



Delta Plan Consistency Detailed Findings

ZACHARIAS RANCH MITIGATION BANK

Sacramento County, California

USACE PERMIT/TRACKING NO.: SPK-2020-00886

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Prepared by:

Westervelt Ecological Services
3636 American River Drive, Suite 120
Sacramento, California 95864
Contact: Brighton Heard
Email: bheard@westervelt.com
Office: (916) 646-3644

wesmitigation.com

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List of Acronyms/Abbreviations

AMM	Avoidance and Minimization Measures
ARP	In-lieu Program for Aquatic Resources
BMP	Best Management Practice
CCR	California Code Regulations
CEQA	California Environmental Quality Act
CVFPB	Central Valley Flood Protection Board
CESA	California Endangered Species Act
FESA	Federal Endangered Species Act
GHG	Greenhouse Gas
HUC	Hydrologic Unit Code
LTMP	Long-term Management Plan
SERP	Statutory Exemption for Restoration Projects
SFEI	San Francisco Estuary Institute
SMUD	Sacramento Municipal Utilities District
SSHCP	South Sacramento Habitat Conservation Plan
SRA	Shaded Riverine Aquatic
WES	Westervelt Ecological Services

1. INTRODUCTION

1.1. Project Location

The Zacharias Ranch Mitigation Bank (project) is an approximately 580-acre project located between Lambert Road to the north and Twin Cities Road to the south in southwestern Sacramento County. The project is approximately 2 ½ miles north of the town of Walnut Grove and approximately 2 miles west of Interstate 5 (Figure 1, all figures referenced in this document are included in Attachment A.). The project is located in portions of Sections 1, 2, 4, 12, 13, and 14; Township 5 North; Range 3 East of the Courtland and Bruceville U.S. Geological Survey Quadrangle Maps (Figure 2).

1.2. Project Purpose and Need

Historically, the Sacramento-San Joaquin Delta (Delta) formed the largest wetland complex on the West Coast with an extensive tidal wetland complex and dendritic channel network, emergent wetlands, open water, and riparian scrub and forest connected to the Sacramento River and influenced by seasonal inundation and resultant fluctuations in salinity. The area was inhabited and tended by the Miwok. In the early to mid-1800's European influence began to change the landscape by manipulating water flows and inundation regimes through berm and levee building, as well as extirpating the Miwok. These changes, compounded by continued development and hydrology manipulations, limit habitat for a variety of California native animals and plants dependent on this biologically rich region, ultimately limiting their viable populations. Currently, only three percent of the historic extent of the wetland complex remains due to agricultural conversion and urban development (SFEI 2012). The Zacharias Ranch (Site), having been farmed since the 1930's and located immediately adjacent to the Delta's Snodgrass Slough, is an ideal site to restore. Returning the Site to its historic habitat of tidal emergent marsh would support numerous species dependent on this habitat and includes re-establishing the Miwok/Wilton Rancheria engagement with this land.

The Project is a private commercial mitigation bank that will restore and enhance freshwater tidal emergent marsh and riparian habitat within the floodplain of Snodgrass Slough, which is within the Legal extents of the Delta. The neighboring Cosumnes Floodplain Mitigation Bank has recently sold the extent of its credits, demonstrating that a demand for mitigation in the Sacramento region is outpacing the supply. Through the establishment of the project, approximately 580-acres of historic floodplain will be restored to provide aquatic resources and species habitat credits and will create a critical link between existing conserved lands of the Stone Lakes National Wildlife Refuge (Refuge) and the McCormack-Williamson Tract and the Cosumnes River Preserve.

Credits would serve to offset impacts regulated by the Federal Clean Water Act Sections 404 and 401, State Porter-Cologne Water Quality Control Act, Federal ESA, California ESA, and CEQA. The proposed Bank is located within the boundary of the South Sacramento Habitat Conservation Plan (SSHCP) and In-Lieu Fee Program for Aquatic Resources (ARP) and would be established such that credits could provide compensation for Covered Activities and Plan Permittees (County of Sacramento, City of Galt, City of Rancho Cordova, Sacramento County Water Agency, Capitol

Southeast Connector Joint Powers Authority, and the Implementing Entity). The Bank would also provide credits that could be utilized by the National Fish and Wildlife Foundation Sacramento Valley In-Lieu Fee program for aquatic resources.

1.3. Restoration Goals and Objectives

The following objectives are necessary to achieve the Bank goals:

- Construct two breaches in the existing farm berm to allow re-connection of the Site to full tidal influence. Sustainable number of breaches and breach sizing was determined with hydraulic modeling by MBK Engineers.
- Re-contour the existing agricultural field to create diverse tidal channels and low mounds to increase tidal influence, provide habitat for fish, and transport nutrients to support the local aquatic food web.
- Re-contour the existing agricultural field to create topographic complexity and to support diverse plant and habitat assemblages including perennial tidal marsh, riparian scrub, and riparian forest.
- Conduct riparian shrub and tree plantings (i.e., horticultural restoration) on areas existing above intertidal elevation to promote the rapid development of SRA habitat and riparian habitat.
- Promote natural recruitment within the existing riparian habitat areas.
- Limit trespass and other unauthorized uses of the Bank.

The restoration concept is to re-establish a freshwater tidal marsh and floodplain-associated vegetation communities within the interior of the Site, which reflects the historic habitats mapped near the Site by the San Francisco Estuary Institute's 2012 Sacramento-San Joaquin Delta Historical Ecology Investigation.

A series of open water features, including tidal and subtidal channels, will be excavated throughout the Site. The tidal marsh complex will connect directly to Snodgrass Slough via two breaches in the existing farm berm. These features will be sustainably sized, so that they can be naturally sustained and stable through the daily tidal fluctuations, preventing excess erosion or sedimentation within the channels. Fill material generated from excavating the channels and breach(es) will be used to create varying topography and wetland and riparian communities providing ecological benefits to the site and surrounding area. As the topography rises above the daily influence of the tides, the Site will transition to woody riparian scrub similar to the composition of the Snodgrass Slough in-channel islands.

Higher elevations will transition to cottonwood-dominated riparian habitat, and in some instances Valley Oak-dominated riparian. Post-restoration conditions will reflect natural conditions found in reference sites located in the North Delta and replicate the historic habitats mapped on and near the Site (SFEI 2012). While riparian areas will be situated above the daily tidal zone, floodwaters in Snodgrass Slough will engage directly with these floodplain-associated habitats during high-flow periods and storm events, with the majority being backwater flooding that originates from the

Mokelumne and Cosumnes rivers. By allowing full tidal exchange to occur throughout the emergent marsh areas, restoration will promote nutrient exchange, provide downstream food-web support for aquatic species, and export organic carbon off-site into Snodgrass Slough and surrounding Delta waterways. In addition, existing riparian areas will be enhanced through increased water availability and vegetation management to promote native plant coverage and recruitment.

At higher elevations in the landscape of the Site, the riparian vegetation will shift to a woodland with an overstory comprised of a sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia*), and Fremont's cottonwood (*Populus fremontii*). The highest locations on Site will support a riparian overstory of valley oak with California grape and elderberry (*Sambucus nigra* ssp. *caerulea*) along with native sedges and grasses comprising the mid- and the understories, respectively. While these areas will be situated above the daily tidal zone, rising waters in Snodgrass Slough will engage directly with these floodplain-associated habitats during high-flow periods.

Vegetation establishment will be accomplished through a variety of planting methods, including container plantings, cuttings, on-site transplants, and seeding. While vegetation in low-lying areas will likely not require irrigation when exposed to the restored tidal prism, container plantings in riparian zones could require supplemental water for several years after installation. Plantings will be contract-grown from plant material sourced on-site or in the surrounding area whenever possible, ensuring plants are locally adapted to Site conditions.

In addition to restoring historic floodplain vegetation communities, wetland reestablishment will also expand the habitat available for the following species known or with potential to occur in the vicinity.

Restored tidal wetlands on the Site will increase downstream food web support for the following special-status species:

- North American green sturgeon
- Winter-run Chinook salmon
- Spring-run Chinook salmon
- Central Valley steelhead

Restoration will expand available juvenile rearing habitat and increase food web support for the following species:

- North American green sturgeon
- Central Valley steelhead

Riparian enhancement will also restore and protect the following special-status species:

- Giant Garter Snake (basking and refugia)
- Swainson's Hawk (Nesting)

- Conservation of the Site will preserve two documented onsite CNDDDB nest occurrences
- Bank establishment will preserve existing riparian trees and establish new potential nest trees for the species

2. COVERED ACTION SUMMARY

2.1. Regional Setting

The project is located in the north Sacramento-San Joaquin Delta (Delta) along Snodgrass Slough, which functions as the tidal backwater of the Mokelumne River. The project lies within the Snodgrass Slough 10-digit Hydrologic Unit Code (HUC) watershed (HUC 1804001210) and the Upper Mokelumne 8-digit sub basin (HUC 18040012). The Stone Lakes Wildlife Refuge is located adjacent to the east, the Cosumnes River Preserve and Cosumnes Floodplain Mitigation Bank further east, and other conserved lands are located south of the project.

2.2. CEQA Compliance

In accordance with California Public Resources Code § 20180.56, also known as the Statutory Exemption for Restoration Projects (SERP), this project adheres to CEQA requirements for statutory exemptions for fish and wildlife restoration projects. The purpose of the project is to conserve, restore, protect, enhance, and assist in the recovery of the California native fish, Chinook Salmon (*Oncorhynchus tshawytscha*), as well as to restore and provide habitat including freshwater marsh complex, shaded riverine aquatic (SRA), and Pacific Salmon Essential Fish Habitat. The project will have incidental public benefits including long-term net benefits to climate resiliency, flood attenuation, biodiversity, and sensitive species recovery and includes procedures for ongoing management for the protection of the environment. Although the project does include construction activities, these activities are solely related to habitat restoration. A CEQA SERP request form has been submitted to the lead agency, Sacramento County.

3. PROJECT DESCRIPTION

3.1. Restoration Design

The restoration concept for Zacharias Ranch is to re-establish freshwater tidal marsh and riparian vegetation communities within the interior of the site, which reflects the historic habitats mapped near the site by the San Francisco Estuary Institute's (SFEI) 2012 Sacramento-San Joaquin Delta Historical Ecology Investigation. To accomplish this, a series of open water features including dendritic channels, will be excavated throughout the site, which will connect directly to Snodgrass Slough via two breaches in the existing farm berm. These features will be sustainably sized, so that they can be naturally regulated through the water velocities generated by daily tidal fluctuations, preventing excess erosion or sedimentation within the channels. Fill material generated from excavating these features will be used to create varying topography throughout the site to create zones of different wetland communities based on elevation and expected ecological benefits to the site and surrounding area. For example, by allowing full tidal exchange to occur throughout

the emergent marsh areas, Zacharias Ranch will promote nutrient exchange, provide downstream food web support for aquatic species, and export organic carbon off-site into Snodgrass Slough and surrounding Delta waterways. In addition, existing riparian areas will be enhanced through increased water availability and vegetation management to promote native plant coverage and recruitment.

3.2. Construction Methods

Construction activities will generally follow the sequence outlined below.

- Implementing Environmental Commitments/Avoidance and Minimization Measures (AMMs)
- Mobilizing equipment.
- Clearing and grubbing, as needed; salvaging and stockpiling vegetation for reuse in the designated staging area where it can be cared for until final planting or placement.
- Excavating channels and placing and contouring of excavated material onsite.
- Planting and/or transplanting.
- Seeding bare soil for habitat and erosion control.
- Maintaining re-vegetated areas for a growing season for plants to establish.
- Removing large culverts and tide gates in the southern crossing of Railroad Cut.
- Breaching the berm at low tide to reintroduce full tidal hydrology.

Wetland re-establishment will be implemented using heavy equipment, which may include scrapers, excavators, bulldozers, skip loaders, skid loaders, dump trucks, and water trucks. As previously stated, construction is proposed to occur over two seasons. The first phase of construction will entail excavating tidal channels, creating topographic complexity, and planting and seeding. In the second phase, breaches along Snodgrass Slough will be excavated, spoils will be placed along retained berms and at higher elevations in the northern portion of the Bank, and bare soils will be planted and seeded.

A restoration ecologist or biologist and Tribal monitors will observe and manage habitat restoration daily during earthwork and planting activities. The WES representative and Tribal representative will have authority to stop construction activities if situations arise that could be detrimental to the existing cultural resources. Construction will be allowed to resume only after corrective actions have alleviated the potential for detrimental activities.

4. DELTA PLAN POLICIES

4.1. Delta Plan Chapter 2

4.1.1. [G P1 / 23 CCR § 5002 Detailed Findings to Establish Consistency with the Delta Plan](#)

B1. Coequal Goals – G P1 / 23 CCR § 5002(b)(1)

The project is consistent with all applicable regulatory processes in the Delta Plan. G P1 / 23 CCR § 5002(b)(1) acknowledges that full consistency with all regulatory processes may not be feasible or

relevant. A certification of consistency is determined and subsequently provided by the Delta Stewardship Council upon acknowledgement and approval of the covered action's coequal goals.

B2. Mitigation Measures – G P1 / 23 CCR § 5002(b)(2)

Attachment B presents a “crosswalk” between the Delta Plan Mitigation Measures and the Project-specific Environmental Commitments and/or Mitigation Measures which comply with, or effectively substitute for, the Delta Plan Mitigation Measures. The Zacharias Ranch Environmental Commitments / Avoidance and Minimization Measures (AMMs) has been referenced in this Attachment, which has been uploaded to support the submittal of the Certification of Consistency.

B3. Best Available Science – G P1 / 23 CCR § 5002(b)(3)

The best available scientific information, data, and models were incorporated into planning. Professional experts were consulted for their judgment in order to create objectives regarding the Adaptive Management and Monitoring Plan. The factors being assessed include hydrologic and physical processes, habitat structure and function, and habitat protections. Throughout the project planning and implementation processes, WES will continue to use the best available science in managing the project. Data will be collected to assess the existing conditions of the site and the subsequent restored conditions after completion of the project.

B4. Adaptive Management – G P1 / 23 CCR § 5002(b)(4)

The project is consistent with Delta Plan Policy Number G P1 23 CCR § 5002(b)(4). Adaptive management is a strategy to address unforeseen changes in site conditions or other components of the Bank that incorporates changes to management practices, including corrective actions as determined to be appropriate by the Property Owner, Interagency Review Team (IRT), and the Conservation Easement Grantee. An adaptive management plan should guide decisions for revising management plans and implementing measures to address both foreseeable and unforeseeable circumstances that adversely affect project success. It includes those activities necessary to address the impacts of climate change, degree of erosion, fire, flood, or other natural events, extraordinary circumstances, et cetera. Adaptive management includes those activities necessary to address the effects of climate change, fire, flood, or other natural events and incorporate best available science and Traditional Ecological Knowledge (TEK). The Development and Interim Management Plan (DIMP) and Long-Term Management Plan (LTMP) have been prepared with adherence to an adaptive management strategy which is consistent with Fish Restoration Program Agreement Implementation Strategy and the Delta Science Plan. WES will incorporate the following adaptive management approaches to project implementation, monitoring, and maintenance:

Phase 1: Plan

1. Define the Problem

The Delta was the largest wetland complex on the West Coast until the 1830's. The extent of historic wetland loss within the Delta is extreme, with only three percent of freshwater tidal wetlands remaining (SFEI 2012). The Project Site has been farmed since the 1930's and its location

at the confluence of major waterways with consequential flooding makes it an ideal landscape for ecological restoration.

