

Mitigation Monitoring and Reporting Program

**American River Watershed Common Features,
Water Resources Development Act of 2016
Project, Lower American River Contract 3A**

SCH# 2005072046

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Abbreviations and Acronyms

APE	Area of Potential Effects
ARCF	American River Watershed Common Features
BMP	Best Management Practice
CCR	Code of California Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CRHR	California Register of Historic Resources
CVFPB	Central Valley Flood Protection Board
EA	Environmental Assessment
EIS	Environmental Impact Statement
EIR	Environmental Impact Report
GHG	Greenhouse gas
GRR	General Reevaluation Report
HPMP	Historic Properties Management Plan
HPTP	Historic Properties Treatment Plan
MLD	Most Likely Descendent
MMRP	Mitigation, Monitoring, and Reporting Program
mph	Miles per hour
NAHC	Native American Heritage Center
NO _x	Oxides of Nitrogen
PA	Programmatic Agreement
PM	Particulate matter
PM ₁₀	Particulate matter 10 microns or less in diameter
PPV	Peak particle velocity
PRC	Public Resources Code
RWQCB	Regional Water Quality Control Board
SMAQMD	Sacramento Metropolitan Air Quality Management District
SPCCP	Spill Prevention Control and Countermeasures Plan
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

**MITIGATION MONITORING AND REPORTING PROGRAM
AMERICAN RIVER WATERSHED COMMON FEATURES,
WATER RESOURCES DEVELOPMENT ACT OF 2016 PROJECT,
LOWER AMERICAN RIVER CONTRACT 3A
SACRAMENTO, CALIFORNIA**

This mitigation monitoring and reporting program (MMRP) is designed to fulfill Section 21081.6 (a) of the California Public Resources Code (PRC) and Section 15097 of the California Environmental Quality Act (CEQA) Guidelines. PRC Section 21081.6(a) and CEQA Section 15097 require that public agencies adopt a reporting or monitoring program whenever a project or program is approved that includes mitigation measures to be imposed to mitigate or avoid significant environmental impacts on the physical environment. The mitigation measures and strategies are described below.

The MMRP includes the following, organized by impact topic:

- Mitigation Number – lists the adopted mitigation measures by number as designated in the Final Supplemental Environmental Impact Report/ Environmental Assessment (Supplemental EIR/EA).
- Mitigation Measure – Provides the text of the mitigation measures, each of which has been adopted and incorporated into the American River Contract 3A Project.
- Implementation Timing – identifies the timing of implementation of the action described in the mitigation measures. *See Notes below.
- Responsible for Mitigation – identifies the agency/party responsible for implementing the actions described in the mitigation measures.
- Responsible for Monitoring/Reporting Action – identifies the agency/party responsible for monitoring and/or reporting on the implementation of the actions described in the mitigation measures.

***Notes:**

D: To be implemented or included as part of project design. Includes project permitting and agency coordination.

P: To be implemented prior to construction being initiated (pre-construction), but not part of design or permitting.

C: To be implemented during project construction.

M: To be implemented as ongoing maintenance after construction is complete.

Visual Resources

VIS-1

Shield Temporary Nighttime Lighting: The Project Partners (USACE, CVFPB, and SAFCA) shall require its construction contractors to ensure that all temporary lighting used for security of the staging areas is shielded or directed to avoid or minimize any direct illumination onto light-sensitive receptors located outside of the Project Area.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Hydrology and Water Quality

WQ-1

Prepare and Implement a Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasures Plan, and Associated Best Management Practices:

As part of a turbidity monitoring program, the USACE contractor(s) would monitor turbidity in the adjacent water bodies, where applicable criteria apply, to determine whether turbidity is being affected by construction and to ensure that construction does not result in a rise in turbidity levels above ambient conditions, in accordance with the Central Valley RWQCB Basin Plan turbidity objectives. The monitoring program would be coordinated with the Central Valley RWQCB prior to construction and would be implemented by the construction contractor. The contractor would be required to use BMPs, as described below, to prevent runoff from all construction areas. Environmental commitments included in the project to reduce the potential for impacts on water quality include preparation of the SWPPP, and Spill Prevention Control and Countermeasures Plan (SPCCP).

The following measures would be implemented as part of the SWPPP, as required by the State Water Resources Control Board for any construction activities that disturb more than 1 acre, to limit erosion potential.

- Conduct earthwork during low-flow periods (e.g., approximately May 1 through November 30).
- To the extent possible, stage construction equipment and materials on the landside of the subject levee reaches in areas that have already been disturbed.
- Minimize ground and vegetation disturbance during project construction by establishing designated equipment staging areas, ingress and egress corridors,

spoils disposal and soil stockpile areas, and equipment exclusion zones prior to the commencement of any grading operations.

- Install sediment barriers (e.g., silt fences, fiber rolls, and straw bales) around the base of soil stockpiles to intercept runoff and sediment during storm events. If necessary, cover stockpiles with geotextile fabric to provide further protection against wind and water erosion.
- Install sediment barriers on graded or otherwise disturbed slopes as needed to prevent sediment from leaving the project site and entering nearby surface waters.
- Install plant materials to stabilize cut and fill slopes and other disturbed areas once construction is complete. Plant materials could include an erosion control seed mixture or shrub and tree container stock. Temporary structural BMPs, such as sediment barriers, erosion control blankets, mulch, and mulch tackifier, could be installed as needed to stabilize disturbed areas until vegetation becomes established.
- During working hours, the construction activity would not cause the turbidity in the adjacent water body down current from the construction sites to exceed the Basin Plan turbidity objectives. Specifically, where natural turbidity is between 0 and 5 nephelometric turbidity units (NTUs), increases would not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases would not exceed 20 percent; where natural turbidity is between 50 and 100 NTUs, increases would not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases would not exceed 10 percent.^{18F} In determining compliance with these limits, appropriate averaging periods could be applied, provided that beneficial uses would be fully protected.
- An SPCCP is intended to prevent any discharge of oil into navigable water or adjoining shorelines. The contractor would develop and implement an SPCCP to minimize the potential for adverse effects from spills of hazardous, toxic, or petroleum substances during construction and operation activities. The SPCCP would be completed before any construction activities begin.
- Implementation of this measure would comply with State and Federal water quality regulations. The SPCCP would describe spill sources and spill pathways in addition to the actions that would be taken in the event of a spill (e.g., an oil spill from engine refueling would be immediately cleaned up with oil absorbents). The SPCCP would outline descriptions of containment facilities and practices such as double-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures, and spill response kits. It would also describe how and when employees are trained in proper handling procedure and spill prevention

and response procedures. Release of contaminants into adjacent water bodies could result in significant effects.

Implementation Timing: D, P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Vegetation and Wildlife

VEG-1

Retain, Protect, and Plant Trees On-Site: Project designs would be refined to reduce impacts on vegetation and wildlife to the extent practicable. Refinements implemented to reduce the loss of riparian habitat would include reducing the impact footprint, constructing bank protection rather than launchable rock trench whenever feasible, and designing planting benches.

Where practicable, trees would be retained in locations where the bank protection and planting bench are constructed. Trees would be protected in place along the natural channel during the placement of rock. Additional plantings would be installed on the newly constructed bench to provide habitat for fish and avian species. The planting bench would be used where practicable to minimize impacts on fish and wildlife species. The on-site habitat would be created in accordance with the ARCF GRR Habitat Mitigation, Monitoring, and Adaptive Management Plan (HMMAMP), which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

Implementation Timing: D, C, M

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

VEG-2

Compensate for Riparian Habitat Removal: To compensate for the removal of riparian habitat (including forested wetlands), replacement habitat would be created at a ratio of 2:1 to account for the temporal loss of habitat while newly created habitat is growing. Species selected to compensate for the riparian corridor removal would be consistent with the approved list of trees, shrubs, and herbaceous plants native to the Parkway. The riparian replacement habitat would create habitat connectivity and wildlife migratory corridors that would provide for the habitat needs of important native wildlife

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species without compromising the integrity of the flood control facilities, the Parkway's flood conveyance capacity, and the Parkway management goals in the Parkway Plan. Some of the replacement riparian habitat would be planted on the planting benches. Additionally, to comply with the Parkway Plan, lands within the Parkway would be evaluated for compensation opportunities. The exact location of the compensation lands in the Parkway would be coordinated with the Sacramento County Department of Regional Parks during the design phase of the project and would comply with the Parkway Plan's objectives and goals. It is assumed that sufficient lands are available within the Parkway. The replacement habitat would be created in accordance with the ARCF GRR HMMAMP, which includes conceptual mitigation proposals, performance standards, and adaptive management tasks.

