
SHAG SLOUGH BRIDGE REMOVAL ENVIRONMENTAL IMPACT REPORT ADDENDUM

LOOKOUT SLOUGH TIDAL HABITAT RESTORATION AND FLOOD IMPROVEMENT PROJECT

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SECTION 1

Background and Purpose of this Addendum

1.1 Background

The California Department of Water Resources (DWR) is implementing the Lookout Slough Tidal Habitat Restoration and Flood Improvement Project (Project). The Project would restore approximately 3,164 acres of tidal marsh that would partially fulfill DWR's obligations under The Project is intended to fulfill a portion of the 8,000-acre tidal habitat restoration obligations of the Department of Water Resources (DWR) contained within Reasonable and Prudent Alternative (RPA) of the U.S. Fish and Wildlife Service (USFWS) Delta Smelt Biological Opinion (BiOp) for long-term coordinated operations of the State Water Project (SWP) and the federal Central Valley Project (CVP). Because restoration of tidal habitat will provide access for salmonid rearing at Lookout Slough, the Project will also be consistent with RPA I.6.1 of the National Marine Fisheries Service (NMFS) Salmonid BiOp for SWP/CVP operations. The 8,000-acre tidal restoration requirement is also a condition (Condition of Approval 9.1.1) of Incidental Take Permit No. 2081-2018-066-00, for Long-Term Operation of the SWP in the Sacramento-San Joaquin Delta, issued by CDFW to DWR in 2020. The Project Site is comprised of three properties totaling approximately 3,400 acres in unincorporated southeastern Solano County, California, with a small portion of work extending into Yolo County (see **Figure 1**).

As the Lead Agency, DWR prepared and circulated a Draft Environmental Impact Report (EIR) on the Project (State Clearinghouse (SCH) # 2019039136) in accordance with the requirements of the California Environmental Quality Act (CEQA). The Notice of Preparation (NOP) for the EIR was published on March 21, 2019 and circulated to the public, local, state, and federal agencies, and other interested parties. A public scoping meeting was held on April 10, 2019 in Dixon, California. The Draft EIR was published on December 16, 2019 and was circulated for 60 days with the public and agency comment period on closing on February 14, 2020. During the Draft EIR public comment period, DWR held a public meeting on January 22, 2020 in Dixon, California. At the end of the circulation period for the Draft EIR, a total of 19 written comment letters and e-mails were received. There were three commenters at the public meeting. On November 3, 2020, DWR certified the Final EIR; adopted CEQA findings, a statement of overriding considerations, and a mitigation monitoring and reporting program (MMRP); approved the Project; and filed the Notice of Determination (NOD) with the State Clearinghouse.

Since certification of the Project EIR (certified EIR) and Project approval (approved Project), DWR and Ecosystem Investment Partners (EIP, DWR's contractor), in consultation with Solano County, have discussed vacating Liberty Island Road, which was proposed by the Project and analyzed in the EIR. However, as part of the road vacation, Solano County will require the



Lookout Slough Tidal Habitat Restoration and Flood Improvement Project EIR Addendum

Figure 1
Project Site



SOURCE: Maxar, 2021; NHD, 2021; ESA, 2021

removal of the Shag Slough Bridge (the Bridge), located on Liberty Island Road, as a condition to vacating the segment of Liberty Island Road identified as part of the approved Project. Since removal of the bridge was not analyzed previously, this addendum is now prepared to include the bridge.

1.2 Purpose of the EIR Addendum

Section 15160 of the CEQA Guidelines explains that CEQA allows a lead agency to tailor an environmental document to different situations and intended uses. Specifically, Section 15160 allows lead agencies to tailor the use of CEQA mechanisms (such as this Addendum) to fit the circumstances presented to the lead agency by a project or changes to a Project. DWR has prepared an Addendum to assess the minor modifications to the Project that are necessary since preparation of the EIR, in accordance with Section 15164. According to Section 15164(a) of the CEQA Guidelines, the lead agency or a responsible 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 requiring preparation of a subsequent EIR have occurred. Section 15162 of the CEQA Guidelines lists the conditions that would require the preparation of a subsequent EIR rather than an addendum. These include the following:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration 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 will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant 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 of the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
 - a. The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the Project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

This addendum concludes that the minor Project changes (i.e., removing a damaged and unusable bridge) do not trigger any of the CEQA Guidelines Section 15162 conditions described above, and that the preparation of an addendum therefore is appropriate.

