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Addendum 3 to the Prospect Island Tidal Habitat Restoration Project Final Environmental Impact Report



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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CVFPB	Central Valley Flood Protection Board
DWR	California Department of Water Resources
DWSC	Deep Water Ship Canal
EIR	Environmental Impact Report
FEIR	Final Environmental Impact Report
ft	feet
NAVD88	North American Vertical Datum of 1988
NMFS	National Marine Fisheries Service
RWQCB	Regional Water Quality Control Board
SR	state route
SRFCP	Sacramento River Flood Control Project
SWA	State Wildlife Area
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

EXECUTIVE SUMMARY

The California Department of Water Resources (DWR) has prepared Addendum 3 to the 2019 Prospect Island Tidal Habitat Restoration Project Final Environmental Impact Report (2019 FEIR) (SCH#2013052056). The 2019 FEIR evaluated the effects and mitigation measures associated with the Prospect Island Tidal Habitat Restoration Project (Project).

This Addendum evaluates a proposed refinement to the site-clearing activities described in the 2019 FEIR. Under the proposed refinement, 220 acres of existing trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) would be retained where located outside the construction footprint and associated buffer areas. This represents a change from the Project described in the 2019 FEIR, which included vegetation-clearing treatments across all subtidal elevations to reduce potential predation of native fish species by ambush predators. Under the FEIR, existing trees and woody vegetation within shallow subtidal habitats would be removed, while vegetation within moderate and deep subtidal habitats below 0.0 feet NAVD 88 would be cleared and disked in place. Under the proposed refinement, only trees and woody vegetation located outside the construction footprint and associated buffer areas within the shallow subtidal elevation band would be retained; all other vegetation-clearing activities would remain as described in the 2019 FEIR.

Supplemental environmental analysis in this assessment concludes that retaining trees and woody vegetation within shallow subtidal areas would not result in new significant environmental effects or substantially increase the severity of effects previously identified in the 2019 FEIR. Because the proposed refinement reduces the extent of vegetation clearing previously evaluated and does not alter the Project's restoration footprint, levee breaches, excavation limits, tidal hydrology, or other restoration features, the underlying basis for the FEIR effects analysis remains unchanged. Updated hydraulic modeling of the Yolo Bypass floodway of the Sacramento River Flood Control Project (SRFCP) indicates that predicted water surface elevations remain within the range previously evaluated. Updated hydraulic modeling of the Yolo Bypass floodway of the Sacramento River Flood Control Project (SRFCP) with the proposed refinement indicates that predicted water surface elevations remain within the range previously evaluated, with increases of less than 0.01 foot during the modeled 100-year and 200-year flood events. Additionally, Delta smelt are unlikely to utilize shallow-subtidal vegetated habitat containing woody materials (Moyle et al 2016), providing additional support for the conclusion that retaining trees would not be expected to

substantially increase post-construction predation effects evaluated in the FEIR. Accordingly, the significance determinations and mitigation measures identified in the 2019 FEIR remain unchanged.

Based on the analysis in this Addendum, a Supplemental or Subsequent EIR is not required because the proposed refinement would not result in new significant environmental effects, substantially increase the severity of previously identified effects, involve substantial changes to Project circumstances, or present new information of substantial importance that would alter the conclusions of the 2019 FEIR. Therefore, preparation of an Addendum pursuant to CEQA Guidelines Section 15164 is appropriate.

1 INTRODUCTION

1.1 Background

A Final Environmental Impact Report (2019 FEIR) for the Prospect Island Tidal Habitat Restoration Project (Project) was prepared and certified by DWR in accordance with the California Environmental Quality Act (CEQA) in 2019 (https://ceqanet.opr.ca.gov/2013052056/3). The 2019 FEIR evaluated the effects and mitigation measures associated with the Prospect Island Tidal Habitat Restoration Project (Project). Since certification of the 2019 FEIR, DWR has prepared two addenda to address refinement to Project construction access. Addendum 1 evaluated environmental effects associated with construction of a temporary access ramp along the Deep Water Ship Channel (DWSC) levee access route, and Addendum 2 evaluated use of SR-84 and Holland Road for construction access and materials transport in lieu of the DWSC levee access route. Neither addendum resulted in new significant environmental effects or substantial increases in the severity of previously identified effects. This Addendum evaluates a separate proposed refinement to the Project's site-clearing activities involving retention of 220 acres of trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 ft NAVD 88) outside the construction footprint and associated buffer areas.

The 2019 FEIR assumed site preparation would include clearing and grubbing within the construction footprint and associated buffer areas, and cleared vegetation within moderate subtidal areas below 0.0 ft NAVD 88 would be disked in place. This Addendum eliminates removal of trees and woody vegetation within the shallow subtidal elevation band that are located outside of the construction footprint and associated buffer areas; any trees that established within the shallow subtidal would be retained and would not be cleared. Retention of this woody vegetation would reduce the extent of vegetation disturbance but otherwise not change Project excavation, grading, or construction of other tidal restoration components described in the 2019 FEIR.

1.2 CEQA Guidelines for Preparing an Addendum

The CEQA Guidelines (§15164(a)) specify that the lead agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary, but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred. According to Section 15162, a subsequent EIR shall not be prepared for the project unless the Lead Agency

determines, based on substantial evidence considering the whole record, one or more of the following conditions are met:

1. Substantial changes are proposed to the project which would require major revisions to the EIR due to the involvement of new, significant environmental effects or a substantial increase in the severity of previously identified significant effects.
2. Substantial changes occur with respect to the circumstances under which the project is undertaken which would require major revisions to the EIR due to the involvement of new significant environmental effects; or
3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the EIR was certified as complete, shows any of the following:
    - The project would have one or more significant effects not discussed in the EIR;
    - Significant effects previously examined in the EIR would be substantially more severe than shown in that EIR;
    - Mitigation measures or project alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects on the environment, but the project proponents declined to adopt the mitigation measure or alternative; or
    - Mitigation measures or project alternatives which are considerably different from those analyzed in the EIR would substantially reduce one or more significant effects on the environment, but the project proponents declined to adopt the mitigation measure or alternative.

The requirements for a subsequent EIR as specified in the CEQA Guidelines (§15164(a)) have not been met here. Only minor additions or changes to the 2019 FEIR are needed. Therefore, this Addendum has been prepared.

2 PROPOSED REFINEMENT TO THE PROSPECT ISLAND TIDAL HABITAT RESTORATION PROJECT

This Addendum analyzed the proposed refinement to the Project to modify clearing activities described in Section 2.2.3, paragraph 2.b. of the 2019 FEIR by retaining 220 acres of existing trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) where located outside the construction footprint and associated buffers. The proposed refinement would reduce disturbance of existing vegetation and preserve woody habitat structure without altering the Project's restoration footprint, tidal hydrology, excavation, grading, levee breaches, or other restoration features evaluated in the 2019 FEIR. No new or substantially more severe, significant environmental effects, or potentially significant environmental effects, would occur.

2.1 Clearing activities as described in 2019 FEIR

Section 2.2.3, paragraph 2.b of the 2019 FEIR described site-clearing activities that included clearing and grubbing within the construction footprint and associated buffer areas (Figure 2-1). Vegetation within moderate subtidal habitats below 0.0 feet NAVD 88 would be cleared and disked in place, and existing trees and woody vegetation within shallow subtidal habitats (0.0 to 2.1 feet NAVD 88) would be removed to reduce habitat suitability for ambush predators upon native fish species.

2.2 Clearing activities refinement

Under this proposed refinement to the Project, 220 acres of trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) that are located outside the construction footprint and associated buffer areas (Figure 2-1) would be retained, reducing vegetation disturbance while maintaining the restoration footprint and other Project features evaluated in the FEIR.

