

Mitigation Measures and Project Consistency with the Delta Plan MMRP – San Joaquin River Basin, Lower San Joaquin River Reach

TS_30_L Levee Improvement Project (TS_30_L or Project)

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

Delta Plan Mitigation Measure #	Delta Plan Mitigation Measure	TS_30_L Project Consistency
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"> • 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. • All concrete washing and spoils dumping shall occur in a designated location. • Construction stockpiles shall be covered in order to prevent blowoff or runoff during weather events. • Severe weather event erosion control materials and devices shall be stored onsite for use as needed. • 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 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> <p>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.</p> <p>6. Apply bank stabilization BMPs, as needed, for any in-channel disturbance, such as:</p> <ul style="list-style-type: none"> • A 100-foot vegetative or engineered buffer shall be maintained between the construction zone and surface water body. • 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>TS_30_L is consistent with applicable mitigation measures identified in this section.</p> <p>1,2. The USACE will be responsibility for ensuring implementation of Mitigation Measure 3.2.6-1: Water Quality Avoidance and Minimization Measures. Under this measure, the contractor would prepare a spill control plan and a SWPPP. These plans will cover issues such as appropriate measures for handling and disposing of concrete and concrete washout, implementing erosion control measures as described in the Regional Board Erosion and Sediment Control Field Manual.</p> <p>3. The extent of impervious surfaces from this project is minimal. A levee road surfaced with a triple chip seal over a 6-inch-thick aggregate base would be installed. A SWPPP would be implemented during construction.</p> <p>4. N/A. The project is not expected to affect sediment contaminant bioavailability of selenium or methylmercury.</p> <p>5, 6. Given the location of the TS_30_L levee, the construction work associated with the levee improvement work would not affect in-river sediment. The habitat restoration and enhancement work to occur on the SJR West Site would occur on the landward side of the exterior levee, again minimizing any potential to directly or indirectly affect sediment in the San Joaquin River channel.</p>
3-2	<p>7. Prior to construction, a survey should be made of all wells located adjacent to the construction site to determine 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:</p> <ul style="list-style-type: none"> • Install sheet piles to reduce the area influenced by shallow groundwater level declines. • 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. • 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 not feasible, a new, deeper, replacement well shall be installed for groundwater production. 	<p>The cutoff walls should not affect the utility of existing or future water supply wells. Dewatering may be necessary depending on construction timing and water levels. If required, a dewatering plan will be developed by the contractor and submitted to the Regional Board. The contractor shall implement the measures below.</p> <p>1. All work performed in-water shall be completed in a manner that meets the water quality objectives to ensure the protection of beneficial uses as specified in the Basin Plan</p> <p>2. All dewatering and diversion methods shall be installed such that natural flow is maintained upstream and downstream of the Project area.</p> <p>3. Any temporary dams or diversion shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the Project area.</p> <p>4. Disturbance of protected riparian vegetation shall be limited or avoided entirely when feasible.</p>
Biological Resources		
4-1	<p>1. Avoid, minimize, and compensate for reduction in area and/or habitat quality of sensitive natural communities, including wetlands, by doing the following:</p> <ul style="list-style-type: none"> • Selecting project site(s) that would avoid sensitive 	<p>TS_30_L is consistent with applicable mitigation measures identified in this section.</p> <p>1. The project site was selected because of the importance to improve the existing levee to increase the level of public safety for the local community. As such, it was not possible to entirely avoid all impacts to sensitive biological</p>

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	<p>natural communities, including jurisdictional wetlands and other waters, vernal pools, alkali seasonal wetlands, riparian habitats, and inland dune scrub.</p> <ul style="list-style-type: none"> • Design, to the extent practicable, project elements to avoid effects on sensitive natural communities. • 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. • 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). <p>2. Implement advanced mitigation planning for ecosystem restoration prior to construction.</p> <p>3. Implement construction best management practices, including:</p> <ul style="list-style-type: none"> • Developing and implementing a Stormwater Pollution Prevention Plan (SWPPP). • Minimizing soil disturbance, erosion, and sediment runoff from project site. • Avoiding and minimizing contaminant spills. • Minimizing visual and noise disturbance from construction activities. • Conducting biological construction monitoring to ensure that implemented BMPs are effective. <p>4. Restore areas temporarily affected by construction activities, including:</p> <ul style="list-style-type: none"> • Preparing restoration plan for temporary impacts sites for review by resource agencies. • Minimizing soil disturbance and stockpiling topsoil for later use in any areas to be graded. • Decompacting or amending soil if necessary before planting and use native species for revegetation. • Restoring natural communities with similar or improved function 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"> • Conserve oak woodlands, through the use of conservation easements. • Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees. • 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"> • Nonnative species eradication methods (if eradication is feasible) • Nonnative species management methods • Early detection methods • Notification requirements • Best management practices for preconstruction, construction, and post construction periods • Monitoring, remedial actions and reporting requirements • 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 	<p>resources. Nonetheless, the project proponents designed the project to ensure any effects to existing potentially jurisdictional waters and riparian habitat were avoided to the extent feasible. Furthermore, with implementation of the proposed compensatory restoration on the SJR West Site, the project will have a net improvement in the extent of freshwater wetlands and riparian habitat.</p> <p>1,2. No net loss/unavoidable impacts: The Project will result in improvements increases in ecosystem function and result in an increase in extent of freshwater wetlands and riparian forest habitat. The mitigation project on the SJR West Site will occur concurrently or in advance of the levee improvement work at TS_30_L; i.e., there will not be deferred mitigation for any conversion of sensitive biological resources associated with this project.</p> <p>3. As specified under Mitigation Measure 3.2.6-1: Water Quality Avoidance and Minimization, USACE will ensure use of BMPs for sediment control during construction and will have the contractor prepare a SWPPP, as required by the State Water Board.</p> <p>4. After completion of construction activities, the temporary facilities will be removed and these areas of the Project site would be restored to pre-project conditions. Site restoration activities for areas disturbed by construction activities, including borrow areas and staging areas, will include a combination of regrading, reseeding, constructing permanent diversion ditches, using straw wattles and bales, and applying straw mulch and other measures deemed appropriate. Use of the 9-acre northern staging/stockpile area would involve ceasing irrigation (i.e., temporary fallowing) of a rice field to accommodate material and equipment storage and would not involve grading or permanent modifications. The staging/stockpile areas used for TS_30_L levee site improvements would be restored to pre-project conditions and irrigation and farming of the site could continue.</p> <p>5. Preservation of oak woodlands is N/A since they are not present.</p> <p>6. Invasive species management: The SJR West Site Mitigation Plan included in this certification describes that monitoring that would take place regarding weeds. The documentation describing the project’s consistency with Delta Plan Policy ER P5 also describes the means and methods that will be implemented to remove and control weeds.</p>
<p>4-2</p>	<p>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.</p> <p>2. Schedule construction to avoid special-status species’ breeding, spawning, or migration locations during the seasons or active periods that these activities occur.</p> <p>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</p>	<p>TS_30_L is consistent with applicable mitigation measures identified in this section.</p> <p>1. The project site was selected because of the importance of improving the existing levee to increase the level of public safety for the local community. As such, it was not possible to entirely avoid all impacts to potential habitat for special-status species. For example, the project would affect existing elderberry shrubs, which are potential host plants for the federally threatened valley elderberry longhorn beetle. To avoid impacts on VELB, the elderberry shrubs will be transplanted at the SJR West Site.</p> <p>2. Special status species avoidance: Project footprint and construction schedule are designed to avoid impacts to special-status species.</p> <p>3. The following Mitigation Measures will be implemented which include requirements for preconstruction monitoring including Mitigation Measure 3.6-4: Breeding-Season Survey; Mitigation Measure 3.6-6: Burrowing Owl Preconstruction Surveys; Mitigation Measure 3.6-7:</p>

