Yolo Bypass Wildlife Area Habitat and Drainage Improvements Project - Mitigation Measures and Project Consistency

Delta Plan Mitigation Measure #	Delta Plan Mitigation Measure	Yolo Bypass Project Consistency
Air Quality		
9-1	Conflict with an Applicable Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a Cumulatively Considerable Net Increase of Nonattainment Pollutants: ❖ Use equipment and vehicles that are compliant with 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. ❖ Minimize idling times either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]).Clear signage should be posted for construction workers at all entrances to the site. ❖ Maintain all equipment in proper working condition according to manufacturer's specifications. ❖ Use electric equipment when possible. Use lower-emitting alternative fuels to power vehicles and equipment where feasible. Use low VOC coatings and chemicals; minimize chemical use. Prepare a dust control plan and apply dust control measures at the construction sites. ❖ 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. BMPs for fallowed lands could include, but are not limited to, the following: ❖ Implement conservation cropping sequences and wind erosion protection measures, such as: • 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.	The Project is consistent with the applicable mitigation measures identified in this section for construction related impacts. Some of the requirements in this measure are not applicable to the Project. Refer to Section 3.3 (Air Quality) of the IS/MND, specifically Mitigation Measure Air-1.

	• Avoid any traffic or tillage when fields are extremely dry to avoid pulverization. ❖ Apply soil stabilization chemicals to fallowed lands. ❖ Re-apply drain water to allow protective vegetation to be established. ❖ 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. Project-specific lists of mitigation measures should also include the recommendations or requirements of the local air district(s). For example, the BAAQMD lists the following basic and additional mitigation measures to reduce emissions from project construction (BAAQMD 2010). **Basic Construction Mitigation Measures Recommended for ALL Proposed Projects** 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off 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. **Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold** 1. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. 2. All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph. 3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity. 4. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established. 5. The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time. 6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site. 7. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel. 8. Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent. 9. Minimizing the idling time of diesel powered construction equipment to two minutes. 10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the	

	use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available. 11. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings). 12. Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM. 13. Require all contractors to use equipment that meets ARB's most recent certification standard for off-road heavy duty diesel engines. Source: BAAQMD 2010.	
Biological Resources		
4-1	Substantial Adverse Effects on Sensitive Natural Communities, Including Wetlands and Riparian Habitat: ❖ Avoid, minimize, and compensate for reduction in area and/or habitat quality of sensitive natural communities, including wetlands, by doing the following: • Selecting project site(s) that would avoid sensitive natural communities, including jurisdictional wetlands and other waters, vernal pools, alkali seasonal wetlands, riparian habitats, and inland dune scrub. • Designing, to the maximum extent practicable, project elements to avoid effects on sensitive natural communities. • Replacing, restoring, or enhancing on a "no net loss" basis (in accordance with USACE and 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	The Project is consistent with the applicable mitigation measures identified in this section for disturbance of riparian, marsh and wetland habitats. Some of the requirements in this measure are not applicable to the Project. Avoidance and restoration of Black Willow thickets natural community and BMPs: refer to Section 3.4, Mitigation Measure BIO-9 of the IS/MND. Avoidance and restoration of wetlands and other waters: refer to Section 3.4, Mitigation Measure BIO-10 of the IS/MND. Obtaining permits are a part of the Project, including Section 404 and 408 from USACE, Section 401 from

	agencies (at ratios that offset temporal loss of habitat value). ❖ Implement construction best management practices, including: • 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. ❖ Restore areas temporarily affected by construction activities, including: • 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. ❖ 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: • 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. ❖ An invasive species management plan shall be developed and implemented for any project to 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 DFG and local experts, such as the University of California Extension, county agricultural commissioners,	SWRCB, Section 7 consultation with USFWS, and a SWPPP. With respect to invasive species management see the additional notes at the end of this table.

	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: • 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.	
4-2	Substantial Adverse Effects on Special-status Species: ❖ 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. ❖ Schedule construction to avoid special-status species' breeding, spawning, or migration locations during the seasons or active periods that these activities occur. ❖ Conduct preconstruction surveys (by a qualified biologist) for special-status species in accordance with USFWS, NMFS and DFG survey methodologies and appropriate timing to determine presence and locations of any special-status species and their habitat, and avoid, minimize, or compensate for impacts to special-status species in coordination with DFG and USFWS or NMFS. ❖ 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 DFG 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	The Project is consistent with the applicable mitigation measures identified in this section for disturbance of habitat and potential impacts to special-status species, including plants. Some of the requirements in this measure are not applicable to the Project. Preconstruction plant surveys, mitigation and monitoring: refer to Section 3.4, Mitigation Measure BIO-1 of the IS/MND. Worker awareness training: refer to Section 3.4, Mitigation Measure BIO-2 of the IS/MND. Construction timing, preconstruction surveys, monitoring, and other avoidance measures for Giant Garter