SECTION 2

Description of Project Changes

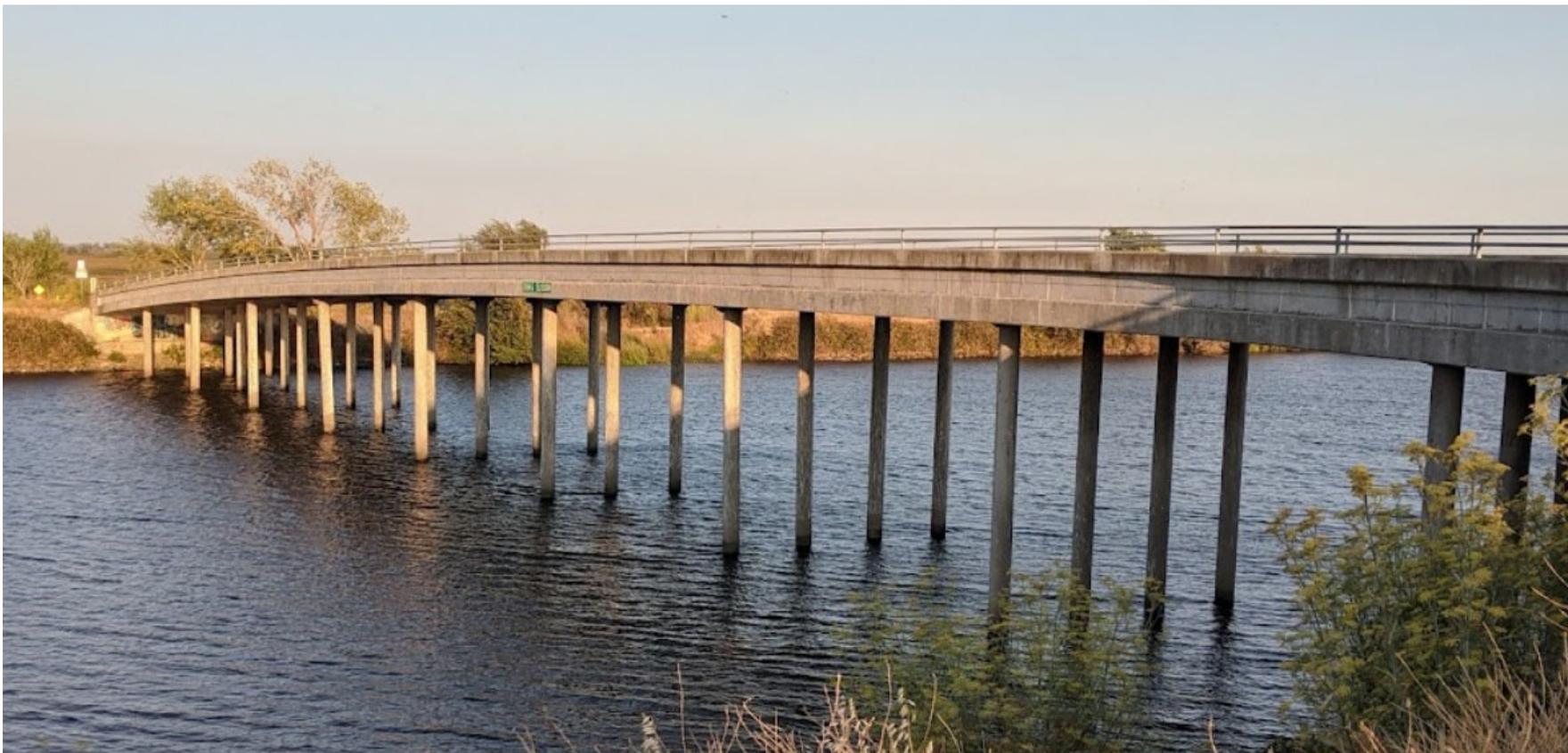
2.1 Project Overview

The Project will create habitat that is beneficial to Delta Smelt and other native fish and wildlife species and will also increase flood storage and conveyance, increase the resiliency of levees, and reduce flood risk within the Yolo Bypass. The Project is part of the California EcoRestore Initiative, which seeks to restore and/or enhance 30,000 acres of habitat in the Delta, Yolo Bypass, and Suisun Marsh.

The approved Project involves constructing a new setback levee along Duck Slough and Liberty Island Road (Duck Slough Setback Levee). The existing levee at Shag Slough would be breached and partially degraded to provide tidal and flood connectivity between the proposed Duck Slough Setback Levee and Shag Slough. The existing Cache/Hass Slough Levee would be enhanced to increase stability and reduce long term maintenance costs. The enhanced Cache/Hass Slough Levee would function as a training levee (Cache/Hass Slough Training Levee) to prevent increased water surface elevations upstream of the Cache Slough Complex. Grading, placement of fill material, and combination of natural revegetation and plantings would be used to restore and enhance upland, tidal, subtidal, and floodplain habitat.

The Bridge was constructed in 1992 to provide access to Liberty Island, which is now the flooded Liberty Island Ecological Reserve. The Bridge is located in Solano County, owned and operated by Solano County, and is approximately 22 miles southwest of the city of Sacramento, and 16 miles east of the city of Vacaville (see Figure 1). Liberty Island Road is a County road running north-south and parallel to Shag Slough along the top of the levee on the eastern boundary of the approved Project. At the Bridge, Liberty Island Road turns approximately 90-degrees and crosses Shag Slough in an east-west direction and then terminates. Public vehicular access is blocked by gates approximately 45-feet east of the Bridge where the road terminates. There is no other vehicular access beyond the gates.

The existing Bridge structure is approximately 373 feet long and 28 feet wide, which widens to approximately 45 feet on the west end of the Bridge. The Bridge structure consists of 11 spans of reinforced concrete slabs supported by concrete pile bents (or piles) and extensions. The west abutment is supported by a single row of piles, while the eastern abutment is supported by a pile cap and two rows of piles. The Bridge deck includes handrails and metal beam guard railing along the approaches (see **Figure 2**).



D:\181197.00 - Lookout Slough Restoration\1.05 Graphics-GIS\Illustrator

SOURCE: Hanford, 2021

Lookout Slough Tidal Habitat Restoration and Flood Improvement Project EIR Addendum

Figure 2
View of Shag Slough Bridge



The Bridge structure was damaged in 1995 due to an in-water impact, resulting in the northern most pile being knocked out of plum, and slab cracking and damage to the concrete barrier of the westbound lane of the Bridge deck. Shoring measures were installed under the westbound lane near the damaged pile to stabilize the structure. The two most recent Caltrans Bridge Inspection Records Information System (BIRIS) inspection reports conducted on August 27, 2019 and March 29, 2021, noted that a bridge shored up or repaired on a temporary basis is considered a temporary bridge, and the Inventory Rating (IR) and Operating Rating (OR) are evaluated as if the shoring was not in place. The BIRIS inspection reports indicate that the Bridge structure is rated “intolerable.” In addition, the BIRIS inspection reports state that the Bridge has an operating rating of zero metric tons. As a result, the Bridge has been formally closed to all vehicle traffic. While it is closed to vehicle traffic, the Bridge provides informal, unsanctioned access to the Shag Slough Levee and pedestrian access to Liberty Island Ecological Reserve. The approved Project includes vacating Liberty Island Road from the northwest corner of the Project Site to the Bridge so that the levee can be breached to promote tidal inundation in the restored marsh area. The approved Project contemplates leaving the Bridge in place.

While the Bridge would continue to be closed to vehicle traffic (same as pre-Project conditions), the Project contemplated removing all access to the Bridge including pedestrian access, because the levee underlying Liberty Island Road and leading to the Bridge would be breached as a result of the Project. Impacts associated with the removal pedestrian access were addressed in the certified EIR

2.2 Project Modifications

Since certification of the Lookout Slough Tidal Habitat Restoration and Flood Improvement Project EIR and Project approval, DWR and EIP, in consultation with Solano County, have proposed to modify the approved Project to remove the Bridge structure because it is an unsafe structure that will be cut off from public land access due to the Project, and cannot be used for any purpose post-project. Solano County is requiring removal of the Bridge be a condition to vacating the segment of Liberty Island Road identified as part of the approved Project. This addendum addresses the removal of the Bridge.

2.2.1 Shag Slough Bridge Removal

Section 3.d.ii in Chapter III, *Project Description* of the certified EIR describes the construction activities related to temporary access road construction and moving utilities. This Section 3.d.ii of the certified EIR explains that the Project would vacate Liberty Island Road from the northeast corner of the Project Site to the Bridge and a gate would be installed at the at the northeast corner of Liberty Island Road at Shag Slough to restrict public access (vehicle and pedestrian) onto the Project Site leaving the Bridge to remain in place. The approved Project is proposed to be modified to remove the Bridge structure.

Removal of the Bridge would be accomplished with the use of conventional demolition techniques, methods, and procedures. A typical top-down demolition procedure, starting with removal of the appurtenant components followed by the concrete deck and piers, would involve sawing the structural components into manageable sections and then lifting these sections out by

a crane(s). The Bridge demolition would incorporate the use of barge-mounted equipment (e.g., excavators, cranes, etc.) working within the waterway below the bridge in Shag Slough. Anticipated activities and procedures to be undertaken to remove the Bridge structure are described in more detail below.