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	<p>compensate for impacts to special-status species in coordination with DFW and USFWS or NMFS.</p> <ol style="list-style-type: none"> 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. Conduct construction monitoring (by qualified biologist) to ensure effectiveness of avoidance and minimization measures and implement remedial measures if necessary. 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). 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>Nersting Bird Surveys; Mitigation Measure 3.6-12: Bat and Roosting Habitat Survey.</p> <ol style="list-style-type: none"> Establish buffers: Project will establish buffers if appropriate. See Mitigation Measure 3.6-5: Active Nest Buffer; Mitigation Measure 3.6-6: Burrowing Owl Preconstruction Surveys; Mitigation Measure 3.6-7: Nesting Bird Surveys; Mitigation Measure 3.6-12: Bat and Roosting Habitat Survey which calls for establishment of buffers around nest and roosting areas, as applicable. Construction monitoring: Mitigation Measure 3.6-4: Breeding-Season Survey; Mitigation Measure 3.6-5: Active Nest Buffer; Mitigation Measure 3.6-6: Burrowing Owl Preconstruction Surveys; Mitigation Measure 3.6-7: Nesting Bird Surveys; Mitigation Measure 3.6-8: Minimization of Effects on Giant Garter Snake; Mitigation Measure 3.6-12: Bat and Roosting Habitat Survey will have USACE provide on-site biologist/environmental monitoring to be present to ensure all conditions established in applicable state and federal permits are followed. Species relocation: Mitigation Measure Mitigation Measure 3.6-11: VELB Compensation: mitigation efforts include transplanting elderberry shrubs Impacts/Mitigation: The Project received a USFWS BO and NMFS BO, which addresses potential impacts to federally-listed species, and mitigation requests.
<p>4-3</p>	<ol style="list-style-type: none"> Select project site(s) that would avoid a substantial reduction in fish and wildlife species habitat. To the maximum extent practicable, design project elements to avoid effects that would lead to a substantial loss of fish and wildlife habitat. Replace, restore, or enhance habitats for fish and wildlife species that would be lost. Where substantial loss of habitat for fish and wildlife species is unavoidable, compensate for impacts by preserving in-kind habitat. 	<p>The TS_30_L project is consistent with all mitigation measures in this section. Project proposes to create net habitat for wetland and riparian-dependent wildlife through restoration elements on the SJR West Site.</p>
<p>4-4</p>	<ol style="list-style-type: none"> 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. Protect, restore and enhance connectivity of habitats, including but not limited to wetland and riparian habitats that function as migration corridors for wildlife species. 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. 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. 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>The planned project is consistent with applicable mitigation measures in this section.</p> <ol style="list-style-type: none"> The Project will not permanently impact any habitat for migratory waterfowl or shorebirds. Connectivity: The planned restoration and enhancement on the SJR West Site will create a mosaic of riparian and wetland habitat. This enhancement/restoration effort will result in net increase in extent (and larger patches of) these habitats within the lower San Joaquin River portion of the Delta. The need to protect migratory pathways is N/A. Project does not involve any new diversions, intakes, or barriers. The project would not cause the alterations of flow patterns used by migratory aquatic species.
<p>4-5</p>	<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>The impacts to biological resources protected by local policies and ordinances were evaluated in the SEIR under Impact 3.6-5. As described in the SEIR with implementation of mitigation measures protecting biological resources including Mitigation Measure 3.6-16: Temporary Fencing, Mitigation Measure 3.6-17: Mandatory Contractor/Worker Awareness Training, Mitigation Measure 3.6-18: Construction Monitoring, and Mitigation Measure 3.6-19: Riparian Compensation, the potential impacts to local policies protecting biological resources would be less than significant.</p>
<p>Delta Flood Risk</p>		
<p>5-1</p>	<ol style="list-style-type: none"> 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. 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 place and fully functional until long-term replacement facilities are completed. 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. Based on the results of the drainage or hydrologic and 	<p>The analysis in the 2018 LSJR FR/EIS/EIR determined Alternative 7a would not contribute runoff water in excess of current baseline conditions and would not exceed the capacity of existing or planned stormwater drainage systems, and so would have no effect. In addition, the analysis in the 2018 LSJR FR/EIS/EIR determined Alternative 7a would not substantially alter the existing drainage patterns of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site.</p>

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	<p>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.</p> <ol style="list-style-type: none"> 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. 6. Where low channel velocities might result from construction, implement a sediment management program in order to maintain channel capacity. 7. 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. 8. 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. 9. 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 the fair-market value. 10. Provide a long-term sediment removal program at in-river structures. 11. 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. 	
<p>5-2</p>	<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>These measures are N/A, because the Project will not exceed the capacity of existing or planned drainage systems and would not substantially alter the existing drainage patterns of the area in a manner that would result in substantial erosion or siltation on or off site. See description above in response to Delta Plan Mitigation Measure 5-1 with regards to anticipated hydrologic effects with Project implementation.</p>
<p>5-4</p>	<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. 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 runoff. 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 	<p>These measures are N/A, because the Project will not exceed the capacity of existing or planned drainage systems and would not substantially alter the existing drainage patterns of the area in a manner that would result in substantial erosion or siltation on or off site. See description above in response to Delta Plan Mitigation Measure 5-1 with regards to anticipated hydrologic effects with Project implementation.</p>