	remedial measures if necessary. ❖ When appropriate, relocate special-status plant and animal species or their habitats from project sites following USFWS, NMFS, and DFG 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 CESA and 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).	Snake: refer to Section 3.4, Mitigation Measure BIO-3 of the IS/MND. Preconstruction surveys, monitoring, and other avoidance measures for Pacific Pond Turtle: refer to Section 3.4, Mitigation Measure BIO-4 of the IS/MND. Preconstruction surveys, buffers, monitoring, and other avoidance measures for Swainson's Hawk and other raptors: refer to Section 3.4, Mitigation Measure BIO-5 of the IS/MND. Preconstruction surveys, buffers, and other avoidance measures for Burrowing Owl: refer to Section 3.4, Mitigation Measure BIO-6 of the IS/MND. Preconstruction surveys, buffers and monitoring for other protected birds: refer to Section 3.4, Mitigation Measure BIO-7 of the IS/MND. Preconstruction surveys and buffers for bats: refer to Section 3.4, Mitigation Measure BIO-8 of the IS/MND.
4-3	Substantial Adverse Effects on Fish or Wildlife Species Habitat:	The Project is consistent with the

	❖ 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.	applicable mitigation measures identified in this section. Avoidance and restoration of Black Willow thickets natural community and BMPs: refer to Section 3.4, Mitigation Measure BIO-9 of the IS/MND. Avoidance and restoration of wetlands and other waters: refer to Section 3.4, Mitigation Measure BIO-10 of the IS/MND. The project is expected to result in long-term beneficial effects on fish populations and habitat by enhancing seasonal floodplain habitat. The design features would provide long-term benefits to fish species that utilize floodplains for spawning and rearing during winter and spring.
4-4	Interfere Substantially with the Movement of Any Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors: ❖ Protect habitat for migratory waterfowl and shorebirds by expanding existing wildlife refuges and management areas, and establishing new ones in or near wetland areas used by migratory waterfowl and shorebirds. Manage these areas by establishing suitable vegetation, hydrology and other habitat components to optimize the use 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. Acquire areas with potential to increase connectivity between existing habitats, protect these areas in perpetuity	Connectivity: Project improvements would allow expansion of managed wetlands within the YBWA and would increase productivity of existing wetlands. The improvements would reduce flooding that limits access to the wildlife area by improving channel capacities and road crossings and improve the ability to drain lands following flood events. Migratory pathways: Project improvements would improve

	through the acquisition of conservation easements, deed restrictions, or similar tools, and restore the habitat for wildlife species in these areas. Habitat restoration might be accomplished by establishing suitable hydrology or other physical conditions for desirable vegetation, planting desirable vegetation, fencing and managing grazing, and other means. ❖ Protect migratory pathways for migratory aquatic species such as salmon, steelhead, and sturgeon including those that use Delta tributaries and floodplain habitats by screening diversions, and removing migration barriers. ❖ 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.	drainage and enhance habitat for waterfowl and shorebirds. Project improvements would have beneficial effects on fish populations, communities, and habitat by enhancing new floodplain habitat and improve conditions for fish movement and distribution.
4-5	Conflict with Any Local Policies or Ordinances Protecting Biological Resources or the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Protection Plan: ❖ 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.	Not Applicable to the Project
Cultural Resources and Tribal Cultural Resources		
10-1	The following mitigation measures would reduce the effects of Disturbance or Destruction of Prehistoric and Historic-era Archaeological Resources: ❖ 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	The Project is consistent with the applicable mitigation measures identified in this section. A Historical Resources Study was conducted for the Project to meet Section 106 of the National Historic Preservation Act. A request was sent to the Native American Heritage Commission (NAHC) for a list of Native American individuals and groups and letters were sent to

	properties. ❖ 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 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 to comment on the proposed research. ❖ 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: • 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 ❖ 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 and the Native American community. Potential adverse effects on cultural resources recommended as eligible for listing in the NRHP will be resolved through the development of a memorandum of agreement and/or a program-level agreement.	provided contacts in December 2016. No historical resources were identified in the Project area. In accordance with Public Resources Code, Section 21080.3.1 and the CDFW's Tribal Communication and Consultation Policy (2014), CDFW notified tribal contacts provided by the Native American Heritage Commission as well as the tribal contacts that have requested notification from the CDFW. CDFW sent notification letters in March 2017 to the following tribes: Federated Indians of Graton Rancheria, United Auburn Indian Community of the Auburn Rancheria, Cortina Indian Rancheria of Wintun Indians, and Yocha Dehe Wintun Nation. Refer to Section 3.5, Cultural Resources, and Section 3.17, Tribal Cultural Resources, of the IS/MND.
10-2	The following mitigation measures would reduce the effects of Discovery of Unrecorded Human Remains: ❖ If human remains are encountered during ground-disturbing construction activities, stop work that would potentially affect the find and contact the county coroner. • In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities,	The Project is consistent with the applicable mitigation measures identified in this section. Measure for mitigation of discovering unrecorded human remains during construction activities: refer to