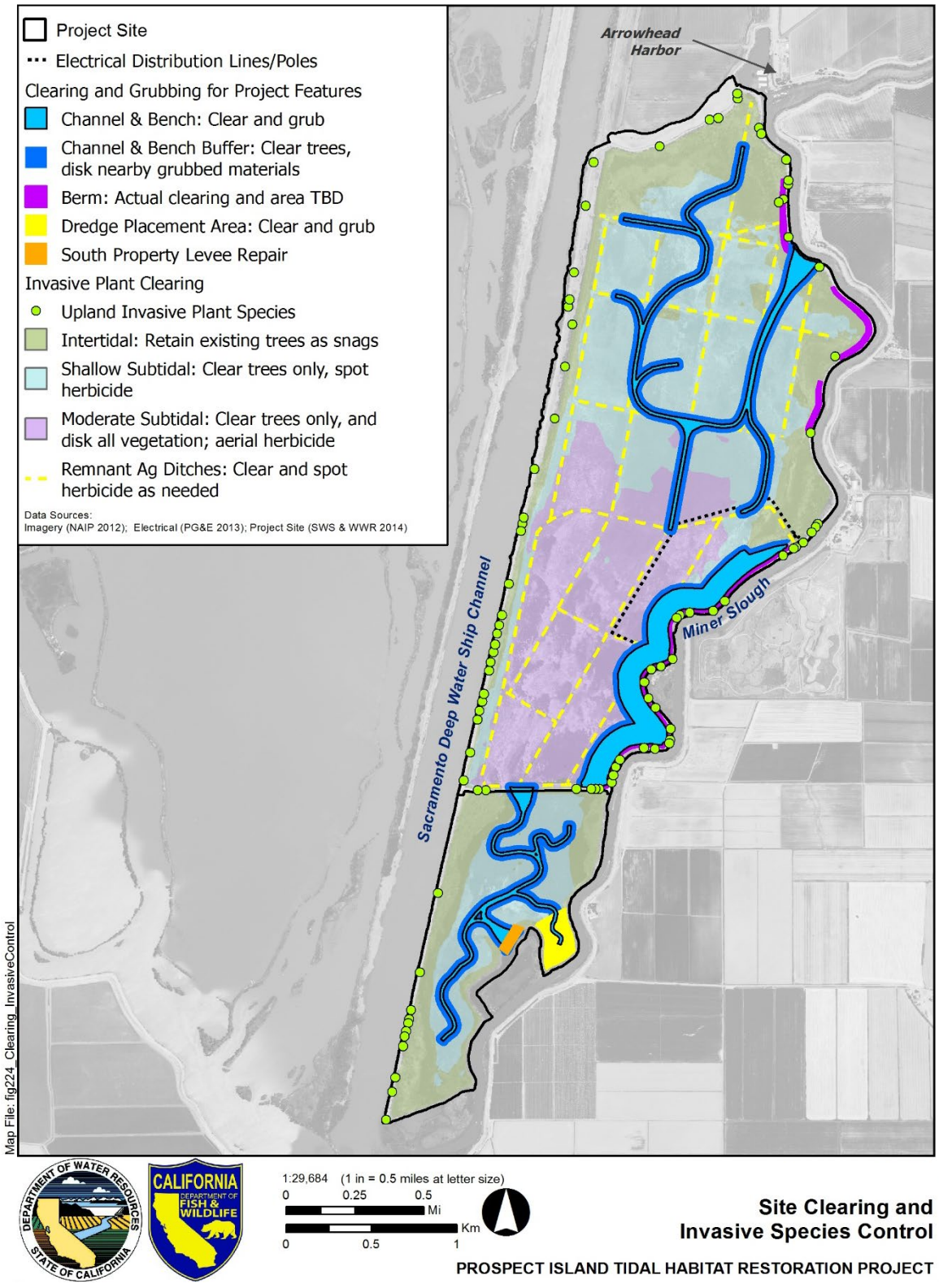

Figure 2-1. Site Clearing (from 2019 FEIR).

3 SUPPLEMENTAL ENVIRONMENTAL REVIEW

3.1 Environmental Checklist

This section describes the methods used to evaluate the proposed refinement to the Project. Appendix A, Table A-1 includes an environmental checklist that summarizes the environmental effects and mitigation measures identified in the 2019 FEIR. The table identifies the original significance determination and applicable mitigation measures for each impact and documents consideration of the proposed refinement includes an environmental checklist that identifies the resource areas that pertain to the proposed refinement as addressed in the 2019 FEIR. The Table A-1 checklist (See Appendix A, Table A-1) states each environmental impact analyzed in the 2019 FEIR (e.g., noise, transportation/traffic, and air quality) and explains each impact effect's significance and associated mitigation measures accounting for the proposed refinement to the Project.

The proposed refinement was evaluated with respect to the following resource areas addressed in the 2019 FEIR:

- Water Quality
- Geology and Soils
- Hazards and Hazardous Materials
- Air Quality
- Greenhouse Gases
- Mineral Resources
- Noise
- Aesthetics
- Agricultural Resources
- Cultural Resources
- Land Use and Planning / Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities

The environmental effects assessments for these resource areas do not warrant further discussion in this Addendum because one or more of the following conditions apply:

1. The effect relates to construction activities, excavation, grading, dredging, levee breaching, soil handling, or other earthmoving activities that would not be modified or increased by retaining trees and woody vegetation outside the construction footprint and associated buffer areas;
2. The effect relates to resources that would not experience additional disturbance because the proposed refinement reduces, rather than increases, the extent of vegetation clearing and ground disturbance previously evaluated in the FEIR;
3. The effect assessment addresses long-term hydrologic, geomorphic, water quality, habitat, or ecosystem processes that would not be altered because the proposed refinement would not modify tidal hydrology, levee geometry, breach dimensions, excavation limits, restoration acreage, Project objectives; or
4. The effect relates to utilities, infrastructure, easements, transportation facilities, public services, or other built features that would not be modified, relocated, or additionally disturbed through retention of shallow-subtidal trees and woody vegetation.

The effects assessments most relevant to the proposed change in shallow-subtidal clearing are Hydrology (FEIR Section 3.1), Aquatic Biological Resources (FEIR Section 3.3), and Wetland and Terrestrial Biological Resources (FEIR Section 3.4). These resources are discussed in the following subsections and summarized in Table A-1. As explained in the following discussions, retention of shallow-subtidal trees and woody vegetation, as proposed in the Project refinement, would not result in new significant effects or a substantial increase in the severity of previously identified effects. Therefore, the significance determinations and mitigation measures identified in the 2019 FEIR remain unchanged.

3.2 Hydrology

The proposed refinement to retain trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) outside the construction footprint and associated buffer areas is potentially relevant to the hydrology resource area evaluated in FEIR Section 3.1 because this vegetation could potentially affect hydraulic roughness and flood conveyance. DWR reviewed Hydrology Impacts 3.1-1 through 3.1-10 and determined that the refinement would not alter the Project footprint, levee configuration, breach dimensions, excavation limits, tidal exchange, groundwater conditions, water diversions, or other Project features that formed the basis of the original hydrology analysis.

Accordingly, the significance determinations for Hydrology Impacts 3.1-1 and 3.1-3 through 3.1-10 remain unchanged, as summarized in Table A-1.

Impact 3.1-2 requires additional discussion because it is the only hydrology impact that could reasonably be affected by vegetation retention. As discussed below, updated hydraulic modeling confirms that resulting water-surface elevation changes remain within the range previously evaluated and do not alter the FEIR conclusion.

Impact 3.1-2: Potential impacts to Sacramento River Flood Control Project and Yolo Bypass Floodway flood conveyance

The original assessment of potential effects to Sacramento River Flood Control Project (SRFCP) and Yolo Bypass flood conveyance was presented on pages 3-27 and 3-28 of the 2019 FEIR. Using a hydraulic model developed by the USACE based on the RMA2 platform (USACE 2007), potential changes in flood conveyance associated with restoration of Prospect Island were modeled and compared to baseline flow and water surface elevation conditions under 1957 SRFCP design flow conditions (Appendix H in SWS and WWR 2012). Based on modeling results, only minor localized changes in water surface elevations (less than 0.05 ft) were identified and were considered insignificant because they were within the range of model uncertainty.

To evaluate whether retention of trees and woody vegetation within the shallow subtidal elevation band could potentially affect flood conveyance, updated hydrodynamic modeling was conducted using the same North Delta RMA2 model network and boundary conditions used in the 2016 flood-conveyance analysis supporting the FEIR (RMA 2016; GEI 2026). The updated analysis modified only hydraulic roughness assumptions within mapped areas of shallow subtidal habitats that currently contain trees and woody vegetation. Using conservative roughness assumptions associated with dense trees (willows and cottonwoods) in these areas, modeling results indicate that retained trees would have very little effect on flood stages (GEI 2026). For both the 100-year and 200-year flood events, increases in peak water-surface elevations in Miner Slough and other selected North Delta locations were less than 0.01 foot relative to the prior modeled condition without trees. These changes are substantially smaller than the water-surface elevation changes evaluated in the 2019 FEIR, which were determined to be insignificant because they were within the range of model uncertainty. Accordingly, the updated results remain consistent with the flood-conveyance conclusions and significance determination presented in the FEIR.

