, which could potentially initiate seepage and slope instability. In addition, placement of stockpiles, heavy equipment, or other surcharges could also cause channel bank instabilities.

If required by the DSOD, a Dam Alteration Application would be filed in order to obtain permits for constructing the concrete pad and retaining wall. Initial retaining wall stability analysis showed that it possesses adequate local strength and stability. In addition, the concrete pad and retaining wall would be designed to avoid risk of failure and flooding. The final project design would be based on a subsurface geotechnical exploration of the project site and a slope stability analysis. Any excavation would be above the design water surface elevation of the dam and any excavation which alters the dam, levee, or channel bank cross-section, either temporarily or permanently, would be checked to verify slope stability. Finally, placement of stockpiles, heavy equipment, or other surcharges would be considered in the final design to avoid channel bank instabilities. The additional weight of the concrete pad plus the 100-ton crane and the radial gate would also be factored into the analysis of

the stability of the existing concrete wall. Because all proposed facilities would be designed by a licensed engineer in accordance with DWR requirements for construction on levees and dams, the potential to expose people to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam would be reduced to a less-than-significant level.

j) Result in inundation by seiche, tsunami, or mudflow?

No impact. Although the CCF and project site is located in a relatively flat area with little topography, the project site is located in an area containing landslide deposits and is identified in the Contra Costa County General Plan to be a landslide hazard area. Mudflows, however, are unlikely to pose a hazard to people or property in the project area, since narrow mountain valleys that would foster large, fast-moving mud flows during rain storms do not exist near the project area. The proposed project would not affect the existing risk for seiche or tsunami to occur and would not increase populations located with an area subject to seiche or tsunami. There would be no impact.

3.10 LAND USE AND PLANNING

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X.	Land Use and Planning. Would the project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, 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 project site is located in the southeast corner of the CCF in Contra Costa County, near the town of Byron. The project site is zoned as Institutional (Public/Quasi-public) and designated as Parks and Recreation, Delta Recreation and Water in the Contra Costa County General Plan. Surrounding land uses include agriculture, recreation and open space areas, and SWP and Central Valley Water Project fish salvage and pumping facilities. The project site includes an open area between the access road atop the CCF dam and the access road atop the outer levee, a popular fishing spot adjacent to the radial gates of the CCF, and an existing boat dock on the West Canal.

3.10.2 DISCUSSION

a) Physically divide an established community?

No impact. The proposed project would install a prefabricated fishing pier, install a gravel-surface staging area, replace an existing boat dock and other facilities associated with the FFP. The project site is entirely located on DWR property. The project would not alter the existing use of the site and would not divide an established community. 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 site is owned and maintained by DWR. The CCF FFP is being proposed as one measure to decrease predation and increase the survival of ESA-listed salmon, steelhead, and sturgeon within the CCF. Implementation of the proposed project would not alter or change the existing water conveyance operations of DWR into the California Aqueduct, and would improve access for recreational users. Thus, the proposed project would not conflict with any land use policies or regulations and no impacts would occur as a result of the proposed project.

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

No impact. The project site is directly adjacent to, but not within the area covered by the East Contra Costa County HCP/NCCP. The proposed project would not remove vegetation during grading of the staging area. Because none of the vegetation is habitat or a biological community which would be managed under a conservation plan, as discussed in Section 3.4, "Biological Resources," the proposed project would not conflict with any applicable habitat conservation plan or natural community conservation plan, and there would be no impact.

3.11 MINERAL RESOURCES

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	Mineral Resources. Would the project:				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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

The CCF is a constructed water regulating facility. It is not located in an area of known or significant mineral resources.

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 Contra Costa County General Plan establishes and maps important county sand, gravel, and crushed rock as mineral resources (Contra Costa County 2005b). There are no such mineral resources in the proposed project area. Therefore, implementation of the proposed project would not result in the loss of a known mineral resource, and there would be 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. As discussed in (a) above, no mineral resources in the project area are identified in the Contra Costa County General Plan. Therefore, no impact to locally important mineral resource recovery sites would occur as a result of the proposed project.

3.12 NOISE

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

3.12.1 ENVIRONMENTAL SETTING

INTRODUCTION

This section evaluates potential noise impacts resulting from the project, specifically the potential for the project to cause a substantial temporary or permanent increase in ambient noise levels within or around the project site, or to expose people to excessive noise levels.

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired and, therefore, may cause general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment.

Decibels are the standard unit of measurement of the sound pressure generated by noise sources and are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale for earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise energy would result in a 3-dB decrease.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-weighted scale, which approximates the frequency response of the average young ear when

listening to most ordinary everyday sounds, was devised. Noise levels using A-weighted measurements are written dBA or dB. It is assumed that all noise levels presented below are A-weighted.

It is widely accepted that the average healthy ear can barely perceive changes of 3 dB (increase or decrease) and that a change of 5 dB is readily perceptible (Caltrans 2009). An increase of 10 dB is perceived as twice as loud and a decrease of 10 dB is perceived as half as loud.

Although dBA may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of frequencies from distant sources that create a relatively steady background noise in which no particular source is identifiable. Average noise levels over a period of minutes or hours are usually expressed as dB L_{eq}, which typically assumes a 1-hour average noise level and is used as such in this report. The maximum noise level (L_{max}) is the highest sound level occurring during a specific period. The Community Noise Equivalent Level (CNEL) is the 24-hour L_{eq} with a 5-dB "penalty" for the evening noise-sensitive hours from 7 p.m. to 10 p.m. and a 10-dB "penalty" applied during nighttime noise-sensitive hours from 10 p.m. to 7 a.m. The day-night average noise level (L_{dn} or DNL) is similar to the CNEL but with no adjustment (penalty) during evening hours; that is, daytime is defined as 7 a.m. to 10 p.m.

EXISTING NOISE CONDITIONS

Existing noise sources in the project area include distant traffic, agricultural operations, wildlife vocalizations, wind, and moving water within the CCF. While no noise measurements were collected, it is assumed ambient noise levels in the project area range from 40 to 55 dB L_{eq} during daytime hours (7 a.m. to 10 p.m.) and near 30 dB (L_{eq}) or lower at nighttime (10 p.m. to 7 a.m.). Assuming an average daytime ambient noise level of 50 dB (L_{eq}), and an average nighttime noise level of 30 dB (L_{eq}), the ambient L_{dn} would be approximately 48 dB.

3.12.2 REGULATORY SETTING

FEDERAL PLANS, POLICIES, REGULATIONS, AND LAWS

The EPA, Office of Noise Abatement and Control, was originally established to coordinate federal noise control activities. After inception, EPA's Office of Noise Abatement and Control issued the federal Noise Control Act of 1972 which established programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. Administrators of EPA determined in 1981 that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations contained in the rulings by EPA in prior years remain upheld by designated federal agencies, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies.

STATE OF CALIFORNIA

The State of California adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

CONTRA COSTA COUNTY

It should be noted that as a State agency, DWR is not subject to compliance with local ordinances or policies. The following is listed for information purposes. The Noise Element of the Contra Costa County General Plan 2005–2020 (2005) contains the following goals and policies to reduce or eliminate the effects of excessive noise in the community:

GOAL 11-A: To improve the overall environment in the County by reducing annoying and physically harmful levels of noise for existing and future residents and for all land uses.

GOAL 11-B: To maintain appropriate noise conditions in all areas of the County.

GOAL 11-E: To recognize citizen concerns regarding excessive noise levels, and to utilize measures through which the concerns can be identified and mitigated.

- Policy 11-2: The standard (limit) for outdoor noise levels in residential areas is 60 dB L_{dn}.
- Policy 11-8: Construction activities shall be concentrated during the hours of the day that are not noise-sensitive for adjacent land uses and should be commissioned to occur during normal work hours of the day to provide relative quiet during the more sensitive evening and early morning periods.

Contra Costa County does not have an ordinance specifically addressing noise. Noise complaints within the County's unincorporated area are addressed through application of peace disturbance sections of the County Code and application of generic nuisance ordinances of the County Code.

3.12.3 DISCUSSION

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

Less-than-significant impact. Construction noise levels would fluctuate depending on the particular type, number, and duration of usage of the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by those activities, distances to noise-sensitive receptors, and the existing ambient noise environment near the receptor. On-site construction equipment used during site preparation would include excavators, dozers, backhoes, cranes, and trucks. Table 3.12-1 depicts the noise levels generated by the various types of construction equipment that could be used during construction of the proposed project.

As indicated in Table 3.12-1, noise levels for construction activities would range from 74 dB to 85 dB at a distance of 50 feet.[2] Continuous combined noise levels generated by the anticipated construction equipment to be used on-site would result in noise levels of 88.9 dB at 50 feet. Construction noise attributable to the proposed project was estimated using the Federal Transit Administration (FTA) noise methodology for the prediction of heavy equipment noise sources.

[2] 50 feet is typically used as the standard distance of measurement for construction noise levels. Noise levels can then be adjusted to identify noise levels at a specific receptor, taking into account attenuation over distance and other factors.

Table 3.12-1 Noise Emission Levels from Construction Equipment		
Equipment Type	**Typical Noise Level (dB) @ 50 Feet**	**Typical Duty Cycle**
Excavator	85	40
Impact Pile Driver	95	20
Crane	85	16
Dozer	85	40
Backhoe	80	40
Cement Mixer with Extended Arm	85	40
Truck	74–81	40
Notes: dB = A-weighted decibels Noise levels are for equipment fitted with properly maintained and operational noise control devices, per manufacturer specifications. Source: Bolt Beranek and Newman Inc. 1981; FTA 2006:12-6; Thalheimer 2000; data compiled by AECOM in 2012		

Noise from localized point sources (such as construction sites) typically decreases by 6–7.5 dB with each doubling of distance from source to receptor. A reduction of 6 dB is typically associated with sound travelling across a hard surface such as asphalt, whereas a 7.5-dB reduction is associated with softer, pervious ground, such as the agricultural fields that exist between the proposed project and the nearest residential receptor (approximately 2,400 feet southeast of the limits of construction). Taking this into account, construction activities are predicted to generate exterior hourly noise levels of 45.7 dB L_{eq} at the nearest receptor, when propagated from the acoustical center of construction activity. Construction noise at the nearest noise-sensitive receptor is not expected to exceed a day-night average noise level of 43 dB (L_{dn}).

Based on the provided list of construction equipment and construction schedule, it was estimated that a worst-case day of construction operations involving aggregate materials delivery/removal from the project site would include no more than 20 heavy haul-truck trips (to or from the site). Along Clifton Court Road, between Byron Highway and the Dam Access Road, these additional project construction trips would be expected to produce a noise level of approximately 43 dB L_{dn} at the closest noise-sensitive receptor setback (100 feet from the roadway centerline).

Combined construction noise exposure from on-site operations and off-site traffic operations would be approximately 46 dB L_{dn} at the closest noise-sensitive uses (i.e., 43 dB L_{dn} from on-site construction, 43 dB L_{dn} from haul truck traffic). This combined noise exposure is below the county's 60 dB L_{dn} limit. Therefore, this impact is considered less than significant.

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

Less-than-significant impact. Publications by the FTA and the California Department of Transportation (Caltrans) are two of the seminal works for the analysis of groundborne noise and vibration relating to transportation and construction-induced vibration. The proposed project is not subject to FTA or Caltrans regulations; however, these guidelines serve as a useful tool to evaluate vibration impacts. Therefore, FTA and Caltrans guidance are used for assessing the vibration impacts of the proposed project. Caltrans guidelines recommend that a standard of 0.2 inches per second (in/sec) peak particle velocity (PPV) not be exceeded for the protection of normal residential buildings (Caltrans 2004). With respect to human response within residential uses (i.e., annoyance, sleep disruption), FTA recommends a maximum acceptable vibration standard of 80 vibration decibels (VdB) (FTA 2006).

CONSTRUCTION VIBRATION

Construction activities in the project area may result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Groundborne vibration levels caused by various types of construction equipment are summarized in Table 3.12-2. Pile driving would result in the greatest opportunity for groundbourne vibration and noise impacts.

Table 3.12-2
Typical Construction-Equipment Vibration Levels

Equipment		PPV at 25 feet (in/sec)	Approximate L_V at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Haul Trucks		0.076	86
Large Bulldozer		0.089	87

Notes:
in/sec = inches per second; L_V = velocity level in decibels (VdB) referenced to 1 microinch/second and based on the root mean square velocity amplitude; PPV = peak particle velocity
Source: FTA 2006

Using standard FTA vibration attenuation formulas, construction activities would not exceed the recommended threshold of significance of 0.2 in/sec PPV for architectural damage or the recommended threshold of significance for human disturbance of 80 VdB from construction activities involving pile driving at a distance of greater than 275 feet.