2. Goals and Objectives

The goal of the Proposed Action includes the restoration and protection of 580-acres of freshwater emergent marsh, shaded riverine aquatic, open water, riparian scrub, and riparian forest habitat. Additionally, restoring the habitat will encourage special-status species use including giant garter snake, salmonids (Chinook and Steelhead), green sturgeon, and nesting Swainson's hawk.

3. Linkages between Objectives and Proposed Actions

Previous WES projects, as well as published scientific literature, display the efficacy between the proposed action of restoration and the objectives and goals of promoting biodiversity. Restored wetlands show approximately 36% higher rates of supporting ecosystem services than degraded wetland ecosystems (Meli, P., et al. 2014). The implementation and management of the Bank will increase ecosystem services and subsequently provide habitat for special-status species.

4. Select Actions and Develop Performance Measures

The Project will construct two breaches along Snodgrass Slough to facilitate unobstructed tidal flow and inundation of the site. This action along with the excavation of the main and fringe tidal channels will support the flow and ebb of tides for full tidal excursions and exchange to create habitat including freshwater emergent marsh, shaded riverine aquatic, open water, riparian scrub, and riparian forest habitat. The restored habitat will encourage special-status species use including giant garter snake, salmonids (Chinook and Steelhead), green sturgeon, and nesting Swainson's hawk.

Phase 2: Do

Design and Implement Actions and 6. Design and Implement Monitoring Plan

Objective 1 - Action: Monitor habitat status and trends

As part of the Annual Walk-through Survey, the status and any changes in habitat with potential to beneficially or adversely affect Covered Species will be noted. These changes could include changes in vegetative communities, sedimentation, infestations of noxious/invasive species, or other significant differences in biological composition. Any necessary tasks will be identified, prioritized, and implemented as funding is available.

Objective 2 - Action: Maintain habitat for Chinook salmon

Monitoring to characterize salmonids use of the Bank will be conducted every 10 years. Data collection methods for fish use characterization will include eDNA sampling or similar future technology. Water samples for eDNA sampling collected from several locations throughout the Bank at transects spaced at 100-meter intervals.

Objective 3 - Action: Monitor invasive species, including but not limited to, those with potential to adversely affect habitat quality

Each year's Annual Walk-Through Survey (or a supplemental survey) will include a qualitative assessment (e.g., visual estimate of cover) of potential or observed Invasive Species. Annual assessments will be compared to the results of the Invasive Species baseline established during the Interim Management Period. As feasible, treatment of invasive aquatic species may be coordinated with the California State Parks Division of Boating and Waterways and Wilton Rancheria. The Property Owner will review the latest information available from the California Invasive Plant Council (Cal-IPC) regarding the invasive status of all plants known to occur at the Bank. Invasive plant species known to occur at the Bank and ranked "high" or "alert" or Invasive Plant Species that threaten the Conservation Values of the Bank (e.g., cause reductions in habitat value for Covered Species) will be noted and subsequently targeted for treatment as appropriate. Control methods will be initiated with the expansion and/or new establishment of invasive plant populations (with an overall rating of "High" or "Alert" by Cal-IPC) greater than one acre. Notification and approval by the Signatory Agencies are not required if Invasive Plant Species treatments are limited to hand-held, mechanical, limited grazing, and herbicide application methods as described in this LTMP. If prescribed burning is proposed or alternative methods deemed suitable under an adaptive management framework, notification and approval from the Signatory Agencies will be coordinated by the Land Manager. Any required management of invasive wildlife species will be conducted by CDFW at the discretion of the agency.

The timeline of the expected interim monitoring schedule is detailed in **Table 1**. Unforeseen environmental circumstances may cause the monitoring schedule to change.

Table 1. Interim Monitoring Schedule					
Monitoring Task	Year 1	Year 2	Year 3	Year 4	Year 5
<u>Physical Stability</u>	N/A	N/A	X	N/A	X
<u>Structural Complexity</u>	N/A	X	N/A	X	N/A
<u>Tidal Hydroperiod</u>	N/A	N/A	X	N/A	X
<u>Credited Wetland Extent</u>	N/A	N/A	X	N/A	X
<u>Tule Survivorship</u>	X	X	N/A	N/A	N/A
<u>Planted Vegetation Expansion and Natural Recruitment/Invasive Plant Species</u>	N/A	N/A	X	N/A	X
<u>Salmonids</u>	X	X	X	X	X
<u>General Condition</u>	X	X	X	X	X
<u>Photo Documentation</u>	X	X	X	X	X

Phase 3: Evaluate and Respond

1. Analyze, Synthesize, and Evaluate

Monitoring data will be analyzed for potential trends. The results of each monitoring event will inform and possibly adjust the subsequent events. The Development and Interim Management Plan as well as the Long-Term Management Plan provide preliminary monitoring plans while accounting for adaptive management protocol and the potential necessity to change development and monitoring plans.

2. Communicate Current Understanding

The annual interim report shall identify and describe any Remedial Action proposed, approved, or performed and, if the Remedial Action has been completed, evaluate its effectiveness. An annual interim management report shall be submitted to the Signatory Agencies, with a courtesy copy to the IRT, and uploaded to RIBITS. Each report shall include the following:

- Data, documentation, and discussion of progress toward meeting Performance Standards including any deficiencies
- An itemized account of the management tasks described herein
- Time period covered, i.e. the dates “from” and “to”
- Description of each management task conducted
- Description of the management and maintenance activities proposed for the next reporting year
- Description of the overall condition of the Bank, including photos documenting the status of the Bank during the reporting period and a map documenting the location of the photo documentation points.
- Recommendations regarding (1) any habitat enhancement measures deemed to be warranted, (2) any problems that need short and long-term attention (e.g., vegetation control, erosion control), and (3) any changes in the monitoring or management program that appears to be warranted based on monitoring results to date.
- The annual report will address any remedial action proposed, approved, or performed.
- If remedial action has been completed, the annual report shall also evaluate the effectiveness of that action.

3. Adapt

An adaptive decision-making process that integrates ongoing improvements to best practices, evaluation of monitoring data, and general observations and oversight will provide continuous improvements in management and implementation to achieve Project objectives. The Project’s adaptive management approach is consistent with the Fish Restoration Program Agreement Implementation Strategy (DWR et al. 2012) and the Delta Science Plan (Delta Stewardship Council 2013). If a method is proving to not be successful, different approaches informed by the best science available will influence future decisions. Information from interim and long-term monitoring events will guide the approach needed for land management. The data collected will inform future restoration projects of a similar nature.

4.2. Delta Plan Chapter 3

4.2.1. Reduce Reliance on the Delta through Improved Regional Water Self-Reliance – WR P1 / 23 CCR § 5003

This policy is not applicable. The project does not act as a water supplier nor propose to export water from, transport water through, or use water in the Delta.

4.2.2. Transparency in Water Contracting - WR P2 / 23 CCR § 5004

This policy is not applicable. This project does not enter into or amend a water supply or water transfer contract.

4.3. Delta Plan Chapter 4

4.3.1. Delta Flow Objectives – ER P1 / 23 CCR § 5005

This policy is not applicable. The project will not require revision of flow objectives.

4.3.2. Restore Habitats at Appropriate Elevations – ER P2 / 23 CCR § 5006

The elevations at the project site range from approximately 2 ft to 9 ft and are consistent with intertidal elevations. Elevations of the existing fields are within the tidal range of Snodgrass Slough measured during baseline studies conducted in 2020 and 2021. As discussed in Appendix 4A of the Delta Plan, this project is located within an intertidal elevation band with the purpose of restoring tidal wetlands, tidal inundation regimes, and Salmonid migration space. Hydrologic monitoring will be conducted in years 3 and 5 with the use of pressure transducing dataloggers. Water levels within the project site will be compared to levels in Snodgrass Slough to determine if the tidal and seasonal fluctuations in water level match indicating full tidal exchange between the project site and the receiving waters. While riparian areas will be situated above the daily tidal zone, rising waters in the Slough will engage directly with these floodplain-associated habitats during high-flow periods and storm events further upstream in the Mokelumne and Cosumnes River watersheds.

4.3.3. Protect Opportunities to Restore Habitat – ER P3 / 23 CCR § 5007

This project includes the restoration of Tidal Wetland and Floodplain Riparian and improvement of tidal connectivity and circulation. Habitat restoration and permanent protections provided by the Project will benefit Salmonids and other native fish and wildlife species by creating and reconnecting off-channel habitat. The Project will restore native marsh and upland riparian habitat benefiting native plant and wildlife species and will provide for the long-term control of priority invasive species. The Project will also provide a contiguous corridor of conserved habitat stretching from the Cosumnes River Preserve to the adjacent Stone Lakes National Wildlife Refuge.

[4.3.4. Expand Floodplain and Riparian Habitats in Levee Projects – ER P4 / 23 CCR § 5008](#)

The project is consistent with Delta Plan Policy Number ER P4/ 23 CCR § 5008. The Bank is not located within a Priority Location discussed within Appendix 8 of the Delta Plan - nor is the Bank specifically a levee project. The development of the Bank will expand floodplain and riparian habitats within the Bank. During periods of high flows, water typically backs up and adds to flows from the Morrison Creek watershed north of the Bank resulting in raised water surface elevations between the levees and farm berms along Snodgrass Slough, and upstream of the Site. Breaching the Site's farm berm along Snodgrass Slough will introduce approximately 580 acres of land back into marsh and floodplain functions within the Delta. The Site is surrounded by water and a tall historic railroad grade separates the Site from adjacent property on the east; there is no need for a setback levee to protect adjacent properties as the Site operates essentially as an island.

[4.3.5. Avoid Introductions of and Habitat for Invasive Nonnative Species – ER P5 / 23 CCR § 5009](#)

The project is consistent with Delta Plan Policy Number ER P5/ 23 CCR § 5009. Measures outlined in the Development and Interim Management Plan and Long-Term Management Plan include commitments regarding implementing land management practices that minimize the occurrence of invasive species. Each year's Annual Walk-Through Survey (or a supplemental survey) will include a qualitative assessment (e.g., visual estimate of cover) of potential or observed Invasive Species. Annual assessments will be compared to the results of the Invasive Species baseline established during the Interim Management Period.

4.4. Delta Plan Chapter 5

[4.4.1. Locate New Urban Development Wisely – DP P1 / 23 CCR § 5010](#)

This policy is not applicable. The project does not develop new industrial, commercial, or residential structures or buildings.

[4.4.2. Respect Local Land Use When Siting Water or Flood Facilities or Restoring Habitats – DP P2 / 23 CCR § 5011](#)

The project site is currently zoned as AG-80 (F), or Agricultural 80-acre lots within a floodway. The land is currently used for agriculture but given its proximity to Snodgrass Slough it requires consistent dewatering during rain events. The restoration of the site and reversion back into a floodway corresponds with Sacramento County's land zoning in regard to the floodway designation. Although, changing the AG-80 zone may be required.

4.5. Delta Plan Chapter 7

4.5.1. Prioritization of State Investments in Delta Levees and Risk Reduction – RR P1 / 23 CCR § 5012

This policy is not applicable. This project does not require State investment in levee operation, maintenance, or improvements of Delta project levees and non-project levees.

4.5.2. Require Flood Protection for Residential Development in Rural Areas – RR P2 / 23 CCR § 5013

This policy is not applicable. The project does not include the development of new residential areas.

4.5.3. Protect Floodways – RR P3 / 23 § CCR 5014

The project is consistent with Delta Plan Policy Number RR P3/ 23 CCR § 5014 and would not impede or encroach upon floodplains or the free flow of water in the floodway nor would it jeopardize public safety.

4.5.4. Floodplain Protection – RR P4 / 23 § CCR 5015

The project is consistent with the Delta Plan Policy Number RR P4 / 23 § CCR 5015. This project would enhance floodplain values and functions by adding to the existing floodplain within the Cosumnes River-Mokelumne River confluence through reverting the property to a wetland complex. There would not be any adverse impacts as this project creates habitat for native fish and follows the regulations of the Central Valley Flood Protection Board (CVFPB).

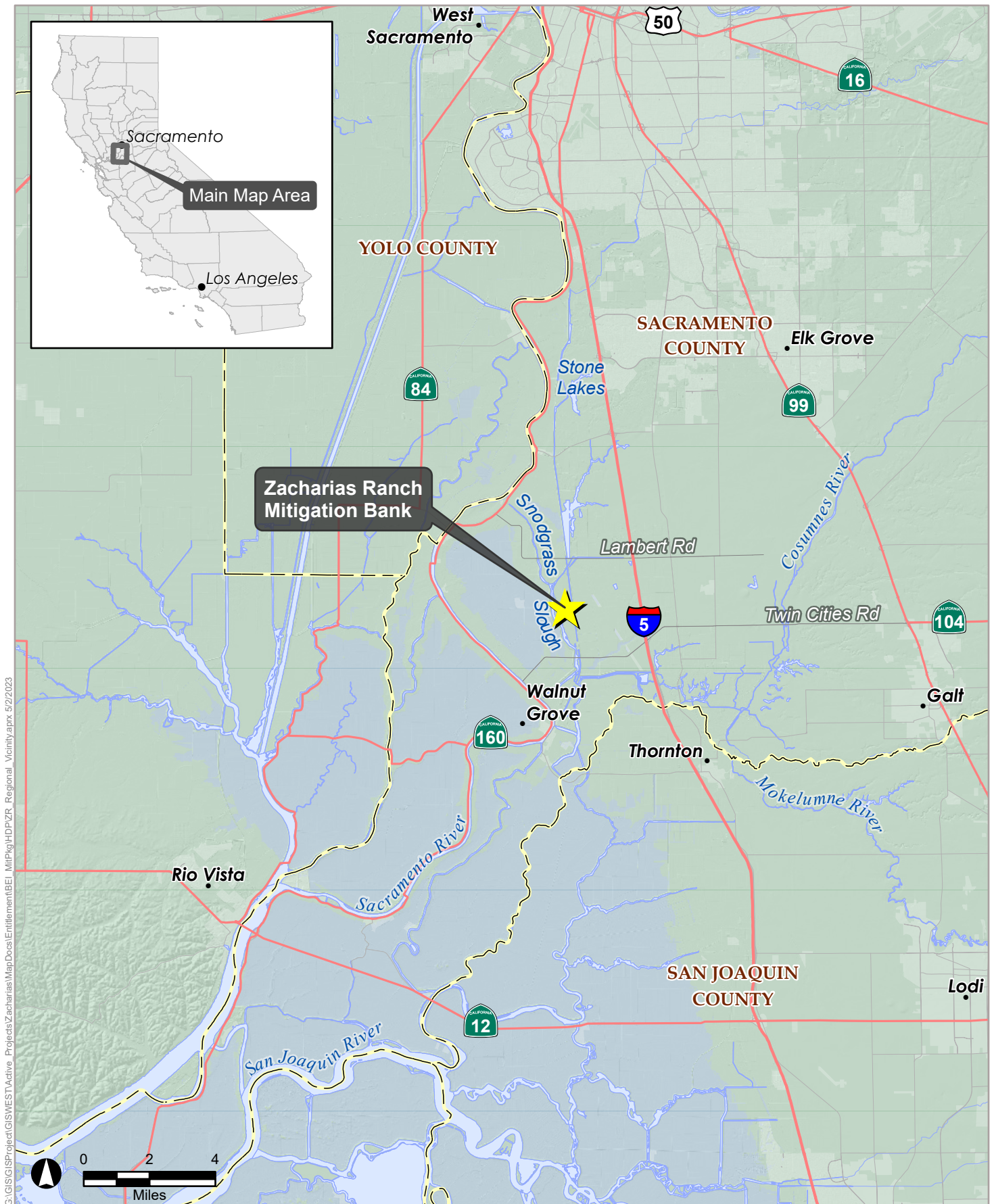
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Attachments