Consistent with the original FEIR analysis, the updated modeling demonstrates that retention of trees and woody vegetation outside the construction footprint and associated buffer areas would not materially change the flood-conveyance conclusions or significance determination for Impact 3.1-2 in the 2019 FEIR. Retention of this vegetation would not otherwise modify levee geometry, breach dimensions, tidal exchange, or other Project features evaluated in the hydrologic analysis and would not alter the FEIR's conclusion that the Project would have *No Impact* on SRFCP and Yolo Bypass flood conveyance.

3.3 Aquatic Biological Resources

The proposed refinement to retain trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) outside the construction footprint and associated buffer areas is potentially relevant to the aquatic biological resources evaluated in FEIR Section 3.3 because retained woody vegetation could influence habitat conditions and predator-prey interactions for native fish species. DWR reviewed Aquatic Biological Resources Impacts 3.3-1 through 3.3-12 and determined that the refinement would not alter the Project footprint, restoration acreage, levee breaches, excavation limits, channel configuration, tidal hydrology, construction methods, or other Project features that formed the basis of the original aquatic resources analysis in the 2019 FEIR. While retention of woody vegetation may contribute to variations in habitat complexity within shallow subtidal areas, it would not alter the significance determinations for Aquatic Biological Resources Impacts 3.3-1 through 3.3-8 and 3.3-10 through 3.3-12, which remain unchanged, as summarized in Table A-1.

Impact 3.3-9 requires additional discussion because it is the only aquatic biological resources impact directly related to the original rationale for removing trees and woody vegetation from subtidal habitats. As discussed below, retaining trees within shallow subtidal areas is not expected to substantially alter habitat use by native fish species or increase post-construction predation beyond the levels evaluated in the FEIR and therefore does not alter the FEIR conclusion.

Golden Mussel

The golden mussel (*Limnoperna fortunei*) is a freshwater bivalve native to the Pearl River Basin in southeastern China. Golden mussels were first detected in the Delta in 2024 on the lower San Joaquin River in the Port of Stockton. Since their initial detection, golden mussels have been found throughout SWP and CVP infrastructure south of the Delta. Golden mussels have now been detected throughout the Delta. The impacts of golden mussels on the Delta ecosystem and native fishes are unknown, but it has been speculated that golden mussels

could impact lower trophic production through enhanced filter feeding (Morais 2026). Golden mussels may attach to trees left onsite, but it is unclear if they would occur at densities that would meaningfully affect lower trophic production within Prospect Island or affect lower trophic production different than what would occur from other invasive bivalves (i.e., Corbicula) that are likely to colonize the site after breaching. If golden mussels colonize the trees, there are no anticipated direct impacts on Giant Garter Snake or Swainson Hawk presence or abundance. Also, there are no anticipated impacts of golden mussels on abundance and distribution of native species, including Delta smelt, longfin smelt, Chinook salmon or green sturgeon.

Impact 3.3-9: Post-construction increased predation on native fish

The original assessment of post-construction predation on native fish was presented on pages 3-135 through 3-137 of the 2019 FEIR. The FEIR concluded that restoration of tidal wetlands and associated channel networks could create conditions suitable for piscivorous fish and wildlife; however, multiple Project design features were incorporated to favor native fish species and reduce the potential for predation. These design features included a breach velocity dissipater at the northern breach, channel geometries designed to increase depths and velocities that discourage establishment of aquatic vegetation associated with predator habitat, and removal of standing trees within subtidal habitats. Based on these design features and the anticipated habitat and the expected food-web benefits of tidal wetland restoration to native fish species, the FEIR previously concluded that post-construction predation on native fish would be less than significant.

Under the proposed Project refinement, existing trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) located outside the construction footprint and associated buffer areas would be retained. To minimize predation on native fish species in open water habitats, trees and woody vegetation within moderate and deep subtidal habitats below 0.0 feet NAVD 88, as well as vegetation within the construction footprint and associated buffer areas, would continue to be removed as described in the FEIR. Retention of trees and woody vegetation within shallow subtidal habitats could provide additional structural cover that may be used by native fish as well as piscivorous fish and other predators relative to post-Project conditions assumed in the FEIR. However, the retained vegetation would be located outside constructed channels and open-water habitats where predation concerns are greatest.

Because shallow subtidal areas outside cleared constructed channels and open-water habitats are expected to transition to emergent marsh over the long term, retained woody vegetation may provide additional habitat complexity during the transition to emergent marsh. Retained woody debris will not have any impacts to native species, including Chinook salmon, Delta smelt, longfin smelt, white sturgeon, and green sturgeon, as they are unlikely to occupy woody debris structure (Nobriga et al. 2005; Brown and Michnuik 2007; Grimaldo et al. 2012; Moyle et al. 2016; Grimaldo et al. 2017; Mahardja et al. 2017; Grimaldo et al. 2020; Huntsman et al. 2022), although juvenile Chinook salmon may be more likely than other native species to occur around structure (Hellmair et al 2018).

Delta smelt, the target species of the project as required by the 2024 State Water Project Incidental Take Permit and 2024 Record of Decision, are a primarily pelagic species, and unlikely to utilize these shallow habitats altogether (Grimaldo et al. 2004; Nobriga et al. 2005; Brown and Michnuik 2017; Grimaldo et al. 2012; Grimaldo et al. 2017; Mahardja et al. 2017; Huntsman et al. 2022). CDFW's Tidal Wetland Monitoring Program has sporadically collected Delta smelt since 2015, and few of these have been within tidal wetlands and all have been in deeper, open water (i.e. non-vegetated) habitat sampled by lampara nets (Bowles et al 2026). USFWS sampling in Liberty Island historically sampled Delta smelt in nearshore habitats with beach seines (USFWS 2026), but the anticipated colonization by emergent vegetation in Prospect Island would make Delta smelt utilization of these habitats unlikely. While the proposed refinement represents a modification to one of the design assumptions supporting the original clearing rationale, it does not introduce a new predation mechanism beyond those evaluated in the FEIR. The FEIR previously considered the potential for predatory fish and wildlife to utilize restored habitats and concluded that predation levels would be similar to and potentially lower than existing conditions because of the Project's overall design and ecological benefits. Because native fish are unlikely to utilize the emergent vegetation in Prospect Island from removal of the woody vegetation, retaining the vegetation similarly is unlikely change the level of predation on native fish. The primary mechanism by which Delta smelt are likely to benefit from the restoration is through enhanced lower trophic food web production (see Hammock et al. 2019).

Accordingly, retention of trees and woody vegetation within the shallow subtidal elevation band would not result in new significant effects or a substantial increase in the severity of previously identified effects. The FEIR's conclusion that post-construction predation on native fish would be *Less Than Significant* remains unchanged.

3.4 Wetland & Terrestrial Biological Resources

The proposed refinement to retain trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) outside the construction footprint and associated buffer areas is potentially relevant to the wetland and terrestrial biological resources evaluated in FEIR Section 3.4 because those resources could be affected by changes in the extent of vegetation removal and associated habitat disturbance. DWR reviewed Wetland and Terrestrial Biological Resources Impacts 3.4-1 through 3.4-18 and determined that the proposed refinement would not alter the Project footprint, restoration acreage, levee breaches, excavation limits, channel configuration, tidal hydrology, construction methods, or other Project features that formed the basis of the original wetland and terrestrial biological resources analysis. Because the proposed refinement would reduce vegetation removal and associated habitat disturbance relative to conditions evaluated in the FEIR, it would not alter the significance determinations the significance determinations for Impacts 3.4-1 through 3.4-9 and 3.4-12 through 3.4-18, which remain unchanged, as summarized in Table A-1.

Impacts 3.4-10 and 3.4-11 warrant additional discussion because giant garter snake habitat was specifically evaluated in the FEIR and retention of woody vegetation could affect habitat conditions within portions of the restored site. As discussed below, however, retaining trees and woody vegetation within shallow subtidal areas is not expected to increase construction-related effects to giant garter snake or substantially alter the FEIR conclusions regarding long-term habitat conditions. Therefore, the FEIR conclusions remain unchanged.

