Mitigation Monitoring Plan for the Broadway Bridge Project

Federal Project No.: TGR2DGL 5447(043)

City of West Sacramento City Council Resolution 22-43

May 2022

Broadway Bridge Project

SCH # 2017072019

MITIGATION MONITORING PLAN

Introduction

Public Resources Code section 21081.6 and section 15097 of the California Environmental Quality Act (CEQA) Guidelines require public agencies to establish monitoring or reporting programs for projects approved by a public agency whenever approval involves the adoption of either a mitigated negative declaration or specified environmental findings related to environmental impact reports.

The following is the Mitigation Monitoring Plan (MMP) for the Broadway Bridge Project (proposed project). The intent of the MMP is to aid the City of West Sacramento in its implementation and monitoring of mitigation measures adopted from the Broadway Bridge Project Final Environmental Impact Report (EIR).

Mitigation Measures

The mitigation measures are taken from the Broadway Bridge Project Final EIR. The MMP describes the actions that must take place to implement each mitigation measure, the timing of those actions, and the entities responsible for implementing and monitoring the actions.

MMP Components

The components of the attached table, which contains applicable mitigation measures, are addressed briefly, below.

Mitigation Measure: All mitigation measures identified in the Broadway Bridge Project Draft EIR are presented, as revised in the Final EIR.

Action(s): For every mitigation measure, one or more actions are described. The actions delineate the means by which the mitigation measures will be implemented, and, in some instances, the criteria for determining whether a measure has been successfully implemented. Where mitigation measures are particularly detailed, the action may refer back to the measure.

Implementing Party: This item identifies the entity that will undertake the required action.

Timing: Implementation of the action must occur prior to or during some part of project approval, project design or construction or on an ongoing basis. The timing for each measure is identified.

Monitoring Party: The City of West Sacramento is primarily responsible for ensuring that mitigation measures are successfully implemented. Within the City of West Sacramento, a number of departments and divisions would have responsibility for monitoring some aspect of the overall project. Other agencies, such as the Yolo-Solano Air Quality Management District, may also be responsible for monitoring the implementation of mitigation measures. As a result, more than one monitoring party may be identified.

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Visual/Aesthetics				
Mitigation Measure AES-1: Work with Stakeholders to Determine Bridge Aesthetics The project proponent will conduct a focused outreach effort and will conduct a public meeting, charrette session, or similar public engagement method with public stakeholders to develop an aesthetic design approach. This measure will allow concerned viewers to assist in creating a bridge that is visually appealing to the general public, while balancing the need for increased circulation access at this location. Affected stakeholders will be able to provide input on the preferred architectural style and coloring of the proposed bridge.	Conduct public outreach effort to discuss and receive input on the aesthetic design approach	City of West Sacramento	Prior to approval of final project design	City of West Sacramento, City of Sacramento
Mitigation Measure AES-2: Implement Project Landscaping The project proponent will install landscaping where space and safety considerations allow and in a manner that is consistent with the Cities of West Sacramento and Sacramento planning policies and directives to improve city streetscapes. Prior to approval of the roadway design, the City of West Sacramento and/or City of Sacramento project landscape architect will review project designs to ensure that the following elements are implemented in the project landscaping plan. ● Design and implement low-impact development (LID) measures that disperse and reduce runoff by using such features as vegetated buffer strips/medians between paved areas that catch and infiltrate runoff. Evaluate the use of pervious paving in the proposed project to improve infiltration and to reduce the amount of surface runoff from entering waterways and the storm water system. Do not use LID measures where infiltration could result in adverse environmental effects. Use LID measures, such as cobbled swales and aggregate mulching, as an aesthetic design element to create an attractive view while reducing water use. ● Require construction contractors to incorporate native grass and wildflower seed into standard seed mixes, which may be non-native, for erosion control measures that will be applied to all exposed slopes. If appropriate for the surrounding habitat, use wildflowers to provide seasonal interest to areas where trees and shrubs are removed, and grasslands are disturbed. Incorporate into seed mixes only wildflower and grass species that are native, and under no circumstances use any invasive grass or wildflower plant species as any component of any erosion control measure. Choose species that are indigenous to the area and for their appropriateness to the surrounding habitat. For example, choose upland grass and wildflower species for drier upland areas, and wetter species for areas that will receive more moisture. If not appropriate to the surrounding habitat, do not include wildflowers in the seed mix. ● Require the species list to include trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Increase the effectiveness of roadside planting areas and reduce their susceptibility to disease by increasing plant variety—providing multiple layers, seasonality, and diverse habitat. Use evergreen groundcovers or low-growing plants, such as *Ceanothus* spp., in areas where taller vegetation could cause driving hazards by obscuring site distances. Use species native and indigenous to the project area and California. Use native plant species to create attractive spaces, high in aesthetic quality, that are not only drought tolerant but also attract more wildlife than traditional landscape plant palettes. Use native species to promote a visual character of California that is being lost through development and reliance on non-native ornamental plant species. ● Use vegetative accents and screening to reduce the perceived scale and mass of built features, while accentuating the design treatments that will be applied to those features. Pay special attention to plant choices near residences to ensure that species chosen are of an appropriate height; and rely on evergreen species to provide year-round light screening from nuisance light, if applicable. ● Do not use any invasive plant species at any location. ● Plant vegetation within the first 6 months following project completion. ● Implement an irrigation and maintenance program during the plant establishment period and continue irrigation, as needed, to ensure plant survival. Design the landscaping plan to maximize the use of planting zones that are water efficient. Incorporate aesthetic features such as cobbling swales or shallow detention areas, as appropriate, to reduce or eliminate the need for irrigation in certain areas. ● If an irrigation system is required, use a smart watering system to evaluate the existing site conditions and plant material against weather conditions, and avoid overwatering of such areas. To avoid undue water flows, manage the irrigation system in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days; or shut down the zone or system until it can be repaired.	Provide landscaping in areas where vegetation is removed and to reduce visual impacts at reconfigured intersections	City of West Sacramento/ contractor	Prior to design review and approval of roadway design; during construction	City of West Sacramento and City of Sacramento