Based on the proximity of the nearest residential land use, pile driving would not occur within 275 feet of residential receptors. Thus, groundbourne vibration levels at the nearest residential land use would result in less than significant impacts to local receptors. Groundbourne noise impacts occur due to the vibration of structures. Due to the low level of vibration at the nearest structures, 0.001 in/sec PPV, groundbourne noise impacts would be less than significant.

OPERATIONS VIBRATION

There are no known sources of significant vibration associated with the operation of the proposed project.

In summary, impacts related to groundborne vibration and noise levels would be less than significant because thresholds would not be exceeded during construction or operation of the proposed project.

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

Less-than-significant impact. Construction noise would cease at the end of construction and would not result in a permanent increase in ambient noise levels in the project area. The primary noise sources associated with operation of the proposed project would include traffic accessing the site, vehicles in the parking lot, and ongoing maintenance activities.

The proposed project would not result in substantial traffic generation and traffic associated with future patrons would result in a less than a 1-dB increase along area roadways. The proposed restrooms would include passive venting and thus have no significant noise source. Parking noise is dominated by vehicle engine starts, braking, and vehicle doors closing.

Parking area noise is estimated using the FTA Create Rail model, which includes an algorithm for parking lots based on the number and type of vehicles using the lot. Based on a maximum of 20 vehicles, primarily DWR maintenance trucks, entering and exiting the site in a single hour, noise levels are estimated to be 46 dB L_{eq} at 50 feet from the edge of the proposed parking lot. It is assumed maintenance activities would include the use of a vacuum truck to vacate the restrooms weekly. A vacuum truck generates noise levels of approximately 85 dB L_{max} at 50 feet, which would attenuate to 45 dB L_{eq} or less at the nearest residence. Based on the distance to the nearest residence, noise levels would not measurably increase ambient noise levels at the nearest residence. This impact would be less than significant.

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

Less-than-significant impact. Temporary increases in noise levels due to the project are associated with construction activities. Operation noise is considered permanent noise and is discussed under item e). The project would involve construction of piers, roadways, and parking areas. Construction activities associated with improvements at the project site would generate short-term, temporary, and intermittent noise at or near individual noise-sensitive locations in the project area. The nearest noise-sensitive land uses are residential units located approximately 2,400 feet south of the project site.

Noise levels generated during construction would fluctuate depending on the physical location of construction activities within the project site as well as the type, number, and duration of operation of construction equipment. Noise sources associated with construction activities are considered point sources, and drop off at a rate of 7.5 dB per doubling of distance over acoustically soft ground, such as the agricultural fields located in the vicinity of the project site. The loudest stages of construction are typically associated with earthmoving, as these stages typically involve the largest and greatest number of pieces of equipment. Another stage with potential for significant noise levels is foundation construction when it involves drilling into bedrock or pile driving. It should be noted that since trucks associated with construction at the project site would proceed north and away from the nearest receptor, the pile-driving phase of the proposed project is considered to have the highest potential noise levels, and as noted above would result in ambient noise levels of approximately 88.9 dB at 50 feet.

Based on the distance to the nearest receptors, average hourly construction noise levels during grading, general construction, or paving are calculated to be approximately 45.7 dB L_{eq} (and no more than 43 dB L_{eq}) at the nearest residential property. Construction noise levels would be similar to those from farm equipment or passing personal vehicles on lightly traveled roads. Overall construction-related noise exposure, including the operation of on-site construction equipment and off-site construction haul trucks, would be approximately 46 dB L_{dn} at the closest noise-sensitive property. This noise exposure is less than the assumed ambient noise exposure of 48 dB L_{dn}, and would not be expected to increase the noise exposure at the closest noise-sensitive properties by more than 2 dB (L_{dn}). This increase is not considered to be significant, and would not be expected to adversely affect noise-sensitive receptors in the project vicinity. Therefore, this impact is considered less than significant.

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

No impact. The project site is not located within 2 miles of a public airport. The Contra Costa County Byron Airport is located within the project vicinity and is over 3 miles west of the project site. The Contra Costa County Airport Land Use Compatibility Plan (Contra Costa County Airport Land Use Commission 2000) describes all Byron Airport compatibility polices to ensure safety hazards are addressed within the plan area. Because all project activities would be located outside of the Byron Airport Land Use Compatibility Plan area and the project would not affect any airport operations, the project would not expose people on- or off-site to excessive noise levels. Therefore, there would be no impact related to airport noise.

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

No impact. As noted in item (e) above, the closest airport to the proposed FFP would be the Byron Airport, which is a public airport. No private airstrips are in the vicinity of the project site, and the project would not affect any airstrip operations. Therefore, the proposed project would not expose people on- or off-site to excessive noise levels, and would have no impact to private airstrip noise.

3.13 POPULATION AND HOUSING

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

3.13.1 ENVIRONMENTAL SETTING

The project site includes the CCF, and associated infrastructure. Canals and agricultural open space surround the project site and no housing exists near the project site.

3.13.2 DISCUSSION

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

No impact. The proposed project would develop the FFP at the CCF. During construction, the work force is expected to be generated from the existing labor pool in Contra Costa County. Following construction, the FFP would be maintained by existing DWR staff that is assigned to the CCF facilities. Accordingly, the proposed project would not induce population growth in the area, and there would be no impact.

b) Displace substantial numbers of existing homes, necessitating the construction of replacement housing elsewhere?

No impact. The proposed project would not displace any existing housing. Therefore, the proposed project would not result in impacts to housing nor necessitate the construction of replacement housing. No impact would occur.

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

No impact. The proposed project would not displace any people, or result in the need for replacement housing. No impact would occur.

3.14 PUBLIC SERVICES

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

3.14.1 ENVIRONMENTAL SETTING

Fire protection and police protection services in the unincorporated areas of Contra Costa County are provided by the East Contra Costa County Fire Protection District and the Contra Costa County Sheriff's Department, respectively. The CCF is accessible to boaters, pedestrians, and bicyclists for recreational opportunities, but no additional facilities (e.g., restrooms) to support these activities are currently provided at the site.

3.14.2 DISCUSSION

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

FIRE PROTECTION

No impact. The project site would continue to be served by the East Contra Costa County Fire Protection District. The closest fire station, Station 59 located at 1685 Bixler Road, Discovery Bay, CA is approximately 6.75 miles from the proposed construction site. Construction and operation of the proposed project would not require additional fire protection facilities and access to the site would be maintained during construction in accordance with Contra Costa County fire policies and regulations. Therefore, no impacts related to fire protection services would occur as a result of the proposed project.

POLICE PROTECTION

No impact. The Contra Costa County Sheriff's Patrol Division provides uniformed law enforcement services to residents in the unincorporated areas of Contra Costa County, including the area around the CCF. Construction and operation of the proposed project would not require additional police protection facilities or services. Therefore, no impacts related to police protection services would occur as a result of the proposed project.

SCHOOLS

No impact. The proposed project would develop the FFP at the CCF and would not provide new housing or a large number of employment opportunities. Therefore, the proposed project would not generate new students or increase the demand on local school systems, and no impact to school services would occur.

PARKS

Less-than-significant impact. The CCF and project site are widely used by anglers for fishing. While public access by pedestrians and bicyclists would be maintained to the majority of the CCF throughout construction, the area around the radial gate structure and the existing boat dock would be closed temporarily during construction activities for public safety reasons. Because closure of the area in the immediate vicinity of the proposed fishing facilities would be temporary; other areas around the CCF would remain available for fishing and public recreation during construction; and following construction, pedestrian and bicycle access to the site along the dam and outer levee roads, and to boaters via the new boat dock on West Canal, would resume, this impact would be less than significant.

OTHER PUBLIC FACILITIES

No impact. No other public facilities exist in the project area that would be affected by construction or operation of the FFP. There would be no impact to other public facilities.

3.15 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. Recreation. Would the project:				
a) 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) 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

RECREATIONAL FISHERIES

The Delta supports regionally important recreational fisheries consisting of a variety of resident and migratory fish. Sport fish species known to occur in the CCF which attract anglers to this location include white catfish (*Ictalurus catus)*, striped bass (*Morone saxatalis)*, largemouth bass (*Micropterus salmoides)*, white sturgeon (*Acipenser traensmontanus),* and Chinook salmon (*Oncorhynchus tshawytscha*).

A brief description of these fisheries is provided below.

Catfish (*Ictalurus* spp.)

A variety of species of catfish inhabit the Delta and are harvested in the local recreational fisheries. These species include black, brown, yellow, white, and channel catfish. These catfish were primarily introduced into the Delta during the late 1800s to support local recreational fisheries (Moyle 2002). White catfish are among the more common species and may be considered the most important catfish species harvested by recreational anglers within the Delta. Catfish typically inhabit areas characterized by lower water velocities (e.g., sluggish channels, sloughs, and backwaters) where turbidity is high and waters are relatively warm. Catfish inhabit areas of the Delta where salinity is low, because most species have a low salinity tolerance. Catfish feed on a variety of organisms including shrimp and other macroinvertebrates, clams, worms, and small fish. As a result of their life history and size, catfish are generally less vulnerable to entrainment at water diversions than many other fish. Hydrologic conditions within the Delta influence the geographic distribution of catfish, primarily through regional variation in salinity.

Striped Bass (*Morone saxatilis*)

Striped bass are a large anadromous nonnative species introduced into the Delta in the late 1800s to support commercial and recreational fisheries. Commercial fishing for striped bass is no longer allowed; however, the species supports one of the largest recreational fisheries within the Delta. Striped bass begin spawning in the spring when the water temperature reaches 60°F, with most spawning occurring at temperatures between 61°F and 69°F, the spawning period usually extends from April to mid-June. Striped bass spawn in open fresh water,

especially the Delta and lower San Joaquin River between the Antioch Bridge and the mouth of Middle River, and other channels in this vicinity. Another important spawning area is the Sacramento River between Sacramento and Princeton. About one-half to two-thirds of the eggs are spawned in the Sacramento River and the remainder are spawned in other Delta channels. Female striped bass usually spawn for the first time in their fourth or fifth year, when they are 21 to 25 inches long. Some males mature when they are 2 years old and only about 11 inches long. Most males are mature at age three and nearly all females at age five (CDFW 2008a).

Adult striped bass abundance has decreased over the past several decades (CDFW 2008b). CDFW has hypothesized that this trend can be largely explained by the detrimental effect on young bass production of increasing water exports and decreasing freshwater flow. Distribution of adult bass, based on tag recaptures by anglers, has changed substantially.

Striped bass no longer make extensive use of San Francisco Bay and instead spend a greater part of the year in the Delta and other upstream areas. Summer use of nearby ocean waters may have increased also in recent years. Total mortality of adult striped bass has increased over the past decade due to an increase in natural mortality, while angling mortality has declined. Variations in adult abundance are correlated with the combination of the 0.15 inch young-of-the-year index and losses to water exports after the 0.15 inch index is set. The 0.15 inch index and subsequent export losses are both dependent on export rates and outflow, so that adult abundance is affected by exports and outflow throughout the year (CDFW 2008b).

Largemouth (Black) Bass (*Micropterus salmoides*)

Over the past decade the Delta has become known as a world-class fishery for largemouth bass. Both northern and Florida strain largemouth bass have been introduced into the Delta (northern strain in the late 1800s and Florida strain in the 1960s) to support recreational fisheries. Largemouth bass typically inhabit areas of the Delta having relatively shallow water with associated emergent vegetation, submerged vegetation, or other cover and structures. Largemouth bass are abundant in habitat along major channels, sloughs, and backwaters with salinities less than about 3 parts per thousand (Moyle 2002). Largemouth bass are a major predatory fish within the Delta. Juvenile and adult largemouth bass forage aggressively on crayfish, fish, and other organisms such as frogs. Largemouth bass spawn in the spring (April-June) in nests that are guarded by the adult until the fry emerge and begin feeding.

Within the Delta there has been a growing popularity for largemouth bass recreational angling tournaments. Tournaments are held year-round with prizes awarded based on weight of individual bass and total weight of up to five bass. Tournament anglers are required to maintain the bass alive, which are then released back into the Delta after completing the weigh-in. The number of bass anglers, the number of tournaments, and the size of individual bass have all been increasing in recent years. Several of the recreational tournaments held recently in the Delta have been televised nationally (e.g., Bass Masters Invitational). As a result of their life history and size, largemouth bass are generally less vulnerable to entrainment at water diversions than many other fish.