Impact 3.4-10: Short-term construction-related injury or mortality and loss of habitat for giant garter snakes

The original assessment of construction-related effects to giant garter snake was presented on pages 3-175 through 3-177 of the 2019 FEIR. The FEIR concluded that site preparation and construction activities, including clearing and grubbing, invasive species control, channel excavation, construction of topographic features, temporary access routes, staging areas, and levee breach excavation, could result in direct injury or mortality of giant garter snakes, temporary habitat disturbance, and temporary habitat loss. The FEIR further concluded that implementation of Mitigation Measure 3.4-10.1 would reduce these effects to a less-than-significant level.

Under the proposed Project refinement, existing trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) located outside the construction footprint and associated buffer areas would be retained. The refinement would not expand construction activities, increase the construction footprint, modify excavation limits, or increase the extent of ground disturbance relative to the FEIR. All construction activities identified in the FEIR as potential sources of injury, mortality, or temporary habitat disturbance to giant garter snake would remain unchanged.

Retention of trees and woody vegetation would reduce the amount of vegetation removal and habitat disturbance previously assumed under the FEIR. The refinement would not eliminate or modify implementation of Mitigation Measure 3.4-10.1, including worker environmental awareness training, pre-construction surveys, exclusion fencing, seasonal work restrictions, speed limits, and other avoidance and minimization measures. Because the proposed refinement would reduce rather than increase habitat disturbance and would not introduce new construction-related impact mechanisms, it would not increase the potential for injury, mortality, or temporary habitat loss for giant garter snake beyond the levels evaluated in the FEIR.

Accordingly, retention of trees and woody vegetation within the shallow subtidal elevation band would not result in new significant effects or a substantial increase in the severity of previously identified effects. The FEIR's conclusion that Impact 3.4-10 would be Less Than Significant with Mitigation remains unchanged.

Impact 3.4-11: Long-term conversion of giant garter snake habitat

The original assessment of long-term effects to giant garter snake habitat was presented on pages 3-177 through 3-180 of the 2019 FEIR. The FEIR concluded that restoration of Prospect Island would convert existing non-tidal habitats to tidal aquatic and tidal freshwater emergent wetland habitats while increasing the amount of potential giant garter snake foraging habitat available on the site. Although the FEIR identified a reduction in some upland basking and overwintering habitat, it concluded that the restored site would continue to provide suitable habitat features for giant garter snake and that the overall impact would be less than significant.

Under the proposed Project refinement, trees and woody vegetation within the shallow subtidal elevation band outside the construction footprint and associated buffer areas would be retained. The refinement would not alter the restoration

footprint, tidal hydrology, channel network, intertidal bench features, topographic features, levee breaches, restoration acreage, or other habitat elements that formed the basis of the FEIR's giant garter snake habitat assessment.

The FEIR's evaluation of giant garter snake habitat focused primarily on the availability of aquatic foraging habitat, freshwater emergent wetland habitat, shallow aquatic habitat, basking habitat, and upland refuge areas. Retention of trees and woody vegetation would not materially alter the habitat features most strongly associated with giant garter snake use. Suitable habitat is associated with persistent shallow water; emergent herbaceous wetland vegetation that provides escape cover and foraging habitat; grassy banks and openings for basking; and higher-elevation uplands that provide winter refuge (Hansen and Brode 1980; Wylie et al. 1997; USFWS 2017). No literature was found that documents increased predation on GGS from birds and mammals in shallow subtidal areas with trees and woody vegetation. Furthermore, no literature was found that documents GGS in largemouth bass and striped bass stomach content. To the contrary, one study of 1,467 largemouth bass and striped bass documented stomach contents to contain annelids, bivalves, insects, crustaceans, fish, and tadpoles (Nobriga and Feyrer 2007). Therefore, it is not anticipated that the proposed refinement will result in any new effects or increase in significant effects within the shallow subtidal elevation band. The proposed refinement therefore would not substantially increase predation risk to giant garter snake or materially alter the habitat suitability assumptions underlying the FEIR's significance determination for Impact 3.4-11. Over time, these areas are expected to continue transitioning toward tidal freshwater emergent wetland habitats consistent with the restoration objectives evaluated in the FEIR.

Accordingly, retention of trees and woody vegetation within the shallow subtidal elevation band would not alter the habitat suitability assumptions underlying the FEIR's analysis. The FEIR did not identify predation as a factor driving its significance determination for long-term giant garter snake habitat conversion. Rather, the FEIR's conclusion was based on the availability and suitability of aquatic, emergent wetland, basking, and refuge habitat following restoration. Because the proposed refinement would not materially alter those habitat features or the habitat conditions evaluated in the FEIR, it is not anticipated that retention of woody vegetation would create a new predation mechanism or substantially increase the severity of predation effects relative to the conditions evaluated in the FEIR. Therefore, the FEIR's conclusion that Impact 3.4-11 would be Less Than Significant remains unchanged.

3.5 Cumulative Impacts

The 2019 FEIR evaluated cumulative impacts associated with implementation of the Prospect Island Tidal Habitat Restoration Project in combination with other past, present, and reasonably foreseeable projects in the region. The proposed refinement evaluated in this Addendum consists solely of retaining existing trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 feet NAVD 88) outside the construction footprint and associated buffer areas. The refinement does not alter the Project footprint, restoration acreage, levee breaches, excavation limits, tidal hydrology, construction methods, or operational characteristics evaluated in the 2019 FEIR. Because the refinement reduces the extent of vegetation removal previously evaluated and would not result in new significant effects or a substantial increase in the severity of previously identified effects, it would not alter the cumulative impact conclusions presented in FEIR Section 3.19 of the 2019 FEIR. The cumulative impact determinations and mitigation measures identified in the 2019 FEIR therefore remain unchanged.

4 CONCLUSION

The analysis in this Addendum demonstrates that the proposed Project refinement, retention of trees and woody vegetation within the shallow subtidal elevation band (0.0 to 2.1 ft NAVD 88) outside the construction footprint and associated buffers, would not result in new significant environmental effects or substantially increase the severity of effects previously identified in the 2019 FEIR. The proposed refinement reduces the extent of vegetation removal evaluated in the 2019 FEIR and does not modify the restoration footprint, levee breaches, excavation limits, tidal hydrology, or other Project features that formed the basis of the FEIR effect analysis. No substantial changes have occurred with respect to the circumstances under which the Project would be undertaken that would result in new or substantially more severe environmental effects. Lastly, no new information of substantial importance demonstrates new significant effects, substantially more severe effects, or the need for different mitigation measures or alternatives than those analyzed in the 2019 FEIR. Therefore, preparation of an Addendum pursuant to CEQA Guidelines Section 15164 is appropriate. The 2019 FEIR (), supplemented by this Addendum, is complete, accurate, and adequate to meet the requirements of CEQA and the State CEQA Guidelines.

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Appendices

Appendix A

Prospect Island Tidal Habitat Restoration Project Final Environmental Impact Report Effects Summary and Mitigation Measures

Table A-1. Summary of Effects and Mitigation Measures by Resource Area

Effect No.	Effect Title	FEIR Significance	Proposed Mitigation Measures	Significance with Proposed Project Refinement	New Mitigation Measures
			HYDROLOGY		
3.1-1	Potential changes in agricultural water supply and drainage due to changes in tidal range	LTS	None required	LTS	No
3.1-2	Potential impacts to SRFCP and Yolo Bypass Floodway flood conveyance	NI	None required	NI	No
3.1-3	Groundwater seepage impacts from Prospect Island to adjacent areas	LTS	None required	LTS	No
3.1-4	Potential wind-wave erosion of interior side of Prospect Island levees	LTS	None required	LTS	No
3.1-5	Potential toe-scour and erosion of Miner Slough levees affecting Ryer Island levee stability	LTS	None required	LTS	No
3.1-6	Potential increase in seepage on adjacent lands due to Miner Slough bed scour	LTS	None required	LTS	No
3.1-7	Potential regional flow impacts causing non-compliance with D-1641 Rio Vista flow requirements	NI	None required	NI	No
3.1-8	Potential scour impacting stability of nearby bridges, trestles, culverts, or other structures	NI	None required	NI	No
3.1-9	Potential impacts to water rights from diversion of surface water	NI	None required	NI	No
3.1-10	Potential construction-related impacts to groundwater supplies and third-party wells	NI	None required	NI	No