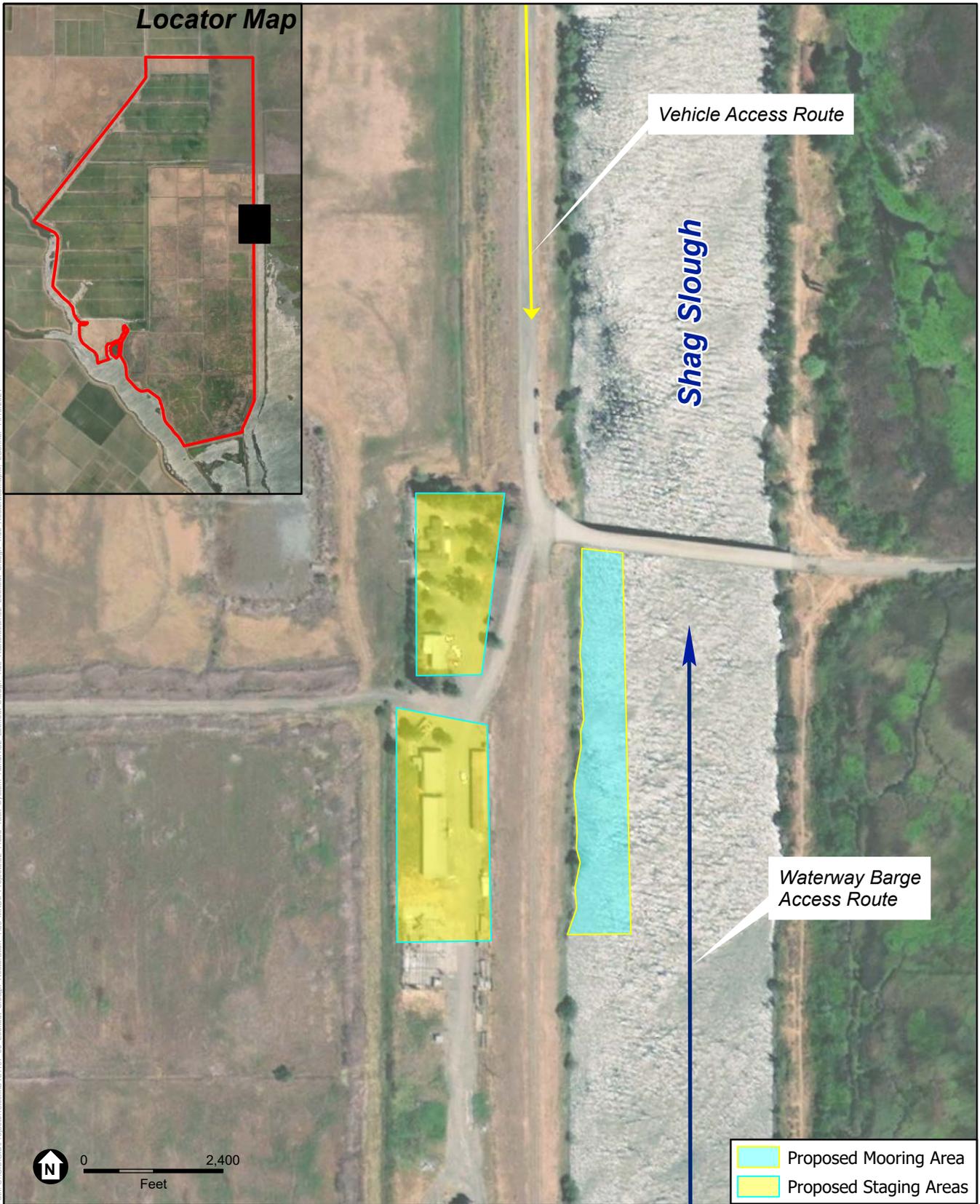
2.2.1.1 Site Preparation, Staging Areas and Access

Prior to initiation activities to demolish and remove the Bridge structure, all public access via Liberty Island Road would be prohibited from accessing the Bridge and the construction area by installation of a gate (already a part of the approved Project) at Liberty Island Road, approximately one mile from the Bridge location at the northeast corner of the Project Site. Therefore, non-construction related traffic would be excluded from the vicinity of the work area during Bridge removal activities. In addition, to prevent swallows from nesting under the Bridge, exclusion measures would be implemented prior to the nesting season in the year of Bridge removal activities. These measures would include removal of remnant nest materials from the Bridge before nesting season (February 15 to August 31), installation of exclusionary devices anchored to the Bridge to prevent birds from attaching nests, and maintenance of the exclusionary device. Any removal of nest materials on the exclusionary devices would be conducted by a qualified biologist.

The construction area (including staging areas) where Bridge demolition and removal activities would occur is shown in **Figure 3**. Equipment and materials would be stored on land immediately west of the Bridge in an area that is already planned for clearing as a part of the approved Project. In addition, barge-mounted equipment and debris-hauling barges would be moored/docked and/or anchored in Shag Slough at the approved location shown on Figure 3 at the end of each shift. Appropriate construction area signage would be installed to clearly indicate construction areas under and adjacent to the Bridge where boaters, recreational fishers, and other recreationists may be present. Advance warning signs for the closure of the construction areas would be posted along the boundaries of the Bridge removal activities on Liberty Island and at the gate installed on Liberty Island Road. In-water navigational warning indicators would be installed in accordance with the applicable regulatory guidelines of the U.S. Coast Guard and U.S. Army Corps of Engineers (Corps). Equipment necessary to conduct the demolition and removal of the Bridge structure would access the construction site by land and water. Land-based equipment would access the Bridge via Liberty Island Road, and barge mounted equipment would access the Bridge from the south on Shag Slough, as shown in Figure 3.

2.2.1.2 Bridge Removal Procedures

Demolition of overwater structures is planned to follow a top-down sequence. Demolition activities would be performed in accordance with mitigation measures described in the certified EIR and Project permits to reduce potentially significant impacts on the environment. A schematic showing the existing structural features of the Bridge is shown in **Figure 4**.