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AES-3: Apply Minimum Lighting Standards All artificial outdoor lighting and overhead street lighting will be limited to safety and security requirements and the minimum required for driver safety. Lighting will be designed using the Illuminating Engineering Society's design guidelines. All lighting will be designed to have minimum impact on the surrounding environment and will use downcast, cut-off type fixtures that are shielded and direct the light only toward objects requiring illumination. Therefore, lights will be installed at the lowest allowable height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties or open spaces, or backscatter into the nighttime sky. The lowest allowable wattage will be used for all lighted areas, and the amount of nighttime lights needed to light an area will be minimized to the highest degree possible. Light fixtures will have non-glare finishes that will not cause reflective daytime glare. Lighting will be designed for energy efficiency, with daylight sensors or timers with an on/off program. Lights will provide good color rendering with natural light qualities, with the minimum intensity feasible for security, safety, and personnel access. Lighting, including light color rendering and fixture types, will be designed to be aesthetically pleasing. Light-emitting diode (LED) lighting will avoid the use of blue-rich white light (BRWL) lamps and use a correlated color temperature that is no higher than 3,000 Kelvin. In addition, LED lights will use shielding to ensure that nuisance glare and light spill does not affect sensitive residential viewers. Lights along pathways and bridge safety lighting will use shielding to minimize offsite light spill and glare, and will be screened and directed away from adjacent uses to the highest degree possible. The amount of nighttime lights used along pathways will be minimized to the highest degree possible to ensure that spaces are not unnecessarily over-lit. For example, the amount of light can be reduced by limiting the amount of ornamental light posts to higher use areas and by using bollard lighting on travel way portions of pathways. Technologies to reduce light pollution evolve over time; design measures that are currently available may help but may not be the most effective means of controlling light pollution once the project is designed. Therefore, all design measures used to reduce light pollution will use the technologies available at the time of project design to allow for the highest potential reduction in light pollution.	Design lighting to have a minimum impact on surrounding environment using Illuminating Engineering Society's design guidelines Minimize nighttime lighting as much as possible Use the latest technologies available at the time of project design to allow for the highest potential reduction in light pollution Also refer to requirements in *Minimize or Avoid Permanent Bridge Lighting from Directly Radiating on Water Surfaces of the Sacramento River*	City of West Sacramento	During final design, prior to final design review	City of West Sacramento and City of Sacramento