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	<p>and conveyance facilities that could cause flooding upon failure.</p> <ol style="list-style-type: none"> 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. 14. Construct new evacuation roads and access roads, as necessary. 15. Conduct Golden Guardian emergency drills. 	
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>These measures are N/A, because the Project would not result in drainage-related impacts, including those within the floodplain. See description above in response to Delta Plan Mitigation Measure 5-1 with regards to anticipated hydrologic effects with Project implementation.</p>
Land Use and Planning		
6-1	<p>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):</p> <ul style="list-style-type: none"> • Burying or visually masking new infrastructure or facilities; • Restoring disturbed landscapes back to preconstruction conditions; • Reestablishing access (e.g., reconnecting roads, rebuilding bridges); • Relocating landmark buildings; or • 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. 	<p>N/A. The project will not physically divide any established communities or residential areas.</p>
6-2	<p>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:</p> <ul style="list-style-type: none"> • Recording a deed restriction that ensures permanent conservation and mitigation on other property of equal or greater environmental mitigation value; • Creating a buffer or barrier between uses; • Redesigning the project or selecting an alternate location that avoids or mitigates the impact; and/or • Restoring disturbed land to conditions to provide equal or greater environmental value to the land affected by the covered action. 	<p>To minimize the impact of conversion of farmland, Mitigation Measure 3.5-1 will be implemented. This measure includes siting biological mitigation sites to minimize the loss of agricultural land with the highest values. Additionally, this measure calls for the establishment of buffer areas between restoration sites and adjacent agricultural land. The buffers are to be sufficient to protect and maintain land capability and flexibility in agricultural operations.</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 nonproject 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 	<p>Planned restoration project is consistent with applicable mitigation measures in this section.</p> <ol style="list-style-type: none"> 1. The project site contains Prime Farmland (within the TS_30_L levee footprint, northern staging/stockpile area, barge off-haul site, and SEWD borrow site, as well as within the SJR West Site), Farmland of Statewide Importance (within the SEWD borrow site), and Unique Farmland (within the TS_30_L levee footprint, and northern staging/stockpile area). Impacts resulting from the development of a barge off-haul site, co-located stockpile and staging areas, and haul routes would be temporary in nature and would be returned to pre-construction conditions once construction is completed. Therefore, these activities would not result in conversion of agricultural land to non-agricultural use or conflict with existing zoning. The TS_30_L levee improvements would have a less than significant impact of high value agricultural land, since existing Prime Farmland and Unique Farmland located within the project's reshaped levee's waterside slope would remain in the reshaped levee's easement (i.e., there would not be a change in agricultural use). 2. Mitigation Measures 3.5-1: Minimize and Avoid Loss of Special Designated

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	<p>agricultural management.</p> <ol style="list-style-type: none"> 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. Manage project operations to minimize the introduction of invasive species or weeds that may affect agricultural production on adjacent agricultural land. 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 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. 	<p>Farmland would function to minimize and avoid loss of prime and Unique Farmland and Farmland of Statewide Importance. Fully offsetting the conversion of agricultural land in San Joaquin County was determined to not be feasible as the supply of land that is suitable for agricultural use, but not currently being used for agricultural and commercial available is extremely limited; SJAFCA was unable to locate a financially feasible property (or properties).</p> <ol style="list-style-type: none"> The project is sited to not result in fragmenting or isolating Farmland. The planned restoration and enhancement to occur on SJR West Site occurs on the western end of the Wright-Elmwood Tract, meaning the rest of the tract would still remain in agricultural use. As discussed under Mitigation Measures 3.5-1: Minimize and Avoid Loss of Special Designated Farmland, any utility or infrastructure serving agricultural uses will be reconnected if it is disturbed during construction of the project so that economically viable farming operations are not interrupted. The SJR West Site Monitoring Plan describes in more detail the management approach for invasive weeds, including management triggers and potential management responses. As discussed under Mitigation Measures 3.5-1: Minimize and Avoid Loss of Special Designated Farmland, buffer areas will be established between the mitigation site on the SJR West Site and adjacent agricultural land on Wright-Elmwood Tract. The buffers will be sufficient to protect and maintain land capability and flexibility in agricultural operations. Buffers shall also serve to protect biological mitigation sites from noise, dust, and the application of agricultural chemicals.
7-2	<ol style="list-style-type: none"> 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. 	<p>The project was designed to minimize to the greatest extent feasible conflicts with lands under Williamson Act contract or protected by agricultural zoning. The barge off-haul site is located in an active Williamson Act contract area. The barge off-haul site will only be used if borrow material is supplied by Dutra Materials at Decker Island. However, activities at the barge off-haul site would be temporary in nature and would be returned to pre-construction conditions once construction is completed and would not result in a conflict with the Williamson Act.</p>
7-3	<ol style="list-style-type: none"> 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. Wherever possible, nonprotected sites should be preferred and selected instead of protected sites. 	<p>N/A. The project site does not contain any forestland or timberland.</p>
7-4	<ol style="list-style-type: none"> 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). 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. When removal of existing forestland or timberlands is required as part of an action, proponents must acquire the property at fair market value. 	<p>N/A. The project does not contain any forestland.</p>
Visual Resources		
8-1	<ol style="list-style-type: none"> 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. 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. Use vegetation plantings on proposed facility walls, such as climbing plants, espaliers, and other forms that soften the appearance of structures. Develop a landscaping plan for all proposed structures. Provide vegetative screening to soften views of structures. Landscaping should complement the surrounding landscape. Round the tops and bottoms of spoil disposal areas, and contour the faces of 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. 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. 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. 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. Develop aesthetically pleasing landscaping for relocated roads at the shoulders, intersections, and on- and off- ramps 	<ol style="list-style-type: none"> The proposed structural feature being affected by the project is the TS_30_L levee improvement. The project will involve reconstruction of that levee to improved standards and will thus be of similar aesthetic character as to what exists currently. N/A The project will not involve construction of building structures. N/A. The project will not involve construction of standing walls. N/A The project will not involve construction of building structures. N/A The project will not involve permanent spoil pile areas. N/A The project will not involve construction of parking lots. Vegetative clearing will be conducted to the minimum extent possible. The exterior of the levee will have a visual character congruent with the surrounding area. The restoration and enhancement mitigation site on the SJR West Site will more closely resemble the conditions present in the historical Delta. N/A The project will not involve relocation of roads that are subject to high public use. N/A The project does not involve construction of electric transmission towers N/A The project will not construction of visitor oriented facilities.