White Sturgeon (*Acipenser transmontanus*)

White sturgeon are a popular recreationally harvested species, with the primary fishery downstream of the Delta in Suisun and San Pablo bays. Habitat requirements of white sturgeon are not well understood, but spawning and larval ecologies are probably similar to those of green sturgeon (previously described). White sturgeon are

characterized by a large body size, large head and mouth, and long cylindrical body. The white sturgeon is a slow growing, late maturing anadromous fish. White sturgeon spawn in large rivers in the spring and summer months and remain in fresh water while young. Older juveniles and adults are commonly found in rivers, estuaries, and marine environments. Anadromous white sturgeon most commonly move into large rivers in the early spring, and spawn in May through June. White sturgeon can spawn multiple times during their life, and apparently spawn every 4 to 11 years as they grow and mature. It has been estimated that white sturgeon reach maturity in 5 to 11 years. Because of their life history, geographic distribution, and large size, white sturgeon have a lower vulnerability to entrainment into water diversions than many of the other fish inhabiting the Delta. Seasonal hydrology within the rivers and estuary has been identified as factor affecting habitat conditions for white sturgeon.

Chinook Salmon (*Oncorhynchus tshawytscha*)

Fall-run Chinook salmon (previously described) support a recreational fishery within the Delta during the fall (October to December) when adult salmon are migrating from the ocean through the Delta into the upstream rivers to spawn. Complete or partial bans on recreational fishing for Chinook salmon have been imposed since 2007 in response to the low numbers of returning adults.

ANGLER ACCESS

Angler access to the CCF is restricted (Mecum 1980). Because of restricted access, the area near the radial gates experiences limited use by boaters, waders, and shore fisherman much as it did in the early 1970s. Anglers unsafely fish from the wing walls on either side of the radial gate structure and wade out several hundred feet into the shallow area adjacent to the east side of the scour hole. Anglers also fish from the bank. No restrooms or other public facilities are currently located at the site.

Anglers that fish in the vicinity of the CCF radial gate structure obtain access to the site on foot, by bicycle, or by boat. Boaters use an existing boat dock located on West Canal approximately 0.17 mile east of the radial gate structure. Pedestrians and bicyclists gain access through a narrow slot at the Clifton Court Road gate and then must travel approximately 4.75 miles along the paved road on top of the dam to the radial gate structure.

Two marinas are located near the CCF. Rivers End Marina and Storage is located approximately 1.5 miles south of the radial gate structure at the north end of Lindeman Road. From this location, boaters travel approximately 1.7 miles north along Old River to reach the boat dock near the radial gate structure. Lazy M Marina is located just east of Byron Highway approximately 0.75 miles west of the intake canal that leads to the Banks Pumping Plant. From this location, boaters must travel around the north and east sides of CCF along Italian Slough to Old River/West Canal, a distance of approximately 5.8 miles, to reach the boat dock near the radial gate structure.

3.15.2 DISCUSSION

a) 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 proposed project would include the construction of a new boat dock, staging area, and a fishing pier to enhance public access to fishing in the vicinity of the existing scour hole in order to reduce the number of predatory fish, and associated prescreen loss of at-risk fish species within CCF. While the new fishing pier and

boat dock, combined with the other proposed features and facilities (i.e., ADA-compliant accessibility, bathroom, bicycle rack, security fencing, and lighting) would be expected to increase the popularity of the CCF as a recreational fishing location, and could lead to more foot and bicycle traffic along the dam and/or outer levee road as well as more boat traffic from nearby marinas, access to the site would not change significantly. Therefore, the capacity of the facilities to accommodate the anticipated use, in particular the main feature of the project, the fishing pier, would not be exceeded.

Because the dam and levee roads are designed to accommodate vehicle traffic and equipment, increased pedestrian and bicycle use would not cause or accelerate substantial physical deterioration of these roads. The size of the new dock on West Canal would be similar to the existing boat dock, the number of boats that could be docked at any one time would not increase substantially with implementation of the proposed project. However, the dock may experience more frequent use as a result of the proposed facilities. Because boat traffic could originate from more than one location in the area and elsewhere, physical deterioration of the existing marinas would not be substantially accelerated. There would be no impact.

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

Less-than-significant impact. The proposed project is intended to enhance recreational fishing and angler safety near the CCF radial gate structure, and includes the construction of new recreational facilities, including a fishing pier, associated staging area, restroom facilities, and other related appurtenant facilities, as well as replacement of an existing boat dock. The analysis included in this document has fully evaluated the possible environmental impacts associated with these improvements. The project itself would not be expected to result in the need for any additional recreational facilities other than those included as part of the proposed project.

While the amount of new or increased angling pressure and/or success (i.e., capture and harvest) that would be created by the proposed project is uncertain, the potential exists for increased angling opportunities associated with the new facilities to result in localized decreased numbers of nonnative predator game fish. The effect of increased angling pressure would not be expected to have a substantial effect on regional game fish populations or other recreational fishing opportunities located elsewhere in the Delta because the project would only improve angler access and opportunity in the CCF, and game fish that could be affected in the CCF also occur throughout the Delta. Moreover, the CCF is not known to be an important spawning area for these game fish species. CDFW maintains regulations to protect sport fish and allow reasonable public angling opportunities (CDFW 1999). These regulations will remain in effect and will continue to provide protection of game fish found in the project area and the surrounding region.

Because the project would not result in regional or system-wide adverse effects on the existing recreational fisheries, this impact would be less than significant.

3.16 TRANSPORTATION AND TRAFFIC

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

3.16.1 ENVIRONMENTAL SETTING

The CCF is not available for public boat access. Boats utilize a small boat dock along the outer levee of the CCF, which is located near the southern end of West Canal to the east of the radial gates. Public access to the north bank of the intake canal is provided via Clifton Court Road. However, only foot and bicycle traffic are allowed along the paved road atop the dam and the gravel road atop the outer levee leading to the radial gate structure.

Public vehicle access to the radial gate structure and other parts of the CCF is restricted by a gate at the end of Clifton Court Road near the west side of the CCF. Clifton Court Road is located to the east of Byron Highway, which connects to Byron to the north and to Tracy to the south of the project site, and provides access to Interstate 205 to the south. Clifton Court Road and Byron Highway are shown on Exhibit 2-2, along with the local access route along the dam road.

3.16.2 DISCUSSION

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less-than-significant impact. The proposed project would not adversely impact Bryon Highway, Clifton Court Road, or any other local or regional roads in the vicinity of the project site. Constructing the staging area would require approximately 700 haul trips for fill material. The retaining wall would require approximately 150 haul trips for the structural backfill behind the retaining wall. Installation of the temporary rock platform, if used, would require 45 haul trips. After pier construction is complete, the temporary rock platform would be removed, and the rock would be hauled away for stockpiling at DWR's existing Howard Yard rock stockpile located on Union Island near the corner of South Tracy Road and Howard Road. The number of haul trips to export the rock for the temporary rock platform would also be 45. These haul trips would occur over a three-month period and would be staggered through the day during non-peak commute hours.

A maximum of 7 work trucks would be used during construction of each major component of the proposed project (i.e., staging area, temporary rock platform, concrete pad and retaining wall, in-water work). All other construction equipment would be transported to the project site once and would be left in the staging area after each workday.

Public transit, bicycle, and pedestrian facilities do not exist in the immediate vicinity of the project site. While bicyclists and pedestrians use the dam and levee roads on DWR land in the CCF, these roads are not designated as pedestrian, bicycle, or local roads in the project area. Because worker commute trips would be minor during the construction period, haul truck trips would occur over a three-month period and would be spread out throughout the workday, and no road closures or obstructions to standard roadway flow (including bicyclists and pedestrians) would be part of the proposed project, no adverse impact would occur on the circulation system in the project vicinity during construction.

Traffic during operation of the FFP, once the pier and associated facilities have been constructed, would not change compared to current typical DWR maintenance worker trips. Therefore, the impact on the surrounding circulation system would be minimal after construction of the proposed project.

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. As noted in item (a) above, construction and operation of the proposed project would not adversely impact Byron Highway, Clifton Court Road or any other local or regional roads in the project vicinity. Because the approximately 1,070 total haul trips and commute traffic required during construction would occur over a three-month period and haul trips would be staggered throughout the day during non-peak hours, the surrounding circulation system would not be adversely impacted.

Use of the project site by anglers would be expected to increase as a result of the proposed FFP, but the extent of the increase is unknown. The FFP would provide alternative access to fishing for those anglers that presently fish from the wing walls or wade into the CCF. Access to the site would not be substantially increased as a result of the proposed project, so while the capacity of the new pier would be substantial, this capacity would far exceed the anticipated use because of limited access. Therefore, traffic from operation of the FFP would not be expected to increase substantially compared to existing conditions at the CCF. This impact would 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. The proposed project would not result in a change in air traffic patterns or result in any air safety risks. The proposed project is intended to improve the survival of at-risk Delta fish species and increase public safety for anglers who access the area adjacent to the CCF radial gate structure. The construction and operation of the proposed project would not include any aircrafts or develop any structures that would interfere with air traffic in the vicinity of the project. There would be no impact.

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

No impact. The proposed project would not include any change to roadway design in the project vicinity or incompatible uses. The proposed project is intended to improve the survival of at-risk Delta fish species and increase public safety for anglers who access the area adjacent to the CCF radial gate structure. There would be no impact.

e) Result in inadequate emergency access?

No impact. Construction of the proposed project would include a fishing pier, associated staging area, restroom facilities, and other related appurtenant facilities, as well as replacement of an existing boat dock in the CCF. Construction equipment that would be used for the proposed FFP once transported to the project site would not interfere with any emergency access on Byron Highway or Clifton Court Road, and haul trips during construction would not adversely impact the surrounding circulation system, as noted in item (a) above. The proposed project would not include any road or lane closures during any phase of construction. 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. As noted in item (a) above, public transit, bicycle, and pedestrian facilities do not exist in the immediate vicinity of the project site. While public access by pedestrians and bicyclists would be maintained to the majority of the CCF throughout construction, the area around the radial gate structure and the existing boat dock would be closed temporarily during construction activities for public safety reasons. Pedestrians and bicyclists access would remain open during construction of the FFP to the remainder of the CCF for recreation. However, the dam and levee roads are not designated bicycle, or pedestrian facilities in any plan or program. Thus, the proposed project would not conflict with any adopted policies, plans, or programs for public transit, bicycle, and pedestrian facilities, and there would be no impact.

3.17 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. Utilities and Service Systems. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider 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 project site and the CCF do not currently generate wastewater or require the use of a wastewater treatment facility.

The CCF is accessible to boaters, pedestrians, and bicyclists for recreational opportunities, but no facilities (e.g., restrooms) to support these activities are currently provided at the site.

3.17.2 DISCUSSION

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

No impact. The proposed project would construct the FFP at the CCF and would include a prefabricated ADA-compliant public restroom. The restroom would include a concrete-lined waste pit that would be periodically emptied. The minimal amount of waste generated by the proposed semi-permanent restroom would not result in

changes to facilities or operations at existing wastewater treatment facilities. As such, no modification to a wastewater treatment facility's current wastewater discharges would occur. No impact to wastewater treatment requirements of the RWQCB would occur.

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. Construction activities would utilize existing water supplies and would not generate wastewater. Operation of the proposed project would not require new water supplies; however, an ADA-compliant restroom would be installed at the site. The restroom would include a concrete-lined waste pit that would be periodically emptied. The minimal amount of waste generated by the proposed semi-permanent restroom would not result in changes to facilities or operations at existing wastewater treatment facilities. As such, no modification to a wastewater treatment facility's current wastewater discharges would occur. In addition, the project would not require the construction of new or expanded water or wastewater treatment facilities and no impacts would occur.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No impact. No stormwater drainage facilities are currently present at the site. The FFP includes the installation of a 60 by 40 foot concrete pad on the levee and paving a 400-foot portion of the outer levee road. As noted in Section 3.9.2 (e) above, the proposed project would create additional runoff due to this increase in impervious area; however, the increase would be minor and activities at the site would not contribute substantial additional sources of polluted runoff during construction or operations for the reasons discussed in Section 3.9.2(e). Because the increase in runoff and the potential for release of pollutants is minor, no new storm water drainage facilities would be required. There would be no impact to stormwater drainage capacity.

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

No impact. Construction activities would utilize existing water supplies and operation would not increase the current water use at the project site. Accordingly, the project would not require new or expanded entitlement and no impacts would occur.

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?

Less-than-significant impact. As noted in (a) above, the proposed project would generate a minimal amount of wastewater from the proposed semi-permanent restroom. The operation of the restroom would not substantially increase wastewater flows to an existing wastewater treatment facility. This impact would be less than significant.