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Air Quality				
Mitigation Measure AIR-1: Implement Additional Control Measures for Construction Emissions of Fugitive Dust Additional measures to control dust in Yolo County will be borrowed from YSAQMD's recommended list of dust control measures and implemented to the extent practicable when the measures have not already been incorporated in, and do not conflict with, the requirements of the Caltrans *Standard Specifications* (California Department of Transportation 2018), special provisions, the NPDES permit, the Biological Opinions, the CWA Section 404 permit, CWA Section 401 Certification, and other permits issued for the project. The following measures are taken from YSAQMD's Construction Dust Mitigation Measures (Yolo-Solano Air Quality Management District 2007). ● Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure. ● Haul trucks shall maintain at least 2 feet of freeboard. ● Cover all trucks hauling dirt, sand, or loose materials. ● Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations and hydroseed area. ● Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least 4 consecutive days). ● Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land. ● Plant vegetative ground cover in disturbed areas as soon as possible. ● Cover inactive storage piles. ● Sweep streets if visible soil material is carried out from the construction site. ● Treat accesses to a distance of 100 feet from the paved road with a 6- to 12-inch layer of wood chips or mulch. ● Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel. Additional measures to control dust in Sacramento County will be borrowed from SMAQMD's recommended list of dust control measures and implemented to the extent practicable when the measures have not already been incorporated in, and do not conflict with, the requirements of the Caltrans *Standard Specifications*, special provisions, the NPDES permit, the Biological Opinions, the CWA Section 404 permit, CWA Section 401 Certification, and other permits issued for the project. The following measures are taken from SMAQMD's (2021) *Guide to Air Quality Assessment in Sacramento County* and represent their basic control measures for fugitive dust. ● Control of fugitive dust is required by District Rule 403 and enforced by District staff. ● Water all exposed surfaces two times 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 2 feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered. ● Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. ● Limit vehicle speeds on unpaved roads to 15 mph. ● All roadways, driveways, sidewalks, and parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used. The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The ARB enforces idling limitations and compliance with diesel fleet regulations. ● Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. ● Provide current certificate(s) of compliance for ARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1]. For more information contact ARB at 877-593-6677, doors@arb.ca.gov, or www.arb.ca.gov/doors/compliance_cert1.html. Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies. ● Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.	Comply with Caltrans' Standard Specification Section 14, Yolo Solano Air Quality Management District's (YSAQMD) and Sacramento Metro Air Quality Management District's (SMAQMD) recommended list of control measures	City of West Sacramento/ contractor	During construction	City of West Sacramento, City of Sacramento, Yolo Solano Air Quality Management District, Sacramento Metropolitan Air Quality Management District, Caltrans