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	<p>from highways. Design turnouts and scenic vista points where appropriate for relocated roads with high visibility and high public use.</p> <p>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.</p> <p>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.</p>	
<p>8-2</p>	<p>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.</p> <p>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>	<p>See Consistency with Delta Plan Mitigation Measure 8-1 above.</p> <p>The aesthetic impacts of levee construction would be reduced with the implementation of mitigation measures related to minimizing loss of vegetation (Mitigation Measures 3.6-16 through 3.6-19).</p>
<p>8-3</p>	<p>12. Use shields for proposed lighting facilities, and direct lighting downward and inward toward the facilities.</p>	<p>N/A. The project does not include installation of permanent, artificial lighting sources.</p>
<p>Air Quality</p>		
<p>9-1</p>	<p>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. New engines and retrofit control systems should reduce NO_x and PM from diesel-fueled on-road and off-road vehicles and equipment.</p> <p>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 CA Code of Regulations [CCR]). Clear signage should be posted for construction workers at all entrances to the site.</p> <p>3. Maintain all equipment in proper working condition according to manufacturer's specifications.</p> <p>4. Use electric equipment when possible. Use lower-emitting alternative fuels to power vehicles and equipment where feasible.</p> <p>5. Use low Volatile Organic Compounds (VOC) coatings and chemicals; minimize chemical use.</p> <p>6. Prepare a dust control plan and apply dust control measures at the construction sites.</p> <p>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.</p> <p>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> <p>BMPs for fallowed lands could include, but are not limited to, the following:</p> <p>9. Implement conservation cropping sequences and wind erosion protection measures, such as:</p> <ul style="list-style-type: none"> • 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. • If residues are not adequate, small grain 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. • Avoid any tillage if possible. • Avoid any traffic or tillage when fields are extremely dry to avoid pulverization. <p>10. Apply soil stabilization chemicals to fallowed lands.</p> <p>11. Re-apply drain water to allow protective vegetation to be established.</p> <p>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 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.</p> <p>A. 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).</p> <p>Basic Construction Mitigation Measures Recommended for ALL</p>	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <p>The Project, as described in the SEIR, will implement Mitigation Measure 3.2.2-1: Reduce Construction-Related NO_x Emissions.</p> <p>The mitigation measure that will be implemented states the following:</p> <p>USACE shall require the use of off-road equipment that meets or exceeds USEPA or California Air Resources Board CARB Tier 4 off-road emission standards for all off-road vehicles greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities. Prior to issuance of a construction permit, the prime contractor(s) shall prepare and submit a Construction Emissions Minimization Plan (Plan) to USACE for review and approval. The Plan shall include estimates of the construction timeline by phase with a description of each piece of equipment required for every construction phase. Equipment descriptions and information shall include: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number and expected fuel usage and hours of operation. The Plan shall be kept by USACE and made available for review by any persons requesting it. Quarterly reports shall be submitted by the prime contractor(s) to USACE indicating the construction phase and equipment information used during each phase for the previous quarter.</p>

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	<p>Proposed Projects</p> <ol style="list-style-type: none"> 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 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 shall be provided for construction workers at all access points. 7. All construction equipment shall be maintained and properly tuned in accordance with 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. <p>Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold</p> <ol style="list-style-type: none"> 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. 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 NO_x 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 NO_x and PM. 13. Require all contractors to use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines. 	
<p>9-2</p>	<p>13. 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:</p> <ul style="list-style-type: none"> • A list of potential odor sources • Identification and description of the most likely sources of odor • Identification of potential, intensity, and frequency of odor from likely sources • A list of odor control technologies and management practices that could be implemented to minimize odor releases • 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. 	<p>N/A. The project is not expected to cause noxious odors.</p>

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<p>9-3</p>	<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:</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. Please refer above to consistency with Delta Plan Mitigation Measure 9-1.</p>
<p>Cultural Resources</p>		
<p>10-1</p>	<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 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. 2. If potentially 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 California Register of Historical Resources (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: <ul style="list-style-type: none"> • Planning construction to avoid the sensitive sites • Deeding the sensitive sites into permanent conservation easements • Capping or covering archaeological sites • Planning parks, green space, or other open space to incorporate the sensitive sites • 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 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. 6. Before any project-specific ground-disturbing activities begin, conduct investigations to identify submerged cultural 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <ol style="list-style-type: none"> 1. Surveys: Cultural resources pedestrian surveys were conducted for the entire TS_30_L site and the SJR West Site between March 2017 and December 2022. All of the cultural resources identified on the Project site and mitigation site were evaluated for significance and determined not eligible for the National Register of Historic Places (NRHP). Similarly, none of these resources appear to be eligible for the California Register of Historical Resources (CRHR). 2/3. N/A since pedestrian archeological survey did not reveal any CRHR-eligible prehistoric or historic-era archeological resources. 4/5. Section 106 Programmatic Agreement was developed between USACE and the SHPO regarding potential impacts from implementation of the overall Lower San Joaquin River Feasibility Study Project on historic properties. The Programmatic Agreement outlines the procedures to follow for the construction and management of levee improvements. Stipulations include review procedures, qualifications, and provisions for a Historic Properties Management Plan (HPMP) and Historic Properties Treatment Plans (as applicable). The Programmatic Agreement also provides stipulations for the identification and evaluation of cultural resources before HPMP approval. 6. N/A. The project has no potential to affect submerged cultural resources. 7. As described under Mitigation Measure 3.7-4: Preconstruction Training and Paleontological Monitor, if paleontological resources are unearthed, a qualified Paleontologist and/or paleontological monitor will be present during all excavations in the Modesto Formation. The qualified Paleontologist and /or paleontological monitor will have the authority to temporarily divert or redirect grading and excavation activities.