Within the Project Area, the Project Partners have designated Erosion Protection and Work Area construction zones. In Work Area zones, some or all the vegetation would be removed for site access, haul routes, and staging areas. Then, upon completion of the project, work zones would be seeded with native grassland species. Erosion Protection construction zones would require that most riparian vegetation be removed, but riparian vegetation would be planted at a planting bench and within the site on buried revetment or among the revetment. To compensate for the temporal loss of riparian vegetation and SRA habitat, creation of off-site habitat would also occur at sites that would be protected in perpetuity. These sites would include a mitigation site in the American River Parkway that would be selected and designed in coordination with NMFS and USFWS as part of the consultation under the Endangered Species Act. In addition, riparian habitat would be planted at previously-designated and approved elderberry shrub mitigation areas (the Glenn Hall Park mitigation site and the two Rio Americano mitigation sites described in Chapter 2, *Project Description of the American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 1 Supplemental Environmental Assessment/Supplemental Environmental Impact Report*) and the two Rossmoor mitigation sites and Arden Pond mitigation site described in Chapter 2, *Project Description of the American River Watershed Common Features, Water Resources Development Act of 2016, American River Contract 2 Supplemental Environmental Impact Statement/Supplemental Environmental Impact Report*.

Implementation Timing: D, P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Fisheries

FISH-1

Observe In-Water Work Windows: In-water construction would be restricted to the general estimated work window of July 1 through October 31. The exception being that in-water work necessary for dewatering activities would begin June 1. During preconstruction engineering and design, the work window may be adjusted on a site-specific basis, considering periods of low fish abundance, and in-water construction outside the principal spawning and migration season. Typical construction season generally corresponds to the dry season, but construction may occur outside the limits of the dry season, only as allowed by applicable permit conditions.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

FISH-2

Analyze Hazardous Materials Spills and Implement Measures to Control

Contamination: Because of the deleterious effects on native resident fish of numerous chemicals used in construction, if a hazardous materials spill does occur, a detailed analysis would be performed immediately by a registered environmental assessor or professional engineer to identify the likely cause and extent of contamination. This analysis would conform to American Society for Testing and Materials Standards and would include recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, USACE and their contractors, in coordination with CVFPB, would select and implement measures to control contamination, with a performance standard that surface water quality and groundwater quality must be returned to baseline conditions.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

FISH-3

Implement Measures to Avoid and Minimize Effects on Listed Fish Species: To avoid and minimize effects on listed fish species, the following measures would be implemented: In-water construction activities (e.g., placement of rock revetment) would be limited to the work window of July 1 through October 31. If the Project Partners needs to work outside of this window, it would consult with USFWS and NMFS.

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- Erosion control measures (BMPs) would be implemented, including a Storm Water Pollution Prevention Plan and Water Pollution Control Plan, to minimize the entry of soil or sediment into the American River. BMPs would be installed, monitored for effectiveness, and maintained throughout construction operations to minimize effects on Federally listed fish and their designated critical habitat. Maintenance would include daily inspections of all heavy equipment for leaks.
- The Project Partners would participate in an existing Interagency Working Group or work with other agencies to participate in a new Bank Protection Working Group to coordinate stakeholder input into future flood risk reduction actions associated with the ARCF 2016 Project, American River Contract 3A.
- The Project Partners would coordinate with NMFS during pre-construction engineering and design as future flood risk reduction actions are designed to ensure that conservation measures are incorporated to the extent practicable and feasible and projects are designed to maximize ecological benefits.
- The Project Partners would include a Riparian Corridor Improvement Plan as part of the Project, with the overall goal of maximizing the ecological function and value of the existing levee system in the Sacramento metropolitan area.
- The Project Partners would implement an ARCF GRR Habitat Mitigation Monitoring and Adaptive Management Plan (HMMAMP) with an overall goal of ensuring that the conservation measures achieve a high level of ecological function and value. In addition, per the NMFS 2021 BO, a site specific long term management plan (LTMP) and an overarching habitat management plan (HMP) that outlines O&M requirements will be prepared as a complimentary supplemental document to the HMMAMP (See FISH-4 below for additional details). The HMMAMP would include:
 - Specific goals and objectives and a clear strategy for maintaining all project conservation elements for the life of the Project.
 - Measures to be monitored by the Project Partners for 10 years after construction. The Project Partners would update its O&M manual to ensure that the HMMAMP is adopted by the local sponsor to ensure that the goals and objectives of the conservation measures are met for the life of the Project.
 - Specific goals and objectives and a clear strategy for achieving full compensation for all Project-related impacts on listed fish species.
- The Project Partners would continue to coordinate with NMFS during all phases of construction, implementation, and monitoring by hosting annual meetings and issuing annual reports throughout the construction period as described in the HMMAMP.

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- The Project Partners would seek to avoid and minimize adverse construction effects on listed species and their critical habitat to the extent feasible and would implement on-site and off-site compensation actions as necessary.
- For identified designated critical habitat, where feasible all efforts will be made to compensate for impacts as close as possible to the place of occurrence. The SAM has been used throughout the Sacramento River basin and Delta flood control system to inform impacts to designated critical habitat, SRA, and instream components. Estimates of suitable habitat will be verified in the field by the Project Partners prior to initiating proposed actions to determine the extent of suitable habitat present NMFS. The Project Partners would develop and implement a compensatory mitigation accounting plan to ensure the tracking of compensatory measures associated with implementation of the Proposed Action. The Project Partners would continue to coordinate with NMFS after construction during the monitoring periods for habitat establishment via written monitoring reports, electronically, and through site visits as requested. The Project Partners would minimize the removal of existing riparian vegetation and IWM to the maximum extent practicable. Where appropriate, removed IWM would be anchored back into place, or if not feasible, new IWM would be anchored in place.
- The Project Partners would ensure that the planting of native vegetation would occur as described in the HMMAMP. All plantings must be provided with the appropriate amount of water to ensure successful establishment.
- The Project Partners would provide a copy of the BO, or similar documentation, to the prime contractor, making the prime contractor responsible for implementing all requirements and obligations included in the documents and for educating and informing all other contractors involved in the Project as to the requirements of the BO.
- A NMFS-approved Worker Environmental Awareness Training Program for construction personnel would be conducted by the NMFS-approved biologist for all construction workers before the start of construction activities. Written documentation of the training would be submitted to NMFS within 30 days of the completion of training.
- The Project Partners would consider installing IWM of at least 40 percent shoreline coverage at all seasonal water surface elevations in coordination with the Interagency Working Group or the Bank Protection Working Group. The purpose is to maximize the refugia and rearing habitats for juvenile fish.
- The Project Partners would consider varying the elevation of planting benches and IWM to accommodate a wide variety of water years and ensure there is ample shoreline habitat in different flow scenarios.

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- The Project Partners would monitor turbidity during in-water work activities to ensure levels stay below the allowable thresholds (turbidity measured 1,000 feet downstream of the extent of the site is not to exceed double the upstream of site turbidity measurement).
- Screen any water pump intakes, as specified by the 2011 NMFS screening specifications. Water pumps would maintain an approach velocity of 0.2 feet per second or less. Screen openings would be for a perforated plate: circular or square openings shall not exceed 3/32 inch (2.38 millimeters [mm]), measured on a side, and slotted or rectangular screen face openings must not exceed 1.75 mm (approximately 1/16 inch) in the narrow direction. Screen material shall provide a minimum of 27 percent open area.