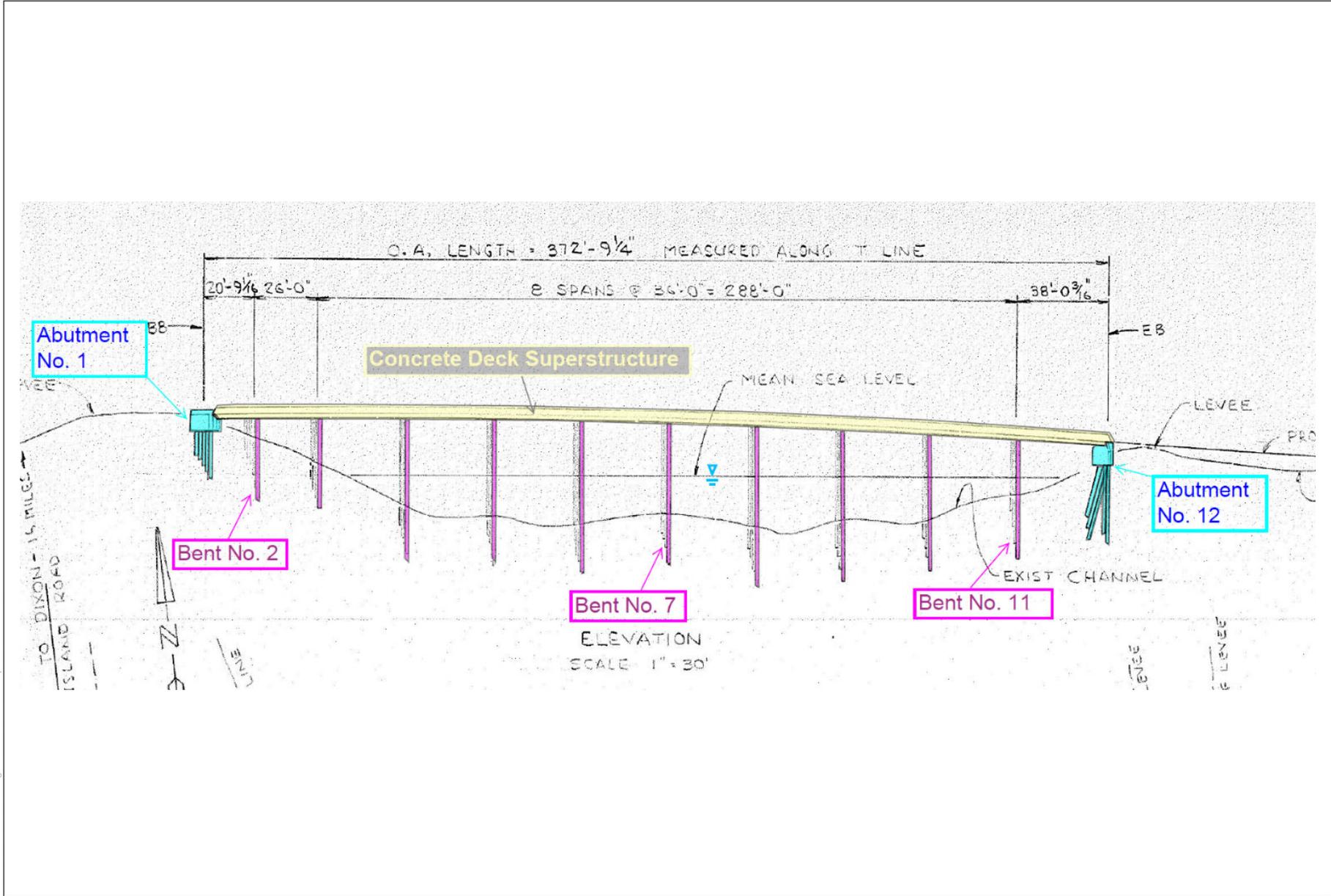


Lookout Slough Tidal Habitat Restoration and Flood Improvement Project EIR Addendum

Figure 3
 Bridge Removal Access, Equipment Staging and Mooring Locations



SOURCE: Maxar, 2021; NHD, 2021; ESA, 2021



SOURCE: Hanford, 2021

Lookout Slough Tidal Habitat Restoration and Flood Improvement Project EIR Addendum

Figure 4
Existing Structural Schematic of Shag Slough Bridge



The following is a general sequence of demolition activities to be performed:

- 1) Removal of deck components (e.g., tubular handrailing, concrete barriers, etc.)
- 2) Concrete deck (identified as superstructure in Figure 4) removal
- 3) Removal of below deck components

Both of the concrete abutments at either end of the Bridge would remain in place. To minimize the risk of debris from falling into the water or onto the banks of Shag Slough, wet vacuums or similar techniques would be used to capture debris and fine particles. In addition, during demolition of overwater features, temporary platforms or other suitable means, such as debris netting, would be installed beneath the work to capture and prevent debris from falling into the water of the slough. Any debris that accidentally falls into the water would be removed using dip nets or other suitable methods. To further reduce the risk of contamination associated with demolition activities in Shag Slough, containment booms, silt curtains, or other suitable means identified in the approved Project environmental permits would be deployed in the water surrounding the Bridge. The boom(s) or curtain(s) would be of sufficient length to enclose work area and pile removal equipment.

Bridge removal methods and activities would be done in compliance with all applicable mitigation measures in the certified EIR and all best management practices and avoidance and minimization measures included in approved permits for the Project (e.g., Clean Water Act Section 401 and 404, NMFS BiOp, etc.).

Typical equipment to be used to accomplish the demolition and removal of the Bridge structure would include the following:

- Air compressor
- Concrete saws
- Thermal cutting tools
- Equipment barge
- Debris barge
- Crane
- Vibratory pile driver
- Generator
- Jackhammer
- Concrete removal equipment (e.g. hydraulic breakers, hoe ram, hydraulic shear, etc.)
- Welder
- Tractor/loader/backhoe
- Dump truck/flat-bed trucks/haulers

The following is a more detailed description of the sequence of activities anticipated during the Bridge demolition and removal process.

Removal of Deck Components

Prior to removing the concrete deck structure, miscellaneous items and components would be disconnected and removed including handrailing, concrete barriers, etc. Once disconnected, these components would be cut into manageable sections and loaded onto trailers or directly transferred to debris barges for transport to and disposal at a suitable off-site disposal facility.

Concrete Deck Removal

The concrete deck (i.e., superstructure) would be cut or broken into manageable sections, removed with a crane, loaded onto barges or trailers (if practicable), and transported to a suitable off-site disposal facility. If necessary, workers may access underneath the deck and torch cut individual connection components and/or any anchor bolts tying connecting portions of the existing structure together. Concrete panels would be separated along existing construction or expansion joints with concrete saws. Crane lifting holes may be created with mechanical drills to the extent needed for proper rigging attachment and lifting lugs would be installed and properly anchored into the individual deck panels to facilitate proper lifting and removal.

Removal of Below Deck Components

Existing bent caps or supporting girders would be cut into manageable sections and removed from the superstructure using a crane or excavator (equipped with grapple or shear attachment) to lower them down to a barge or trailer (if practical) for transport to a suitable off-site disposal facility. Concrete supporting piles would be carefully removed by cutting them into shorter lengths (starting at the top) and loading the cut sections directly onto barges. The 16-inch concrete pile structures would be removed to one foot below the mudline as required by regulatory agencies. Three extraction methods may be used to remove the piles. The final method will be used will depend on the underlying bed materials and ease of achieving removal of the piers and achieving the desired depth. It is assumed that if Method 1 cannot accomplish the required depth, then Method 2 would be attempted, followed by Method 3, if necessary. Each method is described below.

Method 1

A vibratory pile driver/extractor would extract the existing concrete piles. The extracted concrete piles would be cut into manageable sections and load onto a combination of trucks and/or barges for transport to and disposal at a suitable off-site disposal facility.

Method 2 (if Method 1 cannot be completed)

The concrete piles would be cut to as short as practical to minimize the additional depth needed to meet the specified depth below the mudline. The concrete piles would then be cut into manageable sections and loaded onto a combination of trucks and/or barges for transport to a suitable off-site disposal facility. The remaining portion of the pile(s) would be driven deeper into the slough bottom so that the top of the pile is embedded below the specified depth using a vibratory pile driver. If refusal is encountered and the piles are unable to be driven below the

specified depth, an attempt would be made to partially extract the piles, cut them into smaller overall lengths, and then attempt to re-drive them so that the top of the piles are embedded below the specified depth using a vibratory pile driver/extractor.

Method 3 (if Method 2 cannot be completed)

Installation of temporary cofferdams using steel sheetpiles or approved alternatives would be placed around piers to isolate the work area(s) from water. Where it is necessary to conduct in-water grading work involving either excavation or placement of fill, and during the installation of cofferdam or sheetpiles, a weighted silt curtain suspended from a floating boom would be deployed around the work site. The curtain would simultaneously exclude fish from entering the work areas and reduce turbidity in the slough. A biological monitor would be onsite whenever the turbidity curtains are being installed or moved and the curtain work areas would be inspected prior to commencing work. Any pumps used for dewatering areas behind the temporary cofferdams or sheetpiles would be properly screened to prevent inadvertent entrainment of aquatic species. Dewatering would be performed in a manner to facilitate the safe rescue and relocation of aquatic species required under the certified EIR mitigation measures and NMFS, USFWS, and California Department of Fish and Wildlife (CDFW) permit conditions.