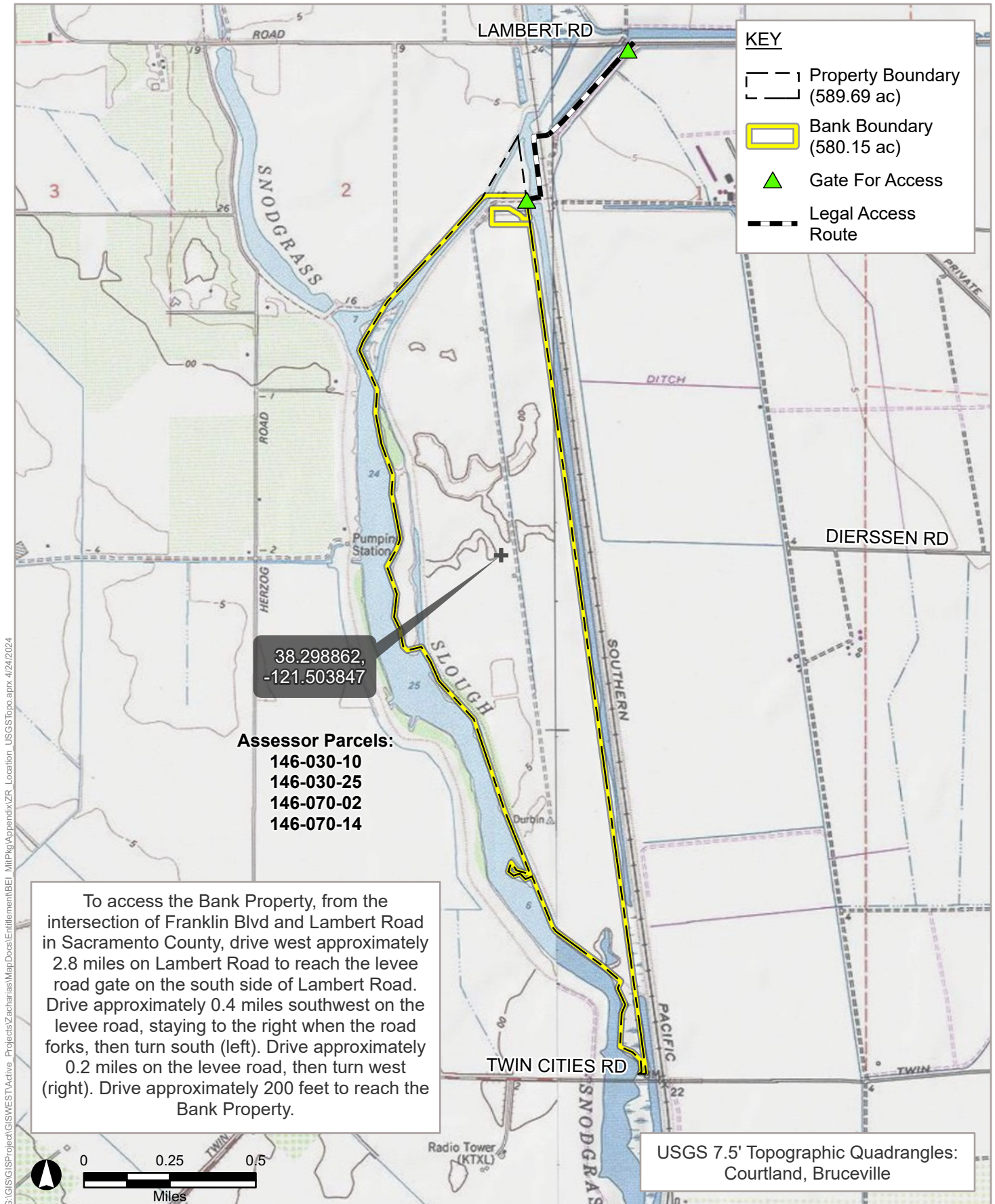
Attachment A.

Figures



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Figure 1
Regional Vicinity
Zacharias Ranch Mitigation Bank



Westervelt
ECOLOGICAL SERVICES

Exhibit A-2
Bank Location (USGS Quad)
Zacharias Ranch Mitigation Bank



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Figure 3
Aerial Overview
Zacharias Ranch Mitigation Bank

Attachment B.
Mitigation Monitoring
Reporting Program

Attachment A: Mitigation Measures and Project Consistency with the Delta Plan MMRP- Zacharias Ranch Mitigation Bank

This table presents a “crosswalk” between Delta Plan Mitigation Measures and the Project-specific Environmental Commitments and/or Mitigation Measures which demonstrates compliance with, or effective substitution for, the Delta Plan Mitigation Measures.

Supporting documents have been referenced in this table, which have been uploaded to support the submittal of the Certification of Consistency. These include:

- Zacharias Ranch Environmental Commitments /Avoidance and Minimization Measures (AMMs)

Note: Some Delta Plan Mitigation Measures have added numbering and lettering to ensure clear reference.

Delta Plan Mitigation Number	Delta Plan Mitigation Measure	Zacharias Ranch Mitigation Bank Consistency
Aesthetics		
5.2-1	Use non-specular conductors for transmission lines and distribution lines to reduce glare.	Unused transmission poles and existing wires have recently been removed. One short section of distribution line runs across the north end of the property to deliver service to neighbors.
Water Resources		
3-1	<p>1. For construction of new facilities, all typical construction mitigation measures shall be required. Typical mitigation measures include the following construction-related Best Management Practices (BMPs):</p> <ul style="list-style-type: none"> a. Gravel bags, silt fences, etc., shall be placed along the edge of all work areas in order to contain particulates prior to contact with receiving waters. b. All concrete washing and spoils dumping shall occur in a designated location. c. Construction stockpiles shall be covered in order to prevent blowoff or runoff during weather events. d. Severe weather event erosion control materials and devices shall be stored onsite for use as needed. e. Soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, and waste management/materials pollution control <p>2. Apply other BMPs as determined necessary by the regulating entity (city, county).</p> <p>3. Any new facility with introduced impervious surfaces shall include stormwater control measures that are consistent with the Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) municipal stormwater runoff requirements. The stormwater control measures shall be designed and implemented to reduce the discharge of stormwater pollutants to the maximum extent practical. Stormwater controls such as bioretention facilities, flow-through planters, detention basins, vegetative swales, covering pollutant sources, oil/water separators, and retention ponds shall be designed to control stormwater quality to the maximum extent practical.</p> <p>4. Mitigate sediment contaminant bioavailability impacts through (a) the exclusion of bird use or nesting areas from areas that may have excessive selenium or mercury; (b) minimization of methylmercury production; and/or (c) maximization of</p>	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's include 2, 11, 12, 17, 18, 21, 22</p>

	<p>contaminant degradation before discharge of water, as appropriate.</p> <p>For any construction activities with the potential to cause in-river sediment disturbance associated with construction:</p> <ol style="list-style-type: none"> 5. Apply BMPs to avoid or reduce temporary increases in suspended sediment. These BMPs for in-channel construction and levee disturbance may include, but are not limited to, silt curtains, cofferdams, the use of environmental dredges, erosion control on all inward levee slopes, and various levee-stabilization techniques, including revegetation. All construction sites will include preparation of a Storm Water Pollution Prevention Plan and BMPs designed to capture spills and prevent erosion to the waterbody. Turbidity shall be monitored up- and downstream of construction sites as a measure of impact. 6. Apply bank stabilization BMPs, as needed, for any in-channel disturbance, such as: <ol style="list-style-type: none"> a. A 100-foot vegetative or engineered buffer shall be maintained between the construction zone and surface water body. b. Native and annual grasses or other vegetative cover shall be established on construction sites immediately upon completion of work causing disturbance, to reduce the potential for erosion close to a waterway or water body. <p>Dredging would be particularly prone to the production of re-suspended sediment and contaminants, but potential impacts could be reduced, but not necessarily fully mitigated through the use of submerged dredge cutter heads, silt curtains, and cofferdams, depending upon the site- specific soil conditions in the channel.</p>	
3-2	<ol style="list-style-type: none"> 1. Prior to construction, a survey should be made of all wells located adjacent to the construction site to determine the location and depths of the wells and the groundwater surface. During construction of any project that requires dewatering of groundwater, monitoring wells should be installed adjacent to the groundwater dewatering wells or pumps. If the adjacent groundwater declines in a manner that would adversely affect adjacent wells following implementation of dewatering, the dewatering operations should be halted until the following measures are implemented: <ol style="list-style-type: none"> a. Install sheet piles to reduce the area influenced by shallow groundwater level declines. b. In case sheet piles are not an option and domestic well yields are affected, water supplies shall be trucked in to satisfy the well user's water supply needs. c. If sheet piles are not effective and the impact on the well yield is important, such that the trucking in of water is not economically feasible, the affected well shall be deepened. Another option for a well that is deep enough would be to lower the pump bowl such that deepened water can be pumped out of the well. If these two options are 	<p>N/A</p> <p>The Project proposes the removal of the two agricultural water pumps located on the Site.</p>

	not feasible, a new, deeper, replacement well shall be installed for groundwater production.	
Biological Resources		
4-1	<ol style="list-style-type: none"> 1. Avoid, minimize, and compensate for reduction in area and/or habitat quality of sensitive natural communities, including wetlands, by doing the following: <ol style="list-style-type: none"> a. Selecting project site(s) that would avoid sensitive natural communities, including jurisdictional wetlands and other waters, vernal pools, alkali seasonal wetlands, riparian habitats, and inland dune scrub. b. Designing, to the maximum extent practicable, project elements to avoid effects on sensitive natural communities. c. Replacing, restoring, or enhancing on a "no net loss" basis (in accordance with U.S. Army Corps of Engineers (USACE) and State Water Resources Control Board (SWRCB) requirements), wetlands and other waters of the United States and waters of the State that would be removed, lost, and/or degraded. d. Where impacts to sensitive natural communities other than waters of the United States or State are unavoidable, compensating for impacts by restoring and/or preserving in-kind sensitive natural communities on-site, or off-site at a nearby site, or by purchasing in-kind restoration or preservation credits from a mitigation bank that services the project site and that is approved by the appropriate agencies, in consultation with applicable regulatory agencies (at ratios that offset temporal loss of habitat value). 2. Implement advanced mitigation planning for ecosystem restoration prior to construction. 3. Implement construction best management practices, including: <ol style="list-style-type: none"> a. Developing and implementing a Stormwater Pollution Prevention Plan (SWPPP). b. Minimizing soil disturbance, erosion, and sediment runoff from project site. c. Avoiding and minimizing contaminant spills. d. Minimizing visual and noise disturbance from construction activities. e. Conducting biological construction monitoring to ensure that implemented Best Management Practices (BMPs) are effective. 4. Restore areas temporarily affected by construction activities, including: 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's include 7, 10, 17, 18, 19, 20, 31</p>

	<ul style="list-style-type: none"> a. Preparing restoration plan for temporary impacts sites for review by resource agencies. b. Minimizing soil disturbance and stockpiling topsoil for later use in any areas to be graded. c. Decompacting or amending soil if necessary before planting and use native species for revegetation. d. Restoring natural communities with similar or improved functions from communities that were affected. <p>5. If a project may result in conversion of oak woodlands, as identified in section 21083.4 of the Public Resources Code, one or more of the following mitigation measures shall be implemented:</p> <ul style="list-style-type: none"> a. Conserve oak woodlands, through the use of conservation easements. b. Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees. c. Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of section 1363 of the Fish and Game Code. <p>6. An invasive species management plan shall be developed and implemented for any project whose construction or operation could lead to introduction or facilitation of invasive species establishment. The plan shall ensure that invasive plant species and populations are kept below preconstruction abundance and distribution levels. The plan shall be based on the best available science and developed in consultation with Department of Fish and Wildlife (DFW) and local experts, such as the University of California Extension, county agricultural commissioners, representatives of County Weed Management Areas (WMA), California Invasive Plant Council, and California Department of Food and Agriculture. The invasive species management plan will include the following elements:</p> <ul style="list-style-type: none"> a. Nonnative species eradication methods (if eradication is feasible) b. Nonnative species management methods c. Early detection methods d. Notification requirements e. Best management practices for preconstruction, construction, and post construction periods f. Monitoring, remedial actions and reporting requirements g. Provisions for updating the target species list over the lifetime of the project as new invasive species become potential threats to the integrity of the local ecosystems 	
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4-2	<ol style="list-style-type: none"> 1. Select project site(s) that would avoid habitats of special-status species (which may include foraging, sheltering, migration and rearing habitat in addition to breeding or spawning habitat), and to the maximum extent practicable, (re)design project elements to avoid effects on such species. 2. Schedule construction to avoid special-status species' breeding, spawning, or migration locations during the seasons or active periods that these activities occur. 3. Conduct preconstruction surveys (by a qualified biologist) for special-status species in accordance with U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS) and DFW survey methodologies and appropriate timing to determine presence and locations of any special-status species and their habitat, and avoid, minimize, or compensate for impacts to special-status species in coordination with DFW and USFWS or NMFS. 4. Establish buffers around special-status species habitats to exclude effects of construction activities. The size of the buffer shall be in accordance with USFWS and DFW protocols for the applicable special-status species. If nest tree removal is necessary, remove the tree only after the nest is no longer active, as determined by a qualified biologist. 5. Conduct construction monitoring (by qualified biologist) to ensure effectiveness of avoidance and minimization measures and implement remedial measures if necessary. 6. When appropriate, relocate special-status plant and animal species or their habitats from project sites following USFWS, NMFS, and DFW protocols (e.g., for special-status plant species or elderberry shrubs). 7. Where impacts to special-status species are unavoidable, compensate for impacts by restoring or preserving in-kind suitable habitat on-site, or off-site, or by purchasing restoration or preservation credits (in compliance with the California Endangered Species Act (CESA) and federal Endangered Species Act (ESA) for affected State- or federally-listed species from a mitigation bank that serves the project site and that is approved by the appropriate agencies, in consultation with the appropriate regulatory agencies (at ratios that offset the temporary loss of habitat value). 	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 23, 29, 30, and 31 are applicable.</p>
4-3	<ol style="list-style-type: none"> 1. Select project site(s) that would avoid a substantial reduction in fish and wildlife species habitat. 2. To the maximum extent practicable, design project elements to avoid effects that would lead to a substantial loss of fish and wildlife habitat. 3. Replace, restore, or enhance habitats for fish and wildlife species that would be lost. 4. Where substantial loss of habitat for fish and wildlife species is unavoidable, compensate for impacts by preserving in-kind habitat 	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 6, 7, 8, 22, 27, and 28 are applicable.</p>
4-4	<ol style="list-style-type: none"> 1. Protect habitat for migratory waterfowl and shorebirds by expanding existing wildlife refuges and management areas and establishing new ones in or near wetland areas used by migratory waterfowl and shorebirds. Manage these areas by 	<p>Project is consistent with applicable mitigation measures identified in this</p>