Implementation Timing: D, P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

FISH-4

Implement Measures to Avoid and Minimize Effects on Listed Fish Species: In 2015, NMFS issued a Biological Opinion (BO) for the ARCF GRR consultation for levee improvements and bank protection, including bank protection along the lower American River. In 2020, the NMFS Biological Assessment for the American River Common Features WRDA 2016 Project (2020 NMFS BA) was prepared to reinstate consultation with NMFS to provide new information related to site-specific details for the Proposed Action and in 2021 a new BO was issued. The 2021 NMFS BO evaluated impacts to Sacramento River winter-run and Central Valley spring-run Chinook salmon, California Central Valley steelhead, and green sturgeon, as well as their critical habitat. The BO evaluated potential impacts based on rough estimates and preliminary designs for the proposed Project. To avoid and minimize effects on listed fish species, the following measures from the 2021 NMFS BO would be implemented:

- The Project Partners would provide NMFS with a site-specific project description prior to advertising for construction contracts of any sites. The project description would include a design at or beyond the 65% level, anticipated impacts, and proposed mitigation ratios for the site. NMFS would provide written approval that the site is consistent with this opinion prior to construction, NMFS would respond within 14 days of receiving site-specific documents.
- The Project Partners would provide to NMFS a vegetation monitoring report at years 1, 2, 3, 5, and 8 post-construction no later than December 31st of each reporting cycle. This report would provide information as to the success of the

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revegetation program and whether the conservation goals are being met at each site. If goals are not being met, then the report would indicate what actions are being implemented to meet those goals.

- The Project Partners would submit a report to NMFS of any incidental take that occurs as part of the Project. This report would be submitted no later than December 31 of each reporting cycle.
- The Project Partners would ensure that the NMFS Central Valley Office is involved with the discussions, development, and tracking of the SAM model development.
- The Project Partners would provide NMFS a detailed O&M plan for all aspects of the proposed action, to ensure all sites are properly managed and the Design Deviation allowing vegetation to remain is followed. This plan would be incorporated into the O&M manual.
- The Project Partners would provide NMFS an LTMP outlining the maintenance of all on-site and off-site mitigation. The plan would include performance goals, monitoring plans, replanting plans, and an adaptive management plan for how mitigation will be addressed if the mitigation site fails.

Implementation Timing: D, M

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

SRA-1

Implement Measures to Avoid, Minimize, and Compensate for Effects on Shaded Riverine Aquatic Habitat: The Project Partners would implement the following avoidance, minimization, and compensation measures:

- For identified designated critical habitat of listed fish species, where feasible, all efforts would be made to compensate for impacts where they have occurred, or elsewhere in the American River Parkway. Impacts on designated critical habitat, SRA habitat, and instream components combined and the compensation value of replacement habitat would be informed by a qualitative assessment of habitat value from the SAM model used throughout the Sacramento River basin and Sacramento–San Joaquin Delta flood control system. Amount of mitigation would be assessed using the slope-area method combined with the qualitative assessment.
- The Project Partners would incorporate compensation for SRA habitat losses by constructing off-site compensation sites, such as Arden Pond and others and if needed, purchasing additional credits at a NMFS-approved conservation bank,

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where appropriate, or by implementing a combination of the two. USACE and CVFPB would compensate for lost habitat using NMFS-approved mitigation actions as approved in the 2021 NMFS BO. Off-site mitigation in the Lower American River would benefit fall-run Chinook, late fall-run Chinook and steelhead. Riparian plantings will be installed onsite on planting benches where feasible in NMFS approved mitigation sites. If USACE and CVFPB find that onsite and offsite permittee responsible mitigation and mitigation bank opportunities have been exhausted, they will approach the resource agencies regarding the potential use of in-lieu fees for remaining mitigation needs.

- Compensation sites would be monitored, and vegetation would be replaced as necessary based on performance standards in the ARCF GRR HMMAMP and according to the conditions in the NMFS 2021 BO.

Implementation Timing: D, P, C, M

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Special Status Species

VELB-1

Implement Current USFWS Avoidance, Minimization, and Compensation

Measures for Valley Elderberry Longhorn Beetle: Project Partners would implement the following measures in accordance with the Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle¹, to reduce effects on valley elderberry longhorn beetle:

Avoidance and Minimization Measures

To reduce direct and indirect impacts on shrubs that would not be transplanted and that occur within 50 meters (165 feet) of the Project, the following measures would be implemented:

Fencing. All areas to be avoided during construction activities would be fenced and/or flagged as close to construction limits as feasible.

Avoidance area. Activities that may damage or kill an elderberry shrub (e.g., trenching, paving) may need an avoidance area of at least 6 meters (20 feet) from the dripline, depending on the type of activity.

¹ U.S. Fish and Wildlife Service. 2017. *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus)*. Sacramento, California. 28 pp.

Worker education. A qualified biologist would provide training for all contractors, work crews, and any on-site personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for non-compliance.

Construction monitoring. A qualified biologist would monitor the initial groundbreaking activities, vegetation removal, installation of protective fencing, and would be present during all transplanting and trimming activities. Weekly site visits would also be conducted to ensure all mitigation measures are being implemented and maintained. Additional monitoring may be required per the USFWS BO.

Timing. As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub would be conducted outside of the flight season of the VELB (March–July).

Trimming. Trimming may remove or destroy VELB eggs and/or larvae and may reduce the health and vigor of the elderberry shrub. To avoid and minimize adverse effects on VELB when trimming, trimming would occur between November and February and would avoid the removal of any branches or stems that are 1 inch or larger in diameter unless they were approved and compensated for by following the USFWS requirements.

Chemical Usage. Herbicides would not be used within the dripline of the shrub. Insecticides would not be used within 30 meters (98 feet) of an elderberry shrub. All chemicals would be applied using a backpack sprayer or similar direct application method.

Mowing. Mechanical weed removal within the dripline of the shrub would be limited to the season when adults are not active (August–February) and would avoid damaging the elderberry shrub.

Erosion Control and Revegetation. Erosion control would be implemented, and the affected area would be revegetated with appropriate native plants.

Dust Control. Dust would be controlled by reducing speed limits to 10 miles per hour, regularly watering roads, and wetting down soil before removal and during placement.

Transplanting

Affected elderberry shrubs with one or more stems measuring 1.0 inch or greater in diameter at ground level that could feasibly be transplanted in accordance with the 2017 Framework must be transplanted to a mitigation site as approved by USFWS.

Elderberry compensation would be planted in the Parkway, but outside of the Project Area (off-site) because of construction timing. Project Partners would find areas in the Lower American River Parkway to either expand existing compensation areas or

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provide connectivity between areas of conserved VELB habitat. Sites within the Lower American River Parkway would be coordinated with the Sacramento County Department of Regional Parks and USFWS during the design phase of the Project. Sites would be designed and developed in accordance with the criteria listed below before any effects on VELB habitat.

For impacts on VELB habitat at Site 1-1 (3.24 acres), the Project Partners would mitigate at a 3:1 ratio and create a total of 9.72 acres of VELB and riparian habitat off-site. The elderberry shrubs that would be affected would be transplanted to the Rio Americano East and West Mitigation Sites, and the Rossmoor East Site. These sites would be used for the transplantation and compensation for impacts on elderberry shrubs as described in the Compensatory Mitigation section below. The mitigation site acreage represents the acreage of woody vegetation planted for mitigation and does not include existing native woody vegetation within the mitigation sites boundaries, nor native grass plantings that form a 15-foot wide buffer around most of the perimeter of the woody plantings.

- **Monitor.** A qualified biologist would be on-site for the duration of transplanting activities to assure compliance with avoidance and minimization measures and other conservation measures (as listed above).
- **Exit Holes.** Exit-hole surveys would be completed immediately before transplanting. The number of exit holes found, the GPS location of the plant to be relocated, and the GPS location where the plant is transplanted would be reported to USFWS and to the CNDDDB.
- **Timing.** Elderberry shrubs would be transplanted when the shrubs are dormant (November through the first 2 weeks in February) and after they have lost their leaves. Transplanting during the non-growing season would reduce shock to the shrub and increase transplantation success.
- **Transplanting Procedure.** Transplanting would follow the most current version of the ANSI A300 (Part 6) guidelines for transplanting shrubs (<http://www.tcia.org/>).
- **Trimming Procedure.** Trimming would occur between November and February and should minimize the removal of branches or stems that exceed 1 inch in diameter.