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

Less-than-significant impact. Construction debris from demolition of the existing boat dock would most likely be transported to the Altamont Landfill, approximately 13 miles from the project site. The amount of debris

generated during project construction is not expected to significantly impact landfill capacities, since the only solid waste would be from the debris from removal of the existing boat dock; rock fill used to construct the temporary rock platform, upon removal, would be stockpiled at the existing DWR rock stockpile at Howard Yard. Operation of the proposed project would generate a similar amount of solid waste as the existing conditions, since the use of the site would be the similar. Impacts to landfill capacity would be less than significant for the proposed project.

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

No impact. As discussed in item (h) above, solid waste would be disposed of at the Altamont Landfill. Transportation and disposal of construction debris would be in accordance with all applicable federal, state, and local regulations. No additional waste compared to the existing conditions would be generated during operation of the proposed project. Because the proposed project would comply with all applicable federal, state, and local regulations, no impact would occur.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

	ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII.	Mandatory Findings of Significance.				
	a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
	b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
	c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Authority: Public Resources Code Sections 21083, 21083.5.
Reference: Government Code Sections 65088.4.
Public Resources Code Sections 21080, 21083.5, 21095; *Eureka Citizens for Responsible Govt. v. City of Eureka* (2007) 147 Cal.App.4th 357; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th at 1109; *San Franciscans Upholding the Downtown Plan v. City and County of San Francisco* (2002) 102 Cal.App.4th 656.

3.18.1 DISCUSSION

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less-than-significant with mitigation incorporated. The analysis conducted in this IS concludes that the proposed project would not have a significant effect on the environment. As evaluated in Section 3.4 above, the proposed project could provide benefits to special-status fish species by increasing angling pressure and associated potential harvest of nonnative predator species that otherwise result in losses to special-status fish species through predation. The proposed project could have potential adverse effects on other special-status species as described in Section 3.4(a). However, with implementation of the environmental protection measures in Chapter 2, and adoption of mitigation measures in Chapter 3, these impacts would be reduced to a less-than-significant level.

With regard to sport fish species, the effect of the proposed project is uncertain. However, as discussed in Section 3.4, while the increased angling pressure could result in localized decreased numbers of nonnative predator game fish, existing sport fishing regulations would continue to apply to the new facility. Therefore, the effect of increased angling pressure would not be expected to have a discernible effect on a regional or system-wide basis because the project would improve angler access and opportunity in only one location, CCF, and existing regulations on catch limits would be maintained.

As noted in Section 3.5.4(a), the proposed project would not substantially alter the design of the CCF, and the proposed changes would not diminish the character-defining features of the SWP. The CCF would continue to function as a storage facility and remain a critical component of the California Aqueduct. Because the CCF would still possess and exhibit its historical significance, the impact on this cultural resource would be less-than-significant. Sections 3.5.4(b) and (d) above provide mitigation for the potential for undiscovered/unknown cultural remains or unknown prehistoric burials. Implementation of Mitigation Measures Cul-1 and Cul-2 would reduce potential prehistory impacts to less-than-significant levels.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less-than-significant impact. Construction of the proposed project would result in temporary impacts that would mainly be limited to the project site. While impacts for resource areas such as air quality and traffic would contribute to more regional impacts, these impacts when combined with other past, present, and reasonably forseeable projects in the project vicinity would not be cumulatively considerable because of the relative size of the proposed project. Also, as noted in Section 3.3(c), construction-generated and operational emissions would not exceed applicable thresholds established by BAAQMD, thus, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact associated with air pollutant emissions.

As discussed in this IS, the proposed project would result in less-than-significant impacts or no impacts to the following areas: aesthetics, agriculture resources, geology/soils, GHG emissions, hazards & hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation and traffic, and utilities and service system, and the proposed project would not contribute to cumulative adverse impacts to these resource areas.

The proposed project's impacts to biological resources would be mitigated to levels that are less than significant as well. With respect to sport fish impacts, as discussed in (a) above and in Section 3.4, the effect of increased angling pressure on sport fish would not be expected to have a discernible effect on a regional or system-wide basis because the project would improve angler access and opportunity in only one location, CCF, and existing catch limits would be maintained. As a result of the proposed project, the survivability of special status fish species and recovery opportunities at the state facilities would be expected to increase and thereby result in a net improvement in these species' survival beyond current conditions. The proposed project would not contribute substantially to a cumulative adverse impact to biological resources.

Furthermore, the proposed project's impacts to air quality and cultural resources would be mitigated to levels that are less than significant and would not contribute to cumulative adverse impacts to these issue areas.

The analysis in this IS has determined that the proposed project would not have any individually limited or cumulatively considerable impacts.

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

Less-than-significant impact. Construction and operation of the proposed project would not cause substantial adverse effects on human beings, either directly or indirectly. The proposed project is intended to enhance recreational fishing and angler safety near the radial gate structure in the CCF with installation of the floating fish pier. A staging area that would be constructed would be used during construction of the proposed project for equipment staging, and during operation of the FFP this area, along with the equipment shed that would be constructed on the fishing pier would be used by DWR for standard maintenance and operation of the CCF facilities. A restroom, new boat dock, and bicycle rack would also be constructed and would provide a recreational benefit for this area of the Delta. Mitigation measures are provided to reduce the project's potential effects on air quality, biological resources, cultural resources, and hydrology and water quality below the level of significance. Thus, construction and operation of the proposed project would result in less-than-significant impacts, and would not cause substantial adverse effects on human beings, either directly or indirectly.

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5 REPORT PREPARERS

California Department of Water Resources (Lead Agency)

Bay-Delta Office

Katherine F. Kelly ..... Chief, Bay-Delta Office, IS Review
Victor Pacheco ..... Chief, Delta Conveyance Branch, IS Review
Teresa Geimer ..... Supervising Engineer, IS Review
Robert Yeadon ..... Supervising Engineer, IS Review
Bijaya Shrestha ..... Senior Engineer, Project Manager, IS Review
Shah Adil ..... Engineer, IS Review
Kevin Clark ..... Senior Environmental Scientist, Technical Review
Veronica Wunderlich ..... Environmental Scientist, Technical Review

Office of Chief Counsel

Laurence Kerckhoff ..... Attorney IV, IS Review

Division of Environmental Services

Katherine Marquez ..... Environmental Scientist, IS Review
Michael Bradbury ..... Staff Environmental Scientist, Technical Review
Jean Witzman ..... Staff Environmental Scientist, Technical Review
Lesley Hamamoto ..... Environmental Scientist, Technical Review
Katherine Bandy ..... Environmental Scientist, Technical Review
Rebecca Gilbert ..... Associate Environmental Planner (Archeology), Technical Review

Division of Engineering

Kari Bianchini ..... Senior Engineer, IS Review
Dominic Tonel ..... Engineer, IS Review
Christine Erickson ..... Environmental Scientist, Technical Review

Division of Statewide Integrated Water Management

Andrew Schwarz ..... Engineer, IS Review

AECOM (IS Preparation)

Richard Hunn ..... Project Director, IS Review
Andrea Shephard, Ph.D. ..... Project Manager, IS Review

Pete Choi ..... Aesthetics, Agricultural and Forest Resources, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning Mineral Resources, Population and Housing, Public Services Recreation Transportation/Traffic, Utilities and Service Systems

Kara Baker ..... Hydrology and Water Quality

Gerrit Platenkamp ..... Biological Resources (Botany and Wildlife), Technical Review

Charlie Battaglia ..... Biological Resources (Botany and Wildlife)

Chris Fitzer ..... Biological Resources (Fisheries), Technical Review

Steve Pagliughi ..... Biological Resources (Fisheries)

Denise Jurich ..... Cultural Resources, Technical Review

Madeline Bowen ..... Historic Resources, Technical Review

Anna Starkey ..... Cultural Resources

Patricia Ambacher ..... Historic Resources

Chris Mundhenk ..... Air Quality, Greenhouse Gas Emissions, Technical Review

Jason Paukovits ..... Air Quality, Greenhouse Gas Emissions

Jason Mirise ..... Noise Technical Review

Issa Mahmodi ..... Noise

Charisse Case ..... Document Specialist

Kristine Olsen ..... Document Specialist

Lisa Clement ..... GIS/Graphics

6 REPORT DISTRIBUTION

Bay Area Air Quality Management District
David Vintze
Planning and Research Division
939 Ellis Street
San Francisco, CA 94109

California Department of Fish and Wildlife
Bay Delta Region
4001 North Wilson Way
Stockton, CA 95205

California Department of Water Resources
Division of Flood Management
Floodplain Planning and Management Office
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Division of Safety of Dams
2200 X Street, Suite 200
Sacramento, CA 95818

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Development
30 Muir Road
Martinez, CA 94553

Delta Stewardship Council
Cindy Messer
980 Ninth Street, Suite 1500
Sacramento, CA 95816

National Marine Fisheries Service
Rob Nielson
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814-4708

State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

State Historic Preservation Officer
Carol Roland-Nawi, Ph.D.
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street
Sacramento, CA 95816

U.S. Army Corp of Engineers
Sacramento Regulatory Branch
1325 J Street, Room 1480
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U.S. Coast Guard Sector San Francisco
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Yerba Buena Island
San Francisco, CA 94130

U.S. Department of the Interior
Bureau of Reclamation
Mid-Pacific Region
2800 Cottage Way
Sacramento, CA 95825-1898

U.S. Fish and Wildlife Service
Bay-Delta Fish & Wildlife Office
650 Capitol Mall, 8th Floor
Sacramento, CA 95814

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APPENDIX A

Air Quality

Table A-1. Emissions Summary					
Pounds/Day	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Staging Area	9.11	78.00	43.81	3.64	3.23
Platform	10.18	81.75	47.67	4.01	3.60
Work in Water (Off-Road)	7.20	55.38	37.37	2.85	2.57
Total	**10.18**	**81.75**	**47.67**	**4.01**	**3.60**
Work in Water (Tugboat/Barge)	17.60	153.63	72.88	5.29	4.87
Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns.					

Table A-2. Staging Area - Construction Emissions									
Off Road Construction Emissions					**Emissions Summary (lbs/day)**				
Off-Road Equipment	**Equipment Type**	**Number**	**Usage Factor (hours/day)**	**Total Hours**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Grader	Graders Composite	1	4	164	0.54	4.32	2.39	0.22	0.20
Loader	Rubber Tired Loaders Composite	2	1.5	123	0.34	2.59	1.40	0.14	0.13
Sheep Foot Roller	Rollers Composite	4	1.5	246	0.55	3.70	2.41	0.25	0.23
Dump Trucks	Off-Highway Trucks Composite	5	0.5	103	0.51	4.17	1.54	0.14	0.13
Excavator	Excavators Composite	1	0.5	21	0.06	0.41	0.26	0.02	0.02
Concrete Pump Truck	Off-Highway Trucks Composite	1	0.5	21	0.10	0.83	0.31	0.03	0.03
Water Truck	Off-Highway Trucks Composite	2	5	410	2.03	16.68	6.15	0.58	0.53
Fork Lift	Forklifts Composite	1	8	328	0.40	2.84	1.77	0.14	0.13
Supervisor/Service Trucks	Off-Highway Trucks	2	2.5	205	0.68	4.81	3.78	0.27	0.25
Work Trucks	Off-Highway Trucks	3	8	984	3.25	23.07	18.17	1.29	1.19
				Total	**8.46**	**63.42**	**38.19**	**3.08**	**2.84**
On Road Construction Emissions					**Total Daily Emissions (lbs)**				
	Trips Per Day	**Distance**	**Average Daily Mileage**	**Total Mileage**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Haul Trucks	1	50	50	2050	0.04	1.19	0.20	0.03	0.03
Haul Trucks	3	80	240	9840	0.21	5.73	0.95	0.17	0.12
Haul Trucks	18	15	270	11070	0.23	6.45	1.07	0.19	0.14
		Total	**560**	**22960**	**0.48**	**13.37**	**2.22**	**0.39**	**0.29**
Note: Assumes 30 trips for mobilization, 100 trips for material delivery, and 700 trips for fill for a total of 830 trips averaged over the construction perioc									
Worker Trips					**Total Daily Emissions (lbs/day)**				
	Total Trips	**Distance**	**Average Daily Mileage**	**Total Mileage**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Worker Trips	20	25	1000	41000	0.17	1.21	3.40	0.17	0.10
Note: Assumes an average of 20 workers per day.									
Total Construction Emissions					**Total Daily Emissions (lbs/day)**				
					ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
				Total	**9.11**	**78.00**	**43.81**	**3.64**	**3.23**
Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns.									