WATER QUALITY					
3.2-1	Short-term construction-related water quality impacts	LTSM	**Mitigation Measure 3.2-1.1** A site dewatering plan shall be developed by the construction contractor and submitted to DWR for approval prior to commencement of construction activities. The site dewatering plan shall include items such as the following: 1. Detailed description of work to be performed to control surface water at the Project site. 2. Detailed description of methods, installation and details of the dewatering systems proposed to be used. 3. Drawings showing the detailed layout of dewatering systems including pumps, ditches, berms, discharge lines, Best Management Practices (BMPs), and barriers to shield or divert flow. 4. Supporting design information including design calculations prepared by a California Registered Civil Engineer, type of systems, sizes, capacities, proposed number and layout of pumps, depths, filters, other needed equipment, and power supply. 5. Information related to backup pumping systems, backup power systems, and warning systems to protect against power failure, system failure, and high groundwater. 6. Information related to operation, maintenance, monitoring, removal, decommissioning pumps, and system abandonment procedures.	LTSM	No

			7. Information related to discharge, including methods to monitor turbidity and water treatment if necessary. 8. Provisions for handling significant rainfall events (greater than 0.5 in predicted in a 24-hour period as described in the Stormwater Pollution Prevention Plan [SWPPP]). This shall also include procedures to be followed prior to the forecasted significant rain events. 9. Provisions for handling emergency situations such as power outages, equipment failures, pumping system shutdowns and the proposed response. 10. Information on schedule and sequencing of dewatering activities. 11. Information on dewatering operations shall be coordinated with other construction operations including placement of compacted soil, removal and placement of pipe, and other miscellaneous items. **Mitigation Measure 3.2-1.2** Upland areas of the Project associated with staging activities shall be covered by a Stormwater Pollution Prevention Plan (SWPPP). All contractors working in a capacity that could increase the potential for adverse water quality effects would receive training regarding the need to minimize effects. Contractors would also be familiar with general storm water construction-site BMPs for the protection of water quality. The SWPPP may include, but would not be limited to, the following:		

			1. Use of vegetated buffers, hay wattles or bales, sandbags, silt screens, or other erosion control measures to intercept runoff from construction, excavation, or staging areas to adjacent waterbodies. 2. BMPs for staging of construction supplies and waste management. **Mitigation Measure 3.2-1.3** A Spill Prevention, Control, and Response Plan shall be developed by the construction contractor and submitted to DWR for approval prior to commencement of construction activities. Spill prevention and cleanup kits, equipment, and materials shall always be in close proximity to locations of hazardous materials (e.g., at fueling and staging areas) and conveniently located to allow rapid response. Prior to entering the work site, all field personnel would be informed of the location of the spill prevention and cleanup kits and appropriately trained in spill prevention, hazardous material control, and spill cleanup. The work site would be routinely inspected to verify that the Plan is properly implemented. The Plan would include: 1. A vehicle inspection and fueling plan. 2. BMPs for spill prevention and containment. 3. Locations and uses of spill prevention materials, cleanup kits, and equipment. 4. Qualification and reporting requirements for a federal reportable spill (CFR, Title 40, Section 110) including contact information for the		

			RWQCB and the California Department of Toxic Substances Control (DTSC).		
3.2-2	Short-term construction-related increases in turbidity and/or mobilization of contaminants from dredging and excavation of levee breaches	LTSM	**Mitigation Measure 3.2-2.1** 1. Appropriate turbidity control measures (e.g., silt curtains) shall be required during all dredging operations. Selection of appropriate turbidity control measures would consider tidal forces in Miner Slough and would be designed to be robust and effective. Turbidity measures would be in place 1–2 days prior to commencement of dredging operations and would be positioned slightly above the bottom sediments allowing aquatic species to escape entrapment. 2. The cycle time of the ascending loaded dredging bucket shall be limited to a velocity that reduces the potential to wash sediment out of the bucket. 3. The number of bites performed per cycle shall be limited to one to reduce sediment re-suspension from opening and closing the dredging bucket.	LTSM	No

3.2-3	Short-term construction-related effects from application of aquatic herbicides	LTSM	**Mitigation Measure 3.2-3.1** Best Management Practices (BMPs) shall be employed in order to minimize potential effects to water quality from accidental spills. All contractors working shall receive training regarding the need to minimize effects. Contractors shall be experienced and compliant in the environmentally safe application of herbicides. BMPs shall include, but not be limited to, the following: 1. Areas for storage, mixing, and loading of herbicides shall be located where accidental spills to nearby waterbodies cannot occur. 2. Applicators shall be trained in proper spill response and rapidly report any spill to the appropriate agencies. 3. Applicators shall maintain on-site (near herbicide storage and loading equipment) appropriate initial spill-response items (e.g., absorbent materials). **Mitigation Measure 3.2-3.2** In order to minimize off-target spray drift and effects to water quality from herbicide application, aerial pesticide application by helicopter shall be preferred (over fixed wing aircraft). In addition, all appropriate, standard BMPs for aerial application of pesticides shall be followed, including but not limited to, the following: 1. Applicators shall develop an application plan--including maps of the Project site showing general spotter and flight plans with application areas clearly indicated--to be approved by the Lead Agency, before any application of herbicides.	LTSM	No

			2. Applicators shall adhere strictly to proper mixing and application guidelines as presented on herbicide labels and in product instructions. 3. Application of herbicides on levee vegetation shall not take place by air and otherwise avoided unless necessary, when it would be executed using spot application techniques. 4. Herbicide application by air shall only take place during the in-water work window from July 1 to October 31 of any one year, in order to reduce potential effects to migrating fish species of concern. 5. Applicators shall maintain records of herbicide applications—including dates, times, weather conditions, amount of herbicide applied, problems experienced, etc.—in addition to or as required by federal, state, and/or local agencies. 6. Spraying shall at all times be halted when flying over levees, adjacent waterbodies (e.g., Miner Slough, DWSC), and agricultural fields. 7. Aerial application would occur only during light winds, non-gusty, relatively cool weather conditions. 8. Application would involve the use of appropriate spray nozzles, nozzle configurations, and nozzle orientations that minimize atomization of herbicide mixtures and production of fine droplets that tend to drift. 9. Herbicide tanks would not be operated at excessively high pressures.		

			10. If conditions require the use of aerial spray by fixed-wing aircraft, pilots shall be instructed to include an appropriate spray buffer (in addition to the width of the levee) where, to the extent possible, no herbicides would be directly applied (subject to overriding safety concerns).		
3.2-4	Short-term construction-related effects on water temperature in adjacent waterbodies due to dewatering activities	NI	None required	NI	No
3.2-5	Long-term effects on salinity in waterbodies near Prospect Island	LTS	None required	LTS	No
3.2-6	Long-term effects on water temperature within Prospect Island and in nearby waterbodies	B	None required	B	No
3.2-7	Long-term effects on primary productivity and dissolved organic carbon (DOC) within and near Prospect Island	LTS	None required	LTS	No
3.2-8	Long-term effects on methylmercury production, bioaccumulation, and export	LTS	None required	LTS	No
3.2-9	Long-term effects on groundwater quality	NI	None required	NI	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
AQUATIC BIOLOGICAL RESOURCES					
3.3-1	Short-term loss and degradation of aquatic habitat from construction-related activities	LTS	None required	LTS	No
3.3-2	Long-term conversion and enhancement of aquatic habitat	B	None required	B	No
3.3-3	Short-term direct construction-related injury or mortality of fish	LTSM	**Mitigation Measure 3.3-3.1** Pile driving activities shall be conducted using vibratory hammers, where feasible, to minimize sound attenuation from pile driving activities. If in-water pile driving activities become necessary, underwater sound monitoring shall be performed to ensure that peak sound pressure does not exceed 206 decibels and accumulated sound exposure level does not exceed 187 decibels at 10 meters. If work is performed at a time when special-status fish less than 2 grams are expected near the Project site, accumulated sound exposure levels shall not exceed 183 decibels at 10 meters. Underwater sound reduction measures shall be implemented as needed to ensure that sound levels do not exceed the above thresholds. Sound reduction measures may include impact cushions, pipe caissons, bubble curtains, fabric barriers, and limiting operational hours and impact frequency. **Mitigation Measure 3.3-3.2** DWR shall consult with CDFW and USFWS before conducting any in-water work during the month of July. DWR shall determine the extent of Delta smelt presence in the CSC and Miner Slough by evaluating catch and distribution data from CDFW's	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			20 mm Survey[1] and Summer Townet Survey[2]. The results shall be sent to USFWS and CDFW representatives to determine the extent of allowable in-water work. 20 mm Survey Stations 724 and 726 are located in Miner Slough at the lower and upper ends of Prospect Island and shall be used to determine Delta smelt abundance in Miner Slough during July construction activities. Summer Townet Survey Station 715, just downstream of Miner Slough in Cache Slough; Station 723, just upstream from Miner Slough in the DWSC; and Station 716, just upstream from Miner Slough in Lindsey Slough, shall be used to determine Delta smelt abundance in the vicinity of Miner Slough when the 20 mm Survey is not active.		
3.3-4	Short-term construction-related noise impediments to fish migration	LTSM	**Mitigation Measure 3.3-3.1** *(described above in Aquatic Biological Resources)*	LTSM	No
3.3-5	Short-term impairment of essential fish behaviors due to potential increases in turbidity during underwater sediment sampling activities	Impact deleted as sampling is complete	None required	Impact deleted as sampling is complete	No
3.3-6	Short-term impairment of essential fish behaviors due to construction-related increases in turbidity	LTSM	**Mitigation Measure 3.2-2.1** *(described above in Water Quality)*	LTSM	No