Compensatory Mitigation

A Compensatory Mitigation Proposal would be prepared detailing the management of on-site and off-site lands. This plan would meet the standards for long-term management and protection of the site as outlined in USFWS's 2017 Framework for ARCF 2016 Project, American River Contract 3A

Assessing Impacts to the Valley Elderberry Longhorn Beetle and the Habitat Mitigation, Monitoring, and Adaptive Management Plan for the ARCF GRR (December 2015). The Compensatory Mitigation Proposal would be prepared and submitted by USACE to USFWS for approval. It would include habitat goals that would be suitable for the western yellow-billed cuckoo and VELB, and would benefit Swainson's hawk, with specific information regarding site selection and development, a planting plan that includes appropriate buffers, success standards, monitoring specifications, and a reporting schedule with data as outlined in Section 6.1 and Appendix C of the 2017 Framework.

Site Selection and Development. Site selection would use a landscape-level approach that would benefit not only the VELB and western yellow-billed cuckoo, but all other species that rely on riparian habitat in the Parkway. Mitigation sites would focus on restoring riparian areas adjacent to the American River that would provide connectivity for VELB populations as described in the 2017 Framework.

Planting Plan. A planting plan would be prepared that would consider site specifics that would influence the success of the elderberry shrub and associated plantings and create a healthy riparian system. The plan would establish a diverse natural community with a complex vegetation structure that would support species present in the Project Area that rely on riparian habitat. The plan would be designed to achieve the following goals described in the 2017 Framework:

1. Maximize the number of stems between 2 centimeters (0.8 inches) and 12 centimeters (4.7 inches).
2. Minimize competition for sunlight and water. Native associates should be planted at a ratio of one native associate for every three elderberry plants.
3. Achieve an average elderberry stem density of 240 stems per acre.

Buffers. An appropriate buffer would be established between mitigation lands and adjacent lands in accordance with the 2017 Framework.

Success Standards. Performance standards including survival rates, stem densities, and recruitment as outlined below and detailed in the 2017 Framework would be established and met to meet compensatory mitigation goals:

1. A minimum of 60 percent of the initial elderberry and native associate plantings must survive over the first 5 years after the site is established. As much as feasible, shrubs should be well distributed throughout the site; however, in some

instances, underlying geologic or hydrologic issues might preclude elderberry establishment over some portion of the site. If significant die-back occurs within the first 3 years, replanting may be used to meet the 60 percent survival criterion. However, replanting efforts should be concentrated in areas containing surviving elderberry plants. In some instances, overplanting may be used to offset the selection of a less suitable site.

2. After 5 years, the site must show signs of recruitment. A successful site should have evidence of new growth on existing plantings as well as natural recruitment of elderberry shrubs. New growth is characterized as stems less than 3 centimeters (1.2 inches) in diameter. If no signs of recruitment are observed, the agency or applicant should discuss possible remedies with USFWS.
3. The Performance Standards outlined in Appendix C of the 2017 Framework, Table 2 for VELB mitigation would be complied with for monitoring years 2 through 7. If performance standards are not met, additional years would be required to meet the performance standards and monitoring years would start over.

Monitoring. The population of VELB, the general condition of the mitigation site, and the condition of the elderberry and associated native plantings in the mitigation site should be monitored at appropriate intervals. In any survey year, a minimum of two site visits between February 14 and June 30 of each year must be conducted by a USFWS-approved biologist. As indicated in the 2017 Framework, surveys must include:

1. A search for VELB exit holes in elderberry stems, noting the precise locations and estimated ages of the exit holes. The location of shrubs with exit holes should be mapped with a GPS. Because adult VELB are rarely encountered, targeted surveys for adults are not required. However, surveyors should record all adult VELB seen. Record photographs should be taken for all observations of adult VELB and their location mapped with a GPS. All exit-hole or adult VELB observations should be reported to the CNDDDB.
2. An evaluation of the success standards outlined above.
3. An evaluation of the adequacy of the site protection (fencing, signage, etc.) and weed control efforts on the mitigation site. Dense weeds and grasses such as Bermuda grass (*Cynodon dactylon*) are known to depress elderberry recruitment and their presence should be controlled to the greatest extent practicable.
4. An assessment of any real or potential threats to VELB and its host plant, such as erosion, fire, excessive grazing, off-road vehicle use, vandalism, and excessive weed growth.

5. A minimum of 10 permanent photographic monitoring locations, established to document conditions present at the mitigation site. Photographs should be included in each report.

Reports. In accordance with the 2017 Framework, yearly survey reports would be submitted to USFWS within 6 months of the final survey each year for monitoring years 2–7 (2017 Framework, Appendix C).

Implementation Timing: D, P, C, M

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

BIRD-1

Avoid and Minimize Effects on Nesting Birds: To avoid and minimize effects on nesting birds, the Project Partners would implement the following measures:

- Before ground disturbance, all construction personnel would participate in a USFWS-approved worker environmental awareness program. A qualified biologist would inform all construction personnel about the life history of Swainson’s hawk, western yellow-billed cuckoo, western burrowing owl, bank swallow, and other relevant species, as well as the importance of nest sites and foraging habitat.
- Where feasible, construction and maintenance activities that have the potential to affect special-status nesting birds and common nesting birds would occur at times of the year when adverse effects on those species would be avoided. If activities are conducted outside the nesting seasons specified in **Table 3-7**, no additional measures are required to mitigate adverse effects on nesting birds.
- A breeding season survey for nesting birds would be conducted by a qualified biologist for all trees and shrubs to be removed or disturbed that are located within 500 feet of construction activities, including grading. Swainson’s hawk surveys would be completed during at least two of the following survey periods: January 1 to March 20, March 20 to April 5, April 5 to April 20, and June 10 to July 30. An area with a radius of 0.5 mile from construction activities would be surveyed for Swainson’s hawk nests. No fewer than three surveys would be completed in at least two survey periods, and at least one of these surveys would occur immediately before project initiation.² Western burrowing owl surveys

² Swainson’s Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley*. May 31, 2000.

would follow suggested guidelines set forth in CDFW’s *Staff Report on Burrowing Owl Mitigation*³ such as conducting three or more daytime survey visits at least 3 weeks apart during the peak of breeding season from April 15 to July 15. Other migratory bird nest surveys could be conducted concurrent with Swainson’s hawk surveys, with at least one survey to be conducted no more than 48 hours from the initiation of project activities to confirm the absence of nesting. If the biologist determines that the area surveyed does not contain any active nests, construction activities, including removal or pruning of trees and shrubs, could commence without any further mitigation. If at any time during the nesting season construction stops for a period of 2 weeks or longer, pre-construction surveys would be conducted before construction resumes.

**TABLE 3-7
NESTING SEASON FOR SPECIAL-STATUS AND COMMON NESTING BIRDS**

Species	Nesting Season
White-tailed kite	February 1 to September 30
Bald eagle	January 1 to August 31
Northern harrier	March 1 to August 31
Swainson’s hawk	March 1 to September 15
Western yellow-billed cuckoo	June 1 to August 15
Burrowing owl	Year-round: February 1 to August 31 (nesting); September 1 to January 31 (wintering)
Bank swallow	April 1 to August 31
Purple martin	February 1 to August 31
Common nesting birds (raptors, passerines, herons, and egrets)	February 1 to August 31

- If nesting birds have been identified within or adjacent to the construction footprint, the Project Partners would establish avoidance buffers as indicated in **Table 3-8**. Reduced buffers may be implemented if recommended by the monitoring biologist and approved by CDFW. Buffers would be marked in the field by a qualified biologist using temporary fencing, high-visibility flagging, or other means that are equally effective in clearly delineating the buffers. Specific buffer distances for burrowing owl, which vary depending on time of year and level of disturbance, are presented in **Table 3-9** in accordance with CDFW’s *Staff Report on Burrowing Owl Mitigation*. Reduced buffers for burrowing owl may be implemented if recommended by the monitoring biologist, due to the nature of the

³ California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 2, 1012. ARCF 2016 Project, American River Contract 3A

activity, and if approved by CDFW. For example, typical burrow avoidance distances during active construction are 160 feet during the non-breeding season, and 250-feet during the breeding season. Any needed burrowing owl exclusion and burrow closure would occur during the non-breeding season only following the methodology in the CDFW *Staff Report*.