	<p>establishing suitable vegetation, hydrology and other habitat components to optimize the use by migratory waterfowl and shorebirds.</p> <ol style="list-style-type: none"> 2. Protect, restore and enhance connectivity of habitats, including but not limited to wetland and riparian habitats that function as migration corridors for wildlife species (similar to how has been implemented through programs such as the California Essential Habitat Connectivity Project). Acquire areas with potential to increase connectivity between existing habitats, protect these areas in perpetuity through the acquisition of conservation easements, deed restrictions, or similar tools, and restore the habitat for wildlife species in these areas. Habitat restoration might be accomplished by establishing suitable hydrology or other physical conditions for desirable vegetation, planting desirable vegetation, fencing and managing grazing, and other means. 3. Protect migratory pathways for migratory aquatic species such as salmon, steelhead, and sturgeon including those that use Delta tributaries and floodplain habitats by screening new diversions, and screening existing diversions and removing existing migration barriers if the specific proposed project/activity (e.g., increased intake volume through an existing unscreened diversion, new diversion, new barrier, new barrier near an existing unscreened diversion, etc.) exacerbates the negative effect on migratory aquatic species caused by the existing barrier or unscreened diversion. 4. Avoid or minimize alteration of flow patterns and water quality effects that could disrupt migratory cues for migratory aquatic species by implementing water management measures and establishing programs to reduce water pollution. 	<p>section. AMM's 22 and 24 are applicable.</p>
4-5	<p>Prior to construction, evaluate impacts to trees or other biological resources protected by local policies and ordinances, and abide by any permit requirements associated with these policies and ordinances.</p>	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 6, 23, 26, and 29 are applicable.</p>
Delta Flood Risk		
5-1	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulic study that would assess the need and provide a basis for the design of drainage- related mitigations, such as new onsite drainage systems or new cross drainage facilities. Prepare the study in accordance with applicable standards of Federal Emergency Management Agency (FEMA), USACE, state Department of Water Resources (DWR), Central Valley Flood Protection Board (CVFPB), as well as the local reclamation districts and flood control agencies and the counties and cities. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, and CVFPB. The study would identify potential increases in flood risks, including those that may result from new facilities. 2. Provide temporary drainage bypass facilities that would reroute drainage around, along, or over the Proposed Project facilities and construction sites. The temporary bypass facilities would be designed in accordance with the results and recommendations of a drainage or hydrologic and hydraulic study and would be in 	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 17 and 18 are applicable.</p>

	<p>place and fully functional until long-term replacement facilities are completed.</p> <ol style="list-style-type: none"> 3. Provide onsite stormwater detention storage at construction and project facility sites that would reduce project- caused short- or long-term increases in drainage runoff. The storage space placement and capacity would be designed based on the drainage or hydrologic and hydraulic study. 4. Based on the results of the drainage or hydrologic and hydraulic study, arrange the length of any stockpiles or other construction features in the direction of the floodplain flow to maximize surface flows under flood flow conditions. 5. At in-stream construction sites that might reduce channel capacity, install setback levees or bypass channels to maintain channel capacity and to mitigate hydraulic impacts. Where low channel velocities might result from construction, implement a sediment management program in order to maintain channel capacity. 6. Provide cross drainage, replacement drainage paths and facilities, and enlarged flow paths to reroute drainage around, under, or over the Proposed Project facilities and to restore the function of any affected existing drainage or flow paths and facilities. 7. Channel modifications for restoration actions would be required to be implemented to maintain or improve flood management functions and would be coordinated with the USACE, DWR, CVFPB, and other flood control agencies to assess the desirability and feasibility for channel modifications. To the extent consistent with floodplain land uses and flood control requirements, if applicable, woody riparian vegetation would be allowed to naturally establish. 8. For areas that would be flooded as a result of the project, or where existing flooding would be increased in magnitude, frequency, or duration, purchase a flowage easement and/or property at fair- market value. 9. Provide a long-term sediment removal program at in-river structures. 10. To mitigate potential impacts of changes in the timing of reservoir releases or the possible combination of river peak flows, use forecasts to implement coordination of operations with existing reservoirs. 	
5-2	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design of drainage- related mitigations, such as new onsite drainage systems or new cross drainage facilities. Prepare the study in accordance with applicable standards of FEMA, USACE, DWR, CVFPB, as well as the local reclamation districts and flood control agencies and the counties and cities. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, and CVFPB. 2. Provide onsite stormwater detention storage at construction and project facility sites that would reduce project- caused, short- and long-term increases in drainage runoff. The storage space would be designed based on the drainage or hydrologic and hydraulic study. 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's 17 and 18 are applicable.</p>
5-4	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design of drainage- related mitigations, such as new 	<p>Project is consistent with applicable mitigation measures identified in this</p>

	<p>onsite drainage systems or new cross drainage facilities. Prepare the study in accordance with applicable standards of FEMA, USACE, DWR, CVFPB, as well as the local reclamation districts and flood control agencies and the counties and cities. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, and CVFPB.</p> <ol style="list-style-type: none"> 2. Where high channel velocities might result from construction, provide bank protection, such as rip rap, to protect levees from erosion. 3. Where construction results in longer channel wind fetch lengths, install vegetative buffer zones or wave erosion protection on the water side slope of levees, such as rock or grouted rip rap, and increase levee freeboard to address higher wind and wave runup. 4. Based on the drainage or hydrology and hydraulics study, determine any resulting changes to available evacuation plans or emergency response times. 5. To reduce emergency response times and public safety risks, raise structures and major roads out of the floodplain. 6. Provide automated flood warning systems. 7. Develop and implement area-specific evacuation and emergency response plans. 8. Considering the results of the hydraulics study noted above, perform a seepage and stability analyses that would assess the need and act as a basis for design of other seepage- and stability- related mitigations, such as cutoff walls, adjacent levees, setback levees, berms, and subdrainage features. Perform the analyses in accordance with applicable standards of FEMA, USACE, and DWR. 9. Perform research and collect subsurface information in accordance with applicable standards of FEMA, USACE, and DWR and perform settlement analyses that would assess the need for monitoring and potential settlement- related mitigations, such as ground improvement or pre-construction surcharging. Perform the analyses in accordance with applicable standards of USACE. 10. Perform research and collect subsurface information in accordance with applicable standards of FEMA, USACE, and DWR and perform seismic and liquefaction analyses that would assess the need and provide the basis for design of other seismic- related mitigations, such as ground improvement. Perform the analyses in accordance with applicable standards of USACE and American Society of Civil Engineers and Southern California Earthquake Center. 11. Prepare and implement a plan for periodic maintenance, inspections, repair, and rehabilitation of new water storage and conveyance facilities that could cause flooding upon failure. 12. Provide redundancy and safety controls and devices on water storage and conveyance facilities (pump stations, canals, and tunnels) to protect against facility failure and subsequent flooding. 13. To limit flooding from the unlikely event of a conveyance facility failure, limit extensive flow escape with installation of safety devices such as gated checks. 	<p>section. AMM's 2, 17, and 18 are applicable.</p>
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	<p>14. Construct new evacuation roads and access roads, as necessary.</p> <p>15. Conduct Golden Guardian emergency drills.²</p>	
5-5	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design of drainage- related mitigations, such as new onsite drainage systems or new cross drainage facilities. Prepare the study in accordance with applicable standards of FEMA, USACE, DWR, CVFPB, as well as the local reclamation districts and flood control agencies and the counties and cities. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, and CVFPB. Provide temporary drainage bypass facilities that would reroute drainage around, along, or over the Proposed Project facilities and construction sites. The temporary bypass facilities would be designed in accordance with drainage or hydrology and hydraulic study and would be in place and fully functional until long-term replacement facilities are completed. 2. Based on the results of the drainage or hydrologic and hydraulic study, arrange the length of any stockpiles or other construction features in the direction of the floodplain flow to maximize surface flows under flood conditions. 3. At in-stream construction sites that might reduce channel capacity, install setback levees or bypass channels to maintain channel capacity and to mitigate hydraulic impacts. 4. Provide cross drainage, replacement drainage paths and facilities, and enlarged flow paths to reroute drainage around, under, or over the Proposed Project facilities and to restore the function of any affected existing drainage or flow paths and facilities. 5. Channel modifications for restoration actions would be required to be implemented to maintain or improve flood management functions and would be coordinated with the USACE, DWR, CVFPB, and other flood control agencies to assess the desirability and feasibility for channel modifications. To the extent consistent with floodplain land uses and flood control requirements, if applicable, woody riparian vegetation would be allowed to naturally establish. 	<p>Hydrology and Water Quality Technical Studies have been completed.</p> <p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM 22 is applicable.</p>
Land Use and Planning		
6-1	<ol style="list-style-type: none"> 1. Minimize physical division of existing established communities or residential areas by designing new facilities and infrastructure to be located underground or with sufficient points of visual and physical access. Examples of methods of minimizing physical division include (but are not limited to): <ol style="list-style-type: none"> a. Burying or visually masking new infrastructure or facilities b. Restoring disturbed landscapes back to preconstruction conditions; c. Reestablishing access (e.g., reconnecting roads, rebuilding bridges); d. Relocating landmark buildings; or 	<p>N/A</p> <p>No new facilities or infrastructure are proposed for the Bank.</p>

	<ul style="list-style-type: none"> e. Implementing other feasible mitigation to reduce the disturbance to a community's physical composition, visual character, or other features integral to the community's identity. 	
6-2	<ol style="list-style-type: none"> 1. Compensate for the loss or reduction in environmental values protected by the subject plan or policy. For example, if the project would result in conversion of agricultural land to a non-agricultural use, potential mitigation actions could include: <ol style="list-style-type: none"> a. Recording a deed restriction that ensures permanent conservation and mitigation on other property of equal or greater environmental mitigation value; b. Creating a buffer or barrier between uses; c. Redesigning the project or selecting an alternate location that avoids or mitigates the impact; and/or d. Restoring disturbed land to conditions to provide equal or greater environmental value to the land affected by the covered action. 	<p>N/A</p> <p>Construction of this project will result in a tremendous gain in environmental values to the land affected by the covered action.</p>
Agriculture and Forestry Resources		
7-1	<ol style="list-style-type: none"> 1. Design proposed projects to minimize, to the greatest extent feasible, the loss of the highest valued agricultural land. 2. For projects that will result in permanent conversion of Farmland, preserve in perpetuity other Farmland through acquisition of an agricultural conservation easement, or contributing funds to a land trust or other entity qualified to preserve Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Farmland to be converted, to compensate for permanent loss). 3. Redesign project features to minimize fragmenting or isolating Farmland. Where a project involves acquiring land or easements, ensure that the remaining non-project area is of a size sufficient to allow viable farming operations. The project proponents shall be responsible for acquiring easements, making lot line adjustments, and merging affected land parcels into units suitable for continued commercial agricultural management. 4. Reconnect utilities or infrastructure that serve agricultural uses if these are disturbed by project construction. If a project temporarily or permanently cuts off roadway access or removes utility lines, irrigation features, or other infrastructure, the project proponents shall be responsible for restoring access as necessary to ensure that economically viable farming operations are not interrupted. 5. Manage project operations to minimize the introduction of invasive species or weeds that may affect agricultural production on adjacent agricultural land. 6. Establish buffer areas between projects and adjacent agricultural land that are sufficient to protect and maintain land capability and agricultural operation flexibility. Design buffers to protect the feasibility of ongoing agricultural operations and reduce the effects of construction- or operation-related activities (including the potential to 	<p>Due to climate change and sea-level rise, it is expected that under future conditions, the site will experience flooding at a greater frequency and duration than any time in the past. The site will contain a buffer around the exterior that will help to protect the restored site.</p>

	introduce special-status species in the agricultural areas) on adjacent or nearby properties. The buffer shall also serve to protect ecological restoration areas from noise, dust, and the application of agricultural chemicals. The width of the buffer shall be determined on a project-by-project basis to account for variations in prevailing winds, crop types, agricultural practices, ecological restoration, or infrastructure. Buffers can function as drainage swales, trails, roads, linear parkways, or other uses compatible with ongoing agricultural operations.	
7-2	Design proposed projects to minimize, to the greatest extent feasible, conflicts and inconsistencies with land protected by agricultural zoning or a Williamson Act contract and the terms of the applicable zoning/contract.	The Williamson Act defines “open space” as a compatible land use under the terms of the contract.
7-3	Avoid land protected as forestland and timberland through site selection and/or project design. Where feasible, project proponents should consider the value of the forest, not only in terms of direct products such as wood but also as part of the watershed ecosystem, when selecting a project site. Wherever possible, nonprotected sites should be preferred and selected instead of protected sites.	N/A The Bank is not located in forestland or timberland.
7-4	<ol style="list-style-type: none"> 1. For projects that will result in permanent conversion of forestland, preserve in perpetuity other forestland through a conservation easement or by acquiring lands or contributing funds to a land trust or other agency (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Forestland to be converted, to compensate for permanent loss). 2. Avoid land protected as forestland and timberland through site selection and/or project design. Where feasible, project proponents should take into account the value of the forest, not only in terms of direct products such as wood, but also as part of the watershed ecosystem, when selecting a project site. When possible, unprotected sites should be preferred and selected instead of protected sites. 3. When removal of existing forestland or timberlands is required as part of an action, proponents must acquire the property at fair market value. 	N/A The Bank is not located in forestland or timberland.
Visual Resources		
8-1	<ol style="list-style-type: none"> 1. Use compatible colors for proposed structural features, such as intakes, pumping plants, and surge towers. Use earth tone paints and stains with low levels of reflectivity. 2. Minimize the vertical profile of proposed structures as much as possible. Where possible, use subgrades for floors of structures. Use landscaped berms instead of walls to mask views of structures from high-visibility sites. Use green roof design where roof structures would be highly visible. 3. Use vegetation plantings on proposed facility walls, such as climbing plants, espaliers, and other forms that soften the appearance of structures. 4. Develop a landscaping plan for all proposed structures. Provide vegetative screening to soften views of structures. Landscaping should complement the surrounding landscape. 5. Round the tops and bottoms of spoil disposal areas and contour the faces of 	N/A No structures are proposed for the Bank.

