



# State Water Resources Control Board



**Linda S. Adams**  
*Secretary for  
Environmental Protection*

**Division of Water Rights**  
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**Arnold Schwarzenegger**  
*Governor*

November 26, 2007

Ms. Leah Orloff  
Contra Costa Water District  
P.O. Box H20  
Concord, CA 94524

Dear Ms. Orloff:

## WATER QUALITY CERTIFICATION FOR THE ALTERNATE INTAKE PROJECT IN SAN JOAQUIN COUNTY

Thank you for providing State Water Resources Control Board (State Water Board) staff with the necessary information to process Contra Costa Water District's (CCWD) request for Clean Water Act section 401 water quality certification of the Alternate Intake Project in San Joaquin County.

The Executive Director of the State Water Board has issued a water quality certification for the Alternate Intake Project, a copy of which is enclosed for your records. A copy of the Notice of Determination is also enclosed. State Water Board staff appreciate the cooperation of CCWD staff on this project. If you have any questions, please contact me at (916) 341-5428.

Sincerely,

Leslie F. Grober, Manager  
Hearings and Special Projects Section

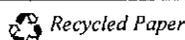
Enclosure

cc: Ms. Jane Hicks  
U.S. Army Corps of Engineers, Regulatory Functions  
333 Market Street  
San Francisco, CA 94599

Mr. Peck Ha, Regulatory Project Manager  
U.S. Army Corps of Engineers  
1325 J Street CO-R  
Sacramento, CA 95814

(Continued next page.)

*California Environmental Protection Agency*



Ms. Leah Orloff

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cc: (Continuation page.)

Pamela Creedon, Executive Officer  
Central Valley Regional Water Quality Control Board  
11020 Sun Center Drive #200  
Rancho Cordova, CA 95670

Greg Vaughn, Senior Water Resource Control Engineer  
Central Valley Regional Water Quality Control Board  
11020 Sun Center Drive #200  
Rancho Cordova, CA 95670

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

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In the Matter of Water Quality Certification for

**The Alternate Intake Project**

Sources: Victoria Canal tributary to Old River

County: San Joaquin County

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**Project Description**

The Proposed Action involves the construction of a new municipal water supply intake for Contra Costa Water District (CCWD) on Victoria Canal. CCWD has applied to the State Water Resources Control Board (State Water Board) to add this water supply intake on Victoria Canal as a new point of diversion. The new intake would improve CCWD's water quality, but would not increase CCWD's total diversion capacity (permitted rate or average annual quantity). The new intake would have a capacity of up to 250 cubic feet per second (cfs) and would be a part of the Old River conveyance system. The existing Old River intake and pump station, with a current capacity of 250 cfs, would remain in use. Combined diversions from the 250 cfs Old River pump station and the proposed 250 cfs alternative intake would be limited to 320 cfs by the capacity of the pipeline connecting the Old River pump station to CCWD's transfer station that routes water either to the Los Vaqueros Reservoir or the Contra Costa Canal. The locations of the new Victoria Canal intake and the Old River Pump Station are shown in Enclosure 2A. CCWD would not increase the average total annual quantity diverted from the Delta.

The new intake structure would consist of a reinforced concrete structure with side retaining walls; suction pipes; and a fish screen, open to Victoria Canal, supported on concrete columns. The intake structure would be approximately 100 to 200 feet long, depending on the depth of the screen, which is anticipated to be 10 feet to 15 feet. The final sizing will be based on confirmation of fish screen design details with fishery agencies, levee geotechnical design considerations, channel bathymetry, and costs. These design considerations may indicate that a narrower, deeper screen is preferable to a shallow, wide screen.

A pump station would lift water from the new intake and convey it through the pipeline system and to the existing Old River conveyance system on Byron Tract. The pump station and associated mechanical piping would occupy a footprint area approximately 140 feet long by 60 feet wide. Normal water surface elevations at the intake would vary with tide; however, the intake pumps would be designed to operate at high and low water levels. The pumps would discharge into a common pipeline. The intake/pump station facilities would also include a smaller motor control center/maintenance building

and an electrical substation. The substation would be an open area measuring approximately 120 feet by 80 feet surrounded by chain-link fencing.

There are no utilities present at the proposed intake site. Electricity, non-potable water, a sanitary holding tank, and a telecommunications system would be provided as part of the Proposed Action. A new power substation would be constructed on-site. Power transmission lines would be installed from the Western Area Power Administration distribution system to the substation. Power supply to the facility would be transmitted through the distribution system from a combination of available sources, including the United States Bureau of Reclamation's (USBR) Central Valley Project.

Water from Victoria Canal would be pumped through a screening filter to provide non-potable service water for the pump seals and washrooms. Sanitary services for CCWD personnel on site for maintenance activities would be provided through the use of a below-ground holding tank that would be regularly maintained. Antennas would be installed at the site to allow the station's programmable logic controller and security system to communicate with CCWD's supervisory control and data acquisition system. Telephone cable would also be installed to allow for voice and data communication.

The existing levee would be reinforced and reconfigured to serve as the engineered soil platform for the proposed intake/pump station facilities and to allow installation of the new intake structure. Enclosures 2B and 2C show the proposed levee modifications. The approximate footprint area of the levee improvements (i.e., measured at the base of the side slopes) would be 250 to 300 feet wide by 1,000 to 1,200 feet long. Approximately 6 to 8 acres at the intake site would be permanently removed from agricultural use by the proposed levee modification.

The levee construction would require approximately 140,000 to 170,000 cubic yards of fill material. The top of the reconfigured levee would be surfaced with aggregate base to maintain vehicular traffic during rain events. A ramp would be provided to allow access to the pump station and ancillary buildings. Slope protection (i.e., riprap) would be installed on the water side of the levee for approximately 400 to 500 feet on each side of the intake structure.

The new conveyance pipeline would traverse Victoria Island buried within a trench from the new intake and pump facility on Victoria Canal to the Old River levee. The pipeline routing for the Proposed Action is shown in Enclosures 2A and 2D. The pipeline would transect Victoria Island diagonally and would be approximately 12,000 to 14,000 feet long. The pipeline would be sized to accommodate a flow rate of up to 250 cfs. The pipe diameter would be approximately 66 inches. Pipeline features such as air release, control valves, cathodic protection test stations, and access hatches would be installed in vaults or on pads above ground along the pipeline route. During construction, the proposed pipeline routing would affect some of the existing irrigation and drainage ditches that are used to irrigate existing agricultural fields and divert irrigation/storm water drainage from the fields (for discharge to Old River or Victoria Canal). Nearly all effects on drainages would be temporary, as the pipeline would be siphoned under the ditches, which would then be recontoured to their pre-project dimensions where possible.



## WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

1. The Federal Clean Water Act (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the Clean Water Act (33 U.S.C. § 1251 (g)) requires federal agencies to "co-operate with the State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."
2. The Applicant has applied to the U.S. Army Corps of Engineers (ACOE) for a standard permit (Corps File No. 200500537).
3. Section 401 of the Clean Water Act (33 U.S.C. §1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the Project will be in compliance with specified provisions of the Clean Water Act, including water quality standards and implementation plans promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the Clean Water Act and with any other appropriate requirement of state law. Section 401 further provides that State certification conditions shall become conditions of any federal license or permit for the Project. The State Water Resources Control Board (State Water Board) has delegated this function to the Executive Director by regulation. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)
4. The California Regional Water Quality Control Boards have adopted, and the State Water Resources Control Board (State Water Board) has approved, water quality control plans (basin plans) for each watershed basin in the State. The basin plans designate the beneficial uses of waters within each watershed basin and water quality objectives designed to protect those uses. Section 303 of the Clean Water Act requires the states to develop and adopt water quality standards. (33 U.S.C. § 1313.) The beneficial uses together with the water quality objectives that are contained in the basin plans constitute State water quality standards under section 303.
5. The State Water Resources Control Board has adopted, and U.S. Environmental Protection Agency has approved, the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento San Joaquin River Estuary (2006 Plan). Additionally, the Central Valley Regional Water Quality Control Board has adopted a Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan). These two Water Quality Control Plans designate the beneficial uses of waters to be protected along with the water quality objectives necessary to protect those uses. Existing beneficial uses designated for the legal Sacramento/San Joaquin Delta (Delta) include municipal and domestic, agricultural, industrial service, industrial process supply, groundwater recharge, navigation, water contact recreation, non-contact water recreation, shellfish harvesting, commercial and sport fishing, warm and cold freshwater habitat, estuarine habitat, wildlife habitat, rare, threatened, and

endangered species, migration of aquatic organisms, and spawning (spawning, reproduction, and development). Protection of these beneficial uses requires compliance with the objectives contained in the 2006 Plan and the Basin Plan.

6. The State Water Board has reviewed and considered the plans and Project description provided by the Applicant. Further, the State Water Board has considered the 2006 Plan and the Basin Plan, the existing water quality conditions, and Project-related controllable factors.
7. Section 401 of the Clean Water Act requires any applicant for a federal license or permit who seeks to conduct an activity that may result in any discharge to navigable waters, to obtain certification from the State that the discharge will comply with applicable water quality standards. The federal agency issuing permits is the U.S. Army Corps of Engineers (COE). The Alternate Intake Project will require a standard permit from the COE under section 404 of the Clean Water Act. CCWD submitted an application for a standard permit to the COE under section 404 on April 19, 2007.
8. The State Water Board is issuing a 401 water quality certification because it has determined that the Alternate Intake Project will be consistent with federal and State water quality standards. In issuing a water quality certification, the State Water Board certifies compliance with provisions of the Clean Water Act and the State's parallel Porter Cologne Act, including all water quality objectives necessary to protect the designated beneficial uses of affected water bodies, as defined in the 2006 Plan and the Basin Plan. Pursuant to the Clean Water Act, the State Water Board must analyze potential Project-related environmental effects to the specified waters prior to making a determination that the proposed projects will protect the designated beneficial uses of the affected water bodies.
9. The State Water Board as responsible agency has reviewed and considered the Final Environmental Impact Report/Environmental Impact Statement for this Project (State Clearinghouse Number 2005012101), adopted on November 15, 2006, by CCWD and USBR. CCWD and USBR incorporated conditions into the Project that protect the environment. The State Water Board will file a Notice of Determination within five days from the issuance of this certification.

**ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER BOARD CERTIFIES THAT THE ALTERNATE INTAKE PROJECT OPERATED BY THE CONTRA COSTA WATER DISTRICT** will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if the Applicant complies with the following terms and conditions during the Project activities certified herein.