**TABLE 3-8
REQUIRED BUFFER DISTANCES FOR NESTING BIRDS***

Resource	Buffer Distance
White-tailed kite	0.5 mile
Bald eagle	0.5 mile
Swainson's hawk	0.25 mile (urban); 0.5 mile (rural or during use of heavy equipment)
Western yellow-billed cuckoo	500 feet
Bank swallow	300 feet
Burrowing Owl	160 feet (non-breeding season) and 250-feet (breeding season)
Common nesting birds	100 feet (passerines); 300 feet (raptors); 200 feet (heron or egret rookeries)

NOTE: If maintaining these buffers is not feasible they can be reduced in coordination with CDFW and/or USFWS.

TABLE 3-9
RECOMMENDED RESTRICTED ACTIVITY DATES AND SETBACK DISTANCES BY LEVEL OF
DISTURBANCE FOR BURROWING OWLS

Time of Year	Distance of Disturbance (feet) from Occupied Burrows	Distance of Disturbance (feet) from Occupied Burrows	Distance of Disturbance (feet) from Occupied Burrows
	Low Disturbance	Medium Disturbance	High Disturbance
April 1 to August 15	600	1,500	1,500
August 16 to October 15	600	600	1,500
October 16 to March 31	150	300	1,500

NOTES:

Low = Presence of maintenance staff on foot or in vehicles conducting work with light equipment (maintenance trucks, all-terrain vehicles).

Medium = Heavy equipment use with moderate noise levels (approximately 50–75 A-weighted decibels [dBA]).

High = Heavy equipment with high noise levels (more than 75 dBA).

SOURCE: California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7, 2012.

- Tree and shrub removal and work in other areas scheduled for vegetation clearing, grading, or other construction activities would not be conducted during the nesting season (generally February 15 through September 30, depending on the species and environmental conditions for any given year) where feasible. During rodent abatement efforts, no fumigation, use of treated bait, or other means of poisoning nuisance animals would occur within 100 feet of areas where burrowing owls are known to occur (e.g., burrows with observed nesting owls).

Implementation Timing: P, C, M

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

TURTLE-1

Implement Measures to Avoid and Minimize Effects on Western Pond Turtle: The Project Partners would implement the following measures to avoid and minimize effects on western pond turtle:

- A qualified biologist would conduct a pre-construction survey within 7 days before the start of Project activities. If no western pond turtles are observed, the Project Partners would document that information for the file, and no additional measures would be required, except as described below for dewatering activities.
- Should any western pond turtles be detected on land during the pre-construction survey, the qualified biologist would identify the location using GPS coordinates. With prior CDFW approval, a qualified biologist may relocate any western pond turtles found on land or in aquatic habitat within the construction footprint to suitable aquatic habitat at least 200 feet away from the construction footprint. If western pond turtles are observed on land within the construction footprint during Project activities, the Project Partners would stop work within approximately 200 feet of the turtle, and a qualified biologist would be notified immediately. If possible, the turtle would be allowed to leave on its own and the qualified biologist would remain in the area until the biologist deems his or her presence no longer necessary to ensure that the turtle is not harmed. Alternatively, with prior CDFW approval, the qualified biologist may capture and relocate the turtle unharmed to suitable habitat at least 200 feet outside the construction footprint. If a western pond turtle nest is unintentionally uncovered during Project activities, work would stop in the vicinity of the nest and USACE and/or CVFPB would contact CDFW to determine the appropriate next steps.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

BATS-1

Implement Measures to Protect Maternity Roosts of Special-Status BatsThe

Project Partners would implement the following measures to avoid and minimize effects on special-status bats, including pallid bat and western red bat:

- When possible, removal of trees identified as providing suitable roosting habitat should be conducted during seasonal periods of bat activity, including:
 - Between March 1 and April 15, and after evening temperatures rise above 45 degrees Fahrenheit and/or no more than ½ inch of rainfall within 24 hours occurs; or

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- Between September 1 and about October 15, and before evening temperatures fall below 45 degrees Fahrenheit and/or more than ½ inch of rainfall within 24 hours occurs.
- If removal of trees must occur during the bat pupping season (typically April-July), within 30 days of tree removal activities, all trees to be removed shall be surveyed by a qualified biologist for the presence of features that may function as special status bat maternity roosting habitat. Trees that do not contain potential special status maternity roosting habitat may be removed. For trees that contain suitable special status bat maternity roosting habitat, surveys for active maternity roosts shall be conducted by a qualified biologist in trees designated for removal. The surveys shall be conducted from dusk until dark.
- If a special-status bat maternity roost is located, appropriate buffers around the roost sites shall be determined by a qualified biologist and implemented to avoid destruction or abandonment of the roost resulting from tree removal or other Project activities. The size of the buffer shall depend on the species, roost location, and specific construction activities to be performed in the vicinity. High-visibility construction fencing would be installed around the buffer and would remain in place until the tree is no longer occupied by bats. No Project activity shall commence within the buffer areas until the end of the pupping season (September 1) or until a qualified biologist confirms the maternity roost is no longer active. If construction activities must occur within the avoidance buffer, then the activities would be monitored by a qualified biologist either continuously or periodically during work, as determined by the qualified biologist. The qualified biologist would be empowered to stop activities that, in the biologist's opinion, threaten to cause unanticipated and/or unpermitted adverse effects on special-status bats. If construction activities are stopped, the biological monitor would inform the Project Partners, and CDFW would be consulted to determine appropriate measures to minimize adverse effects.
- All trees designated for removal would be surveyed by a qualified biologist to identify features that provide habitat for roosting bats, such as cracks, crevices, or bark fissures for trees containing suitable bat roosting habitat that are planned for removal or trimming (irrespective of the time of year). Live trees that are indicated to contain roosting habitat trees should be removed in a two-phase removal system conducted over two consecutive days. The first day, under supervision of the biological monitor, limbs and branches would be removed. Removal activities on the first day should avoid limbs with bat habitat features for roosting bats and remove only branches or limbs without those features. On the second day, the entire tree would be removed and gently lowered to the ground. Tree material removed on the second day should be left undisturbed for the next

48-hours, as feasible. If it is not feasible to remove a tree using the two-phased approach, limbs containing habitat features should be removed and left undisturbed near the felled tree for 48-hours. A qualified biologist would monitor removal of these trees. If tree trimming results in the removal of vegetation that contains potential bat habitat, vegetation should be gently lowered to the ground and left near the tree for 48-hours prior to removal, as feasible.

- A qualified biologist would conduct a pre-construction emergence survey for special-status bats within 14 days before the start of work within 250 feet of the railroad and Interstate 80 Bridges. The survey would be conducted 1 hour before dusk to 1 hour after dusk to identify whether special-status bats are occupying the bridges as day roosts. If special-status bats are found roosting beneath any of these bridges and work would occur within 250 feet of the roost, a qualified biologist will monitor the bats and establish appropriate buffers if needed. If maternity roosts are found, they would be avoided by at least 250 feet until the offspring have fledged. If avoidance is not feasible, additional mitigation would be developed in consultation with CDFW.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

BADGER-1

Implement Measures to Avoid and Minimize Effects on American Badger. The Project Partners would implement the following measures to avoid and minimize effects on American badger.

- The Project Partners would conduct pre-construction clearance surveys for American badgers. These surveys would be conducted within 14 days of the start of any ground-disturbing activity. If no potential American badger dens are present, no further mitigation is necessary.
- If a potential American badger den is discovered but deemed inactive, the qualified biologist would excavate the den during the initial clearance survey to prevent badgers from reoccupying the den during the construction period.
- If found to be present, occupied badger dens would be flagged and ground-disturbing activities would be avoided within 50 feet of an occupied den. Maternity dens would be avoided during pup-rearing season (February 15 through July 1) and a minimum 200-foot buffer would be established.
- If avoidance of a non-maternity den is not feasible, badgers would be relocated by carefully evacuating the burrow (either by hand or using mechanized

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equipment, under the direct supervision of a qualified biologist) before or after the rearing season (February 15 through July 1). Any relocation of badgers would occur only after consultation with CDFW.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

BEE-1

Implement Measures to Avoid and Minimize Effects on Crotch Bumble Bee. To avoid and minimize effects on Crotch bumble bee, the Project Partners would implement the following measure:

- Before construction activities, a qualified biologist would conduct a pre-construction survey, during the flight period for worker and male bees late March through September, within the construction disturbance area for active Crotch bumble bee nests. If an active bumble bee nest is located, recommendations for avoiding or minimizing disturbance of the colony would be developed (e.g., establishing a buffer surrounding entry/exits and avoiding direct disturbance). During rodent abatement efforts, no fumigation, use of treated bait, or other means of poisoning nuisance animals would occur within 100 feet of areas where Crotch bumble bees are known to occur (e.g., burrows with observed nesting bees).