[1] The 20 mm Survey is an annual survey conducted by CDFW that monitors post-larval to juvenile Delta smelt throughout the Delta from March through July. Surveys run every two weeks and include stations in Cache Slough, Lindsey Slough, the DWSC, and Miner Slough.
[2] The Summer Townet Survey is an annual survey that monitors young-of-the-year fish throughout the Delta from June through August. Surveys run every two weeks and include stations in Cache Slough, Lindsey Slough, and the DWSC.

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
3.3-7	Short-term fish injury or mortality during dewatering	LTSM	**Mitigation Measure 3.3-7.1:** To minimize mortality due to the dewatering process, a Fish Rescue Plan shall be prepared by DWR for approval by state and federal fish agencies (CDFW, USFWS, NMFS). Development of the Fish Rescue Plan shall include consideration of numerous sampling methods (seines, electrofishing, traps) and events, performed during and potentially after initial site dewatering. Fish would be captured alive and transported to nearby suitable habitat for release. The fish rescue would occur under the direction of CDFW.	LTSM	No
3.3-8	Fish Injury or mortality due to herbicide application	NI	None required	NI	No
3.3-9	Post-construction increased predation on native fish	LTS	None required	LTS	No
3.3-10	Long-term impacts to fish in Prospect Island and adjacent water bodies from changes in water temperature	B	None required	B	No
3.3-11	Altered habitat and food web from invasion by Asian Clam	LTS	None required	LTS	No
3.3-12	Food web impacts from increased levels of methylmercury bioaccumulation	LTS	None required	LTS	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
WETLAND AND TERRESTRIAL BIOLOGICAL RESOURCES					
3.4-1	Short-term impacts to perennial aquatic habitats and wetland communities from site preparation	SU	None required	SU	No
3.4-2	Short-term impacts to tidal aquatic habitats and wetland communities from dredging in the Miner Slough spur channel	NI	None required	NI	No
3.4-3	Short-term loss of valley/foothill riparian habitat	LTSM	**Mitigation Measure 3.4-3.1** Potential short-term effects to individual high value trees for nesting and roosting would be minimized during final design by avoidance and protection measures, as specified in Mitigation Measures 3.4-14.1 and 3.4-17.1. A map of high value trees for nesting to be protected will be made available to on-site construction management.	LTSM	No
3.4-4	Short-term construction-related mortality or detrimental effects to sensitive plants	LTSM	**Mitigation Measure 3.4-4.1** Mitigation shall include conducting pre-construction surveys for special-status plants. If special-status plants are found within the affected footprint, preservation methods such as transplantation, salvage, or seed collection and dispersal would be considered and shall be implemented if deemed necessary to avoid a significant effect to the local population through consultation with CDFW. Herbicide application practices shall include following all application recommendations for herbicide to be applied and refraining from applying product under wind conditions which would increase the likelihood for drift.	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
3.4-5	Long-term conversion of perennial aquatic habitats and wetland communities to tidal habitat types	LTS	None required	LTS	No
3.4-6	Long-term loss of valley/foothill riparian habitat	LTSM	**Mitigation Measure 3.4-3.1** *(described above in Wetland and Terrestrial Biological Resources)*	LTSM	No
3.4-7	Reduction in available habitat for special-status plant species adapted to existing conditions	LTS	None required	LTS	No
3.4-8	Short-term construction-related impacts to valley elderberry longhorn beetle	LTSM	**Mitigation Measures 3.2-3.1 and 3.2-3.2** *(described above in Water Quality)*	LTSM	No
3.4-9	Long-term impacts to valley elderberry longhorn beetle	NI	None required	NI	No
3.4-10	Short-term construction-related injury or mortality and loss of habitat for giant garter snakes	LTSM	**Mitigation Measure 3.4-10.1** This mitigation measure includes the following: 1. Require construction personnel to receive USFWS and CDFW-approved worker environmental awareness training to recognize giant garter snake and its habitat. 2. Install exclusion fencing around all staging areas. 3. Survey the site at least 24 hours prior to the initiation of ground-disturbing activities in suitable giant garter snake habitat. This survey shall be conducted by a USFWS and CDFW-approved biologist in suitable giant garter snake habitat. Surveys shall be repeated if a lapse in construction activity of two weeks or greater occurs. If giant garter snake is encountered during ground-disturbing activities, activities at that specific location shall cease until appropriate	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			corrective measures, in concurrence with USFWS and CDFW coordination, have been completed or it has been determined that individual giant garter snakes would not be harmed. Sightings shall be reported to USFWS and CDFW. 4. Implement ground disturbing construction activity within giant garter snake habitat between May 1 and October 1. This is the active period for giant garter snake and direct mortality is lessened, because giant garter snakes are expected to actively move and avoid danger. DWR would contact the USFWS and CDFW to determine if additional measures are necessary to minimize and avoid take for work between October 2 and April 30. 5. Vehicle speeds shall not exceed 15 miles per hour (MPH) to avoid hitting giant garter snakes and other special-status wildlife. 6. Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre- Project conditions.		
3.4-11	Long-term conversion of giant garter snake habitat	LTS	None required	LTS	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
3.4-12	Short-term construction-related habitat loss and injury or mortality of individual western pond turtles	LTSM	**Mitigation Measure 3.4-12.1** Prior to implementing restoration activities and/or scheduled dewatering, a qualified biologist would survey areas in or adjacent to suitable western pond turtle aquatic habitat. Western pond turtles found in harm's way would be moved by a qualified biologist to a safe location outside of the work area in a manner consistent with applicable CDFW regulations. A qualified biologist would conduct periodic monitoring of suitable western pond turtle aquatic habitat until ground-disturbing/dewatering activities have ceased in those areas. **Mitigation Measure 3.2-1.2** *(described above in Water Quality)*	LTSM	No
3.4-13	Long-term conversion of western pond turtle habitat	B	None required	B	No
3.4-14	Short-term, construction-related injury or mortality, take of nests, and loss of nesting and foraging habitat of special-status and migratory birds	LTSM	**Mitigation Measure 3.4-14.1** In order to minimize potential construction related effects to special-status and migratory birds over the construction period, this mitigation measure includes the following: 1. Site preparation and construction activities should take place outside of nesting season (February 15–August 15) to avoid take via disturbance or destruction of nests or mortality of individuals. If work begins before this period and continues uninterrupted throughout the nesting season, the consistent disturbance may deter birds from nesting at the site and prevent take.	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			2. If work must take place during March 15 – August 15, a pre-construction survey would be conducted within 14 days prior to the initiation of construction activity by a qualified biologist to identify nesting Swainson's Hawks within 0.5 mi of the construction footprint. If active Swainson's Hawk nests are found, appropriate non-disturbance buffers and avoidance measures would be developed in coordination with CDFW to avoid disturbance of nesting Swainson's Hawks based on individual bird behavior and construction-related disturbance that occurs. Surveys shall be repeated if a lapse in construction of 14 days or greater occurs. Surveys would be repeated annually if work takes place during subsequent nesting seasons. 3. If work must take place during April 1– August 31, a pre-construction survey would be conducted within 14 days prior to the initiation of construction activity to identify nesting raptors within 500 ft, and other nesting birds within 100 ft of the construction footprint. Appropriate non-disturbance buffers would be established until nestlings have fledged. Surveys shall be repeated if a lapse in construction of 14 days or greater occurs during the nesting season. Surveys would be repeated		