1. This certification is subject to modification or revocation upon administrative or judicial review including review and amendment pursuant to Water Code section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with §3867).
2. The State Water Board may add to or modify the conditions of this certification, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.
3. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. Contra Costa Water District (CCWD) shall take all reasonable measures to protect the beneficial uses of water of the Victoria Canal and Old River.
4. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under any State or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any State law authorizing remedies, penalties; process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to a suspected violation of any condition of this certification, the State Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.
5. The Project shall be operated in a manner that maintains native aquatic species in good condition. The State Water Board reserves its jurisdiction to use appropriate administrative procedures to limit Project diversions or other appropriate actions to maintain native aquatic species in good condition.

6. This certification does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (DFG Code § 2050 to 2097) or the federal Endangered Species Act (16 U.S.C. § 1531 to 1544). If a "take" will result from any act authorized under this certification or water rights held by the Applicant, the Applicant shall obtain authorization for the take prior to any construction or operation of the Project. The Applicant shall be responsible for meeting all requirements of the applicable Endangered Species Act for the Project authorized under this certification.
7. This certification is valid for the duration of the described project. CCWD shall notify the State Water Board in writing within 7 days prior to the start of construction activities. Additionally, CCWD shall notify the State Water Board in writing within 7 days of project completion.
8. All Mitigation Measures described in the application for water quality certification and the conditions and monitoring and reporting requirements detailed in the attached Mitigation and Monitoring Program (dated November 2006) are hereby incorporated by reference and are conditions of approval of this certification. Notwithstanding any more specific conditions in this certification, the Applicant shall comply with all mitigation measures, monitoring, and reporting identified in the Mitigation and Monitoring Program.
9. Any imported rock placed in the river for construction or armoring slopes (rip rap) shall consist of cleaned (washed), hard, durable rock materials with each piece 20 to 50 pounds in weight. Rip rap material shall be free from organic matter, lumps, or balls of clay, and other deleterious matter. Materials derived from processing demolished or removed asphalt concrete are not acceptable as washed rock. Construction of rip rap shall be in accordance with the project Geotechnical Report and shall be consistent with the following:
  - a. Subgrade shall be shaped and trimmed as required to provide an even surface. Subgrade shall be stabilized so that it can withstand loads which may be placed upon it, including contractor equipment.
  - b. Rip rap shall be placed with their longitudinal axis normal to the face of embankment and so arranged that each piece above the foundation coarse has a minimum of 3-point bearing on underlying stones. Bearing on smaller pieces used to fill voids shall not be acceptable.
  - c. Finished surfaces of rip rap shall be within 3 inches of elevations shown on construction drawings.
10. Construction activities shall not cause turbidity increases in surface water to exceed:
  - a. where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;

- b. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
- c. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
- d. where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

These limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

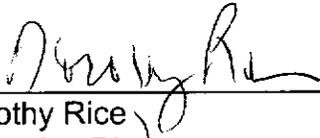
11. Activities shall not cause settleable matter to exceed 0.1 mL/L in surface waters as measured in surface waters 300 feet downstream from the project.
12. In order to protect the beneficial uses in the Delta, as defined in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins and the Water Quality Control Plan for San Francisco Bay/ Sacramento-San Joaquin Delta Estuary, the construction and operation of the project shall not add the following substances to surface waters:
  - Biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses;
  - Taste or odor-producing substances that impart undesirable tastes to domestic and municipal water supplies or odors to fish flesh or other edible products of aquatic origin or cause nuisance or adversely affect beneficial uses;
  - Materials that have potential to alter pH of the surface waters such that it may be depressed below 6.5 or raised above 8.5;
  - Perceptible floating material including, but not limited to, solids, liquids, foams or scums which could result in degradation of water quality;
  - Oil, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water;
  - Toxic pollutants in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health; and,
  - Coliform organisms attributable to human wastes.
13. Fresh concrete or grout that has not set shall not be allowed to contact or enter surface water.

14. All equipment using gas, oil, hydraulic fluid or other petroleum products shall be steam cleaned prior to its use in the river channel. All equipment shall be inspected for leaks prior to use in the river and shall be monitored for leakage. Equipment refueling shall only take place in a designated, contained area. Spill and containment equipment (oil spill booms, sorbent pads, etc.) shall be maintained on-site at all sites using such equipment.
15. In the event that project activities result in the deposition of soil materials or creation of a visible plume in surface waters, the following monitoring shall be conducted immediately upstream and 300 feet downstream of the work site and the results reported to this office within two weeks:

<b>Parameter</b>	<b>Unit</b>	<b>Type of Sample</b>	<b>Frequency of Sample</b>
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	mL/L	Grab	Same as above.

16. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, no construction material, spoils, debris, or any other substances associated with this Project that may adversely impact water quality standards, shall be located in a manner that may result in a discharge or a threatened discharge to waters of the United States.
17. Upon completion of the Project, all Project-generated debris, building materials and trash shall be removed from the Project site with disposal at appropriate waste disposal sites.
18. All areas disturbed by project activities shall be protected from washout or erosion.
19. This certification is contingent on compliance with all applicable requirements of the 2006 Plan, except as may be modified by the specific conditions of the certification.
20. The Applicant shall provide State Water Board staff access to Project sites to document compliance with this certification.
21. The applicant shall provide a copy of this certification and attachments to the contractor and all subcontractors conducting the work, and require that copies remain in their possession at the work site. The Applicant shall be responsible for work conducted by its contractor or subcontractors.
22. If, at any time, an unauthorized discharge to surface waters occurs; the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded; or any other water quality problem arises, the Applicant shall immediately cease work on the Project and promptly notify the Executive Director of the State Water Board.

23. Any modifications of the proposed Project may require submittal of a new Clean Water Act Section 401 Water Quality Certification application. Prior to any modifications of the project, CCWD must submit any change to the Project, including Project operations, that would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the Executive Director of the State Water Board to determine if a new application is required.
24. The State Water Board may add to or modify the conditions of this certification, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.
25. The State Water Board reserves authority to modify or revoke this certification if monitoring results indicate that the Project would violate water quality objectives or impair the beneficial uses.



\_\_\_\_\_  
Dorothy Rice  
Executive Director

11-26-37  
\_\_\_\_\_  
Date

Enclosures

**Enclosure 1: Mitigation Monitoring Program**

# Alternative Intake Project

## Mitigation Monitoring Program

State Clearinghouse # 2005012101

November 2006



# Mitigation Monitoring Program

## Introduction

In accordance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), the Contra Costa Water District (CCWD) and the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) prepared an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that identifies potentially significant effects related to the proposed Alternative Intake Project, which is a drinking water quality improvement project proposed for implementation by CCWD. CCWD is the lead agency under CEQA and Reclamation is the lead agency under NEPA. The EIR/EIS also identifies mitigation measures that would reduce or eliminate these significant effects.

Section 21081.6 of the California Public Resources Code and Section 15091(d) and 15097 of the State CEQA Guidelines require public agencies “to adopt a reporting or monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment.” A Mitigation Monitoring Program (MMP) is required for the proposed Alternative Intake Project because the EIR/EIS for the project identified potentially significant adverse impacts related to construction and implementation activities, and mitigation measures have been identified to reduce most of those impacts to a less-than-significant level.

This MMP will be adopted by the CCWD Board of Directors when the Board approves the Proposed Action or an alternative to the Proposed Action.

## Purpose of the Mitigation Monitoring Program

This MMP has been prepared to ensure that all required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during project design, construction, and implementation, as required. The MMP may be modified by CCWD during project implementation, as necessary, in response to changing conditions or other refinements. A summary table (attached) has been prepared to assist the responsible parties in implementing the MMP. The table identifies individual mitigation measures, monitoring/mitigation timing, responsible person/agency for implementing the measure, monitoring procedures, and a record of implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the EIR/EIS.

## Mitigation Monitoring Program

### Roles and Responsibilities

Unless otherwise specified herein, CCWD is responsible for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. CCWD at its discretion may delegate implementation responsibility or portions thereof to a licensed contractor.

CCWD will be responsible for overall administration of the MMP and for verifying that CCWD staff or a qualified construction contractor has completed the necessary actions for each measure. CCWD will designate a project manager to oversee the MMP during the construction period. Duties of the project manager include the following:

- ▶ Ensure that routine inspections of the construction site are conducted by appropriate CCWD staff; and check plans, reports, and other documents required by the MMP.
- ▶ Serve as a liaison between CCWD and the construction contractor regarding mitigation monitoring issues.
- ▶ Complete forms and maintain records and documents required by the MMP.
- ▶ Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary.

### Mitigation Monitoring Program Summary Table

The MMP Summary Table that follows should guide CCWD in its evaluation and records of the implementation of mitigation measures.

The column categories identified in the MMP Summary Table are described below:

**Mitigation Number:** Lists the mitigation measures by number.

**Mitigation Measure:** Provides the text of the mitigation measures, which are each a condition of project approval, identified in the EIR/EIS.

**Timing/Schedule:** Lists the time frame in which the mitigation is expected to take place.

**Implementation Responsibility:** Identifies the entity responsible for complying with the requirements of the mitigation measure.

**Implementation and Verification:** Verifies compliance. The “Action” column describes the type of action taken to verify implementation. The “Date Completed” column is to be dated and initialed by the project manager, or his/her designee, based on the documentation provided qualified contractors, or through personal verification by CCWD representatives.

## Mitigation Monitoring Plan

I (1) certify that I have reviewed this MMP prepared for the Alternative Intake Project EIR/EIS and find it to be in compliance with the requirements of CEQA, (2) adopt the MMP on behalf of CCWD, and (3) agree to implement the MMP is the design, construction, and implementation of the Alternative Intake Project.