Table A-3. Concrete Pad, Retaining Wall and Temporary Rock Structure - Construction Emissions

Off Road Construction Emissions					**Emissions Summary (lbs/day)**				
Off-Road Equipment	**Equipment Type**	**Number**	**Usage Factor (hours/day)**	**Total Hours**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Loader	Rubber Tired Loaders Composite	1	1	82	0.11	0.86	0.47	0.05	0.04
Dump Trucks	Off-Highway Trucks Composite	5	0.5	205	0.51	4.17	1.54	0.14	0.13
Sheep Foot Roller	Rollers Composite	4	2	656	0.73	4.93	3.21	0.34	0.31
Excavator	Excavators Composite	1	1	82	0.11	0.83	0.53	0.04	0.04
Concrete Pump Truck	Off-Highway Trucks Composite	1	1	82	0.20	1.67	0.61	0.06	0.05
Grader	Graders Composite	1	1.5	123	0.20	1.62	0.90	0.08	0.07
Trencher	Trenchers Composite	1	2	164	0.27	1.28	0.92	0.10	0.10
Water Truck	Off-Highway Trucks Composite	2	2.5	410	1.02	8.34	3.07	0.29	0.27
Compactor	Plate Compactors Composite	1	1	82	0.01	0.03	0.03	0.00	0.00
Asphalt Paver	Pavers Composite	1	1.5	123	0.21	1.22	0.79	0.08	0.08
Crane	Cranes Composite	2	8	1312	2.04	17.71	7.28	0.75	0.69
Fork Lift	Forklifts Composite	1	8	656	0.40	2.84	1.77	0.14	0.13
Supervisor/Service Trucks	Off-Highway Trucks	2	2.5	410	0.68	4.81	3.78	0.27	0.25
Work Trucks	Off-Highway Trucks	3	8	1968	3.25	23.07	18.17	1.29	1.19
				Total	9.75	73.37	43.08	3.64	3.35
On Road Construction Emissions					**Total Daily Emissions (lbs)**				
	Trips Per Day	**Distance**	**Average Daily Mileage**	**Total Mileage**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Haul Trucks	3	100	300	24600	0.26	7.16	1.19	0.21	0.15
		Total	300	24600	0.26	7.16	1.19	0.21	0.15
Note: Assumes 150 trips for the retaining wall and 90 trips for the temporary rock platform for a total of 240 trips averaged over the construction perioc									
Worker Trips					**Total Daily Emissions (lbs/day)**				
	Total Trips	**Distance**	**Average Daily Mileage**	**Total Mileage**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Worker Trips	20	25	1000	82000	0.17	1.21	3.40	0.17	0.10
Note: Assumes an average of 20 workers per day.									
Total Construction Emissions					**Total Daily Emissions (lbs/day)**				
					ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
				Total	10.18	81.75	47.67	4.01	3.60

Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns.

Table A-4. Work in Water - Construction Emissions									
Off Road Construction Emissions					**Emissions Summary (lbs/day)**				
Off-Road Equipment	**Equipment Type**	**Number**	**Usage Factor (hours/da**	**Total Hours**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Crane	Cranes Composite	2	8	1120	2.04	17.71	7.28	0.75	0.69
Pile Driver	Other Construction Equipment Composite	1	8	560	0.66	5.73	2.96	0.24	0.22
Fork Lift	Forklifts Composite	1	8	560	0.40	2.84	1.77	0.14	0.13
Supervisor/Service Trucks	Off-Highway Trucks	2	2.5	350	0.68	4.81	3.78	0.27	0.25
Work Trucks	Off-Highway Trucks	3	8	1680	3.25	23.07	18.17	1.29	1.19
				Total	**7.02**	**54.16**	**33.96**	**2.69**	**2.47**
On Road Construction Emissions					**Total Daily Emissions (lbs/day)**				
	Trips Per Day	**Distance**	**Average Daily Mileage**	**Total Mileage**	**ROG**	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Worker Trips	20	25	1000	70000	0.17	1.21	3.40	0.17	0.10
Note: Assumes an average of 20 workers per day.									
Total Construction Emissions					**Total Daily Emissions (lbs/day)**				
					ROG	**NO_x**	**CO**	**PM_{10}**	**$PM_{2.5}$**
				Total	**7.20**	**55.38**	**37.37**	**2.85**	**2.57**
Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns.									

Table A-5. Work in Water - Tugboat/Barge Emissions

Assumptions

Main Generator Engine	1000	bhp
	745.7	kW
Aux Generator Engines	500	bhp
	372.8	kW
Number	2.0	

Emissions (pounds per day)

Activity	Number of Construction Days	Time (hours per day)	ROG	NOx	CO	PM_{10}	$PM_{2.5}$
Tugboat/Barge	70	8	17.60	153.63	72.88	5.29	4.87

*To account for N_20 and CH_4 emissions, an extra 5% was added to the CO_2 emissions.

Main Engine - Emission Factors (g/bhp-hr)

	ROG	NOx	CO	PM_{10}	$PM_{2.5}$	CO_2	Fuel
1000 hp	0.704	7.18678	2.92	0.29	0.26	652.00	184.16

Note: CO_2 emission factor in g/kWh

Source: ARB Harborcraft Emission Inventory Database

Auxiliary Engine - Emission Factors (g/bhp-hr)

	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	CO_2	Fuel
500 hp	0.8092	6.04575	3.35	0.21	0.19	652.00	184.16

Note: CO_2 emission factor in g/kWh.

Source: ARB Harborcraft Emission Inventory Database

CO2 emissions factor from Port of Long Beach. 2011 Emissions Inventory. Available at http://www.polb.com/environment/air/emissions.asp.

Load Factor

Engine	Load factor
Propulsion	0.45
Auxiliary	0.45

Notes: ROG = reactive organic gases; NOx = nitrogen oxides; CO = carbon monoxide; CO2 = carbon dioxide; PM10 = particulate matter less than 10 microns; PM2.5 = particulate matter less than 2.5 microns.

Source: ARB. Appendix B. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California

Table A-5. Work in Water - Tugboat/Barge Emissions (cont'd)

Table II-4 Fuel Correction Factor

Calendar Years	Horsepower Range	Model Years	NOx	PM
1994-2006	<25	Pre-1995	0.930	0.750
	25-50	Pre-1999		
	51-100	Pre-1998		
	101-175	Pre-1997		
	176+	Pre-1996		
	<25	1995+	0.948	0.822
	25-50	1999-2010		
	51-100	1998-2010		
	101-175	1997-2010		
	176+	1996-2010		
2007+	<25	Pre-1995	0.930	0.720
	25-50	Pre-1999		
	51-100	Pre-1998		
	101-175	Pre-1997		
	176+	Pre-1996		
	<25	1995+	0.948	0.800
	25-50	1999-2010		
	51-100	1998-2010		
	101-175	1997-2010		
	176+	1996-2010		
	All	2011+	0.948	0.852

Source: Off-road Exhaust Emissions Inventory Fuel Correction Factors *(2)*

The basic equation for the estimating emissions from a commercial harbor craft engine is:

$$E = EF_0 \times F \times (1 + D \times \frac{A}{UL}) \times HP \times LF \times Hr$$

Where:

E is the amount of emissions of a pollutant (ROG, CO, NOx, or PM) emitted during one period; [7]
EF_0 is the model year, horsepower and engine use (propulsion or auxiliary) specific zero hour emission factor (when engine is new);
F is the fuel correction factor which accounts for emission reduction benefits from burning cleaner fuel;
D is the horsepower and pollutant specific engine deterioration factor, which is the percentage increase of emission factors at the end of the useful life of the engine;
A is the age of the engine when the emissions are estimated;
UL is the vessel type and engine use specific engine useful life;
HP is rated horsepower of the engine;
LF is the vessel type and engine use specific engine load factor;
Hr is the number of annual operating hours of the engine.

Calendar Years	Horsepower Range	Model Years	NO_x	PM
2007+	All	2011+	0.948	0.852

Source: ARB, Appendix B. Emissions Estimation Methodology for Commercial Harbor Craft Operating in California

Table A-6. Contra Costa County 2014 On-Road Emission Factors														
VEH	FUEL	MDLYR	SPEED	POP	VMT	TRIPS	ROG_RUNEX	CO_RUNEX	NO_X_RUNEX	CO_2_RUNEX	PM_{10}_Total	$PM_{2.5}$_Total	CH_4	N_2O
			(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
LDA	GAS	AllMYr	AllSpeeds	407,602	15,023,836	2,566,347	0.05	1.47	0.14	300.26	0.05	0.02		
LDA	DSL	AllMYr	AllSpeeds	1,814	62,701	10,692	0.05	0.25	0.63	313.30	0.08	0.05		
LDT1	GAS	AllMYr	AllSpeeds	50,198	1,865,495	305,857	0.12	3.58	0.37	355.64	0.05	0.02		
LDT1	DSL	AllMYr	AllSpeeds	69	2,368	362	0.09	0.39	0.83	322.39	0.12	0.08		
LDT2	GAS	AllMYr	AllSpeeds	128,565	5,044,626	809,629	0.05	1.93	0.25	427.79	0.05	0.02		
LDT2	DSL	AllMYr	AllSpeeds	62	2,397	357	0.06	0.29	0.76	320.18	0.09	0.06		
						Average	**0.079**	**1.547**	**0.552**	**356.499**	**0.076**	**0.047**	**0.028**	**0.037**
VEH	FUEL	MDLYR	SPEED	POP	VMT	TRIPS	ROG_RUNEX	CO_RUNEX	NO_X_RUNEX	CO_2_RUNEX	PM_{10}_Total	$PM_{2.5}$_Total	CH_4	N_2O
			(Miles/hr)	(Vehicles)	(Miles/day)	(Trips/day)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
T7 tractor	DSL	AllMYr	AllSpeeds	988	154,717	0	0.39	1.80	10.85	1,729.40	0.31	0.23	0.0051	0.0048
Notes: ROG = reactive organic gases; NO_x = nitrogen oxides; CO = carbon monoxide; CO2 = carbon dioxide; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns.														
Source: EMFAC 2011														