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

PLANT-1

Implement Measures to Avoid and Minimize Effects on Special-Status Plants. To avoid and minimize effects on these known and potentially occurring plants, the Project Partners would implement the following measures:

- Prior to construction, botanical inventories shall be conducted during the identifiable periods for Sanford's arrowhead (blooms May-October), bristly-sedge (blooms May-September), and woolly rose-mallow (blooms June-September) within Site 1-1.
- Sanford's arrowhead, bristly-sedge, and woolly rose-mallow plants identified during rare-plant surveys would be marked or fenced off as an avoided area

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during construction if they occur outside of the construction footprint. A qualified biologist would establish a buffer of at least 25 feet around the plants. If a buffer of 25 feet is not possible, the next maximum possible distance would be fenced off as a buffer.

- If Sanford's arrowhead, bristly-sedge, or woolly-rose mallow are located within the construction footprint and cannot be avoided during construction, the botanist shall establish distribution of the individuals in the population. A detailed relocation and mitigation/conservation plan that includes long-term strategies for the conservation of the species should be developed in coordination with CDFW upon confirming the presence of this species in the Project Area.
- If operations and maintenance activities are to occur near plants, a qualified biologist would mark their location with pin flags. The qualified biologist would instruct all personnel conducting the O&M activities regarding the location, appearance, and extent of these plants and the importance of avoiding impacts on this species.
- Herbicides would not be used within 3 meters (10 feet) of a known Sanford's arrowhead plant and a potentially occurring Sanford's arrowhead, bristly-sedge, or woolly rose-mallow plant. All chemicals would be applied using a backpack sprayer or similar direct application method.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

Cultural Resources

CR-1

Resolve Adverse Effects through a Programmatic Agreement and Historic Properties Treatment Plan. A Programmatic Agreement (PA) has been executed for the ARCF Project. A Historic Properties Treatment Plan (HPTP) would be developed if the proposed action is found to result in adverse effects.

Implementation Timing: D, P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

CR-2

Prepare an Archaeological Discovery Plan and an Archaeological Monitoring Plan. In accordance with the procedures described in Section 9.2 of the ARCF HPMP, an archaeological discovery plan would be developed for the Proposed Action. The discovery plan would specify what actions must be taken by the contractor in the event of an archaeological discovery and describe what actions USACE may take in the event of a discovery.

In accordance with the procedures described in Section 9.3.9 of the ARCF HPMP, an archaeological monitoring plan would be developed for the Proposed Action. This plan would identify the locations of known Historic Properties as well as sensitive areas designated for archaeological monitoring, and would include methods and procedures for monitoring and the procedures to be followed in the event of a discovery of archaeological materials.

Implementation Timing: P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

CR-3

Conduct Cultural Resources Awareness Training. In accordance with the procedures described in Section 9.1 of the ARCF HPMP, USACE would require the contractor to provide a cultural resources and TCRs sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. The training would be developed in coordination with and delivered by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology, as well as culturally affiliated Native American tribes. USACE may invite Native American representatives from interested culturally affiliated Native American tribes to participate.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

CR-4

Implement Procedures for Discovery of Cultural Material. If the discovery of cultural materials (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, building remains), TCRs, sacred sites, or landscapes is made at any time during project-related construction activities, USACE in consultation with the ARCF 2016 Project, American River Contract 3A

CVFPB and other interested parties would develop appropriate protection and avoidance measures where feasible. These procedures would be developed in accordance with the ARCF PA and ARCF HPMP, which specifies procedures for post-review discoveries. Additional measures, such as development of HPTPs prepared in accordance with the PA and HPMP, may be necessary if avoidance or protection is not possible.

Implementation Timing: P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

CR-5

Evaluate Any Tribal Cultural Resources Discovered and Implement Avoidance and Minimization Measures to Avoid Significant Adverse Effects. California Native American Tribes have expertise regarding TCRs (PRC Section 21080.3.1). Consistent with the California Natural Resources Agency Tribal Consultation Policy, culturally affiliated Tribes would be consulted concerning TCRs that may be affected, if these types of resources are discovered before or during construction. Consultation with culturally affiliated Tribes would focus on identifying measures to avoid or minimize impacts on any such resources discovered during construction. If TCRs are identified in the APE before or during construction, the following performance standards would be met before any further construction and associated activities that may result in damage to or destruction of TCRs:

- Each identified TCR would be evaluated for CRHR eligibility through application of established eligibility criteria (14 CCR 15064.636), in consultation with interested Native American Tribes.
- If a TCR is determined to be eligible for listing in the CRHR, USACE, in consultation with the CVFPB, would avoid damaging the Tribal Cultural Resource in accordance with PRC Section 21084.3, if feasible. If the CVFPB determines that the project may cause a substantial adverse change to a TCR, and measures are not otherwise identified in the consultation process, the following are examples of mitigation steps or alternatives capable of avoiding or substantially lessening potential significant impacts on a TCR:
 - Avoid and preserve resources in place, including, but not limited to, planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

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- Treat the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including, but not limited to, the following:
 - Protect the cultural character and integrity of the resource.
 - Protect the traditional use of the resource.
 - Protect the confidentiality of the resource.
 - Establish permanent conservation easements or other interests in real estate, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.
 - Protect the resource.

Implementation Timing: C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

CR-6

Implement Procedures for Discovery of Human Remains. The roles and responsibilities of USACE during the response to the discovery of human remains are outlined in the HPMP. To minimize adverse effects from encountering human remains during construction, the Project Partners would implement the following measures:

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the CVFPB would consult with USACE, and USACE would immediately halt potentially damaging excavation in the area of the burial and notify the Sacramento County Coroner and a professional archaeologist to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050.5[c]). After the coroner's findings have been made, the archaeologist and the NAHC-designated MLD, in consultation with the landowner, would determine the ultimate treatment and disposition of the remains.
- Upon the discovery of Native American human remains, USACE, in coordination with the CVFPB, would require that all construction work must stop within 100 feet of the discovery until consultation with the MLD has taken place. The CVFPB would lead consultation with the MLD, in coordination with USACE. The MLD

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would have 48 hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following is a list of site protection measures that the CVFPB would employ:

- Record the site with the NAHC or the appropriate Information Center.
- Record a document with the county in which the property is located.
- Rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. Reburial of the remains would be completed by the CVFPB or its authorized representative. If the NAHC is unable to identify an MLD, or if the MLD fails to make a recommendation within 48 hours after being granted access to the site, the CVFPB or its authorized representative may reinter the remains in a location not subject to further disturbance. If the CVFPB rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the CVFPB, the CVFPB would implement mitigation to protect the burial remains. Construction work in the vicinity of the burials would not resume until the mitigation is completed.

Implementation Timing: C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

Transportation and Circulation

TR-1

Prepare and Implement a Traffic Control and Road Maintenance Plan. Before the start of project-related construction activities, USACE in coordination with CVFPB would require the contractor to prepare a Traffic Control and Road Maintenance Plan. The items listed below would be included in the plan and as terms of the construction contracts:

- The contractor would be required to prepare a Traffic Control and Road Maintenance Plan. A traffic control plan describes the methods of traffic control to be used during construction. All on-street construction traffic would be required to

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comply with the City of Sacramento's standard construction specifications as detailed in City Code 12.20.030 to the satisfaction of the City Traffic Engineer. The plan would reduce the effects of construction on the roadway system in the Project Area throughout the construction period.