\_\_\_\_\_  
Wally Bishop, General Manager  
CCWD

\_\_\_\_\_  
Date

<p style="text-align: center;"><b>Summary Table</b> <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b></p>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
<b>Delta Water Resources</b>					
No Mitigation Required.					
<b>Delta Fisheries and Aquatic Resources</b>					
4.3-a (Alt 1-3)	<p><b>Minimize Turbidity, Sedimentation, and Other Water Quality Impacts during Construction</b></p> <p>To reduce turbidity in Victoria Canal during project-related construction activities (primarily excavation and cofferdam installation), CCWD shall:</p> <ul style="list-style-type: none"> <li>▶ obtain and comply with RWQCB Section 401 Water Quality Certification and DFG Streambed Alteration Agreement, as needed;</li> <li>▶ monitor periods of construction activity and coordinate with the contractor to identify periods when localized increases in turbidity may occur;</li> <li>▶ install a silt curtain to reduce the dissipation of suspended sediments during dredging and cofferdam installation; and</li> <li>▶ conduct cofferdam installation and removal, to the extent possible, during summer to avoid the potential risk of adverse impacts to Chinook salmon, steelhead, and delta smelt, which are all more abundant in the area during fall, winter, and spring. Installation of the cofferdam will occur during the designated in-water</li> </ul>	Prior to and during construction	CCWD and Construction Contractor(s)		

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>work window between August 1 and November 30, unless modified by written agreement with NMFS, USFWS, and DFG.</p> <p>In addition, successful project-related turbidity control shall be accomplished by installation and subsequent removal of the temporary cofferdam, while maintaining suspended sediment and turbidity levels to the extent possible within the water quality criteria established by RWQCB. CCWD would be required to comply with water quality criteria established by applicable State and Federal permits and approvals for the Proposed Action. In addition, CCWD shall implement the following measures during project-related dredging and soil disposal that comply with the Fisheries Management Plan for EFH for Pacific Salmon:</p> <ul style="list-style-type: none"> <li>▶ monitor project construction-related dredging activities especially any contaminated sediments, regularly report effects on EFH, and re-evaluate activities based on monitoring results;</li> <li>▶ employ best engineering and management practices for all project construction-related dredging projects to minimize water-column discharges; and</li> <li>▶ consider upland disposal options as an alternative to open water disposal during project construction activities. Dredged sediments removed during intake</li> </ul>				

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>construction will be used beneficially on-site or disposed of at an upland site.</p> <p>Avoidance and minimization measures would be implemented in accordance with standard RWQCB requirements that have been used in other similar fish screen construction projects. CCWD shall be responsible for implementing the following measures to the extent practicable during project construction activities:</p> <ul style="list-style-type: none"> <li>▶ The discharge of petroleum products or other excavated materials to surface waters is prohibited;</li> <li>▶ Project construction activities shall minimize substrate disturbance;</li> <li>▶ Project construction activities shall not cause turbidity increases in surface waters as follows:                             <ul style="list-style-type: none"> <li>• where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU;</li> <li>• where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20%;</li> <li>• where natural turbidity is between 50 and 100 NTUs, increase shall not exceed 10 NTUs; and</li> <li>• where natural turbidity is greater than 100 NTUs, increases shall not exceed 10%.</li> </ul> </li> </ul>				

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>These limits would be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses would be fully protected;</p> <ul style="list-style-type: none"> <li>▶ Project construction activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project;</li> <li>▶ Project construction activities shall not cause visible oil, grease, or foam in the work area or downstream;</li> <li>▶ All areas disturbed by project construction activities shall be protected from washout or erosion;</li> <li>▶ In the event that project construction activities create a visible plume in surface waters, CCWD will initiate monitoring of turbidity levels at the discharge site and 300 feet downstream, taking grab samples for analysis of NTU levels twice per day during the work period while the visible plume persists;</li> <li>▶ CCWD shall notify RWQCB, DFG, USFWS, and NMFS immediately if the above criteria for turbidity, oil/grease, or foam are exceeded; and</li> </ul>				

<b>Summary Table</b> <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<ul style="list-style-type: none"> <li>▶ CCWD shall notify RWQCB, DFG, USFWS, and NMFS immediately of any spill of petroleum products or other organic or earthen materials.</li> </ul> <p>CCWD shall prepare a soil erosion control plan and stormwater pollution prevention plan (SWPPP) prior to project grading and excavation activities to minimize potential project construction-related silt from entering waterways and increasing turbidity. The plans would include, but would not be limited to, the following measures to minimize project-related erosion and sedimentation:</p> <ul style="list-style-type: none"> <li>▶ use sedimentation basins and straw bales or other measures to trap sediment and prevent sediment and silt loads to waterways during project construction;</li> <li>▶ cover graded areas adjacent to levees and in other areas that may be subject to erosion (as appropriate) with protective material, such as mulch, and re-seed with adapted native plant species after project construction is complete;</li> <li>▶ incorporate bank stabilization (riprap) into the project design on both the east and west sides of the intake to minimize channel margin erosion of soils into Victoria Canal. To the extent practicable, the aerial extend of riprap will be minimized and small (&lt;8 inch diameter)</li> </ul>				

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>riprap will be used for levee protection;</p> <ul style="list-style-type: none"> <li>▶ minimize project construction-related surface disturbance of soil and vegetation and restore terrestrial habitats immediately after construction to the extent feasible;</li> <li>▶ place any project construction-related stockpiled soil where it would not be subject to accelerated erosion; and</li> <li>▶ commence re-vegetation with grasses native to the Delta and placement of erosion control devices, such as crushed rock, as soon as a graded area has attained finish grade.</li> </ul> <p>CCWD shall ensure that a certified erosion control specialist or California-registered civil engineer prepare the plan. A project field manager would be responsible for monitoring in accordance with established protocols/procedures. If needed, RWQCB staff would review the plan prior to project construction to verify that physical best management practices (BMPs) have been incorporated to reduce project construction-related erosion and sedimentation to the maximum extent possible and ensure compliance with this measure.</p> <p>Effects associated with periodic maintenance dredging in front of the fish screen are not covered in these mitigation</p>				

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	measures, but would be addressed at such time in the future that maintenance dredging is needed, as recommended by DFG. It is expected that a mitigation measure similar to Mitigation Measure 4.3-a (Alternative1), herein, would be developed and implemented at that time by CCWD.				
4.3-b (Alt 1-3)	<b>Implement Measures to Reduce and/or Avoid Underwater Sound Pressure Impacts</b> Potential risk of adverse impacts and incidental take of steelhead, Chinook salmon, delta smelt, and other fish species shall be avoided by installing the sheet pile cofferdam using a vibration hammer that minimizes underwater sound pressure levels to the greatest extent feasible to minimize effects to sensitive fish species. If it is determined that a higher intensity percussion hammer would be required for installing the cofferdam, avoidance of potential adverse effects would be achieved by consulting with USFWS, NMFS, and DFG to determine the appropriate actions, which may include surveying Victoria Canal at the intake site to determine fish presence prior to installation, and possibly modifying the work window accordingly. Installation of the cofferdam, however, is expected to occur during the designated in-water work-window in summer and early fall when water temperatures within the central and south Delta are	Prior to and during construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>seasonally elevated and aquatic habitat in these areas is considered to be generally unsuitable for both salmonids and delta smelt. Chinook salmon and delta smelt avoid habitats, including Victoria Canal, when seasonal water temperatures increase during late spring and early summer reaching levels above 25°C (77°F). Installation of the cofferdam using percussion hammers during summer would reduce and avoid potential adverse effects to these species.</p>				
4.3-c (Alt 1-3)	<p><b>Develop and Implement a Hazardous Materials Control and Spill Prevention and Response Plan to Prevent/Avoid Hazardous Materials Impacts</b></p> <p>CCWD shall prepare and implement a hazardous materials control and spill prevention and response plan prior to construction. Measures that would be included in the plan to minimize project construction-related effects will include the following:</p> <ul style="list-style-type: none"> <li>▶ establish a spill prevention and countermeasure plan before the commencement of project construction that includes strict on-site handling rules to keep construction and maintenance materials out of drainages and waterways;</li> </ul>	Prior to construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b> <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<ul style="list-style-type: none"> <li>▶ prevent project-related raw cement, concrete, or concrete washings; asphalt, paint, or other coating material; oil or other petroleum products; or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses, including Victoria Canal;</li> <li>▶ clean up all project-related spills immediately according to the spill prevention and countermeasure plan, and notify RWQCB immediately of spills and cleanup procedures;</li> <li>▶ provide staging and storage areas for project-related equipment, materials, fuels, lubricants, solvents, and other possible contaminants away from watercourses and their watersheds; and</li> <li>▶ conduct periodic inspection during construction.</li> </ul> <p>USFWS, NMFS, DFG, and RWQCB shall review the plan prior to construction to verify that hazardous material control and spill response measures have been incorporated to control the use of hazardous materials and reduce the chance of spills to the maximum extent practicable. USFWS, NMFS, and DFG shall have access to inspect construction activities to ensure compliance.</p>				

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
4.3-d (Alt 1-3)	<p><b>Develop and Implement a Fish Rescue Plan during Construction to Prevent Stranding in the Cofferdam</b></p> <p>Installation of the cofferdam and dewatering a portion of the proposed intake structure site during fish screen construction may result in fish stranding. CCWD shall develop and implement a Fish Rescue Plan acceptable to DFG, USFWS, and NMFS; the Fish Rescue Plan is presented in the ASIP (see Attachment F, “Fish Rescue Plan,” of Appendix E-1) and summarized herein. CCWD shall ensure that a qualified fishery biologist designs and conducts the fish rescue and relocation effort to collect fish from the area behind the cofferdam. The fish rescue effort would be implemented during the dewatering of the area behind the cofferdam and would involve capture and return of those fish to suitable habitat within Victoria Canal. To ensure compliance, a fisheries biologist shall be present on-site during initial pumping (dewatering) activities.</p> <p>CCWD shall monitor progress of installation of the cofferdam and the schedule for dewatering. CCWD shall coordinate the dewatering schedule with the construction contractor and fishery biologist to allow for the fish rescue to occur prior to completely closing the cofferdam and again when water depths are approximately 2 feet. USFWS, NMFS, and DFG shall be notified at least 48</p>	Prior to and during construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	hours prior to the fish rescue. Information on the species and sizes of fish collected in the rescue and estimates of survival immediately before release would be recorded during the time of the fish rescue and provided in a letter report to be submitted within 30 days after the fish rescue to USFWS, NMFS, and DFG.				
4.3-e (Alt 1-3)	<p>Compensate for the Permanent Loss of Shallow-water Aquatic Habitat at Victoria Canal Intake Site</p> <p>Construction of the proposed intake structure in Victoria Canal would result in the modification of shallow-water aquatic habitat estimated as follows</p> <ul style="list-style-type: none"> <li>▶ 1.03 acres of existing rip-rap shallow-water tidal freshwater emergent habitat along the existing levee would be replaced by 1.03 acre of new rip-rap habitat immediately in front of the fish screen and along each side of the shallow-water fish screen along the existing levee;</li> <li>▶ 0.05 acre of shallow-water tidal freshwater emergent habitat presumed to be earthen bottom would be replaced by 0.05 acre of new rip-rap habitat; and</li> <li>▶ 1.15 acres of shallow-water tidal freshwater emergent habitat presumed to be earthen bottom would be excavated about 10-15 feet deeper, but would retain</li> </ul>	Prior to construction	CCWD		