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	<p>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.</p> <p>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.</p>	
<p>10-2</p>	<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> <p>1. If human remains are encountered during ground-disturbing construction activities, stop work that would potentially affect the find and contact the county coroner.</p> <ul style="list-style-type: none"> • 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]). • Following the coroner's findings, the property owner, contractor or project proponent, an archaeologist, and the NAHC-designated Most Likely Descendent (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 Native American human remains are identified in California Public Resources Code section 5097.9. • 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 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. • 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: (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. • 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>	<p>1/2. As described under Mitigation Measure 3.7-3: Inadvertent Discovery of Human Remains, upon the discovery of Native American human remains, USACE in coordination with SJAFCA, shall require that all construction work stop within 100 feet of the discovery until consultation with the Most Likely Descendant has taken place. The Most Likely Descendant shall have 48 hours to complete a site inspection and make recommendations to the USACE and SJAFCA after being granted access to the site. 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. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. If agreed to by the Most Likely Descendant, SJAFCA or SJAFCA's 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. Construction work in the vicinity of the burials shall not resume until the mitigation is completed.</p>

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<p>10-3</p>	<ol style="list-style-type: none"> 1. Inventory and evaluate historic-era buildings, structures, and linear features. Conduct cultural resource studies to determine whether historic-era buildings, structures, and linear features in the project area are eligible for listing in the CRHR. 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>Project is consistent with applicable mitigation measures identified in this section. Based on site studies, there are no historic-era buildings, structures, or other features eligible for listing at the Project site.</p> <p>See Consistency with Delta Plan Mitigation Measure 10-1 above.</p>
<p>10-4</p>	<p>14. Mitigation Measures 10-1 and 10-3 will also mitigate Impact 10-4, Disturbance or Destruction of Cultural Landscapes and Traditional Cultural Properties. 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. See Consistency with Delta Plan Mitigation Measure 10-1 above. Based on the findings described in the Cultural Resources Survey and Inventory Report, the Project site is not known to be a cultural landscape or traditional cultural property.</p>
<p>Geology and Soils</p>		
<p>11-1</p>	<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 Project does not propose the construction or operation of such buildings or facilities.</p>
<p>11-2</p>	<p>15. 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. The Project does not propose the construction or operation of such buildings or facilities.</p>
<p>11-3</p>	<p>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</p>	<p>The Project is consistent with applicable mitigation measures identified in this section.</p> <p>1/2. The Geotechnical Basis of Design Report (GBODR) summarizes the geotechnical engineering evaluation, conclusions, and recommendations for this project. The scope of this report includes evaluating the existing and with-</p>

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	<p>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.</p> <ol style="list-style-type: none"> 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 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 for suitable project design. 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. 4. 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>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>	<p>project conditions for under-seepage, through-seepage, levee embankment slope stability, and seismic slope stability. Several geotechnical reports, which include subsurface explorations, were available near the TS_30_L levee for literature review. Previous reports were conducted for the existing TS_30_L levee by DWR, USACE, and two private consulting firms, Kleinfelder and Moore & Taber.</p> <ol style="list-style-type: none"> 3. The Project will involve not construction of a new well. 4. The project will not involve construction of surface reservoirs or canals
<p>11-4</p>	<p>16. 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"> • 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. • During construction activities, topsoil shall be removed, stockpiled, and saved for reapplication following completion of construction. The top 6 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. • 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. • 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. • 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. • 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 	<p>The Project is consistent with applicable mitigation measures identified in this section.</p> <p>As specified under Mitigation Measure 3.2.6-1: Water Quality Avoidance and Minimization, USACE will ensure use BMPs for sediment control during construction and will require the contractor to prepare a SWPPP, as required by the State Water Board.</p>

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	construction, spoils sites shall be restored to avoid erosion.	
11-5	17. 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.	The Project is consistent with this mitigation measure. See Consistency with Delta Plan Mitigation Measure 11-3 above.
11-6	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"> • 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. • Develop a seepage monitoring plan if subsurface seepage constitutes nuisance water to the adjacent land. • 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 wells can also be used to mitigate for the occurrence of subsurface nuisance water. 	1. The Project does not propose construction of canals, surface reservoirs or other impoundments. 2. The Project is not considered an ecosystem restoration project. The habitat restoration and enhancement activities on SJR West site will predominately consist of establishment and enhancement of riparian habitat. The project will only involve approximately two acres of wetland establishment. The design thus does not involve new large impoundments of surface water that can potentially cause seepage of nuisance water.
11-7	18. 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.	As part of the planning process, extensive geotechnical analyses were conducted. The Geotechnical Basis of Design Report (GBODR) summarizes the geotechnical engineering evaluation, conclusions, and recommendations for this project.
11-8	19. 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. http://www.swrcb.ca.gov/water_issues/programs/owts/index.shtml): <ul style="list-style-type: none"> • Containment systems that do not generate waste • Anoxic and anaerobic systems • Attached and suspended growth aerobic treatment systems • Natural treatment systems • Disinfection systems • Engineered-fill leach fields • Monitoring control systems 	N/A. No wastewater treatment systems are proposed as a part of the Project.
11-9	20. 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: <ul style="list-style-type: none"> • Over-excavation and import of suitable fill material • Structural reinforcement of constructed works to resist deformation • Construction of structural supports below the depth of highly organic soils into materials with suitable bearing strength 	N/A. The Project would have no potential risk to structures.
Paleontological Resources		
12-1	21. 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: <ul style="list-style-type: none"> • Confirming the paleontological sensitivity (high, moderate, or low) of the areas to be impacted through review of project-level geological and geotechnical data • 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 	N/A. The Project site is not considered to have moderate to high paleontological sensitivity.

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	<p>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</p> <ul style="list-style-type: none"> • The assessment and recovery of discovered fossil resources • The preparation and curation of fossil finds <p>22. 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. 	N/A. The project would have no short-term or long-term effects on the acquisition, mining, or processing of the mineral resources in the project area, as none of the existing sand and gravel mining or processing operations common in the vicinity are located at the work sites.
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 Division of Oil, Gas, and Geothermal Resources of the U.S. Geological Survey (DOGGR) construction site well review program (DOC 2007, California Department of Conservation, Division of Oil, Gas and Geothermal Resources, Well Review Program: Introduction and Application.), such as: <ul style="list-style-type: none"> • For all future projects, identify all existing natural gas well sites and oil production facilities within or in close proximity to the project area. • Identify any oil and natural gas well within 100 feet of any navigable body 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 DOC requires that a "critical well" include more stringent blowout prevention equipment than non-critical wells based on pressure testing and rating. • Identify safety measures to prevent unauthorized access to equipment. • Include safety shut-down devices on oil and natural gas wells and other equipment, as appropriate. • 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. • 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. • 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. 	N/A. The proposed project is not within a mineral resource extraction area.
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 	<p>The Project is consistent with all applicable mitigation measures identified in this section.</p> <p>11-11. As specified under Mitigation Measure 3.2.6-1: Water Quality Avoidance and Minimization, USACE will use BMPs and will prepare a SWPPP, as required by the State Water Board, to minimize risk of hazardous waste contamination to aquatic resources.</p> <p>11-17. The implementation of environmental commitments, including a SWPPP, Bentonite Slurry Spill Contingency Plan (BSSCP), Spill Prevention, Control and Counter Measure Plan (SPCCP) would ensure minimal risk of accidental spills and releases in the environment.</p>