Sediment from the slough bottom would be displaced with an excavator or jetting to expose existing concrete piers at the specified depth. The piers would then be marked and cut at or below the specified depth using similar equipment for cutting in the previous options. The cut piers would be loaded onto a combination of trucks and/or barges for transport to a suitable off-site disposal facility.

2.2.2 Construction Schedule

It is anticipated that removal of the Bridge would be done as the approved Project is nearing completion. Removal of the Bridge would be performed after or concurrently with the Shag Slough Levee breaching activities. Demolition and removal of the Bridge structure is anticipated to be performed within a 2- to 4-month timeframe and would be limited to in-water NMFS and CDFW permit work windows (between June 1 and October 31) when earthwork, including levee breaching, is already contemplated in the immediate area of the Bridge by the Project.

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SECTION 3

Analysis of Potential Environmental Effects

3.1 Introduction

The certified EIR evaluated potential environmental impacts in the following resource categories: aesthetics, agriculture and forestry, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation, tribal cultural resources, utilities/service systems, wildfire, cumulative effects, and growth inducing effects. These issues are re-evaluated in this addendum considering the proposed changes to the approved Project. This evaluation determines whether implementation of the proposed changes would result in any new significant impacts or substantially more severe impacts than identified in the certified EIR. Chapters IV.C to IV.K, and Chapters V and VI of the certified EIR describe the criteria that were used to determine the significance of environmental impacts. All mitigation measures identified in the certified EIR were adopted by DWR as conditions of approval. All applicable mitigation measures and permits will also apply to the project changes evaluated in this addendum.

The analysis contained in this addendum is focused on the activities associated with the proposed removal of the Bridge, as described in Section 2. The approved Project included closing the Bridge and leaving the structure in place. The proposed changes to the approved Project would involve removing the Bridge structure using equipment, site preparation, demolition, and construction methods similar to those described for construction of the approved Project evaluated in the certified EIR. There would be no operation or maintenance associated with removal of the Bridge structure. Therefore, impacts related to the following resource topics would not be affected by the changes to the approved Project and are not discussed in this addendum: aesthetics, agriculture and forestry, geology/soils, land use/planning, mineral resources, population/housing, public services, transportation, utilities/service systems, wildfire, and growth inducing effects.

As noted above, there would be no change in operation or maintenance of the approved Project. Implementation of the proposed changes would involve use of some additional equipment and construction methods in the immediate area of the Project Site though the Bridge removal was not fully addressed in the certified EIR. Therefore, the analysis in this addendum addresses construction-related impacts for the following resource topics: air quality, biological resources, cultural resources, energy, greenhouse gas (GHG) emissions, hazards and hazardous materials, hydrology and water quality, noise, recreation, tribal cultural resources, and cumulative impacts.

3.2 Effects Related to Project Changes

The following resource topics are re-evaluated below to determine whether the proposed changes to the approved Project would result in any new significant impacts or substantially more severe impacts than those described in the certified EIR.

3.2.1 Air Quality

Chapter IV.C, *Air Quality* of the certified EIR concluded that construction of the approved Project could result in short-term and intermittent emissions of criteria air pollutants (including reactive organic gas [ROG], nitrogen oxides [NO_x], particulate matter [PM₁₀]). The emissions were estimated in accordance with methodologies recommended by California Air Resources Board (CARB) and the local air district and were modeled using the California Emissions Estimator Model (CalEEMod) (version 2016.3.2) software with activity-specific data (e.g., construction equipment types and number requirements, off-haul tonnage, workdays per year, and number of employees on site) for the maximum level of construction activity.

Emissions associated with construction of the approved Project were compared to local air district thresholds of significance presented in Table IV.C-1 on page IV.C-12 of the certified EIR. Other air quality impacts (i.e., local emissions of carbon monoxide [CO] and toxic air contaminants [TAC]) were assessed qualitatively in accordance with methodologies recommended by CARB and local air district. As described on page IV.C-9 of the certified EIR, construction activities would use heavy equipment that would emit criteria pollutants and were included in the emissions modeling using the assumptions shown in Table IV.C-3 on page IV.C-10 of the certified EIR. Construction activities generate criteria pollutant emissions from heavy equipment exhaust and from soil disturbance. Modeled estimated emissions of ROG, NO_x, and PM₁₀, presented in Table IV.C-4 on page IV.C-11 of the certified EIR, showed that construction of the approved Project, would not exceed any of the local air district thresholds of significance, except for NO_x. As a result, the certified EIR concluded that the approved Project would have the potential to result in potentially significant impacts on air quality related to NO_x emissions during construction activities. However, significant impacts would be reduced to less than significant with implementation of Mitigation Measures AIR-1 and AIR-2 (Draft EIR, pages IV.C-9 through IV.C-15, as amended in the Final EIR, pages 2-2, 2-3, and 2-15 to 2-17). These mitigation measures would reduce impacts associated with emissions of criteria pollutants during construction activities through implementation of best management practices (BMPs) and requiring the use of equipment with better fuel efficiencies and reduced emissions.

As described on pages IV.C-12 and IV.C-14 to IV.C-15 of the certified EIR, the use of construction equipment could also emit CO and TAC. The certified EIR concluded that the approved Project would not result in a significant increase in vehicle trips and vehicle idling at the nearby intersections that could contribute CO emissions to the existing conditions as a result of construction activities. Therefore, the approved Project would not result in elevated ambient CO levels that would exceed thresholds and violate the California Ambient Air Quality Standards. In addition, while there may be a temporary increase in TAC emissions in the area during constructions, activities, there are no sensitive receptors in the vicinity of the Project Site

that could be exposed to an increase in TACs. On-road vehicle TAC emissions would not result in levels of traffic that would meet or exceed TAC emission thresholds of the local air district. The certified EIR concluded that impacts from CO and TACs would be less than significant with implementation of Mitigation Measures AIR-1 and AIR-2.

Activities to demolish and remove the Bridge would occur over a short timeframe (2 to 4 months). The removal would be accomplished using equipment that is the same and/or similar to the equipment to be used to construct the approved Project. The majority of equipment used for the Bridge removal would not be off-road equipment and off-road equipment produce most of the emissions associated with construction of the approved Project, as documented in the certified EIR (Draft EIR, pages IV.C-9 to IV.C-12). Therefore, removal of the Bridge would result in similar levels of criteria pollutants, CO, and TAC emissions. As a result, removal of the Bridge would result in similar impacts from air emissions associated with the construction of the approved Project as described in the certified EIR, and the implementation of Mitigation Measures AIR-1 and AIR-2 would reduce these impacts to less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new air quality issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified air quality impacts.

3.2.2 Biological Resources

Chapter IV.D, *Biological Resources* of the certified EIR concluded that construction of the approved Project could result in direct and indirect adverse impacts to special-status fish and wildlife species, including mortality, injury, harassment, and potential permanent or temporary loss or modification of habitat. Special-status plants could be adversely impacted through direct removal or mortality of plants, damage, modification of plants or seeds, or the introduction of invasive plants. As a result, Chapter IV.D, *Biological Resources* of the certified EIR concluded that the approved Project would have the potential to result in potentially significant impacts to: (1) special-status wildlife (Draft EIR, pages IV.D-26 through IV.D-40); (2) special-status plants (see pages IV.D-20 through IV.D-25); (3) special-status fish; (see page IV.D-40); and (4) result in the loss or modification of riparian habitat, freshwater marsh, shaded riverine aquatic cover, and wetlands and other waters of the U.S. or State.