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Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Biological Resources				
Mitigation Measure NC-1: Install Orange Construction Fencing between the Construction Area and Adjacent Sensitive Biological Resources The project proponent or their contractor will install orange construction fencing between the construction area and adjacent sensitive biological resource areas. Sensitive biological resources that occur adjacent to the construction area that could be directly affected by the project include sensitive natural communities; special-status wildlife habitats, such as nest sites of Swainson's hawk and migratory birds; and protected trees. Barrier fencing around sensitive biological resource areas will be installed as one of the first orders of work and prior to equipment staging. Before construction begins, the construction contractor will work with the project engineer and a resource specialist to identify the locations for the orange construction fencing and will place stakes around the sensitive resource sites to indicate these locations. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans and described in the specifications. To minimize the potential for snakes and other ground-dwelling animals from being caught in the orange construction fencing, the fencing will be placed with at least a 1-foot gap between the ground and the bottom of the fencing. The exception to this condition is where construction barrier fencing overlaps with erosion control fencing and must be secured to prevent sediment runoff. Barrier fencing will be installed before construction activities are initiated, maintained throughout the construction period, and removed after completion of construction.	Install orange construction fencing as a barrier between the construction area and adjacent sensitive biological resource areas	City of West Sacramento/ contractor, resource specialist	Identify locations prior to construction Install prior to construction Maintain during construction	City of West Sacramento, City of Sacramento, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Caltrans
Mitigation Measure NC-2: Conduct Environmental Awareness Training for Construction Employees The project proponent will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel and will brief them on the need to avoid effects on sensitive biological resources (e.g., native trees, sensitive natural communities, and special-status species habitats in and adjacent to the construction area). The education program will include a brief review of the special-status species with the potential to occur in the BSA (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the BSA in which the species may occur, as well as their legal status and protection. The program also will cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. This will include the steps to be taken if a sensitive species is found within the construction area (i.e., notifying the crew foreman, who will call a designated biologist). In addition, construction employees will be educated about the importance of controlling and preventing the spread of invasive plant infestations. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions will be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.	Retain a qualified biologist to conduct worker awareness training	City of West Sacramento, qualified biologist, contractor	Prior to construction During construction for new crew members	City of West Sacramento, City of Sacramento, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Caltrans
Mitigation Measure NC-3: Conduct Periodic Biological Monitoring The project proponent will retain a qualified biological monitor for the project who will visit the site a minimum of once per week to ensure that fencing around environmentally sensitive areas is intact and that activities are being conducted in accordance with the agreed upon project schedule and agency conditions of approval. The monitor will provide the project proponent with a monitoring log for each site visit. Certain activities will require the presence of a biological monitor for the duration of the activity or during the initial disturbance of an area to ensure that impacts on special-status species are avoided. The activities that require specific monitoring are identified in Measures AS-3, AS-5, AS-7, and AS-8.	Retain a qualified biologist to perform periodic monitoring and prepare monitoring logs Retain a qualified biologist to monitor for the duration of an activity, as identified in other biological mitigation measures	City of West Sacramento/ contractor, qualified biologist	During construction	City of West Sacramento, City of Sacramento, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Caltrans
Mitigation Measure NC-4: Compensate for Temporary Effects on and Permanent Loss of Cottonwood Riparian Forest (Including SRA Cover) The project proponent will compensate for the permanent loss of up to 1.112 acres of riparian forest under Alternative B or up to 1.176 acres of riparian forest under Alternative C. In addition, any unavoidable temporary loss of riparian forest will be mitigated. The project proponent will implement onsite and, if necessary, offsite compensation measures or purchase mitigation bank credits to compensate for losses of cottonwood riparian forest on the waterside slope of the existing levees, including riparian forest supporting SRA cover habitat (as described in EIR/EA Section 4.4.1.1 [*Survey Results*] in the NES, portions of the cottonwood riparian forest in the BSA also provide SRA cover habitat for fish). Onsite compensation will be used to the maximum extent practicable. Compliance with the USACE levee vegetation policy (U.S. Army Corps of Engineers 2014), the ULDC (California Department of Water Resources 2012), or other engineering constraints may limit the ability to achieve full onsite compensation. Therefore, offsite compensation or purchase of mitigation bank credits may be needed to achieve no net loss of existing in-kind riparian and SRA cover habitat values. Each of these options is discussed below. **Onsite or Offsite Restoration or Enhancement along the Sacramento River.** Riparian habitat restoration or enhancement onsite or offsite should occur in the same year construction is completed. For onsite or offsite replacement plantings, the project proponent will prepare a mitigation planting plan, including a species list and number of each species, planting locations, and maintenance requirements. Plantings will consist of cuttings taken from local plants or plants grown from local material. Planted species for the mitigation plantings will be similar to those removed from the project area and will include native species, such as Fremont's cottonwood, valley oak, black willow, boxelder, Oregon ash, and black walnut. The final planting plan will be developed based on results of the arborist survey for species to be removed (see additional discussion below). All plantings will be fitted with exclusion cages or other suitable protection from herbivory. Plantings will be irrigated for up to 3 years or until established. Plantings will be monitored annually for 3 years or as required in the project permits. If 75% of the plants survive at the end of the monitoring period, the revegetation will be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring will be repeated after mortality causes have been identified and corrected.	Conduct arborist survey upon completion of 90% design Provide written documentation that riparian forest has been compensated either through onsite/offsite restoration or through mitigation bank credit purchase as described	City of West Sacramento, arborist	Conduct arborist survey upon completion of 90% design Provide compensation or develop and implement plan for restoration/ enhancement to permitting agencies as required by permit terms	City of West Sacramento, City of Sacramento, U.S. Army Corps of Engineers, California Department of Fish and Wildlife, National Marine Fisheries Service, U.S. Fish and Wildlife Service