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	<p>fuel from the hoses.</p> <ol style="list-style-type: none"> 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. 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 addition to the above, federal, state and local requirements for hazardous materials must be followed.</p> <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>	
<p>14-2</p>	<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 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. 	<p>As described under Mitigation Measure 3.13-1: Work Health and Safety Plan, a worker health and safety plan shall be prepared before the start of construction that identifies, at a minimum, all contaminants that could be encountered during construction; all appropriate worker, public health, and environmental protection equipment and procedures to be used during project activities; emergency response procedures; the most direct route to the nearest hospitals; and a Site Safety Officer. The plan shall describe actions to be taken if hazardous materials are encountered on-site, including protocols for handling hazardous materials, preventing their spread and emergency procedures to be taken in the event of a spill.</p>
<p>14-3</p>	<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 DFG 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 (SCMAD 2011. San Joaquin County Mosquito and Vector Control District. http://www.sjmosquito.org/). 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. 	<p>The project is not expected to create conditions conducive to proliferation of mosquito populations. If mosquito management becomes an issue (e.g., on the SJR West Site), consultation with the Vector Control District will be considered.</p>
<p>14-4</p>	<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. 	<p>The project will not result in creating hazardous wildlife attractants within 5 miles of the edge of an Airport Operations Area. The planned mitigation on the SJR West Site overwhelming involves riparian vegetation plantings. It is not expected to attract large populations of waterfowl that can be problematic for airport operations.</p>

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14-5	1. Prepare and implement a fire management plan to minimize potential for wildland fires.	N/A. The Project site is not within a fire hazard zone as identified by the California Department of Forestry and Fire Protection (CalFire)
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 mitigation, such as reduced speed limits, at locations where noise standards cannot be maintained for sensitive receptors. 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 ground borne vibration (for example, pile drivers). 	<ol style="list-style-type: none"> 1. Mitigation Measure 3.10-1: Construction Noise Reduction would be implemented. 2. Before construction activity begins within 740 feet of one or more residences or businesses, the project proponent shall provide written notification to the potentially affected residents or business owners, identifying the type, duration, and frequency of construction activities. The USACE resident engineer and contractor's project manager shall be designated and contact information shall be provided in the notices and posted near the project area in a conspicuous location that it is clearly visible to nearby receptors most likely to be disturbed. The USACE resident engineer shall manage complaints and concerns resulting from noise-generating activities. The severity of the noise concern shall be assessed by the noise disturbance coordinator and, if necessary, evaluated by a qualified noise control engineer. 3. All construction equipment shall be equipped with noise-reduction devices such as mufflers to minimize construction noise and all internal combustion engines shall be equipped with exhaust and intake silencers in accordance with manufacturers' specifications. 4-7. The contractor will be required to prepare a construction noise and vibration plan prior to construction.
15-2	<ol style="list-style-type: none"> 1. Conduct a preliminary ground borne vibration analysis report to determine future construction-related ground borne 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 ground borne vibration results in significant impacts at sensitive receptors, the following measures shall be implemented: <ul style="list-style-type: none"> • 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. • 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 ground borne noise and vibration-generating activities in the vicinity of the historic structures in accordance with recommendations of the appropriate agency with authority. • Adjacent historic features will be covered or temporarily shored, as necessary, for protection from vibrations, in consultation with the appropriate cultural resources authority. • 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. • Pile-driving activities conducted within 285 feet of sensitive receptors will occur during daytime hours to avoid sleep disturbance during evening and nighttime hours. 	See Consistency with Delta Plan Mitigation Measure 15-2 above.
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. 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. 	<p>1/2. See Consistency with Delta Plan Mitigation Measure 15-2 above.</p> <p>3-5. The Project does not propose a dog park, parking lot, or playing fields.</p>

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	<ol style="list-style-type: none"> 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. 	
Population and Housing		
16-1	<ol style="list-style-type: none"> Require compliance with applicable local policies and regulations regarding the provision of affordable housing. Construct replacement housing if existing housing will be displaced. 	N/A. The project is not a housing project
Public Services		
17-1	<ol style="list-style-type: none"> 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. Develop worker training programs to reduce construction and operations risks. 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. Develop traffic plans and emergency response plans for construction and operations phases of new facilities. 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. 	<p>Project is consistent with applicable mitigation measures identified in this section.</p> <ol style="list-style-type: none"> No new public facilities are proposed. Contractors responsible for constructing the Project are expected to comply with all applicable workplace safety requirements, and are expected to provide worker safety training. 3-4. The SEIR assessed that the project could temporarily increase traffic on local roadways near residential communities, which could slow emergency response times and/or interfere with the use of roadways for emergency evacuation routes. Mitigation Measure 3.1-1: Traffic Safety Plan would be applied which calls for primary contractors for construction shall hire a licensed traffic engineer to develop a coordinated construction traffic safety and control plan in accordance with the latest Manual on Uniform Traffic Control Devices (MUTCD) standards and requirements. The Project has been designed in accordance with all applicable local fire codes and regulations.
Recreation		
18-1	<ol style="list-style-type: none"> 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. 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. 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 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. 	N/A. There are no existing recreational facilities at the Project site.
18-2	<ol style="list-style-type: none"> 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. Lead agencies shall provide additional operations and maintenance of existing facilities in order to prevent deterioration of these facilities. If possible, lead agencies shall provide temporary replacement facilities. If the increase in use is temporary, once use is decreased back to existing conditions, degraded facilities shall be rehabilitated or restored. 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. 	N/A. There are no existing recreational facilities at the Project site.
18-3	<ol style="list-style-type: none"> Projects shall be sited in areas that would have minimal adverse physical effect on the environment. 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>The Project is consistent with this mitigation measure.</p> <ol style="list-style-type: none"> The Project will increase area and quality of sensitive natural communities (wetlands, riparian forest), and benefit and terrestrial species through habitat restoration and enhancement. The Project is not expected to have impacts on recreational facilities, thus there is no need for mitigation, restoration, preservation or creation of new replacement recreational facilities.
Traffic and Transportation		
19-1	<ol style="list-style-type: none"> Avoid modifications to federal, State, and county highways, local roadways, and bridges that may reduce vehicle capacity, to the extent feasible. Develop and implement a traffic control plan to reduce effects of roadway construction activities, including full and partial lane closures, bike and pedestrian facility closures, and 	<p>Mitigation Measure 3.1-1: Traffic Safety Plan would be implemented. This mitigation requires the following:</p> <p>Before the start of each construction season, the primary contractors for construction shall hire a licensed traffic engineer to develop a coordinated construction traffic safety and control plan in accordance with the latest Manual on Uniform Traffic Control Devices (MUTCD) standards and requirements to minimize</p>