Significant impacts to special-status wildlife species and their associated habitats from the approved Project (including operation and maintenance activities) was determined to be less than significant with the implementation of certified EIR Mitigation Measures BIO-3 through BIO-5 resources (Draft EIR, pages IV.D-55 through IV.D-78, as amended in the Final EIR, pages 2-5 to 2-10, and 2-18 to 2-23). These mitigation measures would reduce the significance of impacts because they require the application of a sequence of avoidance, minimization, and monitoring by

a qualified biologist when needed. The mitigation measures also require implementation of agency coordination measures to protect special-status wildlife and their habitat including:

- avoidance of suitable habitat or minimize work in suitable habitat areas for all special-status species;
- seasonal work avoidance measures; protective buffers during approved Project activities where complete avoidance of suitable habitat or active nests is not feasible;
- periodic or continuous monitoring by a qualified biologist when work must occur within buffers or sensitive areas;
- possible relocation of giant garter snake, western pond turtle, and fish species (with USFWS and CDFW authorization, as appropriate);
- and mechanical removal of vegetation and restrictions on herbicide use in suitable special-status species habitats.

Reducing the impacts to listed species to less than significant could also include compensatory mitigation as required in associated permits and authorizations if impacts to the special-status cannot be avoided.

Significant impacts to special-status plants associated with approved project maintenance activities (including levee maintenance activities) were determined to be less than significant with the implementation of certified EIR Mitigation Measures BIO-2 through BIO-4 (Draft EIR, pages IV.D-53 through IV.D-57, as amended in the Final EIR, pages 2-4 to 2-6, and 2-18 to 2-19). These mitigation measures would reduce the significance of the impact because they require the application of a sequence of avoidance, minimization, and monitoring by a qualified biologist when needed to protect special-status plants including:

- avoiding suitable habitat or minimizing work in suitable habitat areas for all special-status species;
- periodic or continuous monitoring by a qualified biologist when work must occur within buffers or sensitive areas;
- conducting pre-activity surveys and implementing avoidance measures when special-status plants are found, and consultation with CDFW prior to construction to obtain authorization and develop compensatory mitigation when avoidance is not feasible.

Significant impacts to special-status fish associated with the approved Project (including operation and maintenance activities) was determined to be less than significant with implementation of Mitigation Measures BIO-3, BIO-4, and BIO-6 (Draft EIR, pages IV.D-55 through IV.D-84, as amended in the Final EIR, pages 2-5 to 2-6, 2-10 to 2-11, 2-18 to 2-19, and 2-23). These mitigation measures would reduce the significance of the impact because they require the application of a sequence of avoidance, minimization, and monitoring by a qualified biologist when needed to protect special-status fish including:

- avoiding suitable habitat or minimizing work in suitable habitat areas for all special-status species;

- periodic or continuous monitoring by a qualified biologist when work must occur within buffers or sensitive areas;
- implementing water quality protection measures; implementing work windows to avoid migrating special-status fish;
- implementing “soft start” protocols during installation and removal of sheetpiles to allow wildlife to vacate the surrounding area;
- and implementing fish rescue plans and consultation with CDFW and/or NMFS when dewatering is necessary.

Significant impacts related to the loss or modification of riparian habitat, oak woodland, shaded riverine aquatic cover, and wetlands and other waters of the US or State associated with approved project maintenance activities (including levee maintenance activities) was determined to be less than significant with implementation of Mitigation Measure BIO-1 (Draft EIR, page IV.D-51, as amended in the Final EIR, pages 2-3 and 2-18). These mitigation measures would reduce the significance of the impact because they require the avoidance, minimization, and implementation of on-site mitigation or compensatory mitigation.

The removal of the Bridge would include construction activities (including staging) and maintenance (e.g., invasive weed control) immediately adjacent to the levee breaches contemplated by the Project. A biological resources survey of the Bridge work areas conducted in November 23, 2021 (ESA, 2021a), found no habitats or special-status species beyond those previously documented in the certified EIR and mitigated to less-than-significant levels with the adopted mitigation measures. Remnant swallow nests were observed under the Bridge. Swallows are a non-special status species that is protected by the Migratory Bird Treaty Act (MBTA). Mitigation Measure BIO-5 identifies measures to be implemented prior to construction to avoid or minimize impacts to nesting birds, including non-special status species such as swallows, that are protected by the MBTA. In addition, the following measures are included in the proposed changes to the approved Project during removal of the Bridge: removal of remnant nest materials from the Bridge before nesting season (February 15 to August 31), installation of exclusionary devices anchored to the Bridge to prevent birds from attaching nests, and maintenance of the exclusionary device. Removal of any nest materials found on the exclusionary devices would be conducted by a qualified biologist.

The following measures included as part of the approved Project and certified EIR mitigation measures and NMFS, USFWS, and CDFW permit conditions would be implemented: a biological monitor would be onsite whenever turbidity curtains are being installed or moved and the curtain work areas would be inspected prior to commencing work; any pumps used for dewatering areas behind the temporary cofferdams or sheetpiles would be properly screened to prevent inadvertent entrainment of aquatic species; and dewatering would be performed in a manner to facilitate the safe rescue and relocation of aquatic species required. Although additional acreage and number of some habitats and special-status species, respectively, were found to be in or adjacent to the Bridge work areas, all mitigation measures from the certified EIR and permit conditions from NMFS, USFWS, and CDFW would be implemented to reduce impacts to less than significant. As a result, removal of the Bridge would result in similar impacts on biological resources associated

with the construction and maintenance of the approved Project as described in the certified EIR, and the implementation of Mitigation Measures BIO-1 through BIO-6 would reduce these impacts to less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new biological resource issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified biological resource impacts.

3.2.3 Cultural Resources

Chapter IV.E, *Cultural Resources* of the certified EIR concluded that construction of the approved Project resulting in excavation and exposure of subsurface soil could result in substantial adverse change in the significance of a historical resources as defined in CEQA Section 15064.5; substantial adverse change in the significance of an archaeological resource as defined in CEQA Section 15064.5; and disturbance of human remains. The certified EIR found no historical resources identified on the Project Site. Impacts on the significance of unique archaeological resources as defined in CEQA Section 15064.5 were determined to be less than significant with Mitigation Measure CULT-1 included in the certified EIR analysis of impacts on cultural resources (Draft EIR, pages IV.E-22 through IV.E-24, as amended in the Final EIR, pages. 2-11, 2-12, 2-24, and 2-25). These mitigation measures would reduce the significance of the impact to archaeological resources because they require identification and evaluation, avoidance, and implementation of the *Secretary of the Interior (SOI) Standards for Archeology*.

The removal of the Bridge would include conducting activities (including staging) in areas immediately adjacent to the contemplated Project activities. A cultural resources survey of the Bridge work areas was conducted on November 11, 2021 (ESA, 2021b) and found no additional resources beyond those previously documented in the certified EIR. Although demolition and Bridge removal activities would be similar to the approved Project, removal of the Bridge structure would be done by both land-based and barge-mounted equipment with no excavation of soil at the Bridge site or staging areas and all mitigation measures from the certified EIR and permit conditions from the Corps Section 408 permission to meet Section 106 of the National Historic Preservation Act would be implemented to reduce impacts to less than significant. Some minor disturbance of surface sediment within Shag Slough would occur during removal of the Bridge piers in an area previously disturbed by the construction of the Bridge that could expose previously undiscovered cultural resources.