APPENDIX B

Biological Resources

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
PLANTS						
Santa Clara thorn-mint	*Acanthomintha lanceolata*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Rocky (often serpentinite)	No, no suitable habitat
Large-flowered fiddleneck	*Amsinckia grandiflora*	FE	SE	1B.1	Cismontane woodland, Valley and foothill grassland	Yes, low quality habitat
Bent-flowered fiddleneck	*Amsinckia lunaris*	None	None	1B.2	Cismontane woodland, Valley and foothill grassland	Yes, low quality habitat
California androsace	*Androsace elongata* ssp. *acuta*	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland	Yes, low quality habitat
Alkali milk-vetch	*Astragalus tener* var. *tener*	None	None	1B.2	Alkali playa, Valley and foothill grassland, Vernal pool, Wetland	Yes, low quality habitat
Heartscale	*Atriplex cordulata* var. *cordulata*	None	None	1B.2	Chenopod scrub, Meadow and seep, Valley and foothill grassland	Yes, low quality habitat
Crownscale	*Atriplex coronata* var. *coronata*	None	None	4.2	Chenopod scrub, Valley and foothill grassland, Vernal pool, Wetland	Yes, known to occur in similar habitat around CCF
Brittlescale	*Atriplex depressa*	None	None	1B.2	Alkali playa, Chenopod scrub, Meadow and seep, Valley and foothill grassland, Vernal pool, Wetland	Yes, low quality habitat
San Joaquin spearscale	*Atriplex joaquiniana*	None	None	1B.2	Chenopod scrub, Meadow and seep, Valley and foothill grassland	Yes, low quality habitat
Lesser saltscale	*Atriplex minuscula*	None	None	1B.1	Chenopod scrub, Playas, Valley and foothill grassland/alkaline, sandy	Yes, low quality habitat
Big-scale balsamroot	*Balsamorhiza macrolepis*	None	None	1B.2	Chaparral, Cismontane woodland , Valley and foothill grassland/sometimes serpentinite	Yes, low quality habitat
Big tarplant	*Blepharizonia plumosa*	None	None	1B.1	Valley and foothill grassland	Yes, low quality habitat
Round-leaved filaree	*California macrophylla*	None	None	1B.1	Cismontane woodland, Valley and foothill grassland/clay	Yes, low quality habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Mt. Diablo fairy-lantern	*Calochortus pulchellus*	None	None	1B.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland	Yes, low quality habitat
Bristly sedge	*Carex comosa*	None	None	2.1	Freshwater marsh, Marsh and swamp, Wetland	No, no suitable habitat
Lemmon's jewel-flower	*Caulanthus lemmonii*	None	None	1B.2	Pinyon and juniper woodlands, Valley and foothill grassland	Yes, low quality habitat
Congdon's tarplant	*Centromadia parryi* ssp. *congdonii*	None	None	1B.2	Valley and foothill grassland	Yes, low quality habitat
Parry's rough tarplant	*Centromadia parryi* ssp. *rudis*	None	None	4.2	Valley and foothill grassland, Vernal pools (alkaline, vernally mesic, seeps, sometimes roadsides)	Yes, low quality habitat
Hispid bird's-beak	*Chloropyron molle* ssp. *hispidum*	None	None	1B.1	Alkali playa, Meadow and seep, Wetland	No, no suitable habitat
Palmate-bracted bird's beak	*Chloropyron palmatum*	FE	SE	1B.1	Chenopod scrub, Meadow and seep, Valley and foothill grassland, Wetland	Yes, low quality habitat
Bolander's water-hemlock	*Cicuta maculata* var. *bolanderi*	None	None	2.1	Marshes and swamps Coastal, fresh or brackish water	Yes, low quality habitat
Livermore tarplant	*Deinandra bacigalupii*	None	None	1B.2	Meadow and seep	No, no suitable habitat
Hospital Canyon larkspur	*Delphinium californicum ssp. interius*	None	None	1B.2	Chaparral, Cismontane woodland, Meadow and seep	No, no suitable habitat
Recurved larkspur	*Delphinium recurvatum*	None	None	1B.2	Chenopod scrub, Cismontane woodland, Valley and foothill grassland	Yes, low quality habitat
Delta button-celery	*Eryngium racemosum*	None	SE	1B.1	Riparian scrub, Wetland	No, no suitable habitat
Diamond-petaled California poppy	*Eschscholzia rhombipetala*	None	None	1B.1	Valley and foothill grassland	Yes, low quality habitat
Stinkbells	*Fritilaria agrestis*	None	None	4.2	Chaparral, Cismontane woodland, Ultramafic, Valley and foothill grassland	Yes, low quality habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Diablo helianthella	*Helianthella castanea*	None	None	1B.2	Broadleaved upland forest, Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland	Yes, low quality habitat
Hogwallow starfish	*Hesperevax caulescens*	None	None	4.2	Valley and foothill grassland (mesic, clay), Vernal pools (shallow)	Yes, low quality habitat
Brewer's western flax	*Hesperolinon breweri*	None	None	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland (usually serpentinite)	No, no suitable habitat
Woolly rose-mallow	*Hibiscus lasiocarpos* var. occidentalis	None	None	2.2	Freshwater marsh, Marsh and swamp, Wetland	Yes, known to occur at edge of West Canal
Contra Costa goldfields	*Lasthenia conugens*	FE	None	1B.1	Cismontane Woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools	No, no suitable habitat
Ferris' goldfields	*Lasthenia ferrisiae*	None	None	4.2	Vernal pools (alkaline, clay)	No, no suitable habitat
Delta tule pea	*Lathyrus jepsonii* var. *jepsonii*	None	None	1B.2	Freshwater marsh, Marsh and swamp, Wetland	Yes, low quality habitat
Mason's Lilaeopsis	*Lilaeopsis masonii*	None	None	1B.1	Freshwater marsh, Marsh and swamp, Riparian scrub, Wetland	Yes, known to occur in West Canal
Delta mudwort	*Limosella subulata*	None	None	2.1	Brackish marsh, Freshwater marsh, Marsh and swamp, Riparian scrub, Wetland	Yes, low quality habitat
Showy golden madia	*Madia radiata*	None	None	1B.1	Chenopod scrub, Cismontane woodland, Valley and foothill grassland	Yes, low quality habitat
Little mousetail	*Myosurus minimus* ssp. *apus*	None	None	3.1	Valley and foothill grassland, Vernal pools	No, no suitable habitat
Adobe navarretia	*Navarretia nigelliformis* ssp. *nigelliformis*	None	None	4.2	Valley and foothill grassland (vernally mesic, clay, sometimes serpentinite), Vernal pools	Yes, low quality habitat
Shining navarretia	*Navarretia nigelliformis* ssp.*radians*	None	None	1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	No, no suitable habitat
Hairless popcorn-flower	*Plagiobothrys glaber*	None	None	1A	Marsh and swamp, Salt marsh, Vernal pool, Wetland	Yes, low quality habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Marsh skullcap	*Scutellaria galericulata*	None	None	2.2	Lower montane coniferous forest, Marsh and swamp, Meadow and seep, Wetland	Yes, low quality habitat
Chaparral ragwort	*Senecio aphanactis*	None	None	2.2	Cismontane woodland, Coastal scrub	No, no suitable habitat
Suisun Marsh aster	*Symphyotrichum lentum*	None	None	1B.2	Brackish marsh, Freshwater marsh, Marsh and swamp, Wetland	Yes, low quality habitat
Saline clover	*Trifolium hydrophilum*	None	None	1B.2	Marsh and swamp, Valley and foothill grassland, Vernal pool, Wetland	Yes, low quality habitat
Caper-fruited tropidocarpum	*Tropidocarpum capparideum*	None	None	1B.1	Valley and foothill grassland	Yes, low quality habitat
Fish						
Green Sturgeon (Southern DPS)	*Acipenser medirostris*	FT	SSC	-	Freshwater, brackish and salt-water environments at various life stages. Found in the Sacramento River Basin, Sacramento-San Joaquin Delta, San Pablo Bay, and the Pacific Ocean	Yes, reduced to less than significant with mitigation
Delta Smelt	*Hypomesus transpacificus*	FT	SE	-	Rivers and sloughs in the Suisun Bay and the Sacramento-San Joaquin Delta	Yes, reduced to less than significant with mitigation
Central Valley Steelhead	*Oncorhynchus mykiss*	FT		-	Central Valley rivers and streams, Delta and SF Bay estuary.	Yes, reduced to less than significant with mitigation
Central Valley Spring-run Chinook Salmon	*Oncorhynchus tshawytscha*	FT	ST	-	Central Valley rivers and streams, Delta and SF Bay estuary.	Yes, reduced to less than significant with mitigation
Sacramento River Winter-run Chinook Salmon	*Oncorhynchus tshawytscha*	FE	SE	-	Central Valley rivers and streams, Delta and SF Bay estuary.	Yes, reduced to less than significant with mitigation

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Sacramento splittail	*Pogonichthys macrolepidotus*	-	SSC	-	Sacramento, San Joaquin, Napa, Mokelumne, and Petaluma rivers and SF estuary	Yes, reduced to less than significant with mitigation
Longfin Smelt	*Spirinchus thaleichthys*	-	ST	-	Pacific coast estuaries from San Francisco Bay to Prince William Sound, Alaska. Sacramento-San Joaquin Delta, Sacramento River and tribuatries	Yes, reduced to less than significant with mitigation
Amphibians and Reptiles						
California tiger salamander	*Ambystoma californiense*	FT	ST	None	In winter, breeds in vernal pools and seasonal wetlands with a minimum 10-week inundation period; in summer, aestivates in grassland habitat, primarily in rodent burrows	No, no suitable habitat
Silvery legless lizard	*Anniella pulchra pulchra*	None	SSC	None	Associated with a variety of vegetation types on sandy soils with accessible moisture, primarily but not exclusively in semistabilized dunes	No, no suitable habitat
Western pond turtle	*Actinemys marmorata*	None	SSC	None	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation	Yes, low quality habitat
San Joaquin whipsnake	*Masticophis flagellum ruddocki*	None	SSC	None	Open habitats—grasslands, savannas, deserts, open-canopy scrub, chaparral, and pastures—with available rodent burrows for cover	No, no suitable habitat
Alameda whipsnake	*Masticophis lateralis euryxanthus*	FT	ST	None	Inhabit variations of chaparral, coastal sage scrub, and northern coastal scrub but can also occur in adjacent grasslands, woodlands, rock outcrops, and rodent burrows. Typically occur on south-facing slopes	No, outside of known range
Coast horned lizard	*Phrynosoma blainvillii*	None	SSC	None	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains; often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills	No, no suitable habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Foothill yellow-legged frog	*Rana boylii*	None	SSC	None	Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools	No, no suitable habitat
California red-legged frog	*Rana draytonii*	FT	SSC	None	Deep, still or slow-moving water with dense shrubby riparian or emergent vegetation	No, no suitable habitat
Giant garter snake	*Thamnophis gigas*	FT	ST	None	Forages in slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches; also requires upland refugia not subject to flooding during the snake's inactive season	Yes, low quality habitat
Birds						
Cooper's hawk	*Accipiter cooperii*	None	WL	None	Nests and forages primarily in riparian woodlands and other wooded habitats	No, no suitable nesting habitat
Ttricolored blackbird	Agelaius tricolor	None	SSC	None	Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields	No, no suitable nesting habitat
Golden eagle	*Aquila chrysaetos*	None	FP, WL	None	Nests and forages in a variety of open habitats, including grassland, shrubland, and cropland; most common in foothill habitats; rare foothill breeder; nests in cliffs, rock outcrops, and large trees	No, no suitable nesting habitat
Great blue heron	*Ardea herodias*	None	None	None	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures.	No, no suitable nesting habitat
Western burrowing owl	*Athene cunicularia*	None	SSC	None	Grasslands and agricultural fields	Yes, low quality habitat
Ferruginous hawk	*Buteo regalis*	None	WL	None	Forage in grasslands, agricultural fields, and other open habitats	No, no suitable nesting habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Swainson's Hawk	*Buteo swainsoni*	None	ST	None	Nests in isolated trees, open woodlands, and woodland margins; forages in grasslands and agricultural fields	Yes, low quality habitat
Northern harrier	*Circus cyaneus*	None	SSC	None	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes	No, no suitable nesting habitat
White-tailed kite	*Elanus leucurus*	None	FP	None	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation	No, no suitable nesting habitat
Prairie falcon	*Falco mexicanus*	None	WL	None	Forages in grasslands and other open dry open habitats, nests on cliffs	No, no suitable nesting habitat
Loggerhead shrike	*Lanius ludovicianus*	None	SSC	None	Nests in isolated shrubs and trees and woodland/scrub edges of open habitats; forages in grasslands, agricultural fields, and low scrub habitats	No, no suitable nesting habitat
California black rail	*Laterallus jamaicensis coturniculus*	None	ST, FP	None	Nests and forages in saline, freshwater, or brackish emergent marshes with gently grading slopes and upland refugia with vegetative cover beyond the high-water line	No, no suitable nesting habitat
Invertebrates						
Conservancy fairy shrimp	*Branchinecta conservatio*	FE	None	None	Vernal pools and seasonal wetlands in valley and foothill grasslands	No, no suitable habitat
Longhorn fairy shrimp	*Branchinecta longiantenna*	FE	None	None	Small, shallow vernal pools and swales in alkali soils or rock outcrops	No, no suitable habitat
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	None	None	Vernal pools and other seasonal wetlands	No, no suitable habitat
Midvalley fairy shrimp	*Branchinecta mesovallensis*	None	None	None	Vernal pools	No, no suitable habitat
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	None	None	Elderberry shrubs, typically in riparian habitats.	No, no suitable habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Curved-foot hygrotus diving beetle	*Hygrotus curvipes*	None	None	None	Small seasonal often muddy pools; can be associated with alkaline plant communities.	No, no suitable habitat
California linderiella	*Linderiella occidentalis*	None	None	None	Vernal pools and seasonal wetlands in valley and foothill grasslands	No, no suitable habitat
Molestan blister beetle	*Lytta molesta*	None	None	None	Often associated with dried vernal pools.	No, no suitable habitat
Antioch andrenid bee	*Perdita scitula antiochensis*	None	None	None	Loose sand on sand bars and sand dunes.	No, no suitable habitat
Mammals						
Pallid bat	*Antrozous pallidus*	None	SSC	None	Deserts, grasslands, shrublands, woodlands, and forests; most common in open, dry habitats; roosts in rock crevices, oak hollows, bridges, and buildings	No, no suitable habitat
Western mastiff bat	*Eumops perotis californicus*	None	SSC	None	Roosts in trees, rock crevices, and buildings in small colonies of fewer than 100 individuals; forages in a variety of grassland, shrub, and wooded habitats, including riparian and urban areas, although most commonly in open, arid lands	No, no suitable habitat
Hoary bat	*Lasiurus cinereus*	None	None	None	Typically roosts alone on trees, hidden among foliage, but occasionally roosts in caves with other bats; prefers coniferous forests, but hunts over open areas or lakes	No, no suitable habitat
San Joaquin Pocket Mouse	*Perognathus inornatus inornatus*	None	None	None	Inhabits grassland and scrub habitats with friable soils	No, no suitable habitat
American badger	*Taxidea taxus*	None	SSC	None	Dry open shrub, forest, and herbaceous habitats with friable soils	No, no suitable habitat
San Joaquin kit fox	*Vulpes macrotis mutica*	FE	ST	None	Grasslands and oak savannas with friable soils; home range sizes of 600–1,300 acres	Yes, low quality habitat