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Bank Credit Purchase. If this option is chosen, the project proponent will provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits. The amount to be paid will be the fee that is in effect at the time the fee is paid. The mitigation will be approved by CDFW and may be modified during the permitting process. Mitigation can be in the form of creation or preservation credits. If mitigation is in the form of restoration/creation credits, the mitigation will be at a minimum ratio of 1:1 (1 acre of restored or created riparian habitat for each acre of riparian habitat removed). If mitigation is in the form of preservation credits, the mitigation will be at a minimum ratio of 2:1 (2 acres of preserved riparian habitat for each acre of riparian habitat removed). The final compensation ratio will be approved by CDFW in order to result in no net loss of riparian habitat. The project proponent will purchase riparian habitat credits from an approved mitigation bank near the project, such as the Liberty Island Conservation Bank, Cosumnes Floodplain Mitigation Bank, Fremont Landing Conservation Bank, Elsie Gridley Mitigation Bank, River Ranch Wetland Mitigation Bank, or other approved bank with available riparian forest credits at the time of project permitting. Replacement riparian forest habitat will include tree species that would support nesting Swainson's hawk (i.e., oak, cottonwood) and will occur within the range of nesting Swainson's hawk within the Sacramento Valley. To provide a current and accurate estimate of tree loss, an arborist survey will be conducted upon completion of 90% design plans for the project and no more than 2 years prior to project construction. In addition to a description of the tree, the arborist survey report will include the precise location of the trunk and size of the dripline for all trees whose trunk or canopy overlap with the project footprint. Riparian forest compensation will be consistent with the requirements of the City of West Sacramento and City of Sacramento tree ordinances to ensure compensation for losses of individual protected trees. In addition to mitigating the loss of riparian forest habitat, specific measures will be included to satisfy NMFS requirements and compensate for the loss of SRA cover (area and linear feet). The acreage will not be duplicated, such that the acreage of riparian forest habitat restored for SRA cover mitigation will apply toward riparian forest habitat mitigation requirements. SRA cover mitigation will include the following riparian replacement requirements. Replace the permanent loss of 302 linear feet and up to 0.368 acre of affected SRA cover vegetation (see EIR/EA Section 4.4.1.2, *Temporary and Permanent Loss of Riparian Vegetation [Including SRA Cover*] in the NES) at a 3:1 replacement ratio (i.e., 3 linear feet replaced for every 1 foot affected and 3 acres replaced for every 1 acre affected) by planting native riparian trees in temporary impact areas and along existing onsite or offsite unshaded banks along the Sacramento River. Plant native riparian trees onsite to the maximum extent practicable, followed by planting on adjacent reaches of the Sacramento River to minimize the need for purchasing offsite mitigation bank credits. Plant riparian trees that are intended to provide SRA cover along the water's edge at summer low flows up to the ordinary high-water mark and at sufficient densities to provide shade along at least 85% of the bank's length when the trees reach maturity. This will ensure that riparian plantings intended for SRA cover mitigation will contribute to instream SRA cover when they are inundated during winter/spring flows and overhead cover (shade) during summer flows when they approach maturity. Monitor and evaluate the revegetation success of riparian plantings intended for SRA cover mitigation as described above. If mitigation for SRA cover is in the form of offsite mitigation bank credits, credits will need to be purchased from an approved mitigation bank within the approved service area for the project that provides riparian forest floodplain conservation credits as offsite compensation for impacts on state- and federally listed fish species, designated critical habitat, and EFH for Pacific salmon.				
Mitigation Measure NC-5: Compensate for Loss of Protected Trees in Landscaping or Ruderal Habitat Within 1 year prior to construction, the project proponent will conduct a preconstruction inventory of all trees to be removed. The inventory will include the location, species, diameter of all trunks, approximate height and canopy diameter, and approximate age—in support of a tree permit for removal of the protected trees. All conditions of the tree permits will be implemented. The project proponent will mitigate the loss of protected street trees using one or a combination of the two following options. ● Because it is unlikely that adequate space will be available in the project area for tree planting after construction, pay in-lieu fees to the City of West Sacramento and the City of Sacramento, based on the tree removal locations, which would be used to purchase and plant trees elsewhere in West Sacramento and Sacramento. Replacement trees will be required at a ratio of 1:1 (i.e., 1-inch diameter of replacement tree planted for every 1-inch diameter of tree removed). Replacement trees will be of the same species, except for replacement of black locust, which is an invasive species and will be replaced with a native tree species. Mitigation will be subject to approval by the City's tree administrator and will take into account species affected, replacement species, location, health and vigor, habitat value, and other factors to determine fair compensation for tree loss. Replacement trees will be monitored annually for 3 years to document their vigor and survival. If any of the original replacement trees die within 3 years of the initial planting, the project proponent will plant additional replacement trees and monitor them until all trees survive for a minimum of 3 years after planting. ● If feasible, plant replacement trees at or near the location of the tree removal, following the same replacement ratio, species, monitoring, and tree survival requirements described for the option above.	Provide written documentation that protected street trees removed have been replaced at a ratio of 1:1	City of West Sacramento/ contractor	Per the terms of each regulatory permit Prior to construction	City of West Sacramento, City of Sacramento