**Summary Table**  
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	<p>the same substrate characteristics; the resulting depth would not constitute shallow-water habitat but would provide habitat complexity in the existing channel.</p> <p>These habitats are marginal, low-quality habitats. They are classified as shallow-water tidal freshwater emergent habitat based on physical characteristics that could potentially support emergent vegetation, but the intake has been sited to avoid existent emergent vegetation to the degree possible. CCWD would mitigate some of these existing habitats with high-quality emergent marsh habitat at the Kimball Island Mitigation Bank or another mitigation bank. The purchased mitigation credits would be for emergent marsh habitat that is far superior to the habitat being disturbed in Victoria Canal. Mitigation, determined in consultation with NMFS, USFWS, and DFG, is calculated as follows:</p> <ul style="list-style-type: none"> <li>▶ 1.03 acres – no mitigation is necessary as the existing habitat would not be modified in a manner that adversely affects available habitat in Victoria Canal. The existing rip-rap would be replaced with similarly sized riprap in Victoria Canal (very little change in habitat).</li> <li>▶ 0.05 acre – a 3:1 mitigation ratio is used because a presumed existing earthen bottom is being replaced with rip-rap, even though the rip-rap will quickly silt</li> </ul>				

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>over and a natural earthen bottom will occur over the long-term. CCWD would purchase 0.15 acre of shallow-water emergent marsh habitat at the Kimball Island Mitigation Bank or other mitigation bank. This more than compensates for the modified habitat; and</p> <ul style="list-style-type: none"> <li>▶ 1.15 acres – a 3:1 mitigation ratio is used because the shallow-water habitat would be replaced with open-water habitat. CCWD would purchase 3.45 acres of shallow-water emergent marsh habitat at the Kimball Island Mitigation Bank or other mitigation bank.</li> </ul> <p>To fully compensate for physical habitat modifications at the Victoria Canal intake site, CCWD will purchase mitigation credits for 3.60 acres of shallow-water emergent marsh aquatic habitat.</p>				
4.3-g (Alt 1-3)	<p><b>Minimize Fish Entrainment and Impingement at the New Victoria Canal Intake</b></p> <p>As part of the Proposed Action, CCWD would install a state-of-the-art positive barrier fish screen that would minimize fish entrainment and impingement at the new Victoria Canal intake. To ensure that the fish screen operates as intended and the risk of incidental take associated with diversions at this facility are in conformance with ESA and CESA, long-term monitoring</p>	<p>During project design and operation.</p> <p>Entrainment monitoring at Victoria Canal would occur for first year of project</p>	CCWD		

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>of operation and maintenance of the positive barrier screen shall be conducted. Monitoring at the onset of diversions through the Victoria Canal intake would include approach velocity measurements immediately after initiation of the positive barrier screen operations, with fine-tuning of velocity control baffles or other modifications as necessary, to achieve uniformity of velocities in conformance with the screen criteria (<math>\leq 0.2</math> feet/second) established by DFG and NMFS, and mandated by USFWS in a number of biological opinions. Long-term velocity tests have been scheduled at 5-year intervals for the Old River Fish Screen Facility, and a similar schedule to test for effectiveness will be implemented for ensuring proper functionality of the Proposed Action's positive barrier fish screen.</p> <p>CCWD shall also monitor the condition of the positive barrier screen on an annual basis for as long as diversions are occurring at Victoria Canal. CCWD shall conduct periodic visual inspections at least monthly, during periods of the year when the intake is in operation, to remove accumulated debris and repair screen panels as necessary. NMFS, USFWS, and DFG shall have access to the positive barrier screen for underwater inspections following completion of intake screen construction. The standards for success would be long-term reliable</p>	<p>operation only. Additional regular screen testing as established by DFG, NMFS, and USFWS.</p>			

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<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
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	<p>operation of the fish screen, and conformance with intake screen design criteria.</p> <p>CCWD will also operate the new Victoria Canal intake consistent with the existing Los Vaqueros Project Biological Opinion operational restrictions on filling Los Vaqueros Reservoir and diverting Delta water, and consistent with any future changes to that Biological Opinion. CCWD will also operate the new Victoria Canal intake consistent with any Biological Opinion issued for the Proposed Action.</p> <p>In addition, CCWD will incorporate entrainment monitoring for fish eggs, larvae, and juveniles at the new Victoria Canal intake consistent with the on-going fishery monitoring being conducted at the Old River Fish Facility. Informal consultation with NMFS, USFWS, and DFG has indicated that a monitoring program as frequent and long-term as that at the Old River Fish Screen Facility is likely not necessary due to the similarities in screen design and the proven effectiveness of the Old River screen.</p> <p>Consequently, entrainment monitoring will be conducted at the Victoria Canal intake for the first year of operation. Following one year of entrainment monitoring, CCWD will issue a performance report within 60 days to NMFS, USFWS, and DFG as a cumulative record of monitoring and communications with the regulatory agencies. Using</p>				

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Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	the 1-year monitoring results, CCWD will recommend continuation, modification, or discontinuation of the biological monitoring program for approval by NMFS, USFWS, and DFG, and then an assessment will be made whether further sampling is necessary, or should be integrated with Old River intake sampling.				
<b>Earth Resources: Geology, Soils, and Seismicity</b>					
4.4-a (Alt 1-3)	<p><b>Complete a Design-Level Geotechnical Study for the Project that Assesses Site-Specific Conditions, and Implement Applicable Study Recommendations in Facility Construction Design</b></p> <p>A design-level geotechnical study shall be prepared for the project that assesses site-specific conditions at and near potential facility locations, including seismic activity, soil liquefaction, the presence of expansive soils, and soil corrosivity. CCWD shall ensure that the study is prepared by a licensed geotechnical engineer during design of the project facilities. The study shall consider the seismic history of the project site and surrounding area and include engineering recommendations for earthquake-resistant design of the project facilities. Engineering recommendations may include measures such as the use of reinforced structural design features, the use of reinforced</p>	During project design and prior to construction	CCWD and licensed geotechnical engineer		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>or flexible pipeline, installation of shutoff valves to stop the flow of water in the event of pipeline rupture, or pipeline realignment. Project facilities shall be designed for acceptable predicted horizontal and vertical ground deformation and ground surface accelerations, as calculated by the geotechnical engineer. The study shall also identify any additional means, such as soil conditioning, to minimize or avoid damage from liquefaction.</p> <p>In addition, the study shall entail sampling and testing of fill and foundation soils to determine their compressibility, strength, expansion, and corrosivity potential and identify appropriate means to minimize or avoid damage from construction on such soils consistent with International Building Code and CBC standards. Methods to address expansive soils may include, but are not limited to, excavation and replacement with non-expansive materials, with the required depth of excavation specified by a registered geotechnical engineer based on actual soil conditions, and treatment of the soils in place through mixture with lime.</p> <p>Recommendations for corrosive soils may include excavation and replacement of highly corrosive soils with appropriate fill material and/or construction of buried pipelines using cathodic protection or mortar-lined and -</p>				

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	<p>coated welded steel pipe, reinforced concrete cylinder pipe, or other materials that can withstand corrosive conditions.</p> <p>The measures used to address these conditions shall conform to applicable building codes. CCWD shall ensure that geotechnical design recommendations resulting from the study are included in the design of project facilities and in the project construction specifications as necessary to minimize the potential environmental effects resulting from seismic events and the presence of adverse soil conditions.</p>				
<b>Local Hydrology and Water Quality</b>					
4.5-a (Alt 1-3)	<p><b>Prepare and Implement a Stormwater Pollution Prevention Plan (SWPPP) that Minimizes the Potential Contamination of Surface Waters, and Comply with Regional Water Quality Control Board (RWQCB) Requirements to Protect Water Quality</b></p> <p>Before the start of any ground-disturbing construction activity, CCWD shall ensure that the construction contractor for the intake, pump station, pipeline, and associated facilities prepares a SWPPP that identifies BMPs to prevent or minimize the introduction of contaminants into surface waters. Several BMPs have</p>	Prior to construction	CCWD and Construction Contractor(s)		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>already been incorporated into the project design. Other BMPs would include the erosion-control measures listed in Mitigation Measure 4.3-a (Alternative 1) in Section 4.3, “Delta Fisheries and Aquatic Resources.” In addition, to minimize the potential for spills of potential water contaminants to be introduced into drainages and waterways, the SWPPP shall establish specific fueling areas for construction vehicles and equipment (located at least 200 feet from drainages) and identify the locations of sensitive habitats, which shall be avoided. It shall also specify procedures for handling hazardous materials establish the need for catch basins and absorbent pads for refueling of sedentary equipment within 100 feet of a drainage or water body. Under standard SWPPP procedures, grading areas must be clearly marked, and equipment and vehicles must remain within the grading areas. Additional requirements of the SWPPP shall include monitoring and reporting to show compliance.</p> <p>CCWD shall also implement the avoidance and minimization measures in accordance with standard RWQCB requirements, as listed in Mitigation Measure 4.3-a (Alternative 1).</p>				

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<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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4.5-d (Alt 1-3, Cumulative)	<p>Prepare and Implement a SWPPP that Minimizes the Potential Contamination of Surface Waters, and Comply with RWQCB Requirements to Protect Water Quality</p> <p>This measure is the same as Mitigation Measure 4.5-a (Alternative 1) described above. Implementation of this mitigation, together with the measures already incorporated into the project design, are expected to reduce the potential direct contribution of the project construction activities to a less-than-significant level. Furthermore, environmental commitments, including similar measures for erosion and sedimentation control and hazardous materials handling, are proposed as part of SDIP implementation and are expected to minimize the potential for erosion, sedimentation, and chemical spills from SDIP construction activities (Bureau of Reclamation and California Department of Water Resources 2005).</p>	Prior to construction	CCWD and Construction Contractor(s)		

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<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
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<b>Terrestrial Biological Resources</b>					
4.6-a (Alt 1-3)	<p>Minimize Potential Fill of Jurisdictional Waters of the United States and Loss of Sensitive Habitat, and Compensate for Unavoidable Impacts</p> <p>CCWD shall implement the following measures:</p> <ul style="list-style-type: none"> <li>▶ CCWD shall minimize fill of waters of the United States and loss of freshwater marsh habitat to the greatest extent feasible.</li> <li>▶ For those waters of the United States that cannot be avoided during construction, authorization for fill of jurisdictional waters of the United States shall be secured from USACE via the Section 404 permitting process prior to project implementation. Any mitigation measures determined necessary during the 404 permitting process shall be implemented. As required, CCWD shall implement waste discharge Best Management Practices (BMPs) during dredging and minimize the disturbance of the river channel bottom and release of sediment into the water to the extent possible.</li> <li>▶ To mitigate for permanent impacts to wetlands and other waters of the United States, CCWD proposes to use an existing USACE-approved mitigation bank to</li> </ul>	Prior to, during, and following construction	CCWD, Construction Contractor(s), and qualified biologist		