Table B-1. Complete Species List						
Common Name	**Scientific Name**	**Federal Status**	**State Status**	**California Rare Plant Rank**	**Habitat**	**Potential for Impact**
Natural Communities						
Alkali meadow	*None*	None	None	None	Not applicable	No, not present on project site
Alkali seep	*None*	None	None	None	Not applicable	No, not present on project site
Cismontane alkali marsh	*None*	None	None	None	Not applicable	No, not present on project site
Coastal and valley freshwater marsh	*None*	None	None	None	Not applicable	Yes, small patches present on edge of West Canal an in CCF
Great valley oak riparian forest	*None*	None	None	None	Not applicable	No, not present on project site
Northern claypan vernal pool	*None*	None	None	None	Not applicable	No, not present on project site
Sycamore alluvial woodland	*None*	None	None	None	Not applicable	No, not present on project site
Valley needlegrass grassland	*None*	None	None	None	Not applicable	No, not present on project site
Valley sink scrub	*None*	None	None	None	Not applicable	No, not present on project site

Listing Status: **FE** = Federally Endangered, **FT** = federal threatened, **SE** = State Endangered, **ST** = State Threatened, FP = California Fully Protected; **SSC** = State Species of Concern; **Rare** = CA Rare; **WL** = DFG Watch List; **CRPR 1A** = Plants presumed extinct in CA, **CRPR 1B** = rare, threatened, or endangered in California and elsewhere; **CRPR 2** = rare, threatened, or endangered in California, but more common elsewhere, **CRPR 4** = limited distribution- a watch list; **CRPR Suffixes** (.1, .2., .3) for all rankings = **.1** = Seriously endangered in California, **.2** = Fairly endangered in California, **.3** = Not very threatened in California

APPENDIX C

Greenhouse Gases

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
1416 9th Steet
Sacramento, CA
95814
dwrclimatechange.water.ca.gov
www.water.ca.gov/climatechange

Project Name:	Clifton Court Forebay Fishing Facility Project
Environmental Document type:	Initial Study
Manager's Name:	Bijaya Shrestha
Manager's email:	Bijaya.Shrestha@water.ca.gov
Division:	Bay-Delta Office
Office, Branch, or Field Division	Delta Conveyance Branch

Short Project Description:

The proposed Clifton Court Forebay (CCF) Fishing Facility project will consist of installing a floating fishing pier extending approximately 500 feet into the CCF. Other appurtenant features to be installed include a staging area; a concrete pad including a retaining wall, a public restroom, a bicycle rack, and a prefabricated equipment shed to enable future use of maintenance equipment in the vicinity of the gates; security gates and fencing; lighting and signage; a new public boat dock located on West Canal, two American Disability Act (ADA) accessible parking spots adjacent to the Clifton Court Road entrance gate on the northwest side of CCF. The fishing pier and boat dock will be prefabricated and will be supported on the pile foundation. The fishing pier, the boat dock, and the restroom will be ADA accessible. The road from the entrance gate to the fishing pier will be designated as a public trail.
The CCF Fishing Facility Project is intended to enable DWR's compliance with certain requirements of the National Marine Fisheries Service's (NMFS) Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and State Water Project (June 2009). The objectives of the proposed CCF Fishing Facility Project are (1) to improve the survival of at-risk Delta fish species, designated under the Federal Endangered Species Act (ESA) within CCF, (2) to provide appropriate access for anglers who use the area and improve the security of the radial gates and other facilities.

Project GHG Emissions Summary

Total Construction Emissions	955.5	$mtCO_2e$
Maximum Annual Construction Emissions	N/A	$mtCO_2e$

☒ 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:	Bijaya Shrestha — Digitally signed by Bijaya Shrestha DN: cn=Bijaya Shrestha, o=DWR, ou=Bay-Delta Office, email=Bijaya.Shrestha@water.ca.gov, c=US Date: 2012.12.10 09:51:29 -08'00'	Date:	12/10/2012
C4 Approval Signature:	Andrew M. Schwarz — Digitally signed by Andrew M. Schwarz DN: cn=Andrew M. Schwarz, o=California Department of Water Resources, ou=DSMW, email=aschwarz@water.ca.gov, c=US Date: 2012.12.10 12:51:17 -08'00'	Date:	12/10/12

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

Table C-1. Clifton Court Forebay Fishing Facility - 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	Excavator	1	10	80	5.12	410	0.010	4
3	Semi Hauler	4	30	960	5	4,800	0.010	50
4	Compactor	1	10	80	5	400	0.010	4
5	Water trucks	2	50	800	5	4,000	0.010	42
6	Backhoe/Loaders	3	10	240	2.97	712	0.010	7
7	Dump trucks	5	10	400	7	2,800	0.010	29
8	Trencher	1	20	160	4.27	684	0.010	7
9	Grader	2	15	240	5.66	1,358	0.010	14
10	Paver	1	15	120	8.84	1,061	0.010	11
11	Roller	4	25	800	6.95	5,558	0.010	58
12	Cranes	2	70	1120	8.18	9,165	0.010	95
13	Concrete pump	1	10	80	10	800	0.010	8
14	Water pump	1	40	320	2	640	0.010	7
15	RT Forklift	1	110	880	3.30	2,902	0.010	30
16	Crane truck	1	110	880	8.18	7,201	0.010	75
17	Supervisor truck	1	110	293	3	880	0.010	9
18	Service truck	1	110	293	4	1,173	0.010	12
19	Subcontractor truck, bldg construction	3	110	2640	4	10,560	0.010	110
20	Work barge & pile driver	1	70	560	8	4,480	0.010	47
21	Tug boat	2	70	1120	10	11,200	0.010	116
22	Pile driver crane	1	70	560	5	2,800	0.010	29
23	Dragline	1	70	560	11.80	6,608	0.010	69
24								
25					**TOTAL**	**80,192**		**833**
26	[1] An 8-hour work day is assumed.							
27	[2] California Air Resource Board Offroad 2007 Emissions Inventory fuel consumption factors							
28	[3] World Resources Institute-Mobile combustion CO_2 emissions tool, June 2003 Version 1.2							

29	**Table C-1. Clifton Court Forebay Fishing Facility - Inventory and Calculation of Greenhouse Gas Emissions (Cont'd)**							
30	**Emissions from Transportation of Construction Workforce**							
31	**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)**
32	20	110	50	110000	20.8	**5288.5**	0.009	**48**
33	[4] United States Environmental Protection Agency. 2008. Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2008. [EPA420-R-08-015]							
34								
35	**Emissions from Transportation of Construction Materials**							
36	**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)**
37	Delivery	100	80	8000	6	1333	0.010	13.9
38	Mobilize Demob	30	50	1500	6	250	0.010	2.5
39	Temp. Platform	90	100	9000	6	1500	0.010	15.0
40	Retaining Wall	150	100	15000	6	2500	0.010	25.0
41	Spoils	700	15	10500	6	1750	0.010	18.2
42							**TOTAL**	**74.5**
43								
44	**Construction Electricity Emissions**							
45	Electricity Needed		**MWh of electricity**	**$mtCO2_e$/ MWh[5]**	**CO_2 e emissions**			
46				0.310	0			
47	[5] eGRID2010 Version 1.0, February 2011 (Year 2007 data) CAMX-WECC sub-region.							
48								
49	**Total Construction Activity Emissions**				**955.5**	(from lines 25, 32, 42, and 46)		
50	**Total Years of Construction**				1			
51	**Expected Start Date of Construction**							
52								
53	**Estimated Project Useful life**			30	Years			
54	**Average Annual Total GHG Emissions**7			**31.8**	**MT CO2 equivalents**			
55	[7]short-term construction emissions amortized over life of project							

Table C-2. Offroad Equipment Emissions Factors[1]				
Equipment	Offroad 2007 Outputs			Individual Unit Factors
	Fuel	MaxHP	Class	Gal/hr
Tampers/Rammers	G2	15	Construction and Mining Equipment	0.20
Plate Compactors	G2	15	Construction and Mining Equipment	0.20
Asphalt Pavers	G4	15	Construction and Mining Equipment	0.58
Asphalt Pavers	G4	25	Construction and Mining Equipment	1.47
Asphalt Pavers	G4	50	Construction and Mining Equipment	2.34
Asphalt Pavers	G4	120	Construction and Mining Equipment	3.95
Tampers/Rammers	G4	15	Construction and Mining Equipment	0.49
Plate Compactors	G4	5	Construction and Mining Equipment	0.18
Plate Compactors	G4	15	Construction and Mining Equipment	0.44
Rollers	G4	5	Construction and Mining Equipment	0.27
Rollers	G4	15	Construction and Mining Equipment	0.55
Rollers	G4	25	Construction and Mining Equipment	1.19
Rollers	G4	50	Construction and Mining Equipment	2.64
Rollers	G4	120	Construction and Mining Equipment	4.64
Paving Equipment	G4	5	Construction and Mining Equipment	0.20
Paving Equipment	G4	15	Construction and Mining Equipment	0.58
Paving Equipment	G4	25	Construction and Mining Equipment	1.32
Paving Equipment	G4	50	Construction and Mining Equipment	2.30
Paving Equipment	G4	120	Construction and Mining Equipment	3.70
Surfacing Equipment	G4	5	Construction and Mining Equipment	0.20
Surfacing Equipment	G4	15	Construction and Mining Equipment	0.39
Surfacing Equipment	G4	25	Construction and Mining Equipment	0.94
Signal Boards	G4	5	Construction and Mining Equipment	0.33
Signal Boards	G4	15	Construction and Mining Equipment	0.60
Trenchers	G4	15	Construction and Mining Equipment	0.65
Trenchers	G4	25	Construction and Mining Equipment	1.40
Trenchers	G4	50	Construction and Mining Equipment	2.20
Trenchers	G4	120	Construction and Mining Equipment	4.27
Bore/Drill Rigs	G4	15	Construction and Mining Equipment	0.79
Bore/Drill Rigs	G4	25	Construction and Mining Equipment	1.45
Bore/Drill Rigs	G4	50	Construction and Mining Equipment	2.68
Bore/Drill Rigs	G4	120	Construction and Mining Equipment	6.67
Bore/Drill Rigs	G4	175	Construction and Mining Equipment	9.04
Concrete/Industrial Saws	G4	5	Construction and Mining Equipment	0.27
Concrete/Industrial Saws	G4	15	Construction and Mining Equipment	0.69
Concrete/Industrial Saws	G4	25	Construction and Mining Equipment	1.34
Concrete/Industrial Saws	G4	50	Construction and Mining Equipment	2.78
Concrete/Industrial Saws	G4	120	Construction and Mining Equipment	4.72
Cement and Mortar Mixers	G4	5	Construction and Mining Equipment	0.26
Cement and Mortar Mixers	G4	15	Construction and Mining Equipment	0.52
Cement and Mortar Mixers	G4	25	Construction and Mining Equipment	1.61
Cranes	G4	50	Construction and Mining Equipment	1.94
Cranes	G4	120	Construction and Mining Equipment	3.42
Cranes	G4	175	Construction and Mining Equipment	5.37
Crushing/Proc. Equipment	G4	15	Construction and Mining Equipment	0.75
Crushing/Proc. Equipment	G4	25	Construction and Mining Equipment	1.37
Crushing/Proc. Equipment	G4	120	Construction and Mining Equipment	7.91