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	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>23. 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 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>24. 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 • Roadmix • Paving <p>25. 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 • Fair share contributions to approved projects identified in the agency's Capital Improvement Plan • Fair share contributions to traffic signals identified in 	<p>the simultaneous use of roadways by different construction contractors for material hauling and equipment delivery to the extent feasible and to avoid and minimize potential traffic hazards on local roadways during construction. Items (a) through (i) of this mitigation measure shall be integrated as terms of the construction contracts.</p> <p>(a) The plan shall outline phasing of activities and the use of multiple routes to and from off-site locations to minimize the daily amount of traffic on individual roadways.</p> <p>(b) The plan shall provide bicycle and pedestrian detours to allow for continued use by bicycle and pedestrian commuters and maintain safe pedestrian and bicyclist access around the construction areas at all times. Construction areas shall be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment shall be located as far away as possible from areas where bicyclists and pedestrians are present.</p> <p>(c) The construction contractors shall develop traffic control plans (TCP) for the local roadways that would be affected by construction traffic. The TCP must be designed and stamped by a licensed traffic engineer in accordance with the latest MUTCD requirements. The TCP must be submitted by the contractor with the City's road encroachment permit application for review and approval. Before the initiation of construction-related activity involving high volumes of traffic, the plan shall be submitted for review by the agency of local jurisdiction (San Joaquin County, City of Stockton, or Caltrans [if applicable]) that has responsibility for roadway safety at and between the Modified Project sites. The contractor shall train construction personnel in appropriate safety measures as described in the plan and shall implement the plan. The plan shall include the prescribed locations for staging equipment and parking trucks and vehicles. Provisions shall be made for overnight parking of haul trucks to avoid causing traffic or circulation congestion. The plan shall call for the following elements:</p> <ul style="list-style-type: none"> • Posting warnings about the potential presence of slow-moving vehicles. • Using traffic control personnel when appropriate. • Placing and maintaining barriers and installing 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/county requirements. • The TCP shall include signs placed on March Lane west of I-5 advising the public of traffic delays due to construction and the tentative timeline of the project. Language to be placed on the signs must be approved by the City's traffic engineer. <p>(d) All operations shall limit and expeditiously remove, as necessary, the accumulation of Modified Project-generated mud or dirt from adjacent public streets at least once every 24 hours if substantial volumes of soil are carried onto adjacent paved public roadways during construction.</p> <p>(e) If needed to comply with Caltrans requirements, a transportation management plan shall be prepared and submitted to Caltrans to cover any points of access from the State highway system for haul trucks and other construction equipment.</p> <p>(f) Before the start of the first construction season, the construction contractor shall obtain a road encroachment permit with San Joaquin County and the City of Stockton to address permit conditions set for the maintenance and repair of affected roadways resulting from increased truck traffic. The road encroachment permit conditions and requirements shall ensure that the affected roadways are repaired to a level that is equivalent to their pre-project condition. Such an agreement may require the contractor to take pre-project photos of existing conditions. Upon project completion, the City or County shall develop a punch list of requirements to ensure that pre-project conditions are restored.</p> <p>(g) Before the Modified Project construction begins, the contractor shall provide notification of Modified Project construction to all appropriate emergency service providers in San Joaquin County, Stockton, Lathrop, and Manteca and shall coordinate with providers throughout the construction period to ensure that emergency access through construction areas is maintained.</p> <p>(h) The contractor shall avoid neighborhoods and school zones to the maximum extent feasible when determining haul routes. When possible, hauling in school zones shall be limited to the period of summer breaks to avoid noise and traffic impacts on the schools. Any damage to residential roadways during construction shall be mitigated per the requirements outlined in the traffic safety and control plan.</p> <p>(i) During preliminary engineering and design, the Modified Project proponent shall provide notification of Modified Project construction to all appropriate railroads in the Modified Project area and shall coordinate with all railroads to minimize freight and passenger service disruptions. Prior to the start of construction, the Modified Project Proponent's contractor shall contact the general manager of affected railroads to coordinate truck haul route traffic and schedule an on-site meeting.</p>
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	<p>the agency's traffic signal plan.</p> <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 nondaylight 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"> 26. 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: <ul style="list-style-type: none"> • Routine inspections and correction procedures to ensure that facility safety features are in good working order. • Routine inspections and correction procedures for navigational hazards around facilities, including floating or submerged debris and the formation of shoals. • 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. 	N/A. The Project would not impact navigation and does not propose facilities in navigable waters.
19-3	<ol style="list-style-type: none"> 1. 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. 2. Phase construction activities, and use multiple routes to and from offsite locations to minimize the daily amount of traffic on individual roadways. 3. Post warnings about the potential presence of slow-moving vehicles. 4. Use traffic-control personnel when appropriate. 5. 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. 6. Notify appropriate emergency service providers of project construction throughout the construction period to ensure that emergency access through construction areas is maintained. 	See Consistency with Delta Plan Mitigation Measure 19-1 above.
19-4	<ol style="list-style-type: none"> 27. Projects where construction- and operations conflict with adopted policies, plans, or programs regarding bicycle or pedestrian facilities should implement Mitigation Measure 19-1, above. The portion of the measure that addresses minimizing impacts on bicycle and pedestrian circulation also would be applicable to this measure. 	See Consistency with Delta Plan Mitigation Measure 19-1 above.
Utilities and Service Systems		
20-1	<ol style="list-style-type: none"> 1. Establish construction debris disposal fee schedules to promote recycling and minimize solid waste. 2. Limit disposal of construction debris and other solid waste at local landfills if the landfills have limited capacity. 3. Dispose of all construction debris at landfills and disposal facilities that are licensed for the type of wastes to be disposed. 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. 4. Require construction contractors to prepare construction debris management plans and require reuse or recycling of construction debris. 	<p>The Project is consistent with applicable mitigation measures identified in this section.</p> <p>Construction waste would be disposed at appropriate facilities. Operational levels of waste disposal will not change following project implementation.</p>