The Bridge itself is not eligible to be listed as a National Register of Historic Places and is not a cultural resource because it was built in 1992. As a result, removal of the Bridge would result in similar impacts on cultural resources associated with construction activities as those described in the certified EIR. Implementation of Mitigation Measure CULT-1 would reduce impacts to less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new cultural resource issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified cultural resource impacts.

3.2.4 Energy

Chapter IV.A, *Impacts Found To Be Less Than Significant* of the certified EIR concluded that construction of the approved Project would result in less than significant impacts resulting from: wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation, or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Activities to demolish and remove the Bridge would occur over a short timeframe (2 to 4 months) after or concurrent with the Shag Slough Levee breaching activities. The removal would be accomplished using equipment that is the same and/or similar to the equipment to be used to construct the approved Project. Additionally, the equipment used for the Bridge removal has been accounted for in the greenhouse gas emissions inventory pursuant to the requirements of DWR's Greenhouse Gas Emissions Reduction Plan, including through incorporation of energy efficient construction equipment. The activities to demolish and remove the Bridge would result in a short-term increase in energy use during construction and there are no post-construction permanent energy-using structures or equipment that would result in an increase in energy consumption. Further, there are no local and state programs and policies related to energy that apply to the approved Project or to the proposed changes to the Project. As a result, removal of the Bridge would result in similar impacts associated with energy use as those associated with the construction of the approved Project as described in the certified EIR, and the impact would be less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new energy issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified energy impacts.

3.2.5 Greenhouse Gas Emissions

Chapter IV.A, *Impacts Found To Be Less Than Significant* of the certified EIR concluded that construction of the approved Project would result in less than significant impacts on: generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Activities to demolish and remove the Bridge would occur over a short timeframe (2 to 4 months) after or concurrent with the Shag Slough Levee breaching activities. The removal would be accomplished using equipment that is the same and/or similar to the equipment to be used to construct the approved Project. Additionally, the equipment used for the Bridge removal has been accounted for in the greenhouse gas emissions inventory pursuant to the requirements of DWR's Greenhouse Gas Emissions Reduction Plan. As a result, removal of the Bridge would result in similar impacts associated with GHG as those associated with the construction of the approved Project as described in the certified EIR, and the impact would be less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new GHG issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified GHG impacts.

3.2.6 Hazards and Hazardous Materials

Chapter IV.F, *Hazards and Hazardous Materials* of the certified EIR concluded that construction of the approved Project could result in significant impacts related to the routine transport, use or disposal of hazardous materials and exposure of residents and workers to safety hazards or excessive noise during construction or operation of the Project. The certified EIR found impacts related to the routine transport, use or disposal of hazardous materials and exposure of residents and workers to safety hazards or excessive noise during construction or operation of the Project to be less than significant. The removal would be accomplished using equipment and hazardous materials that are the same and/or similar to those to be used to construct the approved Project.

To reduce the risk of contamination associated with demolition activities in Shag Slough, containment booms, silt curtains or other suitable means identified in the approved Project environmental permits would be deployed in the water surrounding the Bridge. The boom(s) or curtain(s) would be of sufficient length to enclose work area and pile removal equipment. As a result, removal of the Bridge would result in similar impacts associated with risk of exposure with the use, storage, and transportation disposal of hazardous materials during construction activities as those associated with the construction of the approved Project as described in the certified EIR, and the impact would be less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new hazards or hazardous materials issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified hazards and hazardous materials impacts.

3.2.7 Hydrology and Water Quality

Chapter IV.G, *Hydrology and Water Quality* of the certified EIR concluded that construction of the approved Project could result in: violation of water quality standards or waste discharge requirements due to erosion and sedimentation during construction; violation of water quality standards or substantial degradation of surface water quality caused by erosion and sedimentation during post-construction operation; and changes to flood flow and conveyance that could result in a potential increase in flood risk. The certified EIR also concluded that changes to flood flow and conveyance would not result in increase in flood risk. As a result, this impact was determined to be less than significant. The certified EIR found impacts associated with sediment loading to receiving waters caused by increased rates of erosion during construction activities could result in a violation of water quality standards or substantial degradation of surface water quality. This impact was determined to be less than significant with implementation of Mitigation Measures HYDRO-1 and HYDRO-2 included in the certified EIR (Draft EIR, pages IV.G-19 through IV.G-31, as amended in the Final EIR, pages 2-12, 2-25, and 2-26). These mitigation measures would

reduce impacts on water quality through implementation of Stormwater Pollution Prevention Plan BMPs and a turbidity monitoring program.

The removal of the Bridge would include conducting activities in areas outside of the Project Site boundaries. The following is a general sequence of demolition activities to be performed that were described in detail in Section 2.3, *Bridge Removal Procedures*:

- 1) Removal of deck components (e.g., tubular handrailing, concrete barriers, etc.)
- 2) Concrete deck removal
- 3) Removal of below deck components

To reduce the potential for construction debris and fine materials from affecting water quality, a combination of equipment and materials would be used to collect and control debris from the Bridge removal, including the following:

- wet vacuums or similar technique would be used to capture debris and fine particles during demolition of overwater features
- temporary platforms or other suitable means would be installed beneath the work to capture and prevent debris from falling into the water
- debris that accidentally falls into the water would be removed using dip nets or other suitable methods
- silt curtains or
- if it is necessary to conduct in-water grading work involving either excavation or placement of fill for removal of the piles, and during the installation of cofferdam or sheetpiles, a weighted silt curtain suspended from a floating boom would be deployed around the work site

To further reduce the risk of contamination associated with demolition activities in Shag Slough, containment booms, silt curtains or other suitable means identified in the approved Project environmental permits would be deployed in the water surrounding the Bridge. The boom(s) or curtain(s) would be of sufficient length to enclose work area and pile removal equipment.

Hydraulic and hydrologic conditions with the Bridge removal shows that there would be insignificant changes to flood flows or conveyance, and shear velocities along either bank of Shag Slough would not increase above the approved Project conditions (ESA, 2021c). As a result, removal of the Bridge would result in similar impacts associated with hydrology and water quality as those associated with the construction of the approved Project as described in the certified EIR, and implementation of Mitigation Measures HYDRO-1 and HDRO-2 would reduce impacts to less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new hydrology and water quality issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified hydrology and water quality impacts.

3.2.8 Noise

Chapter IV.A, *Impacts Found To Be Less Than Significant* of the certified EIR concluded that construction of the approved Project would result in less than significant impacts resulting in: substantial temporary or permanent increase in ambient noise levels in excess of local noise standards and thresholds; generation of excessive groundborne vibration or groundborne noise levels; and exposure of people residing or working in the vicinity of an airport or airstrip to excessive noise. Activities to demolish and remove the Bridge would occur over a short timeframe (2 to 4 months) after or concurrent with the Shag Slough Levee breaching activities. The removal would be accomplished using equipment that is the same and/or similar to the equipment to be used to construct the approved Project. Additionally, most of the activities to remove the Bridge structure would be farther from sensitive receptors than the rest of construction activities for the approved Project, including barge-mounted equipment in Shag Slough. As a result, removal of the Bridge would result in similar impacts associated with construction noise as those associated with the construction of the approved Project as described in the certified EIR, and the impact would be less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new noise issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified noise impacts.