Table C-2. Offroad Equipment Emissions Factors[1] (Cont'd)				
Rough Terrain Forklifts	G4	50	Construction and Mining Equipment	3.30
Rough Terrain Forklifts	G4	120	Construction and Mining Equipment	5.26
Rough Terrain Forklifts	G4	175	Construction and Mining Equipment	8.18
Rubber Tired Loaders	G4	50	Construction and Mining Equipment	2.44
Rubber Tired Loaders	G4	120	Construction and Mining Equipment	3.85
Tractors/Loaders/Backhoes	G4	120	Construction and Mining Equipment	2.97
Skid Steer Loaders	G4	15	Construction and Mining Equipment	0.80
Skid Steer Loaders	G4	25	Construction and Mining Equipment	1.11
Skid Steer Loaders	G4	50	Construction and Mining Equipment	1.93
Skid Steer Loaders	G4	120	Construction and Mining Equipment	4.31
Dumpers/Tenders	G4	5	Construction and Mining Equipment	0.14
Dumpers/Tenders	G4	15	Construction and Mining Equipment	0.40
Dumpers/Tenders	G4	25	Construction and Mining Equipment	0.84
Dumpers/Tenders	G4	120	Construction and Mining Equipment	2.60
Other Construction Equipment	G4	175	Construction and Mining Equipment	5.49
Pavers	D	25	Construction and Mining Equipment	0.85
Pavers	D	50	Construction and Mining Equipment	1.32
Pavers	D	120	Construction and Mining Equipment	3.18
Pavers	D	175	Construction and Mining Equipment	5.87
Pavers	D	250	Construction and Mining Equipment	8.84
Pavers	D	500	Construction and Mining Equipment	10.62
Plate Compactors	D	15	Construction and Mining Equipment	0.20
Rollers	D	15	Construction and Mining Equipment	0.29
Rollers	D	25	Construction and Mining Equipment	0.61
Rollers	D	50	Construction and Mining Equipment	1.22
Rollers	D	120	Construction and Mining Equipment	2.71
Rollers	D	175	Construction and Mining Equipment	4.94
Rollers	D	250	Construction and Mining Equipment	6.95
Rollers	D	500	Construction and Mining Equipment	9.95
Scrapers	D	120	Construction and Mining Equipment	4.32
Scrapers	D	175	Construction and Mining Equipment	6.77
Scrapers	D	250	Construction and Mining Equipment	9.52
Scrapers	D	500	Construction and Mining Equipment	14.64
Scrapers	D	750	Construction and Mining Equipment	25.28
Paving Equipment	D	25	Construction and Mining Equipment	0.57
Paving Equipment	D	50	Construction and Mining Equipment	1.13
Paving Equipment	D	120	Construction and Mining Equipment	2.50
Paving Equipment	D	175	Construction and Mining Equipment	4.62
Paving Equipment	D	250	Construction and Mining Equipment	5.56
Surfacing Equipment	D	50	Construction and Mining Equipment	0.66
Surfacing Equipment	D	120	Construction and Mining Equipment	2.92
Surfacing Equipment	D	175	Construction and Mining Equipment	3.91
Surfacing Equipment	D	250	Construction and Mining Equipment	6.12
Surfacing Equipment	D	500	Construction and Mining Equipment	10.04
Surfacing Equipment	D	750	Construction and Mining Equipment	15.75
Signal Boards	D	15	Construction and Mining Equipment	0.28
Signal Boards	D	50	Construction and Mining Equipment	1.68
Signal Boards	D	120	Construction and Mining Equipment	3.67
Signal Boards	D	175	Construction and Mining Equipment	7.05
Signal Boards	D	250	Construction and Mining Equipment	11.57
Trenchers	D	15	Construction and Mining Equipment	0.39
Trenchers	D	25	Construction and Mining Equipment	1.50
Trenchers	D	50	Construction and Mining Equipment	1.55
Trenchers	D	120	Construction and Mining Equipment	2.98

Table C-2. Offroad Equipment Emissions Factors[1] (Cont'd)				
Trenchers	D	175	Construction and Mining Equipment	6.58
Trenchers	D	250	Construction and Mining Equipment	10.14
Trenchers	D	500	Construction and Mining Equipment	14.18
Trenchers	D	750	Construction and Mining Equipment	26.74
Bore/Drill Rigs	D	15	Construction and Mining Equipment	0.47
Bore/Drill Rigs	D	25	Construction and Mining Equipment	0.73
Bore/Drill Rigs	D	50	Construction and Mining Equipment	1.42
Bore/Drill Rigs	D	120	Construction and Mining Equipment	3.52
Bore/Drill Rigs	D	175	Construction and Mining Equipment	6.42
Bore/Drill Rigs	D	250	Construction and Mining Equipment	8.50
Bore/Drill Rigs	D	500	Construction and Mining Equipment	14.07
Bore/Drill Rigs	D	750	Construction and Mining Equipment	27.80
Bore/Drill Rigs	D	1000	Construction and Mining Equipment	41.98
Excavators	D	25	Construction and Mining Equipment	0.75
Excavators	D	50	Construction and Mining Equipment	1.17
Excavators	D	120	Construction and Mining Equipment	3.38
Excavators	D	175	Construction and Mining Equipment	5.12
Excavators	D	250	Construction and Mining Equipment	7.19
Excavators	D	500	Construction and Mining Equipment	10.60
Excavators	D	750	Construction and Mining Equipment	17.56
Concrete/Industrial Saws	D	25	Construction and Mining Equipment	0.75
Concrete/Industrial Saws	D	50	Construction and Mining Equipment	1.40
Concrete/Industrial Saws	D	120	Construction and Mining Equipment	3.40
Concrete/Industrial Saws	D	175	Construction and Mining Equipment	7.30
Cement and Mortar Mixers	D	15	Construction and Mining Equipment	0.29
Cement and Mortar Mixers	D	25	Construction and Mining Equipment	0.80
Cranes	D	50	Construction and Mining Equipment	1.09
Cranes	D	120	Construction and Mining Equipment	2.30
Cranes	D	175	Construction and Mining Equipment	3.67
Cranes	D	250	Construction and Mining Equipment	5.09
Cranes	D	500	Construction and Mining Equipment	8.18
Cranes	D	750	Construction and Mining Equipment	13.77
Cranes	D	9999	Construction and Mining Equipment	44.16
Graders	D	50	Construction and Mining Equipment	1.29
Graders	D	120	Construction and Mining Equipment	3.44
Graders	D	175	Construction and Mining Equipment	5.66
Graders	D	250	Construction and Mining Equipment	7.81
Graders	D	500	Construction and Mining Equipment	10.42
Graders	D	750	Construction and Mining Equipment	22.05
Off-Highway Trucks	D	175	Construction and Mining Equipment	5.71
Off-Highway Trucks	D	250	Construction and Mining Equipment	7.55
Off-Highway Trucks	D	500	Construction and Mining Equipment	12.35
Off-Highway Trucks	D	750	Construction and Mining Equipment	20.03
Off-Highway Trucks	D	1000	Construction and Mining Equipment	28.37
Crushing/Proc. Equipment	D	50	Construction and Mining Equipment	2.06
Crushing/Proc. Equipment	D	120	Construction and Mining Equipment	3.82
Crushing/Proc. Equipment	D	175	Construction and Mining Equipment	7.64
Crushing/Proc. Equipment	D	250	Construction and Mining Equipment	11.09
Crushing/Proc. Equipment	D	500	Construction and Mining Equipment	16.94
Crushing/Proc. Equipment	D	750	Construction and Mining Equipment	26.70
Crushing/Proc. Equipment	D	9999	Construction and Mining Equipment	59.43
Rough Terrain Forklifts	D	50	Construction and Mining Equipment	1.58
Rough Terrain Forklifts	D	120	Construction and Mining Equipment	2.86
Rough Terrain Forklifts	D	175	Construction and Mining Equipment	5.70

Table C-2. Offroad Equipment Emissions Factors[1] (Cont'd)				
Rough Terrain Forklifts	D	250	Construction and Mining Equipment	7.74
Rough Terrain Forklifts	D	500	Construction and Mining Equipment	11.63
Rubber Tired Loaders	D	25	Construction and Mining Equipment	0.77
Rubber Tired Loaders	D	50	Construction and Mining Equipment	1.46
Rubber Tired Loaders	D	120	Construction and Mining Equipment	2.70
Rubber Tired Loaders	D	175	Construction and Mining Equipment	4.85
Rubber Tired Loaders	D	250	Construction and Mining Equipment	6.76
Rubber Tired Loaders	D	500	Construction and Mining Equipment	10.76
Rubber Tired Loaders	D	750	Construction and Mining Equipment	22.04
Rubber Tired Loaders	D	1000	Construction and Mining Equipment	26.99
Rubber Tired Dozers	D	175	Construction and Mining Equipment	5.93
Rubber Tired Dozers	D	250	Construction and Mining Equipment	8.36
Rubber Tired Dozers	D	500	Construction and Mining Equipment	12.11
Rubber Tired Dozers	D	750	Construction and Mining Equipment	18.23
Rubber Tired Dozers	D	1000	Construction and Mining Equipment	27.08
Tractors/Loaders/Backhoes	D	25	Construction and Mining Equipment	0.72
Tractors/Loaders/Backhoes	D	50	Construction and Mining Equipment	1.41
Tractors/Loaders/Backhoes	D	120	Construction and Mining Equipment	2.37
Tractors/Loaders/Backhoes	D	175	Construction and Mining Equipment	4.63
Tractors/Loaders/Backhoes	D	250	Construction and Mining Equipment	7.78
Tractors/Loaders/Backhoes	D	500	Construction and Mining Equipment	15.62
Tractors/Loaders/Backhoes	D	750	Construction and Mining Equipment	23.43
Crawler Tractors	D	50	Construction and Mining Equipment	1.17
Crawler Tractors	D	120	Construction and Mining Equipment	3.03
Crawler Tractors	D	175	Construction and Mining Equipment	5.54
Crawler Tractors	D	250	Construction and Mining Equipment	7.55
Crawler Tractors	D	500	Construction and Mining Equipment	11.80
Crawler Tractors	D	750	Construction and Mining Equipment	21.15
Crawler Tractors	D	1000	Construction and Mining Equipment	29.99
Skid Steer Loaders	D	25	Construction and Mining Equipment	0.63
Skid Steer Loaders	D	50	Construction and Mining Equipment	1.18
Skid Steer Loaders	D	120	Construction and Mining Equipment	1.95
Off-Highway Tractors	D	120	Construction and Mining Equipment	4.32
Off-Highway Tractors	D	175	Construction and Mining Equipment	5.97
Off-Highway Tractors	D	250	Construction and Mining Equipment	5.94
Off-Highway Tractors	D	750	Construction and Mining Equipment	25.95
Off-Highway Tractors	D	1000	Construction and Mining Equipment	37.23
Dumpers/Tenders	D	25	Construction and Mining Equipment	0.35
Other Construction Equipment	D	15	Construction and Mining Equipment	0.46
Other Construction Equipment	D	25	Construction and Mining Equipment	0.60
Other Construction Equipment	D	50	Construction and Mining Equipment	1.30
Other Construction Equipment	D	120	Construction and Mining Equipment	3.70
Other Construction Equipment	D	175	Construction and Mining Equipment	4.86
Other Construction Equipment	D	500	Construction and Mining Equipment	11.51
Compressor (Dredging)	D	50	Dredging	1.41
Compressor (Dredging)	D	120	Dredging	2.62
Compressor (Dredging)	D	175	Dredging	4.42
Compressor (Dredging)	D	250	Dredging	5.60
Compressor (Dredging)	D	500	Dredging	8.90
Compressor (Dredging)	D	1000	Dredging	22.11
Crane (Dredging)	D	750	Dredging	16.28
Deck/door engine	D	250	Dredging	6.45
Dredger	D	175	Dredging	4.09
Dredger	D	250	Dredging	5.69

Table C-2. Offroad Equipment Emissions Factors[1] (Cont'd)				
Dredger	D	750	Dredging	15.90
Dredger	D	9999	Dredging	34.80
Hoist/swing/winch	D	50	Dredging	0.96
Hoist/swing/winch	D	120	Dredging	3.05
Hoist/swing/winch	D	175	Dredging	3.88
Hoist/swing/winch	D	250	Dredging	6.18
Hoist/swing/winch	D	500	Dredging	9.81
Hoist/swing/winch	D	750	Dredging	19.56
Hoist/swing/winch	D	9999	Dredging	36.86
Pump (Dredging)	D	120	Dredging	4.29
Pump (Dredging)	D	175	Dredging	6.35
Pump (Dredging)	D	250	Dredging	10.51
Pump (Dredging)	D	500	Dredging	16.24
Pump (Dredging)	D	750	Dredging	23.77
Pump (Dredging)	D	9999	Dredging	114.38
Generator (Dredging)	D	50	Dredging	1.44
Generator (Dredging)	D	120	Dredging	4.05
Generator (Dredging)	D	175	Dredging	5.47
Generator (Dredging)	D	250	Dredging	9.94
Generator (Dredging)	D	500	Dredging	16.88
Generator (Dredging)	D	750	Dredging	28.09
Generator (Dredging)	D	9999	Dredging	61.55
Other (Dredging)	D	120	Dredging	2.96
Other (Dredging)	D	175	Dredging	5.11
Other (Dredging)	D	250	Dredging	6.32
Other (Dredging)	D	500	Dredging	11.20
Misc Portable Equipment	D	120	Other Portable Equipment	3.15
Misc Portable Equipment	D	175	Other Portable Equipment	4.32
Misc Portable Equipment	D	250	Other Portable Equipment	7.19
Misc Portable Equipment	D	500	Other Portable Equipment	13.44
Misc Portable Equipment	D	750	Other Portable Equipment	19.11
Misc Portable Equipment	D	1000	Other Portable Equipment	25.52

[1] These data were generated using the California Air Resource Control Board Offroad 2007 Emissions Inventory.