	the contractor shall immediately halt potentially damaging excavation in the area of the burial and notify the county coroner and a professional archaeologist to determine the nature of the remains. 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 development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. • 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 descendents, 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	Section 3.5, Mitigation Measure CUL-3, of the IS/MND.

	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. ❖ 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.	
10-3	The following mitigation measures would reduce the effects of Disturbance or Destruction of Historic Buildings, Structures, and Linear Features: ❖ Inventory and evaluate historic-era buildings, structures, and linear features. Conduct cultural resources studies to determine whether historic-era buildings, structures, and linear features in the project area are eligible for listing in the CRHR. ❖ 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	The Project is consistent with the applicable mitigation measures identified in this section. A Historical Resources Study was conducted for the Project to meet Section 106 of the National Historic Preservation Act. No historical resources were identified in the Project area.

	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. ❖ 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. ❖ 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. ❖ 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.	Measures for mitigation of discovering unrecorded historic, archaeological, or paleontological resources during construction activities: refer to Section 3.5, Mitigation Measures CUL-1 and CUL-2, of the IS/MND.
10-4	Mitigation measures MM 10-1 and MM 10-3 will also mitigate Impact 10-4a through e, Disturbance or Destruction of Cultural Landscapes and Traditional Cultural Properties. However, to mitigate Impact 10-4, MM 10-1 surveys and MM-3 inventories would focus on cultural landscapes and traditional cultural	The Project is consistent with the applicable mitigation measures identified in this section.

	properties.	
Water Resources		
3-1	❖ For construction of new facilities, all typical construction mitigation measures shall be required. Typical mitigation measures include the following construction-related BMPs: • 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. ❖ Other BMPs as determined necessary by the regulating entity (city, county). ❖ Any new facility with introduced impervious surfaces shall include stormwater control measures that are consistent with the RWQCB 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. ❖ Mitigate sediment contaminant bioavailability impacts through the exclusion of bird use or nesting areas from areas that may have excessive selenium or mercury. For any construction activities with the potential to cause in-river sediment disturbance associated with construction: ❖ 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	The Project is consistent with the applicable mitigation measures identified in this section. NPDES, SWPPP, BMPs, and methylmercury: refer to Section 3.9, Mitigation Measure HYD-1, of the IS/MND.

	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. Apply bank stabilization BMPs, as needed, for any in-channel disturbance, such as: • 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.	
3-2	❖ 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 be implemented: • 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.	Not applicable to the Project.

Addendum to Table of Yolo Bypass Project Biological Resources Mitigation Measure Consistency with 4-1 Delta Plan MMRP

Section 5 of the Yolo Bypass Wildlife Area Land Management Plan states in "5.2.1.3 NONNATIVE INVASIVE SPECIES":

The Nonnative Invasive Species sub-element includes goals for management of nonnative invasive species not beneficial to wildlife or that could impact special status plants. These goals are based on the California Fish and Game Code, the policies of the California Fish and Game Commission, and the goals and objectives of the CALFED Ecosystem Restoration Program (ERP) (for which DFG is an implementing agency). The Yolo Bypass Wildlife Area contains several invasive weeds that are in need of control efforts. Yellow star thistle tends to occur in disturbed upland areas including parking lots and roads. It appears to thrive during nonflood years. Perennial pepperweed is pervasive in the higher portions of the wetland areas and throughout the uplands. Cattle grazing has effectively kept perennial pepperweed controlled on the Tule Ranch, allowing native forbs to thrive. Most ditches in the Yolo Bypass are eventually choked with water primrose. Many of these ditches are shared with lessees, who contribute towards the control of this invasive aquatic weed. Control measures may include mechanical removal with an excavator or chemical control through the use of aquatic herbicides. Many management activities are coordinated within the Yolo Weed Management Area.

Invasive Species Goal 1 (IS-1): Prevent the introduction and spread of invasive nonnative species that have no benefit to wildlife or that impact special status plants. This goal is based on the need to avoid the potential consequences of the introduction and spread of invasive species, and on a related goal of the CALFED ERP (for which DFG is an implementing agency). The establishment of additional invasive nonnative species could cause substantial adverse modifications to ecosystems. Thus, a goal of the CALFED ERP is to prevent the establishment of additional nonnative invasive species. The tasks listed below represent a strategic approach toward attaining this goal.