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	<p>fully compensate for the acreage that is determined to be permanently affected by the Proposed Action on Victoria Island/Byron Tract, using standard and appropriate mitigation ratios. All jurisdictional waters of the United States, including wetlands, would be mitigated to achieve a no-net-loss ratio as required by USACE.</p> <ul style="list-style-type: none"> <li>▶ CCWD shall obtain a Letter of Permission or permit from the USACE under Section 10 of the Rivers and Harbors Act prior to any work being completed within navigable waters. Any conditions associated with the authorization shall be implemented.</li> <li>▶ Water Quality certification pursuant to Section 401 of the Clean Water Act will be required as a condition of issuance of the 404 permit. CCWD shall obtain water quality certification from the Regional Water Quality Control Board (RWQCB) prior to project implementation. Any measures required as part to the issuance of water quality certification shall be implemented.</li> <li>▶ A DFG Streambed Alteration Agreement will be required. Issuance of the Agreement may require the preparation of a habitat mitigation plan. The wetland mitigation plan developed for impacts to wetland and other waters of the United States may be suitable, if it</li> </ul>				

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	<p>adequately covers impacts to the stream channel of Victoria Canal and impacts to riparian habitat occurring on Victoria Island or Byron Tract from project construction activities. Any conditions of issuance of the Streambed Alteration Agreement shall be implemented as part of project implementation.</p> <ul style="list-style-type: none"> <li>▶ If the Proposed Action results in loss of freshwater marsh habitat in an area that is not a jurisdictional wetland, a wetland mitigation plan shall be developed by a qualified biologist, in consultation with DFG. The mitigation plan shall quantify the total freshwater marsh acreage lost, describe creation/replacement ratios for habitat lost, annual success criteria, mitigation sites, and monitoring and maintenance requirements. Implementation of the plan would be required to compensate for any loss of freshwater marsh habitat and result in no net loss of such habitat.</li> </ul>				
4.6-b (Alt 1-3)	<p><b>Minimize Potential Effects on Special-status Plants, and Mitigate for Loss If Required</b></p> <p>The following measures shall be implemented to protect the documented populations of Mason’s lilaepsis and rose-mallow at the proposed project site:</p>	<p>Prior to, during, and following construction</p> <p>If mitigation is required, maintenance</p>	<p>CCWD, Construction Contractor(s), and qualified biologist</p>		

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

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	<ul style="list-style-type: none"> <li>▶ Information on the special-status plant populations shall be recorded in the field on CNDDDB data forms. These forms shall be submitted to the CNDDDB upon completion of the survey;</li> <li>▶ If the populations can be avoided during project implementation, they shall be clearly marked in the field by a qualified botanist for avoidance during construction activities. Before ground disturbance, all on-site construction personnel shall be given instruction regarding the presence of this species and the importance of avoiding impacts to this species and its habitat; and</li> <li>▶ If special-status plant populations cannot be avoided, consultations with DFG would be required. CCWD shall develop a mitigation plan to compensate for the loss of Mason’s lilaeopsis and rose-mallow at a 3:1 ratio. Because CCWD would not own the land outside the project facility footprint, mitigation through replacement is likely to be impractical at the project site and would need to be achieved at an appropriate off-site location.</li> </ul> <p>If mitigation is required, CCWD shall maintain and monitor the mitigation area for 3 years following the completion of construction and restoration activities with the goal of an 80% survival rate at the end of 3 years.</p>	and monitoring for 3 years post-construction is required			

<p align="center"><b>Summary Table</b>  <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b></p>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>Monitoring reports documenting the restoration effort should be submitted to DFG upon the completion of the restoration implementation and 3 years after the restoration implementation. Monitoring reports should include photo-documentation, when restoration was completed, a description of materials that were used, specified plantings, and justifications of any substitutions to the mitigation plan.</p>				
4.6-c (Alt 1-3)	<p><b>Implement Avoidance and Mitigation Measures as Needed to Minimize Potential Effects on Giant Garter Snake</b></p> <p>Although it is highly unlikely for giant garter snake to be present in the aquatic or upland areas on Victoria Island, there is potentially suitable and marginal habitat present (4,800 feet of suitable habitat and 21,900 feet of marginal habitat out of 178,385 linear feet of potential habitat within the potential impact area). For any work that has the potential to affect giant garter snake or its habitat, CCWD shall consult with USFWS and USACE under ESA Section 7 to develop conservation measures. Work that may affect giant garter snake habitat includes constructing the new intake station and levee improvements on Victoria Canal, installing the conveyance pipeline across irrigation ditches, and connecting the conveyance pipeline to the existing</p>	<p>Prior to, during, and following construction</p>	<p>CCWD, Construction Contractor(s), and qualified biologist</p>		

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	<p>facilities at the Old River intake and pump station (either by tunneling or crossing the levee). Minimization and avoidance measures may include the following:</p> <ul style="list-style-type: none"> <li>▶ All project-related construction activity within giant garter snake habitat (aquatic habitat and adjacent suitable upland habitat within 200 feet) shall be conducted between May 1 and October 1 to the extent feasible. For any project-related construction outside of the May 1-October 1 period, CCWD shall contact the USFWS Sacramento Fish and Wildlife Office to determine if additional measures are necessary to minimize and avoid take.</li> <li>▶ Dewatering of aquatic habitat for project-related construction purposes shall not occur between October 1 and April 15, with the exception of the area within the cofferdam, unless authorized by USFWS. Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat. If complete dewatering is not possible, potential snake prey (i.e., fish and tadpoles) will be removed so that snakes and other wildlife are not attracted to the project construction area.</li> <li>▶ Within 24 hours prior to commencement of project-related construction activities, the site shall be</li> </ul>				

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	<p>inspected by a qualified biologist who is approved by the USFWS Sacramento Fish and Wildlife Office. The construction area shall be re-inspected whenever a lapse in project-related construction activity of 2 weeks or greater has occurred. If a giant garter snake is encountered during project-related construction, all project-related construction activities shall cease in the immediate area until appropriate corrective measures have been completed or it has been determined by the biologist that the snake will not be harmed. USFWS shall be contacted by telephone immediately.</p> <ul style="list-style-type: none"> <li>▶ Movement of heavy equipment to and from the project site during project-related construction activities shall be restricted to established roadways and haul routes to minimize habitat disturbance, and project construction equipment shall be stored in established staging areas.</li> <li>▶ Before ground disturbance, all on-site project-related construction personnel shall be given instruction regarding the presence of the giant garter snake and the importance of avoiding impacts to this species and its habitat.</li> <li>▶ After completion of project-related construction activities, any temporary fill and construction debris shall be removed, and wherever feasible, disturbed</li> </ul>				

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Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>areas shall be restored to pre-project conditions.</p> <ul style="list-style-type: none"> <li>▶ No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes will be placed on the project site when working within 200 feet of potential snake habitat.</li> </ul> <p>The 900 feet of drainage ditch at the toe of the levee that would be filled during construction of the intake would be replaced by a new 1,050-foot-long drainage ditch that wraps around the new levee at the intake site, an increase of 150 feet of potential giant garter snake habitat of equal habitat quality on a long-term basis. This permanent habitat enhancement offsets the temporary loss of this habitat during construction.</p>				
4.6-e (Alt 1-3)	<p><b>Conduct Surveys and Implement Protective Measures, if Needed, to Minimize Potential Effects on Swainson’s Hawk, White-Tailed Kite, Northern Harrier, and Other Raptors</b></p> <p>CCWD shall implement the following mitigation measures.</p> <p>If feasible, in order to avoid impacts to northern harrier, all vegetation within the project’s construction footprint and on-site borrow areas shall be cleared in the non-breeding season.</p> <p>Complete avoidance of project construction-related</p>	Prior to and during construction	CCWD, Construction Contractor(s), and qualified biologist		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>activity during the breeding and nesting season is not feasible. Consequently, pre-construction surveys shall be conducted by a qualified biologist to identify active Swainson’s hawk nests within ½ mile of the proposed project site and nests of other raptors within 500 feet of the proposed project site. The survey shall be conducted no less than 14 days and no more than 30 days prior to the beginning of construction. To the extent feasible, guidelines provided in the <i>Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in the Central Valley</i> (Technical Advisory Committee 2000) shall be followed.</p> <p>If active nests are found, project-related construction impacts shall be avoided by establishment of appropriate buffers to limit project-related construction activities. The size of the buffers shall be determined by a qualified biologist in consultation with DFG. No project-related construction activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active or consultations with DFG specifically allow certain construction activities to continue. Monitoring of the nest by a qualified biologist may be required if the project-related construction activity has potential to adversely affect the nest.</p> <p>To the extent feasible, CCWD will follow Avian</p>				

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>Protection Plan guidelines for power lines (Edison Electric Institute’s Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service 2005):</p> <ul style="list-style-type: none"> <li>▶ provide 60-inch minimum horizontal separation between energized conductors and/or energized conductors and grounded hardware,</li> <li>▶ insulate hardware or conductors against simultaneous contact if adequate spacing is not possible,</li> <li>▶ use WAPA-approved poles that minimize impacts to birds, and/or</li> <li>▶ increase the visibility of conductors or shield wires to prevent avian collisions.</li> </ul>				
4.6-f (Alt 1-3)	<p><b>Conduct Surveys and Implement Protective Measures, If Required, to Minimize Potential Effects on Burrowing Owl</b></p> <p>Prior to any ground-disturbing project-related construction activity, CCWD shall retain a qualified biologist to conduct preconstruction surveys for burrowing owls in suitable habitat within 250 feet of the project footprint, including the ruderal areas, and along the levees, roads, channel banks, and irrigation ditches on Victoria Island/Byron Tract. Surveys shall be conducted in accordance with DFG protocol (California Department of Fish and Game 1995).</p>	Prior to and during construction	CCWD, Construction Contractor(s), and qualified biologist		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to DFG, and no further mitigation is necessary.</p> <p>If occupied burrows are found, impacts to them shall be avoided by establishing a buffer of 165 feet during the nonbreeding season (September 1 through January 31) or 250 feet during the breeding season (February 1 through August 31) for all project-related construction activities. The size of the buffer area may be adjusted if a qualified biologist and DFG determine project-related construction activities would not be likely to have adverse effects. No project-related construction activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied, or consultations with DFG specifically allow certain construction activities to continue.</p> <p>If avoidance of occupied burrows is infeasible for project-related construction activities, on-site passive relocation techniques approved by DFG shall be used to encourage owls to move to alternative burrows outside of the impact area. However, no occupied burrows shall be disturbed by project-related construction activities during the nesting season unless a qualified biologist verifies through noninvasive methods that the burrow is no longer occupied.</p>				