	<p>slopes to create more natural-looking landforms. Create visual diversity by planting vegetation with diverse growth forms on the spoil disposal areas; plant with more than just grasses.</p> <ol style="list-style-type: none"> 6. Landscape parking areas at proposed facilities, and include low- impact design features, such as permeable pavers, tree basins, and bioswales, that reduce stormwater runoff and enhance visual quality. 7. Conduct only partial vegetative clearing of the limits of construction rather than clear the entire area; partial clearing would leave islands of vegetation and result in a more natural look. Use irregular clearing shapes with feathered edges instead of hard edges to promote a more natural effect. 8. Develop design form and materials with a goal to achieve aesthetic visual character instead of a strictly utilitarian objective. Use cast natural form elements or natural materials for facing to achieve texture and color compatible with the adjacent landscape; natural materials would be preferable for areas of high visibility and public use. Landscape areas adjacent to facilities. Use natural materials, such as wood and stone, for signage at proposed facilities. 9. Develop aesthetically pleasing landscaping for relocated roads at the shoulders, intersections, and on- and off- ramps from highways. Design turnouts and scenic vista points where appropriate for relocated roads with high visibility and high public use. 10. To the extent consistent with the safety and reliability of the electric grid, as well as site-specific considerations, use single-pole electrical transmission towers instead of lattice-form towers for proposed large electrical transmission lines, and put transmission lines underground along areas with high visibility and high public use. 11. Consider developing aesthetically well-designed visitor centers, vantage areas, or observation decks at appropriate facilities with interpretation features, walking paths, and other features. Although developing visitor centers would not reduce a visual impact, it would have the effect of making the facilities features of interest to the touring public. 	
8-2	<ol style="list-style-type: none"> 1. Implement elements of Mitigation Measure 8-1 for temporary construction activities and new facilities that are visible from scenic vistas and designated roads and highways as appropriate. 2. Replace all scenic resources (e.g., large trees) that would be removed for the Proposed Project, when feasible. Identify compensatory mitigation for visual or aesthetic resources by providing improvements to areas with existing diminished scenic quality. 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's 9, 30, 31 are applicable</p>
8-3	<p>Use shields for proposed lighting facilities, and direct lighting downward and inward toward the facilities.</p>	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM 3 is applicable.</p>
Air Quality		
9-1	<ol style="list-style-type: none"> 1. Use equipment and vehicles that are compliant with Air Resource Board (ARB) requirements and emission standards for on-road and off-road fleets and engines. 	<p>Project is consistent with applicable mitigation measures identified in this</p>

	<p>New engines and retrofit control systems should reduce NOx and PM from diesel-fueled on-road and off-road vehicles and equipment.</p> <ol style="list-style-type: none"> 2. Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage should be posted for construction workers at all entrances to the site. 3. Maintain all equipment in proper working condition according to manufacturer's specifications. 4. Use electric equipment when possible. Use lower-emitting alternative fuels to power vehicles and equipment where feasible. 5. Use low Volatile Organic Compounds (VOC) coatings and chemicals; minimize chemical use. 6. Prepare a dust control plan and apply dust control measures at the construction sites. 7. To minimize track-out of dirt and mud from dirt and gravel roads, all trucks and equipment, including their tires, shall be washed prior to leaving the site. Only exteriors of trucks and equipment are to be washed (no engine degreasing), no detergents or chemicals shall be used in the wash water, and off-site runoff of rinse water shall be prevented. 8. For projects involving land fallowing, land conversion, or other agricultural operations, implement applicable BMPs from agencies such as the U.S. Department of Agriculture Natural Resources Conservation Service to reduce potential dust emissions. <p>BMPs for fallowed lands could include, but are not limited to, the following:</p> <ol style="list-style-type: none"> 9. Implement conservation cropping sequences and wind erosion protection measures, such as: <ol style="list-style-type: none"> a. Plan ahead to start with plenty of vegetation residue and maintain as much residue on fallowed fields as possible. Residue is more effective for wind erosion protection if left standing. b. If residues are not adequate, small grains can be seeded about the first of the year to take advantage of the winter rains and irrigated with a light irrigation if needed to get adequate growth. c. Avoid any tillage if possible. d. Avoid any traffic or tillage when fields are extremely dry to avoid pulverization. 10. Apply soil stabilization chemicals to fallowed lands. 11. Re-apply drain water to allow protective vegetation to be established. 12. Reuse irrigation return flows to irrigate windbreaks across blocks of land including many fields to reduce wind fetch and reduce emissions from fallowed, farmed, and 	<p>section. AMM's 9, 11, 12, and 13 are applicable.</p>
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other lands within the block. Windbreak species, management, and layout would be optimized to achieve the largest feasible dust emissions reduction per unit water available for their irrigation. Windbreak corridors would provide ancillary aesthetic and habitat benefits.

Project-specific lists of mitigation measures should also include the recommendations or requirements of the local air district(s). For example, the Bay Area Air Quality Management District (BAAQMD) lists the following basic and additional mitigation measures to reduce emissions from project construction (BAAQMD, 2010. California Environmental Quality Act Air Quality Guidelines. December 2010. San Francisco, California. Site accessed February 8, 2011. <http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES.aspx>).

Basic Construction Mitigation Measures Recommended for ALL Proposed Projects

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off- site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off
7. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

	<ol style="list-style-type: none"> 3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. 4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. 5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. 6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. 7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel. 8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. 9. Minimizing the idling time of diesel-powered construction equipment to two minutes. 10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet- average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after- treatment products, add-on devices such as particulate filters, and/or other options as such become available. 11. Use low VOC (i.e., reactive organic gases or ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). 12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM. 13. Require all contractors to use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines. 	
9-2	<ol style="list-style-type: none"> 1. Applicants should develop and implement a project-specific Odor Management Plan. Odor control measures that can be incorporated into this plan include, but are not limited to, the following: <ol style="list-style-type: none"> a. A list of potential odor sources 	<p>N/A</p> <p>There are no potential odor sources within the Bank or as part of the Proposed Action.</p>

	<ul style="list-style-type: none"> b. Identification and description of the most likely sources of odor c. Identification of potential, intensity, and frequency of odor from likely sources d. A list of odor control technologies and management practices that could be implemented to minimize odor releases e. A protocol for monitoring, recording, reporting and responding to odor events, including notification of the local and downwind jurisdictions of projects that may result in odor complaints, including contact numbers for responsible individuals during construction. If odor an event occurs, construction activity should be suspended until conditions change, removing the cause and resultant odors, or until alternate management practices are implemented that significantly reduce the odors 	
9-3	<p>The Air Quality Technical Report prepared for the Proposed Project should evaluate human health risks from potential exposures of sensitive receptors to substantial pollutant concentrations on a project- specific basis. The need for a human health risk analysis should be evaluated using approved screening tools and discussed with the local Air Quality Management District (AQMD) or Air Pollution Control District (APCD) at the time of preparation of the Air Quality Technical Report.</p> <p>If the health risk is determined to be significant on a project-specific basis, control measures should be implemented to reduce health risks to levels below the applicable air district threshold.</p> <p>Implementation of one or more of the following requirements, where feasible and appropriate would reduce the effects of Impact 9-3a, Construction or Operation of Projects Would Expose Sensitive Receptors to Substantial Pollutant Concentrations (<i>from the 2013 Delta Plan Program EIR</i>):</p> <ol style="list-style-type: none"> 1. Implement Mitigation Measure 9-1 to reduce air emissions and air quality impacts from construction and operations of the Proposed Project. 2. Use equipment with diesel engines designed or retrofitted to minimize DPM emissions, usually through the use of catalytic particulate filters in the exhaust. 3. Use electric equipment to eliminate local combustion emissions. 4. Use alternative fuels, such as compressed natural gas or liquefied natural gas. <p>If the project would result in significant emissions of airborne, naturally occurring asbestos or metals from excavation, hauling, blasting, tunneling, placement, or other handling of rocks or soil, a dust mitigation and air monitoring plan would be required to specify site- specific measures to minimize emissions and that airborne concentrations of the toxic air contaminants (TACs) of concern do not exceed regulatory or risk-based trigger levels.</p>	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's 9, 11, and 12 are applicable.</p>
Cultural Resources		
10-1	<ol style="list-style-type: none"> 1. Before any ground-disturbing activities begin, conduct intensive archaeological surveys, including subsurface investigations to identify the locations, extent, and integrity of presently undocumented archaeological resources that may be located 	<p>Project is consistent with applicable mitigation measures identified in this</p>

	<p>in areas of potential disturbance. In addition, if ground-disturbing activities are planned for an area where a previously documented prehistoric archaeological site has been recorded but no longer may be visible on the ground surface, conduct test excavations to determine whether intact archaeological subsurface deposits are present. Also conduct surveys at the project site for the possible presence of cultural landscapes and traditional cultural properties.</p> <ol style="list-style-type: none"> 2. If potentially California Register of Historical Resources (CRHR)- eligible prehistoric or historic-era archeological resources are discovered during the survey phase, additional investigations may be necessary. These investigations could include, but not necessarily be limited to, measures providing resource avoidance, archival research, archaeological testing and CRHR eligibility evaluations, and contiguous excavation unit data recovery. In addition, upon discovery of potentially CRHR-eligible prehistoric resources, coordinate with the NAHC and the Native American community to provide for an opportunity for suitable individuals and tribal organizations, including federally recognized tribes, to comment on the proposed research. 3. If CRHR-eligible archaeological resources or cultural landscapes/properties are present and would be physically impacted, specific strategies to avoid or protect these resources should be implemented if feasible. These measures may include: <ol style="list-style-type: none"> a. Planning construction to avoid the sensitive sites b. Deeding the sensitive sites into permanent conservation easements c. Capping or covering archaeological sites d. Planning parks, green space, or other open space to incorporate the sensitive sites e. Granting of cultural easements to Native American tribes for the purpose of protecting cultural resource properties 4. If federal agencies are participants in the activity and Section 106 of the National Historic Preservation Act applies, conduct formal consultation with the State Historic Preservation Officer, Tribal Historic Preservation Officer (THPO) or Tribal Administrator for tribes that do not have a THPO, and the Native American community. Potential adverse effects on cultural resources recommended as eligible for listing in the National Register of Historic Places (NRHP) will be resolved through the development of a memorandum of agreement and/or a program-level agreement. 5. As part of efforts to identify, evaluate, and consider cultural resources, including prehistoric sites, Native American human remains, and traditional cultural properties, Native Americans would be consulted. The California Native American Heritage Commission (NAHC) would be asked to provide a list of Native Americans who should be contacted concerning an identified future project. The NAHC would also be asked to search its Sacred Lands Files. Native Americans identified by the NAHC would be contacted by letter to request information on cultural resources of importance. They also would be asked to identify concerns 	<p>section. AMM's 32, 33, 34, and 35 are applicable.</p>
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	<p>they have about the project. THPOs and Tribal Administrators of federally recognized tribes would be contacted and asked to search their files and provide information necessary for the identification and consideration of cultural resources.</p> <ol style="list-style-type: none"> 6. Before any project-specific ground-disturbing activities begin, conduct investigations to identify submerged cultural resources. These investigations would include review of State Lands Commission (SLC) Shipwrecks Database and other SLC files, and remote sensing surveys conducted under the direction of a qualified maritime archaeologist. If avoidance of significant submerged cultural resources is not feasible, a permit from SLC may be necessary to conduct resource documentation and possible salvage of artifacts, ship components, and other data and objects. 7. If CRHR-eligible archaeological resources, including submerged or buried shipwrecks or other maritime-related cultural resources, are discovered during construction activities, work would halt within 100 feet of the discovery until the find can be evaluated by a qualified archaeologist or maritime archaeologist as appropriate. In addition, SLC would be consulted. 	
10-2	<p>The identification, evaluation, and determination of disposition of Native American human remains shall be conducted in accordance with Native American consultation procedures described below and in Mitigation Measure 10-1. The location, content, and character of Native American human remains are confidential and shall not be released to the public. Native American human remains and associated funerary objects shall be treated with the utmost respect and in accordance with the direction of the identified Most Likely Descendant (MLD).</p> <ol style="list-style-type: none"> 1. If human remains are encountered during ground-disturbing construction activities, stop work that would potentially affect the find and contact the county coroner. <ol style="list-style-type: none"> a. In accordance with the California Health and Safety Code and the California Native American Grave Protection and Repatriation Act (CNAGPRA), if human remains are uncovered during ground-disturbing activities, the contractor shall immediately halt potentially damaging excavation in the area of the burial and notify the county coroner, a professional archaeologist to determine the nature of the remains, and a representative of California Indian tribes. 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 must contact the NAHC by telephone within 24 hours of making that determination (Health and Safety Code section 7050[c]). b. Following the coroner's findings, the property owner, contractor or project proponent, an archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM 35 is applicable.</p>

	<p>Native American human remains are identified in California Public Resources Code section 5097.9.</p> <ul style="list-style-type: none"> c. Upon the discovery of Native American remains, the landowner shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. d. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment, may be discussed. California Public Resources Code section 5097.9 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following is a list of site protection measures that the landowner shall employ: <ul style="list-style-type: none"> (1) Record the site with the NAHC or the appropriate information center. (2) Use an open space or conservation zoning designation or easement. (3) Record a document with the county in which the property is located. e. The landowner or his or her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The landowner or his or her authorized representative may also reinter the remains in a location not subject to further disturbance if he or she rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the landowner. <p>2. If the discovery of human remains occurs on lands owned and administered by a federal agency, the provisions of the Native American Graves Protection and Repatriation Act (NAGPRA) will apply. NAGPRA requires federal agencies and certain recipients of federal funds to document Native American human remains and cultural items in their collections, notify native groups of their holdings, and provide an opportunity for repatriation of these materials. The act also requires planning for dealing with potential future collections of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony</p>	
10-3	<p>1. Inventory and evaluate historic-era buildings, structures, and linear features. Conduct cultural resources studies to determine whether historic-era buildings,</p>	Project is consistent with applicable mitigation measures identified in this

	<p>structures, and linear features in the project area are eligible for listing in the CRHR.</p> <ol style="list-style-type: none"> 2. Before construction activities begin, an inventory and evaluation of historic-era resources in the project area should be conducted under the direct supervision of an architectural historian meeting the Secretary of the Interior's Professional Qualification Standards for history or architectural history. The documentation should include conducting an intensive field survey, background research on the history of the project area, and property-specific research. Based on this research, the eligibility of historic-era resources located in the project area should be evaluated by the architectural historian using criteria for listing in the CRHR. The resources would be recorded on DPR 523 forms, and the findings documented in a technical report. If federal funding or approval is required, then the project implementation agencies would comply with Section 106 of the National Historic Preservation Act. 3. Identify measures to avoid significant historic resources. Avoidance through project redesign is the preferred mitigation measure for mitigating potential effects on historic-era buildings, structures, linear features, and archaeological sites that appear to be eligible for listing in the NRHP or CRHR. 4. Record photographic and written documentation to Historic American Building Survey (HABS)/Historic American Engineering Record (HAER) standards. If avoidance of a significant historic resource is not feasible, the lead agency should ensure that HABS/HAER documentation is completed. Through HABS/HAER documentation, a qualified architectural historian and qualified photographer should formally document the historic resource through large-format photography, measured drawings, written architectural descriptions, and historical narratives. The completed documentation should be submitted to the Library of Congress. 5. Conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings in the event of relocation. If any historic buildings, structures, or levees are relocated or altered, the lead agency should ensure that any changes to significant buildings or structures conform to the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. Implementation of this measure can mitigate potential changes to significant architectural resources. 6. Conform to the Secretary of the Interior's Guidance for the Treatment of Cultural Landscapes to preserve landscapes' historic form, features, and details that have evolved over time. 	<p>section. AMM 32 is applicable.</p>
10-4	<p>Mitigation Measures 10-1 and 10-3 will also mitigate Impact 10-4, Disturbance or Destruction of Cultural Landscapes and Traditional Cultural Properties (<i>from the 2013 Delta Plan Program EIR</i>). However, to mitigate Impact 10-4, Mitigation Measure 10-1 surveys and Mitigation Measure 10-3 inventories would focus on cultural landscapes and traditional cultural properties.</p>	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 32, 33, 34, and 35 are applicable.</p>
Geology and Soils		