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			annually if work takes place during subsequent nesting seasons. 4. If work must take place during March 15–August 15 and use of non-disturbance buffers is infeasible, a qualified biologist shall be on-site to monitor active nests. Monitoring requirements would be established in coordination with CDFW. Monitors would have authority to stop work if it appears that Swainson's Hawk nests are disturbed by construction activity, and CDFW would be contacted for further guidance. 5. Remove or trim the minimal number of trees to satisfy the Project design. Trimming and removal would take place August 15 to February 15, outside of nesting season. 6. If construction activity results in take of individual birds or their nests, appropriate mitigation would be determined in coordination with CDFW. 7. Vehicle speed limits shall not exceed 15 MPH to avoid striking birds. 8. Remove temporary fill and construction debris after construction completion, and, wherever feasible, restore disturbed areas to pre-project conditions. **Mitigation Measure 3.4-3.1** *(described above in Wetland and Terrestrial Biological Resources)*		

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
3.4-15	Long-term conversion of nesting and foraging habitat for special-status and migratory birds	LTSM	**Mitigation Measure 3.4-3.1** *(described above in Wetland and Terrestrial Biological Resources)*	LTSM	No
3.4-16	Post-construction conversion to tidal habitat suitable for foraging migratory birds	B	None required	B	No
3.4-17	Short-term, construction-related injury or mortality and loss of roosting and foraging habitat for western red bats	LTSM	**Mitigation Measure 3.4-17.1** In order to minimize potential construction related effects to western red bats over the construction period, this mitigation measure includes the following: 1. Confine clearing of vegetation to only those areas necessary to facilitate construction activities and no greater. 2. A pre-construction survey shall be conducted by a qualified biologist to identify roosting western red bats during the maternity season (May through August). If roosting bats are present, construction activities that involve the removal of mature riparian trees, snags, and remnant structures suitable for roosting shall be timed to avoid bat maternity season (May through August). 3. Wherever feasible the Project design and implementation would avoid potential roosting habitat especially large mature trees like cottonwood and sycamore. 4. Coordinate with CDFW on measures to minimize effects to individuals.	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			Mitigation Measure 3.4-3.1 *(described above in Wetland and Terrestrial Biological Resources)*		
3.4-18	Long-term removal of western red bat roosting and foraging habitat	LTSM	**Mitigation Measure 3.4-3.1** *(described above in Wetland and Terrestrial Biological Resources)*	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
GEOLOGY AND SOILS					
3.5-1	Long-term effect on exposure of people and structures to seismic- and landslide-related hazards	B	None required	B	No
3.5-2	Long-term effect on sediment deposition and erosion in Prospect Island	B	None required	B	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
HAZARDS AND HAZARDOUS MATERIALS					
3.6-1	Potential effects from abandoned gas wells	LTSM	**Mitigation Measure 3.6-1.1** Final construction plans shall be revised to avoid existing conflicts between grading and excavation areas and well locations. Once site dewatering is complete and prior to construction work, a geophysical survey shall be conducted to confirm locations of all known abandoned gas wells (DOGGR 2014), which shall be marked and avoided during construction. Also prior to construction, DWR shall file an application under the DOGGR Well Review Program and the site would be inspected.	LTSM	No
3.6-2	Potential effects from contaminant migration via existing groundwater monitoring wells	LTSM	**Mitigation Measure 3.6-2.1** The Project design shall incorporate the groundwater monitoring well locations into the grading and access plans and design any construction at those locations to avoid adversely affecting the wells. If any of the existing groundwater wells are located at planned breach sites, they shall be properly destroyed and capped. Wells shall be avoided or properly destroyed and/or replaced as required by Section 13750 through 13755 (Article 2, Chapter 7, Division 7) of the California Water Code.	LTSM	No
3.6-3	Potential mobilization of contaminants from levee breaching and/or sediment dredging and re-use	LTS	None required	LTS	No
3.6-4	Hazards associated with the Prospect Island houses on the north property	B	None required	B	No
3.6-5	Potential hazards associated with the abandoned house on the south property	B	None required	B	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
3.6-6	Potential soil or water contamination from on-site equipment storage and fueling	LTSM	**Mitigation Measure 3.6-6.1** DWR's standard construction contract Section 01570 requires contractors to conduct fueling and lubrication of equipment in a manner that affords maximum protection against spills and evaporation. Consistent with this standard, the contractor for the Project shall be required to prepare an environmental protection plan, which shall include spill control and contaminant prevention components. The contractor shall be required to have spill kits on-site and to clean up any spill as soon as reasonably possible.	LTSM	No
3.6-7	Potential effects on human health due to the short-term use of aquatic-approved herbicides prior to site construction	LTSM	**Mitigation Measure 3.6-7.1** Herbicides shall be applied under the supervision of a certified pesticide applicator. Certified pesticide applicators are trained to ensure that algaecides and aquatic herbicides are applied at rates consistent with label requirements and in a manner that avoids potential adverse effects including, effects to human health. Prior to herbicide application, DWR or its contractor will obtain all relevant permits required by the federal, state, and local agencies.	LTSM	No
3.6-8	Potential effects on human health due to changes in the extent of mosquito breeding habitat	B	None required	B	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			AIR QUALITY		
3.7-1	Generation of criteria pollutant emissions that could contribute to air quality violations	LTSM	**Mitigation Measure 3.7-1.1** The Project contractors shall implement the techniques listed in Table 3.7-8 in the FEIR, to reduce effects of ozone precursors such as NO_x and ROG, and PM_{10} and $PM_{2.5}$ emissions. **Mitigation Measure 3.7-1.2** Section 6.1 of the YSAQMD CEQA Handbook (YSAQMD 2007) presents a list of feasible measures to control fugitive dust from construction-sites. Common techniques for controlling dust (PM_{10}) focus on minimizing dispersal of earth materials during excavation, transport, and disposal activities. Watering and covering (e.g., tarps, surfactants, and vegetation) are frequently relied on to minimize dust at construction-sites. The Project contractors shall implement the following techniques for controlling dust (Table 3.7-9). The implementation details of these techniques shall be adjusted based on field conditions. **Mitigation Measure 3.7-1.3** DWR and/or its contractor shall monitor construction activities throughout the construction period and pay an off-site mitigation fee. Construction activities data will be collected, emissions associated with construction activities will be calculated, and these data will be reported to Yolo Solano Air Quality Management District (YSAQMD). The specific details of construction monitoring and reporting will be determined in	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			consultation with the YSAQMD. Construction activities data will include, but are not limited to the following items: 1. Barges – distance traveled by loaded and unloaded vessels, horsepower, idling time, fuel use and fuel type. 2. Construction equipment – type and number, horsepower, hours of operation. 3. Haul trucks (heavy-duty trucks) – number of trips, and total trip distance. 4. Construction workers—number of construction workers per day. YSAQMD shall collect the construction activity and emissions reports for record keeping and monitoring purposes. The total offset mitigation fee will be calculated based on actual construction activities. DWR will work in coordination with YSAQMD to assess the specific mechanisms associated with construction monitoring, emission calculations, and payment logistics.		
3.7-2	Conflict with or obstruct applicable general plans or regional air quality plans	LTSM	**Mitigation Measures 3.7-1.1 and 3.7-1.3** *(described above)*	LTSM	No
3.7-3	Expose sensitive receptors to air pollutants and cause higher health risks	LTS	None required	LTS	No
3.7-4	Expose sensitive receptors to objectionable odors	LTS	None required	LTS	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
GREENHOUSE GASES					
3.8-1	Proposed Project-related greenhouse gas emissions	LTS	None required	LTS	No
MINERAL RESOURCES					
3.9-1	Loss of a known mineral resource that would be of value to the region and residents of the state	NI	None required	NI	No
3.9-2	Loss of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan	NI	None required	NI	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			NOISE		
3.10-1	Potential for short-term noise disturbance to nearby residents	LTSM	**Mitigation Measure 3.10-1.1** The following mitigation measure would reduce the noise effect to residences in the Project area to a less-than-significant level: 1. The construction contractor shall locate stationary noise sources as far from existing residences as possible. 2. The DWR shall identify a disturbance coordinator, and the name and phone number of this person shall be conspicuously be posted at the Project site in an area that can be accessed by the general public. If noise complaints are received, the disturbance coordinator shall respond to the complaints and shall take the steps necessary to mitigate the problem.	LTSM	No
3.10-2	Potential for long-term increases in ambient noise levels in the Proposed Project vicinity	LTS	None required	LTS	No
3.10-3	Potential for sensitive receptors to be exposed to excessive ground-borne vibrations during construction-related activities	NI	None required	NI	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
AESTHETICS					
3.11-1	Temporary change in views during construction	LTS	None required	LTS	No
3.11-2	Long-term change in views from State Route 84	LTS	None required	LTS	No
3.11-3	Long-term change in views from Arrowhead Harbor Marina	LTS	None required	LTS	No
3.11-4	Long-term change in views from boats in Miner Slough	LTS	None required	LTS	No
3.11-5	Long-term change in views from boats in the Deep Water Ship Channel	LTS	None required	LTS	No
3.11-6	Long-term change in views from nearby residences	LTS	None required	LTS	No
3.11-7	Long-term light and glare	NI	None required	NI	No
AGRICULTURAL RESOURCES					
3.12-1	Loss or conversion of prime, unique, or important agricultural lands	LTS	None required	LTS	No
3.12-2	Conflicts with Williamson Act contracted lands	NI	None required	NI	No
3.12-3	Potential effects to agricultural uses on adjacent lands	LTS	None required	LTS	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
CULTURAL RESOURCES					
3.13-1	Impacts to historical resources on land	NI	None required	NI	No
3.13-2	Inadvertent discovery of a shipwreck during in-water construction	LTSM	**Mitigation Measure 3.13-2.1** The title to all abandoned shipwrecks, archaeological sites, and historic or cultural resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the CSLC (PRC Section 6313[a]). In the case of an inadvertent discovery of a submerged shipwreck or related artifacts, all work must cease in the immediate vicinity of the find and DWR cultural resources staff and the USACE archaeologist shall be notified immediately in order to initiate consultation with the CSLC staff within two business days of such discovery pursuant to CFR Title 36 *Parks, Forests, and Public Property*, Chapter VIII *Advisory Council on Historic Preservation,* Part 800.13 (b)(3). PRC 6313 (c) states any submerged historic resource remaining in state waters for more than 50 years shall be presumed to be archaeologically or historically significant. If the DWR and U.S. Army Corps of Engineers (USACE) archaeologist, in consultation with the CSLC staff, determine that a historical resource may be present within the Project site, DWR shall retain the services of a qualified maritime archaeological consultant. The maritime archaeological consultant would recommend whether the discovery is an historical/archaeological resource that retains sufficient integrity and is of potential historical or	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			scientific significance. The maritime archaeological consultant also would recommend as to what action, if any, is warranted and would document all recommendations in writing. Based on this information, the USACE, in consultation with the CSLC, may require additional measures to be implemented by DWR. Measures might include preservation *in situ* of the historical resource or a data recovery program. The Project maritime archaeological consultant shall submit a Final Historical Resources Report to DWR, the USACE, and the CSLC staff. This report shall include an evaluation of the historical significance, with a description of the archaeological and historical research methods employed in any archaeological data recovery program undertaken.		
3.13-3	Impacts to unknown archaeological resources	LTSM	**Mitigation Measure 3.13-3.1** To reduce potential effects to unknown archaeological resources, the following measures shall be implemented before the start of ground-disturbing activities: 1. An archaeologist shall conduct cultural resources awareness training for contractors and staff prior to the start of construction. 2. If historical or unique archaeological resources are discovered during construction, work must be halted within 100 ft of the find until a qualified archaeologist meeting the Secretary of the	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			Interior's Standards for archaeologists (NPS 1997) visits the site and assess the significance of the resource. Work may continue on other parts of the Project while evaluation and mitigation takes place (CEQA Guidelines Section 15064.5(f)). After the assessment is completed, the archaeologist shall submit a report describing the significance of the discovery with treatment recommendations. If the find is determined to be an historical or unique archaeological resource, time allotment and funding sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available. 3. Should unique archaeological resources be found, the resources shall be treated in compliance with Public Resources Code Section 21083.2. If the Project can be modified to accommodate avoidance, preservation of the resource is preferred. Data recovery of the damaged portion of the resource also shall be performed pursuant to PRC Section 21083.2(d).		
3.13-4	Impacts to unknown human burials	LTSM	**Mitigation Measure 3.13-4.1** If human remains are found, such remains are subject to the provisions of California Health and Safety Code Section 7050.5-7055. The requirements and procedures shall be implemented, including immediately stopping work in the vicinity of the find and notification of the Solano County Coroner. The process for	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			notification of the California NAHC and consultation with the individual(s) identified by the NAHC as the "most likely descendant" is set forth in Section 5097.98 of the California Public Resources Code. Work can restart after the remains have been investigated and appropriate recommendations have been made for the treatment and disposition of the remains.		
3.13-5	Impacts to paleontological resources	NI	None required	NI	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
LAND USE AND PLANNING/POPULATION AND HOUSING					
3.14-1	Potential conflicts with adjacent land uses	LTS	None required	LTS	No
3.14-2	Potential conflict with plans and policies	NI	None required	NI	No
3.14-3	Population and housing effects	NI	None required	NI	No
PUBLIC SERVICES					
3.15-1	Potential conflict with existing police and fire protection services	LTSM	**Mitigation Measures 3.17-1.1** *(described below in Transportation and Traffic)*	LTSM	No
RECREATION					
3.16-1	Short-term construction-related impacts to recreational boating in Miner Slough and Arrowhead Harbor Marina	LTSM	**Mitigation Measure 3.16-1.1** Speed limit zones or channel closure shall be established by DWR during in-water construction along Miner Slough. The construction contractor shall post and distribute notifications at Arrowhead Harbor Marina and other local boating access sites of any scheduled imposition of boating safety speed limits or channel closure 14–30 days in advance of water-based construction work.	LTSM	No
3.16-2	Long-term impacts to recreational boating in Miner Slough and Arrowhead Harbor Marina	LTS	None required	LTS	No
3.16-3	Long-term Impacts on recreational use of Prospect Island	NI	None required	NI	No
3.16-4	Consistency with existing plans	LTS	None required	LTS	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
TRANSPORTATION AND TRAFFIC					
3.17-1	Potential Traffic Impacts During Construction	LTSM	**Mitigation Measure 3.17-1.1** The construction contractor shall submit a traffic control plan to the California DWR for review and approval that shall limit effects to affected landowners and businesses. The control plan shall include temporary measures, such as the following: 1. Advance public notification signage at areas that might be affected by traffic going to the Project site prior to the start of construction activities, to alert drivers to pending construction work and traffic restrictions. 2. Notification to Arrowhead Harbor Marina, the Port of West Sacramento, and property owners adjacent to haul routes used for site access during construction, 10 days prior to initiation of construction traffic. 3. Temporary railing, barricades, crash cushions, signage, lighting and flashing lights, pavement markings, and the service of qualified flaggers; all as required to provide for the safe passage of public traffic. 4. Other safety measures as required to control vehicular and pedestrian traffic. **Mitigation Measure 3.17-1.2** Before- and after-Project construction an assessment of road surface conditions, and photographic or videographic documentation, will be conducted by DWR and its contractor at the following locations, if used for site access during	LTSM	No