**Summary Table  
Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
4.6-g (Alt 1-3)	<p><b>Conduct Surveys and Implement Protective Measures, If Required, to Minimize Potential Effects on Western Pond Turtle</b></p> <p>Impacts on potential basking sites (i.e., logs and rocks) shall be avoided during project-related construction activities, wherever feasible. Measures to reduce and/or avoid underwater sound pressure and minimize the risk of hazardous spills (as described in Mitigation Measures 4.3-b and 4.3-c in Section 4.3, “Delta Fisheries and Aquatic Resources”) would also protect western pond turtle during construction activities.</p> <p>Preconstruction surveys in any aquatic habitat, including Old River, Victoria Canal, and irrigation ditches and canals, shall be conducted by a qualified biologist immediately prior to (within 24 hours of) commencement of project construction.</p> <p>If western pond turtles are found during field surveys, a qualified biologist shall move the turtle(s) to the nearest suitable habitat outside the project construction area. A qualified biologist shall also be present during installation and dewatering of the cofferdam and during any dredging. Any dredge spoils shall be dumped and inspected for western pond turtles by the biologist.</p>	Prior to and during construction	CCWD, Construction Contractor(s), and qualified biologist		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
4.6-i (Alt 1-3)	<p><b>Conduct Surveys and Minimize Potential Effects on Tricolored Blackbird, If Required</b></p> <p>To minimize potential project-related construction disturbance to nesting tricolored blackbirds during the breeding season, vegetation within the impact area footprint shall be removed during the non-breeding season (August to mid-April). Project-related construction disturbance to vegetation outside of the impact area shall be avoided.</p> <p>If project-related construction activities are expected to occur during the breeding season for tricolored blackbirds (mid-April to July), preconstruction surveys shall be conducted by a qualified biologist in any areas of potentially suitable habitat. These areas specifically include emergent marsh in Old River across from existing pump station and blackberry brambles on Byron Tract and along Old River.</p> <p>If no nesting tricolored blackbirds are observed during the preconstruction surveys, then no further mitigation is required.</p> <p>If tricolored blackbirds are observed nesting on Victoria Island or Byron Tract, project-related construction impacts shall be avoided and minimized by establishment of a 0.25-mile buffer around the colony during the nesting period (mid-April to July) for all project-related construction activities.</p>	Prior to and during construction	CCWD, Construction Contractor(s), and qualified biologist		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
4.6-j (Alt 1-3)	<p><b>Implement Mitigation Measures 4.6-a through 4.6-i (Alternative 1) to Minimize Potential Effects to NCCP Terrestrial Habitat Types</b></p> <p>To minimize potential effects to NCCP terrestrial habitat types, CCWD shall implement Mitigation Measures 4.6-a through 4.6-i (Alternative 1). Implementation of this mitigation would reduce the potential impact to a less-than-significant level.</p> <p>CCWD shall implement Measures 4.6-a through 4.6-i (Alternative 1) to address potential direct and indirect effects on NCCP terrestrial habitat types. Any unavoidable effects on waters of the United States, including wetlands, would be addressed through restoration or replacement according to methods and terms agreed upon through consultation with USACE and/or DFG, ensuring no net loss of the affected resources. Surveys, maintenance of buffer areas where practicable, and other avoidance measures described in the conservation measures described above would ensure minimization of any potential temporary effects of construction on special-status plants, giant garter snake, western pond turtle, tricolored blackbird, burrowing owl, and nesting Swainson’s hawk and other raptors.</p>	Prior to, during, and following construction	CCWD, Construction Contractor(s), and qualified biologist		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
4.6-k (Alt 1-3, Cumulative)	<p>Implement Mitigation Measures 4.6-a Through 4.6-c, 4.6-e Through 4.6-g, and 4.6-i (Alternative 1) to Minimize Potential Effects on Sensitive Resources</p> <p>CCWD shall implement Mitigation Measures 4.6-a through 4.6-c, 4.6-e through 4.6-g, and 4.6-i (Alternative 1) to address potential significant cumulative effects on sensitive terrestrial biological resources. Any unavoidable effects on waters of the United States, including wetlands, would be addressed through restoration or replacement according to methods and terms agreed upon through consultation with USACE and/or DFG, ensuring no net loss of the affected resources.</p>	Prior to, during, and following construction	CCWD, Construction Contractor(s), and qualified biologist		
<b>Land Use</b>					
No Mitigation Required.					
<b>Agriculture</b>					
4.8-a (Alt 1-3)	<p>Preserve the Agricultural Productivity of Prime Farmland and Farmland of Statewide Importance to the Extent Feasible</p> <p>To support the continued productive use of Prime Farmland and Farmland of Statewide Importance at the proposed project site on Victoria Island and Byron Tract,</p>	During project design and construction	CCWD and Construction Contractor(s)		

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>CCWD shall ensure that the following measures are taken, to the extent feasible and practicable, in the design and implementation of the project:</p> <ul style="list-style-type: none"> <li>▶ To the extent feasible, ensure that existing drainage systems at the proposed project site that are needed for agricultural uses are functioning as necessary so that agricultural uses are not disrupted.</li> <li>▶ Minimize the disturbance of Prime Farmland and Farmland of Statewide Importance, and continuing agricultural operations, during construction by locating construction access and staging areas in areas that are fallow and using existing roads to access construction areas to the extent possible.</li> <li>▶ Perform soil density monitoring during backfill and ripping to minimize excessive compaction and minimize effects on future agricultural land use. Remove topsoil prior to excavation in fields and return it to top of fields to avoid detrimental inversion of soil profiles. Avoid excessive compaction of trench backfill. Rip excessively compacted soils to prevent adverse compaction effects. Control compaction to minimize changes to lateral groundwater flow which could affect both irrigation and internal drainage.</li> <li>▶ Coordinate construction scheduling as feasible and practicable so as to minimize disruption of agricultural</li> </ul>				

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>operations.</p> <p>Additionally, to further minimize effects on future farming atop the proposed new pipeline, CCWD shall ensure that the following measures are implemented:</p> <ul style="list-style-type: none"> <li>▶ The soils over the new pipeline will be replaced in a manner that will minimize any negative impacts on crop productivity. The surface and subsurface soil layers will be stockpiled separately and returned in their appropriate locations in the soil profile.</li> <li>▶ To avoid over-compaction of the top layers of soil, the project will include monitoring of pre-construction soil densities and returning the surface soil (approximately the top 3 feet) to within 5% of original density.</li> <li>▶ Where necessary, the top soil layers will be ripped to achieve the appropriate soil density. Ripping may also be used in areas where vehicle and equipment traffic have compacted the top soil layers, such as the construction staging areas.</li> <li>▶ CCWD will avoid working or traveling on wet soil to minimize compaction and loss of soil tilth. Moisture content, above which work should not occur, is to be determined in conjunction with geotechnical testing prior to construction. Where working or driving on wet soil cannot be avoided, roadways will be capped with</li> </ul>				

**Summary Table  
Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>spoils that will be removed at the end of construction and/or ripped and amended with organic material as needed.</p> <ul style="list-style-type: none"> <li>▶ During dewatering, CCWD will monitor soil moisture in adjacent crop fields to assure adequate crop moisture and to assist with irrigation scheduling.</li> <li>▶ CCWD will remove all construction-related debris from the soil surface. This will prevent rock, gravel, and construction debris from interfering with agricultural activities.</li> </ul>				
4.8-c (Alt 1-3, Cumulative)	<p><b>Preserve the Agricultural Productivity of Prime Farmland and Farmland of Statewide Importance to the Extent Feasible</b></p> <p>This mitigation measure is described above under Mitigation Measure 4.10-a (Alternative 1). The Proposed Action would result in a significant and unavoidable cumulative impact with respect to the cumulative conversion of Prime Farmland and Farmland of Statewide Importance to non-agricultural use even with implementation of this mitigation measure. The incremental contribution of farmland conversion associated with the Proposed Action would be a cumulatively considerable contribution to an existing significant cumulative impact.</p>	During project design and construction	CCWD and Construction Contractor(s)		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
<b>Transportation and Circulation</b>					
4.9-c (Alt 1-3)	<p><b>Prepare and Implement a Traffic Control and Safety Assurance Plan</b></p> <p>To reduce hazards to vehicles on local roadways, CCWD shall ensure that the construction contractor prepares and implements a traffic control and safety assurance plan for project-affected roadways and intersections in the project area. The plan shall be submitted to the local public agency with jurisdiction over local transportation issues (e.g., public works department) for review before the initiation of construction-related activities. The plan shall include the following elements:</p> <ul style="list-style-type: none"> <li>▶ Provide flagger control at the access roads to the project site from SR 4 to manage traffic control and flows as necessary during periods of heavy project construction-related truck traffic.</li> <li>▶ Maintain access for emergency vehicles at all times. Provide pre-notification to local police, fire, and emergency service providers of the timing, location, and duration of construction activities that could affect the movement of emergency vehicles on SR 4.</li> <li>▶ Post advance warnings about the potential presence of slow-moving vehicles on SR 4, as appropriate.</li> <li>▶ Place and maintain barriers and install traffic control</li> </ul>	Prior to and during project construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>devices necessary for safety, as specified in Caltrans' Traffic Controls for Construction and Maintenance Work Zones and in accordance with the guidance provided by the affected local jurisdictions.</p> <ul style="list-style-type: none"> <li>▶ Limit the accumulation of project-generated mud or dirt on SR 4. Actions may include using wheel-washers or installing gravel beds at exit points from unpaved roads onto SR 4 to remove soil buildup on tires and reduce track-out.</li> <li>▶ Train construction personnel in appropriate safety measures as described in the plan.</li> </ul>				
<b>Air Quality</b>					
4.10-a (Alt 1-3)	<p><b>Implement SJVAPCD and BAAQMD Measures to Control Construction-Generated Air Pollution Emissions</b></p> <p>Alternative 1 involves construction activities in both San Joaquin and Contra Costa Counties, and air pollution in both counties would be affected by project construction activities in the other county. Therefore, the following measures apply to all of the Proposed Action's construction activities irrespective of the specific location of each construction activity.</p> <p><b>Criteria Air Pollutant Emissions.</b> To the extent feasible, CCWD shall implement the following measures to reduce</p>	During project construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>construction-related air quality impacts from heavy duty equipment for NO<sub>x</sub> emissions in San Joaquin County (SJVAPCD 2002):</p> <ul style="list-style-type: none"> <li>▶ Use alternative fueled or catalyst-equipped diesel construction equipment.</li> <li>▶ Minimize idling time.</li> <li>▶ Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use.</li> <li>▶ Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run by portable generator).</li> <li>▶ Implement activity management (e.g., rescheduling activities to reduce short-term impacts).</li> </ul> <p><b>SJVAPCD Enhanced Mitigation Measures.</b> To further reduce PM<sub>10</sub> emissions, CCWD shall implement the following measure to the extent feasible:</p> <ul style="list-style-type: none"> <li>▶ Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than 1%.</li> </ul> <p><b>SJVAPCD Additional Mitigation Measures.</b> The SVAPCD strongly recommends that the following additional emissions control measure be implemented at large construction sites. CCWD shall implement this measure to the extent feasible:</p>				