11-1	<ol style="list-style-type: none"> 1. For construction that occurs in an Alquist-Priolo Special Studies Zone, a determination must be made by a licensed practitioner (California Certified Engineering Geologist) that no fault traces are present within the building footprint of any structure intended for human occupancy. The standard of care for such determinations includes direct examination of potentially affected subsurface materials (soil and/or bedrock) by logging of subsurface trenches. Uncertainties regarding the exact locations of future ground ruptures associated with such determinations generally are resolved by providing a minimum setback of 50 feet from any known surface trace of an active fault. For critical structures, such as hospitals, dams, and emergency facilities, more stringent mitigation measures are required, including but not limited to greater structural setbacks and heavier reinforcement against strong ground motion, in compliance not only with California regulations but in many cases in compliance with additional Federal regulations. 2. Lead agencies shall ensure that geotechnical design recommendations are included in the design of facilities and construction specifications to minimize the potential impacts from seismic events and the presence of adverse soil conditions. Recommended measures to address adverse conditions shall conform to applicable design codes, guidelines, and standards. 	<p>N/A The Bank is not located within an Alquist-Priolo Fault Zone.</p>
11-2	<p>Require adherence, at minimum, to the precepts of the current approved version of the International Building Code (IBC). Included in the IBC are measures for mitigation of the impacts of strong ground motion on constructed works. In addition to the California–required conformance with the IBC, for critical structures, such as dams (including levees), hospitals, and emergency facilities, additional construction requirements are codified in federal statutes and the regulations of various federal agencies. Lead agencies will, by force of law, require conformance with these codified mitigation measures.</p>	<p>N/A There are no proposed structures within the Bank.</p>
11-3	<ol style="list-style-type: none"> 1. For projects that would result in significant or potentially significant grading operations, a geotechnical investigation shall be performed, and a geotechnical report prepared. The geotechnical report shall include a quantitative analysis to determine whether excavation or fill placement would result in a potential for damage due to soil subsidence during and/or after construction. Project designs shall incorporate measures to reduce the potential damage to an insignificant level, including but not limited to removal and recompaction of existing soils susceptible to subsidence, ground improvement (such as densification by compaction or grouting, soil cementation), and reinforcement of structural components to resist deformation due to subsidence. The site-specific potential for and severity of cyclic seismic loading shall be analyzed in the assessment of subsidence for specific projects. 2. A geotechnical investigation shall be performed by an appropriately licensed professional engineer and/or geologist to determine the presence and thickness of potentially liquefiable sands that could result in loss of bearing value during seismic shaking events. Project designs shall incorporate measures to mitigate the potential damage to an insignificant level, including but not limited to ground improvement (such as grouting or soil cementation), surcharge loading by placement of fill, excavation, soil mixing with non-liquefiable finer-grained materials 	<p>N/A A geotechnical report was prepared by Hultgren Tillis Engineers in 2020. The shallow excavation of channels throughout the project area is not anticipated to cause any subsidence or liquefaction of soils. No water wells will be constructed on the project.</p>

	<p>and replacement of liquefiable materials at shallow depths, and reinforcement of structural components to resist deformation due to liquefaction. An analysis of site-specific probable and credible seismic acceleration values, in accordance with current applicable standards of care, shall be performed to provide suitable project design.</p> <p>3. For projects that would result in construction of wells intended for groundwater extraction, a hydrogeological/geotechnical investigation shall be performed in accordance with the current standards of care for such work by an appropriate licensed professional engineer or geologist to identify and quantify the potential for groundwater extraction-induced subsidence. The study shall include an analysis of existing conditions and modeling of future conditions to assess the potential for aquifer compaction/consolidation. For projects that would result in construction of surface reservoirs and canals a hydrogeological/geotechnical investigation shall be performed by a licensed professional engineer or geologist to identify and quantify the potential for seeps and springs to develop in areas adjacent to the proposed improvements and to propose mitigation measures. Mitigation of such seepage could include, without limitation, additives to concrete that reduce its permeability, construction of impervious liner systems, and design and construction of subdrainage (passive control) or dewatering systems (active control).</p> <p>Geotechnical investigations and preparation of geotechnical reports shall be performed in the responsible care of California licensed geotechnical professionals including professional civil engineers, certified geotechnical engineers, professional geologists, certified engineering geologists, and certified hydrogeologists, all of whom should be practicing within the current standards of care for such work.</p>	
11-4	<p>1. Any covered action that would have significant soil erosion and topsoil loss impacts (Impact 11-4) shall incorporate specific measures for future projects that would expand the use of BMPs or optional erosion control measures listed in the SWPPPs. The SWPPP shall identify an effective combination of BMPs to reduce erosion during construction and to prevent erosion during operation. Examples of typical BMPs include:</p> <ul style="list-style-type: none"> a. Erosion control measures such as silt fencing, sand bags, straw bales and mats, and rice straw wattles shall be placed to reduce erosion and capture sediment. Straw used for erosion control shall be new cereal grain straw derived from rice, wheat, or barley; free of mold and noxious weed seed; and neither derived from dry-farmed crops nor previously used for stable bedding. Clearance shall be obtained from the County Agricultural Commissioner before straw obtained from outside the county is delivered to the work site. Monitoring requirements of the newly revised General Construction Permit shall be implemented, and more effective BMPs shall be identified and installed if runoff samples indicate excessive turbidity. b. During construction activities, topsoil shall be removed, stockpiled, and saved for reapplication following completion of construction. The top 6 	<p>Project is consistent with applicable mitigation measures identified in this section. AMM's 9 and 17 are applicable.</p>

	<p>inches shall be salvaged and reapplied to a comparable thickness. Soil material shall be placed in a manner that minimizes compaction and promotes plant reestablishment.</p> <ul style="list-style-type: none"> c. If catch basins are used for sediment capture, the site shall be graded to ensure stormwater runoff flows into the basins, and basins shall be designed for the appropriate storm interval as provided in the General Construction Permit. d. Temporary work areas shall be surfaced with a compacted layer of well-graded gravel. They may be covered with a thin asphalt binder. Where expansive or compressible soils are present in temporary work areas, construction trailers shall be supported with concrete pads or footings. e. Dust control shall conform to all federal, State, and local requirements and may include use of water trucks, street sweepers, or other methods described in the SWPPP. f. Spoils shall be placed in 12-inch-thick loose lifts and compacted to reduce erosion and minimize future subsidence. Placement of peat spoils shall be on agricultural land where possible. Following construction, spoils sites shall be restored to avoid erosion. 	
11-5	<p>In areas where expansive clays exist, a hydrogeological/geotechnical investigation shall be performed by a licensed professional engineer or geologist to identify and quantify the potential for expansion, particularly differential expansion of clayey soils due to leakage and saturation beneath new improvements. Measures could include, but are not limited to, removal and recompaction of problematic expansive soils, soil stabilization, and/or reinforcement of constructed improvements to resist deformation due to expansion of subsurface soils.</p>	<p>N/A</p> <p>The geotechnical investigation performed by Hultgren Tillis Engineers in 2020 did not identify any potential for expansion of clays due to leakage and saturation.</p>
11-6	<ul style="list-style-type: none"> 1. For projects that would result in construction of canals, storage reservoirs and other surface impoundments, project design shall provide for protection from leakage to the subsurface. Measures could include, but are not limited to, rendering concrete less permeable by specifying concrete additives such as bentonite, design of impermeable liner systems, design of leakage collection and recovery systems, and construction of impermeable subsurface cutoff walls. 2. For ecosystem restoration projects that might cause subsurface seepage of nuisance water onto adjacent lands: <ul style="list-style-type: none"> a. Perform seepage monitoring studies by measuring the level of shallow groundwater in the adjacent soils, to evaluate the baseline conditions. Continue monitoring for seepage during and after the project implementation. b. Develop a seepage monitoring plan if subsurface seepage constitutes nuisance water to the adjacent land. c. Implement seepage control measures if adjacent land is not useable, such as installing subsurface agricultural drainage systems to avoid raising water levels into crop root zones. Cutoff walls and pumping 	<p>N/A</p> <p>There are no permanent surface impoundments proposed within the Bank.</p>

	wells can also be used to mitigate for the occurrence of subsurface nuisance water.	
11-7	For projects that would result in construction of levees, surface impoundments and other fill embankments project design shall incorporate fill placement in accordance with local and State regulations and in accordance with the prevailing standards of care for such work. Measures could include, but are not limited to blending of soils most susceptible to landsliding with soils having higher cohesion characteristics, installation of slope stabilization measures, designing top-of-slope berms or v-ditches, terrace drains and other surface runoff control measures, and designing slopes at lower inclinations	N/A There are no permanent surface impoundments proposed within the Bank.
11-8	<p>1. A geotechnical investigation shall be performed and a geotechnical report prepared. The geotechnical report shall include a quantitative analysis to determine whether on-site soils would be suitable for an on-site wastewater treatment system. If it is determined that the soil could not support a conventional on-site treatment system, non- conventional systems shall be analyzed. Potential alternative systems include (SWRCB, 2011, Onsite Wastewater Treatment System Scoping Document. April 4, 2011. Site accessed September 1, 2011. http://www.swrcb.ca.gov/water_issues/programs/owts/index.shtml):</p> <ul style="list-style-type: none"> a. Containment systems that do not generate waste b. Anoxic and anaerobic systems c. Attached and suspended growth aerobic treatment systems d. Natural treatment systems e. Engineered-fill leach fields f. Monitoring control systems 	N/A There is no on-site wastewater treatment proposed for the Bank.
11-9	<p>1. For projects that would result in significant or potentially significant risk to structures due to the presence of highly organic soils, lead agencies shall require geotechnical evaluation prior to construction to identify measures to mitigate organic soils. The following measures may be considered:</p> <ul style="list-style-type: none"> a. Over-excavation and import of suitable fill material b. Structural reinforcement of constructed works to resist deformation c. Construction of structural supports below the depth of highly organic soils into materials with suitable bearing strength 	N/A
Paleontological Resources		
12-1	<p>1. During the project-level analysis, a Paleontological Resources Monitoring and Recovery Plan (PRMRP) shall be developed and implemented for all actions. The PRMRP shall include protocols for paleontological resources monitoring in those areas where sediment with moderate to high paleontological sensitivity would be affected by construction-related excavations. The PRMRP also shall set forth the following procedures:</p>	N/A No paleontological resources are anticipated to be incurred on the site. Excavations will be relatively shallow and in soil that was recently deposited and accreted.

	<ol style="list-style-type: none"> a. Confirming the paleontological sensitivity (high, moderate, or low) of the areas to be impacted through review of project-level geological and geotechnical data b. Determining the qualifications of the paleontologist as established by the Society of Vertebrate Paleontology (SVP) (SVP, 1991. Standard Measures for assessment and mitigation of adverse impacts to nonrenewable paleontological resources. Society of Vertebrate Paleontology News Bulletin 152:2 – 5; SVP, 1995. Assessment and mitigation of adverse impacts to nonrenewable paleontological resources: Standard guidelines. Society of Vertebrate Paleontology News Bulletin 163: 22 – 27; SVP, 1996. Conditions of Receivership for Paleontologic Salvage Collections. Society of Vertebrate Paleontology News Bulletin. Vol. 166, pp. 31 – 32) c. The assessment and recovery of discovered fossil resources d. The preparation and curation of fossil finds <p>The PRMRP would provide guidelines for the establishment of a yearly or biannual monitoring program led by a qualified paleontologist to determine the extent of fossiliferous sediment being exposed and affected by erosion and determine whether paleontological resources are being lost. If loss of scientifically significant paleontological resources can be documented, then a recovery program should be implemented.</p>	
Mineral Resources		
13-1	<ol style="list-style-type: none"> 1. Ensure land use compatibility between existing mineral resource extraction activities and projects, activities or actions that may be implemented as the result of the Proposed Project. 2. Maintain adequate buffer between future projects and designated MRZ-2 sectors. 3. Explore opportunities to classify and designate new MRZ-2 sectors (e.g., in existing MRZ-3 sectors) to ensure that important mineral resources are conserved and continue to be available for future construction needs. 4. Ensure future land use changes within designated mineral resource extraction areas recognize mineral resource extraction as a compatible use. 5. Limit use of construction aggregate to local sources with sufficient capacity to meet both project and future local development needs, to the extent possible. 6. Use recycled aggregate where possible, to decrease the demand for new aggregate. 	MAR completed for Project.
13-2	<ol style="list-style-type: none"> 1. Ensure access is maintained to existing, active mineral resource extraction sites both during and after project construction. 2. Implement recommendations identified in the Division of Oil, Gas, and Geothermal Resources of the State Department of Conservation (DOGGR) construction site well review program (DOC, 2007. Well Review Program: Introduction and Application), such as: <ol style="list-style-type: none"> a. For all future projects, identify all existing natural gas well sites and oil production facilities within or in close proximity to the project area. b. Identify any oil and natural gas well within 100 feet of any navigable body 	MAR completed for Project.

	<p>of water or watercourse perennially covered by water or any officially recognized wildlife preserve as a "critical well" (California Code of Regulations, Title 14, Chapter 4, Article 2, Section 1720(a)(2)(B) and (C)). The State Department of Conservation (DOC) requires that a "critical well" include more stringent blowout prevention equipment than non-critical wells based on pressure testing and rating.</p> <ul style="list-style-type: none"> c. Identify safety measures to prevent unauthorized access to equipment. d. Include safety shut-down devices on oil and natural gas wells and other equipment, as appropriate. e. Notify DOC of new oil and natural gas wells or changes in oil and natural gas well operations or physical conditions, receive written approval from DOC of the changes, and receive written notification of DOC's inspection of new or changed equipment. The approvals will be primarily related to the ability to: (1) protect all subsurface hydrocarbons and fresh water, (2) protect the environment, (3) use adequate blowout prevention equipment, and (4) use approved drilling and cementing techniques. f. If any plugged/abandoned or unrecorded oil and natural gas wells are uncovered during construction, the DOC should be notified, the wells should undergo remedial well plugging actions, and no structures should be constructed over the abandoned oil and natural gas wells. g. If oil and natural gas wells are under the jurisdiction or a lease from the California State Lands Commission, project proponents should provide additional plans and environmental documentation as required prior to modification of the oil or natural gas wells. 	
Hazards and Hazardous Materials		
14-1	<ol style="list-style-type: none"> 1. Refueling and maintenance of vehicles and equipment to occur only in designated areas that are either bermed or covered with concrete, asphalt, or other impervious surfaces to control potential spills. 2. Refueling of vehicles and equipment to occur only when employees are present. 3. Vehicle and equipment service and maintenance conducted only by authorized personnel. 4. Refueling conducted only with approved pumps, hoses, and nozzles. 5. Catch-pans placed under equipment to catch potential spills during servicing. 6. All disconnected hoses placed in containers to collect residual fuel from the hoses. 7. Vehicle engines shut down during refueling. 8. No smoking, open flames, or welding allowed in refueling or service areas. 9. Refueling performed away from bodies of water to prevent contamination of water in the event of a leak or spill. 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's 11, 12, and 19 are applicable.</p>