- Construction contractors would follow the standard construction specifications of affected jurisdictions, including UPRR, and obtain the appropriate encroachment permits, if required. The conditions of the encroachment permit would be incorporated into the construction contract and would be enforced by the agency that issues the encroachment permit.
- Proposed lane closures would be coordinated with the appropriate jurisdiction and would be minimized to the extent possible during the morning and evening peak traffic periods.
- Standard construction specifications also typically limit lane closures during commuting hours. Lane closures would be kept as short as possible. If a road must be closed, detour routes and/or temporary roads would be made to accommodate traffic flows. Detour signs would be provided to direct traffic through detours. Advance notice signs of upcoming construction activities would be posted at least 1 week in advance so that motorists are able to avoid traveling through the study area during these times. Within the Parkway, detours would be used to allow for continued use by bicycle commuters.
- Safe pedestrian and bicyclist access would be maintained around the construction areas at all times. Construction areas would be secured as required by the applicable jurisdiction to prevent pedestrians and bicyclists from entering the work site, and all stationary equipment would be located as far away as possible from areas where bicyclists and pedestrians are present.
- The construction contractor would provide adequate parking for construction trucks, equipment, and construction workers within the designated staging areas throughout the construction period. If inadequate space for parking is available at a given work site, the construction contractor would provide an off-site staging area and, as needed, coordinate the daily transport of construction vehicles, equipment, and personnel to and from the work site.
- The construction contractor would assess damage to roadways used during construction and the UPRR at-grade railroad crossing and would repair all potholes, fractures, or other damages.
- The construction contractor would notify and consult with emergency service providers at least 14 days prior to commencement of construction that would partially or fully obstruct roadways to ensure that alternative emergency access routes are established to facilitate the passage of emergency vehicles on city streets.

- Emergency vehicle access would be made available at all times. The contractor would be required to coordinate with local emergency responders to inform them of the construction activities.

Implementation Timing: P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

TR-2

Provide Bicycle and Pedestrian Access. The contractor would prepare a Traffic Control and Road Maintenance Plan that would include, but not be limited to, the following provisions related to bicycle and pedestrian access:

- Provide signs along affected pedestrian and bicycle pathways announcing scheduled closures and recommended detour routes.
- Place signal personnel at intersections of construction vehicle pathways and active bicycle and pedestrian facilities.

Implementation Timing: P, C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Air Quality

AQ-1

Implement SMAQMD's Basic Construction Emissions Control Practices.

SMAQMD requires construction projects to implement basic construction emissions control practices to control fugitive dust and diesel exhaust emissions.⁴ USACE would implement the following control measures during project construction:

⁴ Sacramento Metropolitan Air Quality Management District. 2019. Basic Construction Emissions Control Practices. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch3BasicEmissionControlPractices_BMPSFinal7-2019.pdf. Accessed December 22, 2021.

- Control fugitive dust as required by SMAQMD Rule 403 and enforced by SMAQMD staff.
- Water all exposed surfaces twice daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would travel along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible track-out of mud or dirt from adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Complete all roadways, driveways, sidewalks, or parking lots to be paved as soon as possible. In addition, lay building pads as soon as possible after grading unless seeding or soil binders are used.
- Limit vehicle speeds on unpaved roads to 15 miles per hour.
- Minimize idling time, either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes (required by 13 CCR Sections 2449[d][3] and 2485). Provide clear signage that posts this requirement for workers at the site entrances.
- Maintain all construction equipment in proper working condition according to the manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

AQ-2

Implement Enhanced Fugitive Dust Control Practices. Fugitive dust mitigation for the project would require the use of adequate measures during each construction activity and would include frequent application of water or application of soil additives, control of vehicle access, and vehicle speed restrictions. USACE would implement the dust mitigation measures listed below.⁵

⁵ Sacramento Metropolitan Air Quality Management District. 2009. Enhanced Fugitive PM Dust Control Practices. Available: http://www.airquality.org/LandUseTransportation/Documents/Ch3EnhancedFugitiveDustControl_FINAL12-2009.pdf. Accessed December 22, 2021.

- Water exposed soil with adequate frequency for continued moist soil; however, do not overwater to the extent that sediment flows from the site.
- Suspend excavation, grading, and/or demolition activity when wind speeds exceed 20 miles per hour.
- Plant vegetative ground cover (fast-germinating native grass seed) in disturbed areas as soon as possible.
- Install wheel washers for all exiting trucks or wash off all trucks and equipment leaving the site.
- Treat site access to 100 feet from the paved road with a 6- to 12-inch layer of wood chips, mulch, or gravel to reduce generation of road dust and road dust carryout onto public roads.
- Post a publicly visible sign identifying the telephone number and person to contact at the lead agency regarding dust complaints. This person would respond and take corrective action within 48 hours. To ensure compliance, SMAQMD's phone number would also be visible.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

AQ-3

Develop and Implement a Plan for Enhanced On-Site Exhaust Controls.⁶ Actual emissions of nonattainment and maintenance pollutants would be tracked monthly using tools acceptable to SMAQMD (e.g., construction mitigation calculator, SMAQMD's Equipment List). USACE shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment (50 horsepower or more) to be used 8 hours or more during project construction. The tracking data would be used to verify that all pollutants remain below the CEQA daily thresholds, General Conformity de minimis thresholds, or are fully mitigated and offset if emissions exceed either. The initial report would include all the following details:

- Information about the project information and the construction company.
- The equipment type, horsepower rating, engine model year, projected hours of use, and CARB equipment identification number for each piece of equipment in the plan.

⁶ Sacramento Metropolitan Air Quality Management District. 2019. Enhanced On-Site Exhaust Controls. Available: <http://www.airquality.org/LandUseTransportation/Documents/Ch3On-SiteEnhancedExhaustMitigationFinal4-2019.pdf>. Accessed December 22, 2021.

- All owned, leased, and subcontracted equipment to be used.

Updated reports would be submitted monthly to demonstrate continued project compliance. SMAQMD may conduct periodic site inspections to determine compliance. Nothing in this mitigation would supersede other air district, state, or federal rules or regulations.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

AQ-4

Use Electric Construction Equipment. To the extent available and feasible, construction equipment would be powered by electricity, rather than diesel fuel, which would reduce construction-related criteria air pollutants, TACs, and tailpipe GHG emissions associated with diesel fuel combustion.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

AQ-5

Pay NO_x Mitigation Fee to SMAQMD. The contractor would pay the appropriate SMAQMD-required NO_x mitigation fee to offset the project's NO_x emissions when they exceed SMAQMD's threshold of 85 lb/day only if USACE does not pay the mitigation fee through the General Conformity Determination during the year of construction. The NO_x mitigation fee would apply to all emissions from the Proposed Action: on-road (on- and off-site), off-road, portable, stationary equipment, and vehicles.

Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Greenhouse Gas Emissions and Energy Consumption

GHG-1

Avoid, Minimize, and Compensate for Greenhouse Gas Emissions Effects. The Project Partners would implement the following measures to avoid, minimize, and compensate for the Proposed Action's GHG emissions effects:

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- Encourage and provide carpools, shuttle vans, transit passes, and/or secure bicycle parking for construction worker commutes.
- Recycle at least 75 percent of construction waste and demolition debris.
- Purchase at least 20 percent of the materials and imported soil from sources within 100 miles of the project site.
- Minimize idling time, either by shutting equipment off when not in use or by reducing the time of idling to no more than 3 minutes (a 5-minute limit is required by the State airborne toxics control measure [13 CCR Sections 2449(d)(3) and 2485]). Clear signage identifying this requirement for workers would be posted at the entrances to the site.
- Maintain all construction equipment in proper working condition according to the manufacturer's specifications. The equipment would be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use equipment with new technologies (repowered engines, electric drive trains).
- Use a CARB-approved low-carbon fuel for construction equipment. (NO_x emissions from the use of low-carbon fuel would be reviewed and increases mitigated.)
- Purchase carbon offsets for program-wide GHG emissions (direct plus indirect emissions from on-road haul trucks plus commute vehicles) that meet the criteria of being real, quantifiable, permanent, verifiable, enforceable, and additional, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2). Such credits shall be based on protocols approved by the California Air Resources Board (CARB), consistent with Section 95972 of Title 17 of the California Code of Regulations, and shall not allow the use of offset projects originating outside of California, except to the extent that the quality of the offsets, and their sufficiency under the standards set forth herein, can be verified by USACE or the Sacramento Metropolitan Air Quality Management District (SMAQMD). Such credits must be purchased through one of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California Cap and Trade program; or (iii) through the California Air Pollution Control Officers Association's (CAPCOA's) GHG Rx and SMAQMD. Purchase of carbon offsets shall be sufficient to reduce the Proposed Action's GHG emissions to below SMAQMD's significance thresholds through a one-time purchase of credits, based on the emissions estimates in this Supplemental EIR or on an ongoing basis based on monthly emissions estimates that would be prepared in accordance with procedures established by Measure AQ-3.