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<ul style="list-style-type: none"> <li>▶ Limit area subject to excavation, grading, and other construction activity at any one time.</li> </ul> <p><b>BAAQMD Basic Mitigation Measures.</b> CCWD shall implement the following measures to reduce construction-related air quality impacts of the project to a less-than-significant level for PM<sub>10</sub> emissions in Contra Costa County (BAAQMD 1999):</p> <ul style="list-style-type: none"> <li>▶ Water all active construction areas at least twice daily.</li> <li>▶ Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.</li> <li>▶ Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.</li> <li>▶ Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites. [Not applicable to the Proposed Action or Alternatives 2 and 3, given the location of the project site and lack of paved access roads, parking, and staging areas.]</li> <li>▶ Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets. [Not feasible for the Proposed Action or Alternatives 2 and 3, given the public safety implications associated</li> </ul>				

<b>Summary Table</b> <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>with sweeping SR 4, the only adjacent public roadway.]</p> <p><b>BAAQMD Enhanced Mitigation Measures.</b> The BAAQMD directs that the following additional measures should be implemented for project sites greater than 4 acres. CCWD shall implement these additional measures to reduce PM<sub>10</sub> emissions to a less-than-significant level:</p> <ul style="list-style-type: none"> <li>▶ Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).</li> <li>▶ Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.).</li> <li>▶ Limit traffic speeds on unpaved roads to 15 mph.</li> <li>▶ Replant vegetation in disturbed areas as quickly as possible.</li> </ul> <p><b>BAAQMD Optional Mitigation Measures.</b> CCWD shall implement the following optional mitigation measures to the extent feasible:</p> <ul style="list-style-type: none"> <li>▶ Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.</li> <li>▶ Limit the area subject to excavation, grading, and other construction activity at any one time.</li> </ul>				

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>Implementation of Mitigation Measure 4.10-a (Alternative 1) would reduce project-generated construction-related air quality impacts from emissions of PM<sub>10</sub> to a less-than-significant level. However, construction-generated NO<sub>x</sub> emissions could still exceed the SJVAPCD's significance threshold. Consequently, short-term construction-generated emissions impacts, even after mitigation is implemented, would be significant and unavoidable.</p>				
4.10-f (Alt 1-3, Cumulative)	<p><b>Implement SJVAPCD and BAAQMD Measures to Control Construction-Generated Air Pollution Emissions</b></p> <p>This mitigation measure is described above under Mitigation Measure 4.10-a (Alternative 1). The Proposed Action would result in a significant and unavoidable cumulative impact with respect to short-term construction emissions even with implementation of this mitigation measure. For future development projects that would be implemented in the BAAQMD and the SJVAB, the measures described in Mitigation Measure 4.10-a (Alternative 1) would be required in adherence to the requirements set forth by the BAAQMD and the SJVAPCD.</p>	During project construction	CCWD and Construction Contractor(s)		

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
<b>Noise</b>					
4.11-a (Alt 1-3)	<p><b>Implement Measures to Control Generation of Short-Term Construction Noise</b></p> <p>CCWD shall ensure that the following measures are implemented during construction:</p> <ul style="list-style-type: none"> <li>▶ Construction equipment shall be fitted with feasible noise-control devices as presented in Table 4.11-3.</li> <li>▶ Where practical and feasible given other construction sequencing constraints, all construction operations on Victoria Island (San Joaquin County) shall be limited to the hours between 6:00 a.m. and 9:00 p.m. any day, and on Byron Tract (Contra Costa County) shall be limited to daytime hours.</li> </ul> <p>For situations in which it is deemed necessary to construct outside of exempt hours, all of the following limitations shall apply to prevent construction-generated noise from exceeding the applicable standards:</p> <ol style="list-style-type: none"> <li>(1) Pile driving shall not be conducted before 6:00 a.m. or after 9:00 p.m. on Victoria Island or outside daytime hours on Byron Tract.</li> <li>(2) No more than two pieces of equipment that generate noise levels of 75 dBA each with the use of feasible noise control devices shall operate</li> </ol>	During project construction	CCWD and Construction Contractor(s)		

**Summary Table**  
**Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project**

Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>simultaneously at the intake site.</p> <p>(3) No more than one piece of equipment that generates a noise level of 80 dBA with the use of feasible noise control devices shall operate at one time within 2,900 feet of a sensitive receptor.</p> <p>Fitting construction equipment with feasible noise-control devices would reduce worst-case construction noise generated at the intake location to approximately 52 dBA at Discovery Bay and the farm residence approximately 15,000 feet from the intake location. At the nearest sensitive receptors to the intake site (Golden Gate Water-Ski Club), the worst-case noise level would be reduced to approximately 57 dBA. These levels would still be well above the applicable standard (i.e., 45 dBA) for construction activities occurring outside of exempt hours and would likely increase ambient noise levels by at least 5 dBA. With the use of feasible noise-control devices and without operation of a pile driver, a likely worst-case noise level—for example, the combined noise level produced by a truck, excavator, backhoe, and scraper being used simultaneously in the same vicinity—would be approximately 84 dBA at 50 feet, 50 dBA at the nearest sensitive receptor, and 35 dBA at Discovery Bay and the farm residence 15,000 feet away.</p> <p>Limiting construction activity at the intake site that occurs</p>				

<b>Summary Table</b>					
<b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
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	<p>outside of the San Joaquin County hours of exemption such that it entails the use of no more than two pieces of equipment that generate noise levels of 75 dBA each and no single piece of equipment that generates a noise level of 80 dBA with the use of feasible noise control devices would reduce noise levels at the nearest sensitive receptors to 45 dBA.</p> <p>For construction activity on Byron Tract, the worst-case combined noise level from construction equipment experienced at Discovery Bay, in the absence of pile driving, would be approximately 55 dBA. This noise level could be produced by simultaneous operation of machinery that includes two pieces of heavy equipment, such as an excavator and a scraper, both of which produce noise levels of about 88 dBA at 50 feet. This level of construction noise likely would not result in a 5-dBA increase in ambient noise levels at Discovery Bay residences, as roadway traffic along SR 4 would be the dominant noise source at this location and is likely to be louder than the perceived construction-generated noise, even during nighttime hours.</p>				

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
<b>Utilities and Service Systems</b>					
No Mitigation Required.					
<b>Hazardous Materials</b>					
4.13-b (Alt 1-3)	<p>Coordinate with the Applicable Landowners and Land Managers to Ensure That Temporary Construction Workers and CCWD Personnel Are Not Exposed to Harmful Levels of Pesticides from Adjacent Agricultural Practices</p> <p>CCWD shall regularly coordinate with the owners and/or farm managers of the lands on Victoria Island and Byron Tract that are in the vicinity of the proposed project site to obtain information on the timing and type of planned pesticide applications. Construction work in and near areas where pesticides are applied shall be scheduled in coordination with the owners/farm managers as needed to prevent the exposure of construction workers to harmful levels of pesticides. Similarly, after construction of the proposed facilities is completed, CCWD shall routinely coordinate with the owners/farm managers to obtain information on pesticide use, including pesticide types, application locations, and timing of application, and shall curtail staff visits to the project facilities when they would result in potentially harmful exposure of personnel to pesticides.</p>	<p>Prior to and during project construction;</p> <p>Prior to project maintenance activities</p>	<p>CCWD and Construction Contractor(s)</p>		

<p style="text-align: center;"><b>Summary Table</b>  <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b></p>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
<b>Visual Resources</b>					
No Mitigation Required.					
<b>Recreation</b>					
No Mitigation Required.					
<b>Cultural Resources</b>					
4.16-a(1) (Alt 1-3)	<p><b>Survey Previously Unexamined Areas before the Beginning of Any Project-Related Ground Disturbance in These Areas, and Implement Further Mitigation as Necessary</b></p> <p>Before the beginning of any project construction activity that could affect the previously unsurveyed portions of the project site, qualified archaeologists shall survey all portions of the site that were not examined during intensive surveys for the current effort. These areas include portions of the direct pipeline alignment (see Exhibit 4.16-1). The survey shall be conducted during a time when vegetation can be reduced or cleared from the affected area, so the natural ground surface can be examined for traces of prehistoric and/or historic-era cultural resources. Surveys of these areas would not be necessary if it is determined that they would not be affected by any project construction-related activity,</p>	Prior to construction	CCWD and qualified archaeologists		

**Summary Table**  
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Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>including equipment staging or material stockpiling.</p> <p>If the survey reveals the presence of cultural resources on the project site, the procedures outlined in Mitigation Measure 4.16-a(2) (Alternative 1) shall be followed.</p>				
4.16-a(2) (Alt 1-3)	<p><b>Restrict Ground Disturbance and Implement Measures to Protect Archaeological Resources if Discovered during Surveys or Ground-Disturbing Activities</b></p> <p>If unrecorded cultural resources (e.g., unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains, etc.) are encountered during surveys of previously unexamined areas where ground disturbance is planned or during project-related ground-disturbing activities, all ground-disturbing activities shall be restricted from being conducted within a 100-foot radius of the find. A qualified archaeologist shall identify the materials, determine their possible significance according to NRHP and CEQA (including CRHR) criteria, and formulate appropriate measures for their treatment, which shall be implemented by CCWD and its contractors. Potential treatment methods for significant and potentially significant resources may include, but would not be limited to, no action (i.e., resources determined not to be significant), avoidance of the resource through changes in construction methods or</p>	Prior to and during construction	CCWD and qualified archaeologists		