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	<p>5. 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).</p>	
<p>20-2</p>	<ol style="list-style-type: none"> 1. 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. 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. 	<p>The Project is consistent with applicable mitigation measures identified in this section. The Project would require shifting the TS_30_L levee centerline approximately 20 feet towards the waterside. This would require realignment of the existing waterside irrigation ditch and affect an existing PG&E guy cable is currently mounted in the levee embankment. Mitigation Measure 3.2.8-1: Coordination with Utility Providers and Response Plan would be implemented which calls for the following:</p> <ul style="list-style-type: none"> • Before beginning construction, coordination with utility providers to implement orderly relocation of utilities that need to be removed or relocated would occur. Coordination would include the following: • Notification of any potential interruptions in service shall be provided to the appropriate agencies and affected landowners. • Before the start of construction, utility locations shall be verified through field surveys and the use of Underground Service Alert services. Any buried utility lines shall be clearly marked where construction activities would take place and on the construction specifications before of any earthmoving activities begin. • Before the start of construction, the contractor would be required to coordinate with the local municipality and acquire any applicable permits prior to use of municipal water for construction. • Before the start of construction, a response plan shall be prepared to address potential accidental damage to a utility line. The plan shall identify chain of command rules for notification of authorities and appropriate actions and responsibilities to ensure the public and worker safety. Worker education training in response to such situations shall be conducted by the contractor. The response plan shall be implemented by the contractor during construction activities. • Utility relocations shall be staged to minimize interruptions in service.

Climate Change and Greenhouse Gas Emissions

<p>21-1</p>	<p>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:</p> <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. <p>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, 2010e. 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> <p>Efficiency</p> <ol style="list-style-type: none"> 14. Design buildings to be energy efficient. Site buildings to take advantage of shade, prevailing winds, landscaping and sun screens to reduce energy use. 15. Install efficient lighting and lighting control systems. Use daylight as an integral part of lighting systems in buildings. 16. Install light colored “cool” roofs, cool pavements, and strategically placed shade trees. 17. Install energy efficient heating and cooling systems, appliances and equipment, and control systems. 18. Install light-emitting diodes for street and other outdoor lighting. 19. Limit the hours of operation of outdoor lighting. 20. Provide education on energy efficiency. <p>Renewable Energy</p> <ol style="list-style-type: none"> 21. Install solar and wind power systems and energy-efficient heating ventilation and air conditioning. 22. Install solar panels over parking areas. 23. Use combined heat and power in appropriate applications. <p>Water Conservation and Efficiency</p> <ol style="list-style-type: none"> 24. Create water-efficient landscapes. 25. Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls. 26. Use reclaimed water for landscape irrigation. Install the infrastructure to deliver and use reclaimed water. 	<p>The Project will require use of off-road equipment that meets or exceeds USEPA or CARB Tier 4 emission standards for all vehicles great than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities.</p>
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	<p>27. Design buildings to be water-efficient. Install water-efficient fixtures and appliances.</p> <p>28. Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.</p> <p>29. Restrict the use of water for cleaning outdoor surfaces and vehicles.</p> <p>30. 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.)</p> <p>31. 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.</p> <p>32. Provide education about water conservation.</p> <p>Solid Waste Measures</p> <p>33. Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).</p> <p>34. Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.</p> <p>35. Recover by-product methane to generate electricity.</p> <p>Transportation and Motor Vehicles</p> <p>36. Limit idling time for commercial vehicles, including delivery and construction vehicles.</p> <p>37. Use low or zero-emission vehicles, including construction vehicles.</p> <p>38. Institute a heavy-duty off-road vehicle plan and a construction vehicle inventory tracking system for construction projects.</p> <p>39. Promote ride sharing.</p> <p>40. 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).</p> <p>41. Increase the cost of driving and parking private vehicles by, e.g., imposing tolls and parking fees.</p> <p>42. Provide shuttle service to public transit/[work sites].</p> <p>43. Provide information on all options for individuals and businesses to reduce transportation-related emissions.</p> <p>Carbon Offsets</p> <p>44. 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.</p> <p>45. 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:</p> <ol style="list-style-type: none"> 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.) Whether the emissions reductions from off-site mitigation can be quantified and verified. 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> <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>	
<p>21-2</p>	<p>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</p>	<p>The Project is consistent with applicable mitigation measures identified in this section.</p> <ol style="list-style-type: none"> N/A. The Project will increase flood protection for surrounding areas. Intakes/diversions and outfalls: N/A The Project will not construct or impact existing intake/diversions or outfalls. While the project involves use of cutoff walls which could potentially restrict

Mitigation Measures and Project Consistency with the Delta Plan MMRP – San Joaquin River Basin, Lower San Joaquin River Reach

TS_30_L Levee Improvement Project (TS_30_L or Project)

	<p>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.</p> <ol style="list-style-type: none"> 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. 	<p>the localized movement of groundwater, the groundwater analysis in the SEIR determined that the change in groundwater elevations would be minimal – on the order of 3 feet or less.</p>
<p>21-3</p>	<ol style="list-style-type: none"> 28. 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 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>The Project is consistent with this mitigation measure. Climate change is expected to result in increased flows through the Delta because of large precipitation events (e.g., atmospheric rivers) and as a high proportion of the precipitation will come in the form of rain (versus snow) as air temperatures rise. Sea level rise will also increase the risk of flooding events in the Delta. Many areas of the Delta are highly subsided, meaning if there were a levee breach or levee overtopping event from a flood event, the existing Delta lands behind the levees could be inundated below 10 to 15 feet in water. The SJR West Site is located close to sea level in elevation, making it much more resilient to flood events than much of the Delta. The mitigation site will be predominantly restored and enhanced to wetland and riparian communities, which are expected to perform well in the event of a climate-change induced flooding event.</p>
<p>21-4</p>	<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>1/2. A 100% Hydraulic Basis of Design Report (HBODR) was conducted which provided recommendations on the design levee height for the entire TS_30_L levee. The design recommendations from the HBODR are provided below:</p> <ul style="list-style-type: none"> • Design Water Surface Elevation (DWSE) = 13.6 ft (NAVD88) • Minimum Top of Levee Elevation (MTOL) = 14.9 ft (NAVD88) • Design Levee Height = Highest elevation of the following: • Existing Levee Height = 18.6 ft (NAVD88) • MTOL = 14.9 ft (NAVD88) • DWSE + 3 ft = 16.6 ft (NAVD88) • Waterside Erosion Control = 3" thick ¾" rock to match existing condition from the levee toe to the existing top of levee <ol style="list-style-type: none"> 3. N/A. The levee improvement project is not situated along a main Delta channel. The TS_30_L is already within the interior portion of the Wright-Elmwood Tract. 4. The SJR West Site would not involve any channel modifications. All riparian plantings would be implemented interior to the landside portion of the levee along the San Joaquin River.