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Implementation Timing: C

Responsible for Mitigation: USACE

Responsible for Monitoring/Reporting Action: CVFPB

Noise

NOISE-1

Implement Noise Reduction Practices. USACE and the CVFPB would implement the following noise control measures to reduce construction-related noise effects. The following noise reduction practices would reduce noise generated by construction activities and would apply to construction activities within 500 feet of sensitive receptors, including but not limited to residences.

- Coordinate with local residents, comply with noise ordinances, and implement Best Management Practices (BMPs).
- Provide written notice to residents within 1,000 feet of the construction zone, advising them of the estimated construction schedule. This written notice would be provided within one week to one month of the start of construction at that location.
- Display notices with such information as contractor contact telephone number(s) and proposed construction dates and times in a conspicuous manner, such as on construction site fences.
- Schedule the loudest and most intrusive construction activities during daytime hours (7:00 a.m. to 7:00 p.m.), where feasible.
- Require that construction equipment be equipped with factory-installed muffling devices, and that all equipment be operated and maintained in good working order to minimize noise generation.
- Locate stationary noise-generating equipment as far as practicable from sensitive receptors.
- Limit unnecessary engine idling (i.e., longer than 5 minutes) as required by State air quality regulations.
- Employ equipment that is specifically designed for low noise emission levels, when feasible.
- Employ equipment that is powered by electric or natural gas engines, as opposed to those powered by gasoline fuel or diesel, when available and feasible.
- If the construction zone is within 500 feet of a sensitive receptor, place temporary barriers (e.g., noise curtains, sound walls, etc.) between stationary noise

equipment and noise-sensitive receptors to block noise transmission, when feasible, or take advantage of existing barrier features, such as existing terrain or structures, when feasible.

- If the construction zone is within 500 feet of a sensitive receptor, prohibit the use of backup alarms and provide an alternate warning system, such as a flagman or radar-based alarm that is compliant with State and Federal worker safety regulations.
- Locate construction staging areas as far as practicable from sensitive receptors.
- If there are any occupied buildings with plaster or wallboard construction within 40 feet of construction equipment, prepare a vibration control plan prior to construction.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

NOISE-2

Implement Vibration Control Measures. USACE and the CVFPB would implement the following vibration control measures to reduce construction-related vibration effects.

- To the extent feasible and practicable, the primary construction contractors would employ vibration-reducing construction practices so that vibration from construction would comply with applicable noise-level rules and regulations, including the construction vibration standards of the City or County of Sacramento. Project construction specifications would require the contractor to limit vibrations to less than 0.2 inch per second PPV and less than 72 VdB for frequent events (i.e., truck hauling) or 80 VdB for infrequent events (i.e., heavy-duty construction activities). If construction or truck hauling activity would occur within 75 feet of an occupied building, the contractor would prepare a vibration control plan prior to construction. The plan would include measures to limit vibration, including but not limited to the following:
 - Avoid vibratory rollers and packers near sensitive areas. Alternatives may include pad foot rollers drum rollers, or similar non-vibratory equipment.
 - Route heavily loaded trucks away from residential streets, if possible. If no alternatives are available, select the streets with the fewest homes. Depending on the specific truck type that would be used, the contractor could demonstrate with substantial evidence, to the City of Sacramento, that trucks would not exceed applicable thresholds mentioned above.

- Prior to construction activities, notify each residence within 75 feet of construction with contact information to request pre- and post-construction surveys to assess potential architectural damage from levee construction vibration. The survey would include visual inspection of the structures that could be affected and documentation of structures by means of photographs and video. This documentation would be reviewed with the individual owners prior to any construction activities. Post-construction monitoring of structures would be performed to identify (and repair, if necessary) damage, if any, from construction vibration. Any damage would be documented with photographs and video. This documentation would be reviewed with the individual property owners.
- Place vibration monitoring equipment at the property line adjacent to large equipment and, with owner approval, at the back of the residential structures adjacent to the large equipment. Record measurements daily.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

Recreation

REC-1

Avoid and Minimize Effects on Recreational Use. USACE and the CVFPB would implement the following measures to reduce temporary, short-term construction effects on recreational facilities in the Project Area:

- Coordinate with recreation user groups prior to and during construction for input into mitigation measures that would reduce effects to the maximum extent practicable. Advance notice would be given to recreation users, informing them of anticipated activities and detours to reduce the effects. Closures of paved trails would be noticed 14-days in advance via signage at the detour locations.
- Post signs at major entry points for parks and recreation facilities clearly indicating closures and estimated duration of closures. Information signs would notify the public of alternate parks and recreation sites, including boat launch ramps, and provide a contact number to call for questions or concerns.
- Provide flaggers and post warning signs and signs restricting access before and during construction to ensure public safety.
- Provide marked detours for all bike trails and on-street bicycle routes that would be temporarily closed during construction. Detours would be developed in

consultation with the City of Sacramento Bicycle and Pedestrian Coordinator at least 10 days before the start of construction activities, as applicable. Signs that clearly indicate closure routes would be posted at major entry points for bicycle trails, information signs would be posted to notify motorists to share the road with bicyclists where necessary, and a contact number would be provided to call for questions or concerns. Fences would be erected to prevent access to the Project Area.

- Provide traffic control in areas where recreational traffic would intersect with construction vehicles.
- If any access point needs to be closed during construction, post notices providing alternative access routes.
- Upon completion of levee improvements, coordinate with the City of Sacramento and Sacramento County to restore access and repair any construction-related damage to recreational facilities to pre-project conditions.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

Public Utilities and Service Systems

UTIL-1

Avoid and Minimize Service Disruptions and Damage to Utilities and Infrastructure. USACE and the CVFPB would implement the measures listed below before construction begins to avoid and minimize potential damage to utilities and infrastructure and reduce service disruptions during construction.

- Coordinate with applicable utility and service providers to implement the orderly relocation of utilities that need to be removed or relocated.
- Notify the appropriate agencies and affected landowners regarding any potential interruptions of service.
- Verify through field surveys and the use of Underground Service Alert services the locations of buried utilities in the Project Area, including natural gas, petroleum, and sewer pipelines. Any buried utility lines would be clearly marked in construction (e.g., in the field) and on the construction specifications in advance of any earthmoving activities.
- Before the start of construction, prepare and implement a response plan that addresses potential accidental damage to a utility line. The plan would identify chain-of-command rules for notifying authorities and appropriate actions and

responsibilities regarding the safety of the public and workers. A component of the response plan would include worker education training in response to such situations.

- Stage utility relocations during project construction to minimize interruptions in service.
- Communicate construction activities with first responders to avoid response delays caused by construction detours.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB

Hazards and Hazardous Materials

HAZ-1

Implement Storm Water Pollution Prevention Plan Best Management Practices and Test Site for Contaminants Prior to Construction. USACE and the CVFPB would implement the following measures to avoid and minimize the impact of hazards and hazardous materials.

- Comply with applicable regulations to reduce the potential for an accidental release of hazardous materials during construction. The contractor would also be required to prepare a SWPPP, which details the methods to prevent run-on and discharges from the construction sites into drainage systems, lakes, or rivers. The SWPPP would also include BMPs that detail hazardous materials handling and storage requirements as well as spill prevention and response measures that would be implemented accordingly.
- Test each erosion protection site for contaminants before construction and dispose of any materials found in accordance with all Federal, State, and local regulations at an approved disposal site.

Implementation Timing: P, C

Responsible for Mitigation: USACE, CVFPB

Responsible for Monitoring/Reporting Action: CVFPB