Impact No.	Impact Title	FEIR Significance	Proposed Mitigation Measures	Significance with Addendum	New Mitigation Measures
			construction: segments of Courtland Road and/or Teal Road, Road 107, Holland Road, as well as the DWSC levee. If local road conditions deteriorate during construction, DWR or its construction contractor will implement necessary repairs to bring the road up to pre-Project construction conditions.		
3.17-2	Potential Long-Term Loss of Access to Miner Slough Levee	LTS	None required	LTS	No
			UTILITIES		
3.18-1	Solid waste disposal impacts	LTS	None required	LTS	No
3.18-2	Potential for adverse effects on existing utilities	LTSM	**Mitigation Measure 3.18-2.1** In order to reduce the potential for adverse effects to existing utilities, the following actions will be taken by DWR and its contractor prior to any ground disturbing activities: 1. Coordinate with local utility owners to discuss the potential for the existence of underground utilities within the Project area. 2. If utility owners verify the potential for underground utilities, a qualified person shall perform a subsurface survey to identify the exact location of underground utilities within the Project area, so those utilities may be avoided. If the utilities cannot be avoided, they shall be removed in a manner consistent with CalOSHA Title 8, Sections 1539 through 1541.1.	LTSM	No
3.18-3	Potential for adverse effects to easement holders	LTS	None required	LTS	No

Significance abbreviations are: B — *beneficial*; NI — *no impact*; LTS — *less than significant*; LTSM — *less than significant with mitigation*; SU — *significant and unavoidable*.