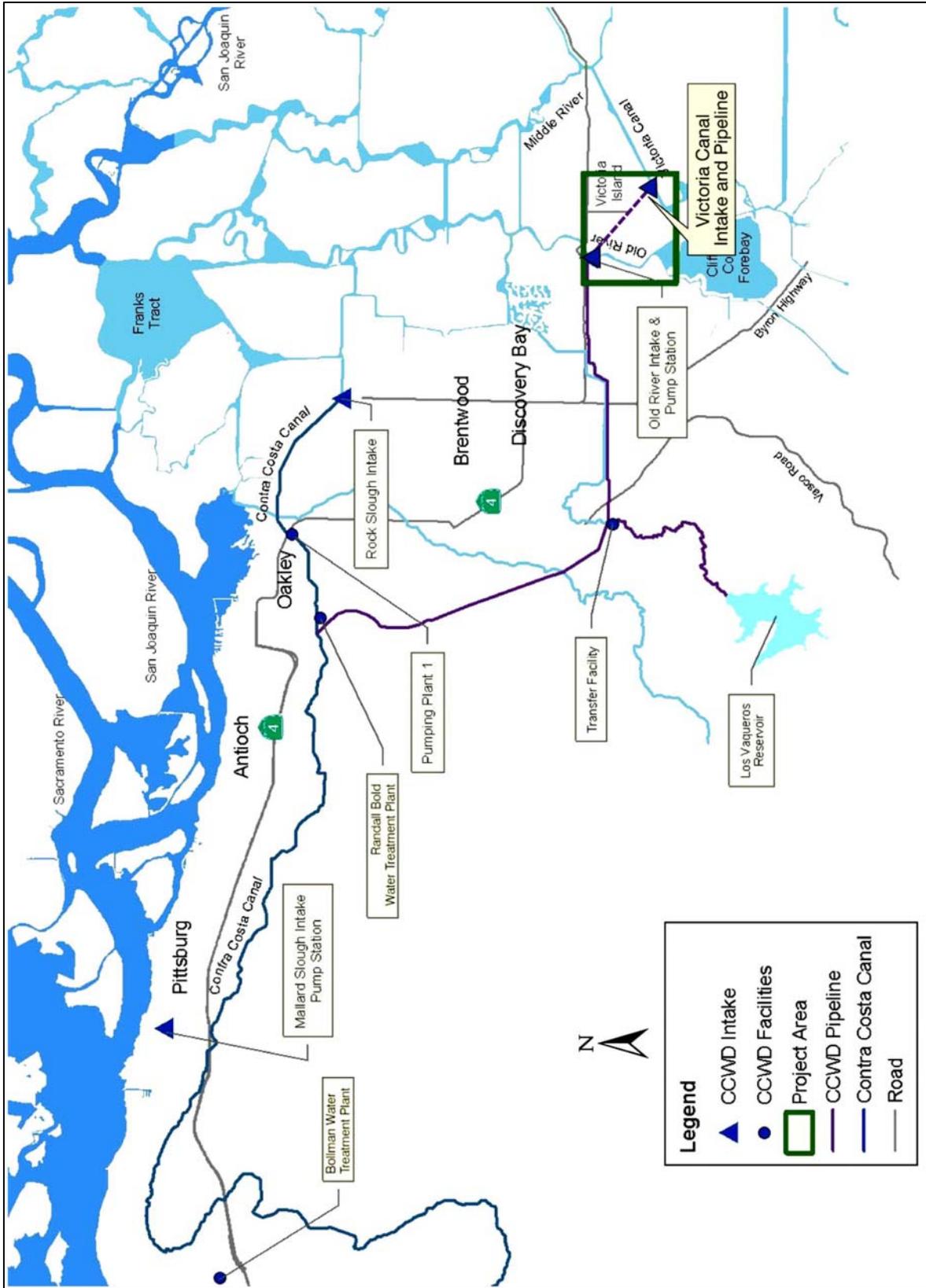
<p align="center"><b>Summary Table</b>  <b>Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b></p>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>project design, and implementation of a program of testing and data recovery, in accordance with all applicable Federal and State requirements.</p>				
4.16-b (Alt 1-3)	<p><b>Stop Potentially Damaging Work if Human Remains Are Uncovered During Construction, Assess the Significance of the Find, and Pursue Appropriate Management</b></p> <p>California law recognizes the need to protect interred human remains, particularly Native American burials and associated items of patrimony, from vandalism and inadvertent destruction. The procedures for the treatment of discovered human remains are contained in California Health and Safety Code §7050.5 and §7052 and California Public Resources Code §5097.</p> <p>In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, all such activities within a 100-foot radius of the find shall be halted immediately and CCWD’s designated representative shall be notified. CCWD shall immediately notify the county coroner and a qualified professional archaeologist. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she</p>	<p>During construction</p>	<p>CCWD, Construction Contractor(s), and qualified archaeologists</p>		

<b>Summary Table Mitigation Monitoring Program for the Contra Costa Water District Alternative Intake Project</b>					
Mitigation Number	Mitigation Measure	Timing/Schedule	Implementation Responsibility	Implementation & Verification	
				Action	Date Completed
	<p>must contact the Native American Heritage Commission by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). CCWD's responsibilities for acting upon notification of a discovery of Native American human remains are identified in detail in the California Public Resources Code Section 5097.9. CCWD or its appointed representative and the professional archaeologist shall contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with the property owner and the lead agencies shall determine the ultimate disposition of the remains.</p>				
<b>Paleontological Resources</b>					
	No Mitigation Required.				
<b>Socioeconomic Effects</b>					
	No Mitigation Required.				

## References

- Bay Area Air Quality Management District. 1999 (December). BAAQMD CEQA Guidelines. San Francisco, CA.
- Bureau of Reclamation and California Department of Water Resources. 2005 (October). South Delta Improvements Program, Volume I: Environmental Impact Statement/Environmental Impact Report. Draft. Prepared by Jones and Stokes. State Clearinghouse # 2002092065. Sacramento, CA.
- California Department of Fish and Game. 1995. Staff Report on Burrowing Owl Mitigation. Sacramento, CA.
- Edison Electric Institute's Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service. 2005. Avian Protection Plan (APP) Guidelines. Available <[http://www.eei.org/industry\\_issues/environment/land/wildlife\\_and\\_endangered\\_species/AvianProtectionPlanGuidelines.pdf](http://www.eei.org/industry_issues/environment/land/wildlife_and_endangered_species/AvianProtectionPlanGuidelines.pdf)>.
- San Joaquin Valley Air Pollution Control District. 2002 (July). Guide for Assessing and Mitigating Air Quality Impacts. Fresno, CA.
- Technical Advisory Committee. 2000 (May 31). *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley*.

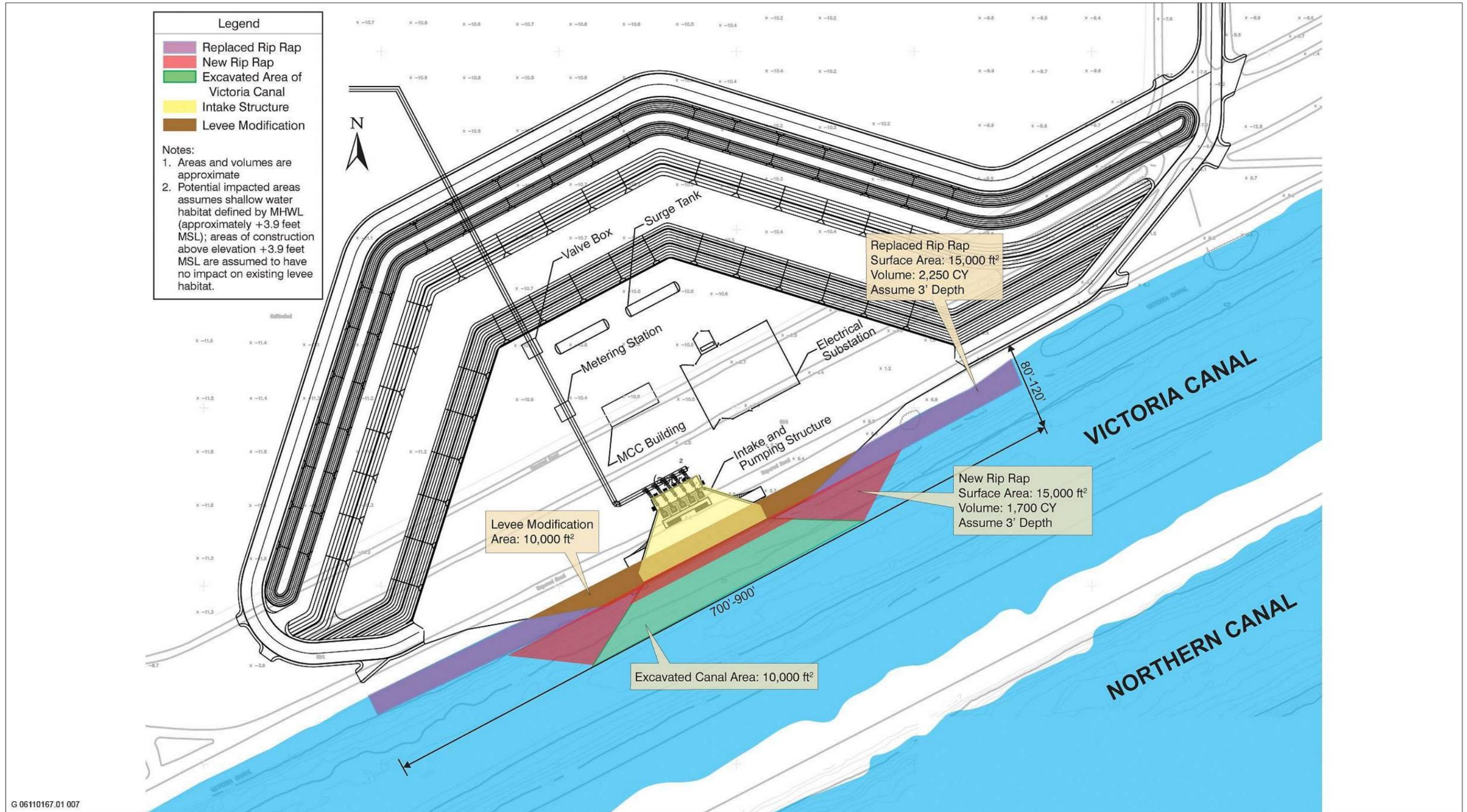
**Enclosures 2A through 2D  
Project Maps**



Source: Carollo Engineers

**Regional Location and Key Existing CCWD Facilities**

**Exhibit 1**



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 Source: Carollo Engineers



Source: Carollo Engineers 2006

**Conceptual Drawing of the Proposed Levee Modification and Proposed Intake and Conveyance Facilities**



Area of Impact Map