3.2.9 Recreation

Chapter IV.J, *Recreation* of the certified EIR concluded that construction of the approved Project could result in:

- significant impacts from an increase in the use of existing parks or recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated from displacement impacts to other shoreline fishing opportunities in the Delta;
- impacts from recreational facilities that are part of the Project or result from any construction or expansion of parks and recreational facilities;
- and impacts resulting from a decrease in opportunities to fish from the shoreline with the Delta region.

The certified EIR found that impacts on these issues to be less than significant.

With implementation of the approved Project, the Bridge would be closed to vehicle traffic (same as pre-Project conditions), and the Bridge would no longer be accessible by pedestrians because the levee underlying Liberty Island Road and leading to the Bridge would be breached as a result of the Project. The removal of the Bridge would not change access by pedestrians for recreational activities along the slough as with the approved Project. Prior to and during demolition activities, appropriate construction area signage would be installed to clearly indicate construction areas under and adjacent to the Bridge where boaters, recreational fishers, and other recreationists may be present. Warning signs for the closure of the construction areas would be posted in advance

along the boundaries of the Bridge removal activities on Liberty Island Ecological Reserve and at the gate installed on Liberty Island Road. In-water navigational warning indicators would be installed in accordance with the applicable regulatory guidelines of the U.S. Coast Guard and Corps. Once the active demolition and removal work is done, access to Shag Slough and the areas around the Bridge abutments would be restored.

As a result, removal of the Bridge would result in similar impacts associated with recreational use as those associated with the construction of the approved Project as described in the certified EIR, and the impact would be less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new recreation issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified recreation impacts.

3.2.10 Tribal Cultural Resources

Chapter IV.K, *Tribal Cultural Resources* of the of the certified EIR concluded that construction of approved Project resulting in excavation and exposure of subsurface soil could result in: substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe. The certified EIR, through tribal consultation, found no known tribal cultural resources identified on or adjacent to the Project Site. As a result, impacts on the significance of unknown tribal cultural resources were determined to be less than significant with implementation of Mitigation Measures TCR-1A and TCR-1B included in the certified EIR (Draft EIR, pages IV.K-11 through IV.K-12, as amended in the Final EIR, pages 2-12 and 2-26). These mitigation measures would reduce the significance of the impact to tribal cultural resources because they require halting construction work in the area of a find, identification and evaluation by a qualified archaeologist meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archaeology and with expertise in California archaeology, consultation with the local tribe, and implementation of a tribal cultural resources management plan.

The removal of the Bridge would include conducting activities (including staging) in areas outside of the Project Site boundaries. As noted above, the certified EIR, through tribal consultation, found no known tribal cultural resources identified on or adjacent to the Project Site. The staging area and area around the Bridge structure are adjacent to the Project Site. In addition, a cultural resources survey of the Bridge work areas was conducted on November 11, 2021 and found no additional resources beyond those previously documented in the certified EIR. Although demolition and Bridge removal activities would be similar to the approved Project, removal of the Bridge structure would be done by both land-based and barge-mounted equipment with no excavation of soil at the Bridge site or staging areas and all mitigation measures from the certified EIR and permit conditions from the Corps Section 408 permission to meet Section 106 of the National Historic Preservation Act would be implemented to reduce impacts to less than

significant. Some minor disturbance of surface sediment within Shag Slough would occur during removal of the Bridge piers in an area previously disturbed by the construction of the Bridge could expose previously undiscovered tribal cultural resources.

Therefore, removal of the Bridge would result in similar impacts on tribal cultural resources associated with construction activities as those described in the certified EIR. Implementation of Mitigation Measures TCR-1A and TCR-1B would reduce impacts to less than significant. In addition, there are no changes in the environmental setting, regulatory setting, or project characteristics that would raise important new tribal cultural resource issues.

Changes to the approved Project would not alter the conclusions of the certified EIR, result in any new significant impacts, or substantially increase the severity of the previously identified tribal cultural resource impacts.

3.2.11 Cumulative Impacts

As described in Chapter V, Section 3, *Cumulative Impact Analysis* of the certified EIR, the approved Project would result in significant cumulative impacts to agriculture and forestry, air quality, biological resources, cultural and tribal resources, hazards and hazardous materials, and water quality. The approved project's contribution to these significant cumulative impacts would be reduced to less than considerable with implementation of Mitigation Measures BIO-1 through BIO-6 (biological resources), CULT-1 (cultural and tribal cultural resources), HAZ-1 (hazards and hazardous materials), and HYDRO-1 and HYDRO-2 (water quality). As a result, cumulative impacts of the approved Project were determined to be less than significant. The approved project would have a less than considerable contribution to cumulative air emissions and cumulative air quality impacts were determined to be less than significant.

The removal of the Bridge would be accomplished using equipment that is the same and/or similar to the equipment to be used to construct the approved Project. Activities to demolish and remove the Bridge would occur over a short timeframe (2 to 4 months) after or concurrent with the Shag Slough Levee breaching activities in an area directly adjacent to the Project Site. As a result, it is anticipated that the implementation of Mitigation Measures BIO-1 through BIO-6 (biological resources), CULT-1 (cultural and tribal cultural resources), HAZ-1 (hazards and hazardous materials), and HYDRO-1 and HYDRO-2 (water quality) would reduce the contribution to cumulative impacts to a less than considerable level, resulting in less than significant cumulative impacts. The changes to the Project do not alter the underlying impact conclusions or cumulative and growth assumptions of the certified EIR. Therefore, there would be no change in the cumulative or growth inducing effects of the Project. None of the significance conclusions or findings in the certified EIR would be altered, result in any new significant impacts, or substantially increase the severity of the previously identified cumulative impacts.

3.3 Conclusion

This addendum documents that the proposed demolition and removal of the Bridge would not result in any new or more severe impacts than those evaluated in the certified EIR, as updated by this addendum. None of the conditions or circumstances that would require preparation of a

subsequent or supplemental EIR pursuant to Public Resources Code Section 21166 exists for the Project with these changes.

3.4 References

- Environmental Science Associates (ESA). 2020. Lookout Slough Tidal Habitat Restoration and Flood Improvement Project Final Environmental Impact Report. Prepared for EIP and DWR, October 2020.
- . 2021a. Memorandum: Biological Constraint Associated with the Lookout Slough Tidal Habitat Restoration and Flood Improvement Project Bridge Removal. Prepared for EIP, April 2022.
- . 2021b. Lookout Slough Tidal Habitat Restoration and Flood Improvement Project Bridge Removal, Solano County, California Solano County, California: Cultural Resources Inventory Report. Prepared for EIP, December 2021.
- . 2021c. Lookout Slough Tidal Habitat Restoration and Flood Improvement Project (D181197.00), Hydraulic Effects of Proposed Shag Slough Bridge Removal. February 2022.
- WRA Environmental Consultants. 2019. Lookout Slough Tidal Habitat Restoration and Flood Improvement Project Draft Environmental Impact Report. Prepared for EIP and DWR, December 2019.

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