	<ol style="list-style-type: none"> 10. When refueling is completed, the service truck to leave the project site. 11. Service trucks provided with fire extinguishers and spill containment equipment, such as absorbents. 12. Should a spill contaminate soil, the soil shall be placed in containers and disposed of as appropriate. All containers used to store hazardous materials to be inspected at least once per week for signs of leaking or failure. All maintenance and refueling areas to be inspected monthly. Results of inspections to be recorded in a logbook maintained onsite. 13. Provision of an automatic sprinkler system for indoor hazardous material storage areas. 14. Provision of an exhaust system for indoor hazardous material storage areas. 15. Separation of incompatible materials by isolating them from each other with a noncombustible partition. 16. Spill control in all storage, handling, and dispensing areas. 17. Separate secondary containment for each chemical storage system. The secondary containment is required to hold the entire contents of the tank plus the volume of water for the fire suppression system that could be used for fire protection for a period of 20 minutes in the event of a catastrophic spill. <p>In the unlikely event of a spill, the spill shall be reported to the appropriate regulatory agencies and contaminated soil shall be cleaned, treated, and/or removed in accordance with regulatory requirements. Small spills shall be contained and cleaned up immediately by trained, onsite personnel. Larger spills shall be reported via emergency phone numbers to obtain help from offsite containment and cleanup crews. All personnel working on the project during the construction phase shall be trained in handling hazardous materials and the dangers associated with hazardous materials. An onsite health and safety person shall be designated to implement health and safety guidelines and to contact emergency response personnel and the local hospital, if necessary.</p> <p>If there is a large spill from a service or refueling truck, contaminated soil shall be placed into barrels or trucks by service personnel for offsite disposal at an appropriate facility in accordance with law. If a spill involves hazardous materials quantities equal to or greater than the specific Reportable Quantities as required by regulatory agencies (42 gallons for petroleum products), all federal, State, and local reporting requirements shall be followed. In the event of a fire or injury, the local fire department shall be called.</p>	
14-2	<ol style="list-style-type: none"> 1. To reduce the risk due to increased exposure to materials that could be released during soil disturbance, worker training programs and breathing apparatus shall be provided. Monitoring programs shall be implemented as areas are excavated to determine the potential for exposure to soil organisms or other constituents. 2. To reduce risk to the community due to increased exposure to materials that could be released during soil disturbance, public outreach programs shall be conducted to educate the public of the types of construction activities and risks that could occur. In areas near extreme hazards, such as construction in areas with identified petroleum-product pipelines or soils with high concentrations of petroleum products, warning 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM 5 is applicable.</p>

	sirens shall be used at construction sites to immediately notify workers and residents. Emergency procedures shall be included in the education and outreach programs for the workers and the community.	
14-3	<ol style="list-style-type: none"> 1. Freshwater habitat management to include water-control-structure management, vegetation management, mosquito predator management, drainage improvements, and other best management practices, and coordination with the DFW and local mosquito and vector control agencies regarding these strategies and specific techniques to help minimize mosquito production. 2. Maintenance of permanent ponds that increase the diversity of waterfowl yet decrease the introduction of vectors through constant circulation of water, vegetation control, and periodic draining of ponds. 3. Tidal management focused on mosquito problems arising from the residual tidal and floodwaters remaining in depressions and cracked ground (Solano County Mosquito Abatement District (SCMAD), 2011. Site accessed February 6, 2011. http://www.solanomosquito.com/). 4. Avoidance of ponding in tidal marsh habitat or in areas within the waterside of setback levees. Design of ecosystem restoration areas, waterfowl hunting areas, setback levees, parks, canals, and surface water storage facilities to minimize standing water, or use of other methods such as mosquito fish to reduce mosquito breeding. 	The project has been specifically designed to avoid ponding and the potential of stranding fish at low tide. This design will also discourage stagnant water and mosquito reproduction. The constant circulation of water through the project area will help to prevent conditions that promote mosquito production.
14-4	<ol style="list-style-type: none"> 1. Avoid creating hazardous wildlife attractants within a distance of 10,000 feet of an Airport Operations Area. 2. Maintain a distance of 5 statute miles between the farthest edge of the Airport Operations Area and hazardous wildlife attractants. 	N/A There are no Airport Operations Areas within or near the Bank.
14-5	Prepare and implement a fire management plan to minimize potential for wildland fires.	Project is consistent with applicable mitigation measures identified in this section. AMM 14 is applicable.
Noise		
15-1	<ol style="list-style-type: none"> 1. Limit the hours of operation at noise-generation sources located near or adjacent to noise-sensitive areas, wherever practicable, to reduce the level of exposure to meet applicable local standards. 2. Locate construction equipment away from sensitive receptors, to the extent feasible, to reduce noise levels below applicable local standards. 3. Maintain construction equipment to manufacturers' recommended specifications, and equip all construction vehicles and equipment with appropriate mufflers and other approved noise-control devices. 4. Limit idling of construction equipment to the extent feasible to reduce the time that noise is emitted. 5. Conduct individual traffic noise analysis of identified haul routes and provide 	N/A Construction equipment will comply with Noise regulations and time ordinances. There are no new proposed noise-generating aspects of the Bank, and there are no sensitive receptors near the Bank.

	<p>mitigation, such as reduced speed limits, at locations where noise standards cannot be maintained for sensitive receptors.</p> <ol style="list-style-type: none"> 6. Incorporate use of temporary noise barriers, such as acoustical panel systems, between construction activities and sensitive receptors if it is concluded that they would be effective in reducing noise exposure to sensitive receptors. 7. Near sensitive receptors, avoid or minimize use of construction equipment known to generate high levels of groundborne vibration (for example, pile drivers). 	
15-2	<ol style="list-style-type: none"> 1. Conduct a preliminary groundborne vibration analysis report to determine future construction-related groundborne vibration levels based on, but not limited to, a detailed equipment list, hours of operation and distances to sensitive receptors located within 500 feet of project sites. 2. Provided that future groundborne vibration results in significant impacts at sensitive receptors, the following measures shall be implemented: <ol style="list-style-type: none"> a. Designate a complaint coordinator and post this person's contact information in a location near construction areas where it is clearly visible to the nearby receptors most likely to be affected. The coordinator will manage complaints and concerns resulting from activities that cause vibrations. The severity of the vibration concern should be assessed by the coordinator and, if necessary, evaluated by a qualified noise and vibration control expert. b. Vibration monitoring will be conducted before and during vibration generating operations occurring within 100 feet of historic structures. Every attempt will be made to limit construction-generated vibration levels during pile driving and other groundborne noise and vibration-generating activities in the vicinity of the historic structures in accordance with recommendations of the appropriate agency with authority. c. Adjacent historic features will be covered or temporarily shored, as necessary, for protection from vibrations, in consultation with the appropriate cultural resources authority. d. Pile driving required within a 50-foot radius of residences will use alternative installation methods where possible (e.g., pile cushioning, jetting, predrilling, cast-in-place systems, resonance-free vibratory pile drivers). This would reduce the number and amplitude of blows required to seat the pile. e. Pile-driving activities conducted within 285 feet of sensitive receptors will occur during daytime hours to avoid sleep disturbance during evening and nighttime hours. 	<p>N/A</p> <p>There are no sensitive receptors located within 500 feet of the project site.</p>
15-3	<ol style="list-style-type: none"> 1. Identify noise-sensitive receptors in the vicinity of project activities and design projects to minimize exposure of sensitive receptors to long-term, operational noise sources (for example, water pumps) to reduce noise levels below applicable local standards. 	<p>N/A</p> <p>Construction equipment will comply with Noise regulations and time ordinances. There are no new proposed noise-</p>

	<ol style="list-style-type: none"> 2. Conduct a preliminary noise analysis report to determine future operation-related noise and distances to sensitive receptors. Provided that future operation-related noise results in significant at sensitive receptors, incorporate into construction design measures such as a structure encasing the new noise generating infrastructure. Materials (masonry brick, metal shed, wood) used to house the infrastructure will be of solid construction and void of gaps at the ground, roof line, and joints. All vents will include acoustically rated louvers. 3. Locate dog parks no closer than 200 feet from the nearest residential property line and at least 75 feet from habitat for noise- sensitive wildlife species. 4. Locate parking lots no closer than 65 feet from the nearest residential property line and at least 25 feet from habitat for noise- sensitive wildlife species unless a detailed noise study is conducted that determines that placement of parking lots closer than the distances specified above will not result in noise levels that exceed 67 dBA at the nearest residential property line or 60 dBA from noise-sensitive habitat, or appropriate mitigation measures, including permanent noise barriers, can be incorporated to reduce noise levels to equal the ambient noise level or referenced thresholds for residential property and noise sensitive habitat. 5. Locate playing fields no closer than located at least 125 feet from the nearest residential property line and at least 50 feet from habitat for noise-sensitive wildlife species unless a detailed noise study is conducted that determines that placement of playing fields closer than the distances specified above will not result in noise levels that exceed 67 dBA at the nearest residential property line or 60 dBA from noise-sensitive habitat, or appropriate mitigation measures, including permanent noise barriers, can be incorporated to reduce noise levels to equal the ambient noise level or referenced thresholds for residential property and noise sensitive habitat. 	generating aspects of the Bank, and there are no sensitive receptors near the Bank.
Population and Housing		
16-1	<ol style="list-style-type: none"> 1. Require compliance with applicable local policies and regulations regarding the provision of affordable housing. 2. Construct replacement housing if existing housing will be displaced. 	N/A The Bank does not remove any housing developments or propose any new housing developments.
Public Service		
17-1	<ol style="list-style-type: none"> 1. Establish construction fee schedules by local agencies for the new or modified facilities to fund additional emergency services potentially required during construction. If emergency services are not needed, a portion of the fees could be refunded. 2. Develop worker training programs to reduce construction and operations risks. 3. Develop appropriate emergency access routes and equipment for both land and water access, if applicable (such as in the Delta), that provides for adequate response time. If use of an existing emergency access route becomes limited due to new or modified facilities, additional routes or placement of duplicate equipment on each side of the route limitation could be considered. 	Project is consistent with applicable mitigation measures identified in this section. AMM's 19 and 20 are applicable.

	<ol style="list-style-type: none"> 4. Develop traffic plans and emergency response plans for construction and operations phases of new facilities. 5. Develop all facilities, including parks and ecosystem restoration areas, in accordance with applicable fire codes and regulations, and with adequate fire equipment access routes, occupancy limitations, and fire-protection equipment. 	
Recreation		
18-1	<ol style="list-style-type: none"> 1. If the substantial impairment, degradation, or elimination of recreational facilities occurs, replacement facilities of equal capacity and quality with ongoing funding provided for maintenance of these facilities. 2. If degradation or impairment of recreational facilities, settings, and activities occur from implementation of water use efficient practices and water conservation measures at recreational areas, the park and recreation areas shall be redeveloped with drought-tolerant plant materials, water efficient irrigation systems, and synthetic turf substitutes where appropriate, in such a way as to retain recreational facilities and use areas. 3. If the volume of water exported from the Delta declines over multiple years, the lead agencies that implement local water supplies may be unable to develop a long-term replacement water 4. supply for the south-of-Delta surface water reservoirs with recreation uses. At these sites, facilities must be modified (including access facilities, as necessary) to accommodate lower water elevations or more frequent fluctuations in water elevations that could occur more frequently in the Proposed Project than under existing conditions. 	<p>N/A</p> <p>There are no recreational facilities impacted by the development of the Bank.</p>
18-2	<ol style="list-style-type: none"> 1. If substantial temporary or permanent impairment, degradation, or elimination of recreational facilities causes users to be directed towards other existing facilities, lead agencies shall coordinate with impacted public and private recreation providers to direct displaced users to under-utilized recreational facilities. 2. Lead agencies shall provide additional operations and maintenance of existing facilities in order to prevent deterioration of these facilities. 3. If possible, lead agencies shall provide temporary replacement facilities. 4. If the increase in use is temporary, once use is decreased back to existing conditions, degraded facilities shall be rehabilitated or restored. 5. Where impacts to existing facilities are unavoidable, compensate for impacts through mitigation, restoration, or preservation off-site or creation of additional permanent new replacement facilities. 	<p>N/A</p> <p>There are no recreational facilities impacted by the development of the Bank.</p>
18-3	<ol style="list-style-type: none"> 1. Projects shall be sited in areas that would have minimal adverse physical effect on the environment. 2. Where impacts to the environment are unavoidable, compensate for impacts through mitigation, restoration, or preservation off-site or creation of additional permanent new replacement facilities. 	<p>N/A</p> <p>There are no facilities impacted by the development of the Bank.</p>
Traffic and Transportation		