1. Inventory habitats within the Yolo Bypass Wildlife Area for infestations of invasive plants. Monitor these infestations and identify correlative factors such as flooding or vegetation manipulation.

    a. Monitor occurrences of star thistle throughout all upland habitats.

    b. Monitor occurrences of perennial pepperweed in grassland and wetland communities. c. Monitor abundance and distribution of water primrose in the wetlands and irrigation infrastructure on the Yolo Bypass Wildlife Area.

2. Prioritize infestations for treatment based on the risks that individual infestations pose to ecosystem services, public infrastructure, and other resources within the Yolo Bypass Wildlife Area, and based on the likelihood that the infestation can be treated and maintained in a cost-effective manner.

a. Monitor hot spots of introduction (e.g., sites along roads, trails, ditches, and canals, near parking areas, and in turnoffs) to enable early detection and rapid eradication of invasives.

b. Monitor upstream populations of Arundo and water hyacinth along Putah Creek to insure they do not spread to the Wildlife Area. Encourage the eradication of these colonies through participation in the Yolo County Weed Management Area. c. Continue monitoring of Iberian star thistle population established on the Tule Ranch.

3. Manage and control invasive and other nonnative species through specified grazing practices, controlled flood-up and drawdown procedures, use of pesticides, and other conventional agricultural practices.

a. During the rosette growth stage of star thistle, apply Transline® for control of this invasive weed.

b. Apply Telar® to perennial pepperweed stands during early growth stages in spring.

c. Utilize grazing as a tool to control perennial pepperweed in the grazing areas of the Tule Ranch.

d. Utilize grazing as a means of controlling perennial pepperweed in pastures and as an initial treatment in preparation for discing or Roundup® application for the control of jointgrass.

e. Evaluate the effectiveness of monitoring and control methods periodically; adjust methods as needed.

f. Coordinate with and support regional control efforts including the efforts of the Yolo County Weed Management Area.

g. Continue coordination with Yolo County for the control of Iberian star thistle on the Tule Ranch.

h. Coordinate with DWR Division of Flood Management, Sacramento Flood Maintenance Office on management of invasive species on and adjacent to levees.

i. Provide education and outreach regarding impacts associated with invasive plants and control efforts.

j. Share results of control efforts with other Wildlife Areas and private habitat managers in the area.

k. Coordinate control efforts with needs of local farmers who share the use of the Mace Ranch Irrigation System. l. Coordinate all actions with the DFG pesticide use programs. Ensure that all actions comply with the ESA and CESA and other regulations aimed at the protection of special-status species and sensitive habitats as well as current county and state regulations regarding the application of pesticides.

m. Maintain a consistent level of expertise in regards to pesticide use techniques and chemical effectiveness by requiring current pesticide applicator's certification for at least two on-site employees.

n. Consider and avoid unintentional effects to non-target plant species.

o. Avoid adverse effects to native forbs in Tule Ranch grassland communities as a result of herbicide applications for the control of star thistle.

p. Avoid adverse effects to agricultural crops in the area through drift in the air or water.

q. Coordinate herbicide treatments to avoid contact with visitors. Clearly identify dates, locations, and times of herbicide treatments to inform the public and facilitate closure of herbicide treatment areas.

Section "5.2.1.4 SEASONAL AND PERMANENT WETLAND COMMUNITIES" under "Agricultural Resources Goal 1 (AR-1): Use agricultural techniques to maintain and enhance habitat for native wildlife and plants" identifies the following tasks with regard to invasive species:

1. Manage and control invasive nonnative plant species through specified grazing practices, controlled flood-up and drawdown procedures, use of pesticides, and other conventional agricultural practices.

2. Enhance grasslands and uplands through grazing, native grass plantings, and other management techniques.

3. Work with adjacent property owners to limit aerial seeding of Italian ryegrass in areas that would support native alkali grassland under natural conditions.

4. Improve habitat for special-status species in the grassland ecosystems at the Yolo Bypass Wildlife Area through the adaptive management of livestock grazing, limited herbicide application, native grass plantings, and other management techniques.

In addition to these tasks, section 5 of the management plan identifies coordination with regional invasive-plant control efforts by the California Department of Food and Agriculture and Yolo County Agricultural Commissioner's Office to survey, control, and monitor invasive plant species.

The number of staff hours dedicated to the above efforts are enumerated in Section 6 of the Land Management Plan titled "Operations and Maintenance".

Deserving of note is the fact that the Yolo Bypass is a federally and state regulated floodway. The periodic floods that occur on this landscape make control of invasive weeds problematic. Some invasive species are discouraged while others are encouraged by flood management mandates imposed over the area