19-1	<ol style="list-style-type: none"> 1. Avoid modifications to federal, State, and county highways, local roadways, and bridges that may reduce vehicle capacity, to the extent feasible. 2. Develop and implement a traffic control plan to reduce effects of roadway construction activities, including full and partial lane closures, bicycle and pedestrian facility closures, and reduced access to adjacent properties. Minimize lane closures during morning and evening peak hours. Limit lane closures near the affected segment. Reroute bicycle and pedestrian access around the project area. Prevent bicyclists and pedestrians from entering the work area. 3. As part of the traffic control plan, identify specific project-vehicle access routes that would avoid additional traffic in residential areas or would adversely affect other sensitive land uses, where feasible. 4. Install roadway status signs at strategic locations in the Delta to inform the public of roadway closures and limits to ingress to/egress from Delta Islands. The signs shall include maps showing the relative locations of road closures and access restrictions to other Delta features. 5. For project operations that increase traffic, prepare a traffic study. Determine haul routes that would be used. Evaluate the levels of service at affected intersections and road segments during the peak a.m. and peak p.m. periods. Model changes in traffic with project traffic. If the level of service is maintained at levels acceptable to the appropriate agency, then no additional mitigation is required. If project traffic causes an intersection or road segment to perform below the minimum level of service standard, then select an alternate route for project traffic or schedule project trips for non-peak-hour periods. If alternate routes are not feasible, then design and construct facility improvements to intersections or road segments to maintain the acceptable level of service. 6. During the planning and analysis of site-specific actions, coordinate with Caltrans and/or other local agencies with jurisdiction over transportation system features for the purpose of minimizing impacts on bridges, roadways, culverts, or other features that may be affected. Agencies responsible for constructing and maintaining levees on which a public roadway may be located shall also be consulted to ensure consistency with levee design criteria. 7. For roads that will be flooded during floodplain operation, prepare and implement vehicular traffic detour planning as necessary. Provide convenient and parallel vehicular traffic detours for routes closed because of inundation. A detour plan shall be prepared and implemented in accordance with current Caltrans Standard Plans and Specifications. (A temporary crossing structure, for example a Bailey Bridge, may be used to maintain circulation and avoid a detour plan.) The detour plan shall be implemented before roadway inundation. The detour plan will include an assessment of existing roadway conditions, whether paved or unpaved, and provisions for repair and maintenance if the roadway conditions are substantially degraded from increased use. After the detour route is identified and before flood flows are released that would overtop roads, the 	<p>N/A</p> <p>There are no proposed roadway activities associated with the development of the Bank.</p>
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	<p>condition of the detour road surface will be assessed and documented. The documentation will be submitted to the local agency responsible for maintenance of the road. After the detour is no longer needed, the condition of the road surface will be assessed and documented. The documentation will identify substantial changes in the condition of the road surface, such as potholing or rutting. Repair and maintenance actions needed to restore the road surface to predetour conditions will be identified. In coordination with the local maintenance agency, the repair and maintenance actions may be conducted by the agency conducting the floodplain operation or by the local maintenance agency to be proportionately reimbursed by the flood management authority.</p> <p>The detour plan will prioritize paved roads for use as detour routes. If use of paved roadway detours is not feasible during flood flow road inundation periods, the detour plan will require that visible dust emissions from unpaved detour routes will be limited to the percent opacity indicated by the appropriate air pollution control district. The following dust control measures may be used to stabilize unpaved roadways:</p> <ul style="list-style-type: none"> • Watering • Uniform layer of washed gravel • Paving <p>Any other method that can be demonstrated to the satisfaction of the appropriate air pollution control district that effectively limits visible dust emission to the local percent opacity standard and meets the conditions of a stabilized unpaved road.</p> <p>8. Traffic impact reports shall be prepared that meet the applicable agencies' standards to assess potential impacts on appropriate street segments and intersections. The traffic impact reports shall identify impacts that exceed the agencies' guidelines for significance and identify appropriate mitigation. Acceptable mitigation measures may include:</p> <ul style="list-style-type: none"> • Turn restrictions • Roadway widening to add lanes or shoulders • Redesign of freeway on- and off-ramps • Median construction/modification to restrict access • Flaring of intersections to add turn lanes • Provision of passing lanes or turnouts • Acceleration and deceleration lanes • Removal of obstructions • Roundabouts • Restriping to add lanes with or without parking removal and restrictions • Protected left-turn pockets or free right-turn lanes • Parking restrictions, daily or during peak hours 	
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	<ul style="list-style-type: none"> • Fair share contributions to approved projects identified in the agency's Capital Improvement Plan • Fair share contributions to traffic signals identified in the agency's traffic signal plan. <ol style="list-style-type: none"> 9. Prepare and implement a waterway traffic control plan to ensure safe and efficient vessel navigation during construction in waterways. The plan shall identify vessel traffic control measures to minimize congestion and navigation hazards to the extent feasible. Construction areas in the waterway will be barricaded or guarded by readily visible barriers or other effective means to warn boaters of their presence and restrict access. Warning devices and signage will be consistent with the California Uniform State Waterway Marking System and effective during non-daylight hours and periods of dense fog. 10. Where temporary partial channel closure is necessary, a temporary channel closure plan shall be developed. The waterway closure plan will identify and implement alternate detour routing and procedures for notifying boaters of construction activities and partial closures, including coordination with the U.S. Coast Guard, local boating organizations and marinas. 11. To the extent feasible, ensure that safe boat access to public launch and docking facilities, businesses, and residences is maintained. 12. Coordinate with transit system operators to establish appropriate alternate transit system routes to be rerouted during construction activities, as appropriate. 13. Boat passage facilities shall be provided as an integral component of operable gate facilities, when feasible. Boat passage facilities shall be designed to provide uninterrupted boat passage when gate are in the "up" position. Floating docks with mooring bits shall be provided along the shoreline on both sides of the boat passage facility for boaters to use while they await passage. Floating barriers will guide boats into the passage facility chambers. 14. Implement a program to provide boater education on procedures for waiting at and using the boat passage facility. 15. Minimize impacts on bicycle and pedestrian circulation where feasible by avoiding impacts, minimizing closure of paths, and providing for temporary or permanent relocation of the facility to the extent feasible. Consult with the appropriate public works department to determine the most feasible alignment for facility relocation. 	
19-2	<ol style="list-style-type: none"> 1. Develop and implement a program that will include procedures for routine inspections and emergency facility operation to allow safe navigation should the facility become damaged or malfunction. The program will include the following specific components: <ol style="list-style-type: none"> a. Routine inspections and correction procedures to ensure that facility safety features are in good working order. b. Routine inspections and correction procedures for navigational hazards around facilities, including floating or submerged debris and the formation 	<p>N/A</p> <p>There are no facilities proposed with the development of the Bank.</p>

	<p>of shoals.</p> <ol style="list-style-type: none"> Contingency and emergency operating procedures to address the possibility that a boat colliding with the flow control facilities will damage the facilities or otherwise render them unable to operate as engineered, and provisions to allow safe navigation. 	
19-3	<ol style="list-style-type: none"> Coordinate with responsible local agencies to establish appropriate emergency routes during construction activities and before existing emergency routes are reclassified to a nonemergency route use. Phase construction activities, and use multiple routes to and from offsite locations to minimize the daily amount of traffic on individual roadways. Post warnings about the potential presence of slow-moving vehicles. Use traffic-control personnel when appropriate. Place and maintain barriers, and install traffic-control devices necessary for safety, as specified in Caltrans' Manual of Traffic Controls for Construction and Maintenance Work Zones and in accordance with city and county requirements. Notify appropriate emergency service providers of project construction throughout the construction period to ensure that emergency access through construction areas is maintained. 	Appropriate consideration will be given to the coordination of construction activities with local traffic. Signs and/or cones may be utilized to provide a visual notification to drivers that trucks may be entering the highway.
19-4	Implement Mitigation Measure 19-1, above. The portion of the measure that addresses minimizing impacts on bicycle and pedestrian circulation also would apply to Impact 19-4a through e.	<p>N/A</p> <p>There would be no impacts to bicycle and pedestrian circulation as a result of the construction of the Bank.</p>
Utilities and Service Systems		
20-1	<ol style="list-style-type: none"> Establish construction debris disposal fee schedules to promote recycling and minimize solid waste. Limit disposal of construction debris and other solid waste at local landfills if the landfills have limited capacity. Dispose of all construction debris at landfills and disposal facilities that are licensed for the type of wastes to be disposed of. If the landfills and disposal facilities are not located near future construction sites, include analysis of transportation of solid waste in future environmental documentation for specific projects. Require construction contractors to prepare construction debris management plans and require reuse or recycling of construction debris. Develop project-specific solid waste plans to maximize practices that reduce and recycle solid waste and sludge generated by water, wastewater, and stormwater treatment facilities; and collect, recycle, or compost litter and solid waste generated at new facilities designed for visitor use (such as parks and visitor centers). 	Project is consistent with applicable mitigation measures identified in this section. AMM 15 is applicable.
20-2	<ol style="list-style-type: none"> Relocate or modify existing water, wastewater, and stormwater facilities or electricity transmission systems in a manner that does not affect current operational reliability to existing and projected users. 	<p>N/A</p> <p>The removal of existing water and electrical infrastructure associated with</p>

	<ol style="list-style-type: none"> 2. Coordinate utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities. 3. Verify utility locations through field surveys and services such as Underground Service Alert. 	the development of the Bank will not impact existing or projected users.
Climate Change and Greenhouse Gas Emissions		
21-1	<ol style="list-style-type: none"> A. Implement GHG mitigation measures listed in the most recent California Air Pollution Control Officers Association (CAPCOA), BAAQMD, and other air district guidance documents (e.g., CAPCOA, 2010. Quantifying Greenhouse Gas Mitigation Measures. A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures. Sacramento, California. August, p. 210-232; BAAQMD, 2011. California Environmental Quality Act Air Quality Guidelines. San Francisco, California. Updated May 2011, p. 8-6). Current versions of such guidance documents list the following for construction: <ol style="list-style-type: none"> 1. Use alternative fuels for construction equipment. 2. Use electric and hybrid construction equipment. 3. Limit construction equipment idling beyond regulatory requirements. 4. Institute a heavy-duty off-road vehicle plan. 5. Implement a construction vehicle inventory tracking system. 6. Use local building materials for at least ten percent of total materials. 7. Recycling or reusing at least 50 percent of construction waste or demolition materials. B. In addition, the California Attorney General's Office has developed a list of various measures that may reduce GHG emissions at the individual project level. A selected list of those proposed measures that could be applied to DWR projects was appended to the DWR guidance document, titled Guidance for Quantifying Greenhouse Gas Emissions and Determining the Significance of their Contribution to Global Climate Change for CEQA Purposes (DWR, 2010. Guidance for Quantifying Greenhouse Gas Emissions and Determining the Significance of their Contribution to Global Climate Change for CEQA Purposes. California Department of Water Resources Internal Guidance Document. CEQA Climate Change Committee. Sacramento, CA. January, Appendix B). As appropriate, the measures can be included as design features of a project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The measures are examples; the list is not intended to be exhaustive. The following may serve as BMPs to be considered and implemented (as applicable) during design, construction, operation, and maintenance of project facilities. 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>AMM's 11 and 12 are applicable during construction. Otherwise, the Bank does not propose the use of any energy once construction is completed.</p>

	<p>Efficiency</p> <ol style="list-style-type: none"> 1. Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use. 2. Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings. 4. Install light colored “cool” roofs, cool pavements, and strategically Install energy efficient heating and cooling systems, appliances and equipment, and control systems. 5. Install light-emitting diodes for street and other outdoor lighting. 6. Limit the hours of operation of outdoor lighting. 7. Provide education on energy efficiency. <p>Renewable Energy</p> <ol style="list-style-type: none"> 1. Install solar and wind power systems and energy-efficient heating ventilation and air conditioning. 2. Install solar panels over parking areas. 3. Use combined heat and power in appropriate applications. <p>Water Conservation and Efficiency</p> <ol style="list-style-type: none"> 1. Create water-efficient landscapes. 2. Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. 3. Use reclaimed water for landscape irrigation. Install the infrastructure to deliver and use reclaimed water. 4. Design buildings to be water-efficient. Install water-efficient fixtures and appliances. 5. Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff. 6. Restrict the use of water for cleaning outdoor surfaces and vehicles. 7. Implement low-impact development practices that maintain the existing hydrologic character of the site to manage stormwater and protect the environment. (Retaining stormwater runoff on-site can drastically reduce the need for energy-intensive imported water at the site.) 8. Devise a comprehensive water conservation strategy appropriate for the project and location. The strategy may include many of the specific items listed above, plus other innovative measures that are appropriate to the specific project. 9. Provide education about water conservation. <p>Solid Waste Measures</p>	
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	<ol style="list-style-type: none"> 1. Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). 2. Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas. 3. Recover by-product methane to generate electricity. <p>Transportation and Motor Vehicles</p> <ol style="list-style-type: none"> 1. Limit idling time for commercial vehicles, including delivery and construction vehicles. 2. Use low or zero-emission vehicles, including construction vehicles. 3. Institute a heavy-duty off-road vehicle plan and a construction vehicle inventory tracking system for construction projects. 4. Promote ride sharing. 5. Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations). 6. Increase the cost of driving and parking private vehicles by, e.g., imposing tolls and parking fees. 7. Provide shuttle service to public transit/[work sites]. 8. Provide information on all options for individuals and businesses to reduce transportation-related emissions. <p>Carbon Offsets</p> <ol style="list-style-type: none"> 1. If, after analyzing and requiring all reasonable and feasible on- site mitigation measures for avoiding or reducing greenhouse gas-related impacts, the lead agency determines that additional mitigation is required, the agency may consider additional off-site mitigation. The project proponent could, for example, fund off-site mitigation projects (e.g., alternative energy projects, or energy or water audits for existing projects) that will reduce carbon emissions, conduct an audit of its other existing operations and agree to retrofit, or purchase carbon “credits” from another entity that will undertake mitigation. 2. The topic of offsets can be complicated, and a full discussion is outside the scope of this summary document. Issues that the lead agency should consider include: <ol style="list-style-type: none"> a. The location of the off-site mitigation. (If the off-site mitigation is far from the project, any additional, non- climate related benefits of the mitigation will be lost to the local community.) b. Whether the emissions reductions from off-site mitigation can be quantified and verified. c. Whether the mitigation ratio should be greater than 1:1 to reflect any uncertainty about the effectiveness of the offset. <p>SmartWay Truck Efficiency</p>	
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	<p>The strategy involves requiring existing trucks/trailers to be retrofitted with the best available "SmartWay Transport" and/or ARB approved technology. Technologies that reduce GHG emissions from trucks may include devices that reduce aerodynamic drag and rolling resistance. Aerodynamic drag may be reduced using devices such as cab roof fairings, cab side gap fairings, cab side skirts, and on the trailer side, trailer side skirts, gap fairings, and trailer tail. Rolling resistance may be reduced using single wide tires or low-rolling resistance tires and automatic tire inflation systems on both the tractor and the trailer.</p> <p>Tire Inflation Program</p> <p>The strategy involves actions to ensure that vehicle tire pressure is maintained to manufacturer specifications.</p> <p>Blended Cements</p> <p>The strategy to reduce CO2 emissions involves the addition of blending materials such as limestone, fly ash, natural pozzolan and/or slag to replace some of the clinker in the production of Portland cement.</p> <p>Anti-idling Enforcement</p> <p>The strategy guarantees emission reductions as claimed by increasing compliance with anti-idling rules, thereby reducing the amount of fuel burned through unnecessary idling. Measures may include enhanced field enforcement of anti-idling regulations, increased penalties for violations of anti-idling regulations, and restriction on registrations of heavy-duty diesel vehicles with uncorrected idling violations.</p>	
21-2	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design for flood protection of the facilities constructed along waterways. Prepare the study in accordance with applicable standards of Federal Emergency Management Agency (FEMA), USACE, DWR, Central Valley Flood Protection Board, San Francisco Bay Conservation and Development Commission (BCDC), as well as the local reclamation districts and flood control agencies and the counties and cities. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, Central Valley Flood Protection Board, and BCDC. 2. Design intakes/diversions and outfalls to be operated at multiple surface water elevations between existing conditions and maximum projected surface water elevations during a high flow event with sea level rise for the life of the facility. 3. Prepare a hydrogeologic study that would assess long-term groundwater recharge and safe yield of wells and wellfields under a sustainable groundwater management plan. If the wells can be used to a greater degree in some years in a manner that would support the sustainable groundwater management plan to avoid long-term groundwater overdraft, wells could be drilled to deeper depths than would be required under existing conditions. 	A hydraulic study was completed by MBK Engineers.

21-3	<p>Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design for ecosystem habitat restoration, including adjacent areas that would allow for migration of the habitat to higher elevations as the surface water elevations increase. Prepare the study in accordance with applicable standards of FEMA, USACE, DWR, and San Francisco Bay Delta Conservation and Development Commission (BCDC). Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, Central Valley Flood Protection Board, and BCDC.</p>	
21-4	<ol style="list-style-type: none"> 1. Prepare a drainage or hydrology and hydraulics study that would assess the need and provide a basis for the design for projects that reduce risks of floods in the Delta. Prepare the study in accordance with applicable standards of FEMA, USACE, DWR, and BCDC. Design subsequent mitigation measures in accordance with the final study and with the applicable standards of FEMA, USACE, DWR, Central Valley Flood Protection Board, and BCDC. 2. Based on the results of the drainage or hydrologic and hydraulic study, arrange the length of flood management facilities in the direction of the floodplain flow to maximize surface flows under flood conditions. 3. Install setback levees or bypass channels to maintain channel capacity and to mitigate hydraulic impacts of high flow events and higher surface water elevations due to climate change and sea level rise. 4. Channel modifications for restoration actions would be required to be implemented to maintain or improve flood management functions and would be coordinated with the USACE, DWR, Central Valley Flood Protection Board, BCDC, and other flood control agencies to assess the desirability and feasibility for channel modifications. To the extent consistent with floodplain land uses and flood control requirements, if applicable, woody riparian vegetation would be allowed to naturally establish. 	<p>A hydraulic study was completed by MBK Engineers to aid the design of the project. Breach and channel dimensions were primarily determined through hydraulic modeling.</p>