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-1: Conduct Preconstruction Surveys for Western Pond Turtle and Implement Protective Measures To avoid potential injury to or mortality of western pond turtles, the project proponent will retain a qualified biologist to conduct a preconstruction survey for western pond turtles immediately prior to construction activities (including vegetation removal) along the banks of the Sacramento River. The biologist will survey the aquatic habitat, riverbanks, and adjacent riparian and ruderal habitat within the construction area immediately prior to disturbance. If a western pond turtle is found within the immediate work area during the preconstruction survey or during project activities, work shall cease in the area until the turtle is able to move out of the work area on its own. Information about the location of turtles seen during the preconstruction survey will be included in the environmental awareness training (Measure NC-2) and provided directly to the construction crew working in that area to ensure that areas where turtles were observed are inspected each day prior to the start of work to verify that no turtles are present. If a western pond turtle nest is discovered during the preconstruction survey or during project construction, the project proponent will coordinate with CDFW to determine whether additional avoidance measures (e.g., no-disturbance buffer or monitoring) are prudent.	Retain a qualified biologist to perform preconstruction surveys for western pond turtles Retain a qualified biologist to perform and environmental awareness training if turtles are found Cease work if western pond turtle(s) is found on site. Coordinate with CDFW if a turtle nest is identified.	City of West Sacramento	Prior to and during construction	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife
Mitigation Measure AS-2: Conduct Tree Removal during Non-Sensitive Periods for Wildlife The project proponent will remove or trim trees during the non-breeding season for tree-nesting migratory birds and raptors, and prior to periods when bats would be hibernating (generally between September 15 and October 31). If tree removal cannot be confined to this period, the project proponent will retain a qualified wildlife biologist with knowledge of the wildlife species that could occur in the project area to conduct the appropriate preconstruction surveys and establish no-disturbance buffers for sensitive wildlife species, as described under Measure AS-3 (Swainson's hawk), Measure AS-4 (nesting birds), and Measure AS-5 (roosting bats).	Conduct tree removal activities during the non-breeding season (September 15 – October 31)	City of west Sacramento/ contractor	Prior to project construction between September 15 and October 31 or after preconstruction surveys conducted by qualified wildlife biologist and establishment of no-disturbance buffer	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife
Mitigation Measure AS-3: Monitor Active Swainson's Hawk and White-Tailed Kite Nests during Pile Driving and Other Construction Activities Active Swainson's hawk and white-tailed kite nests within 600 feet of the BSA will be monitored during pile driving and other construction activities. Monitoring will be conducted by a wildlife biologist with experience in monitoring Swainson's hawk and white-tailed kite nests. The monitor will document the location of active nests, coordinate with the project proponent and CDFW, and record all observations in a daily monitoring log. The monitor will have the authority to temporarily stop work if activities are disrupting nesting behavior to the point of resulting in potential take (i.e., eggs and young chicks still in nests, and adults appear agitated and potentially could abandon the nest). The monitor will work closely with the contractor, the project proponent, and CDFW to develop plans for minimizing disturbance (e.g., modifying or delaying certain construction activities). A minimum non-disturbance buffer of 600 feet (radius) will be established around all active Swainson's hawk and white-tailed kite nests. No entry of any kind related to construction will be allowed within this buffer while the nest is active, unless approved by CDFW through issuance of an Incidental Take Permit or through consultation during project construction. The buffer size may be modified based on site-specific conditions, including line-of-sight, topography, type of disturbance, existing ambient noise and disturbance levels, and other relevant factors. Entry into the buffer for construction activities will be granted when the biological monitor determines that the young have fledged and are capable of independent survival, or that the nest has failed and the nest site is no longer active. All buffer adjustments will be approved by CDFW.	Retain a qualified biologist to monitor Swainson's Hawk and White-Tailed Kite nests during construction	City of West Sacramento; qualified wildlife biologist	During pile driving and project construction	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-4: Conduct Preconstruction Surveys for Nesting Migratory Birds, Including Special-Status Birds, and Establish Protective Buffers The project proponent will retain a qualified wildlife biologist to conduct nesting surveys before the start of construction. These nesting surveys will be conducted in conjunction with the Swainson's' hawk nesting surveys under Measure TE-2 and will include a minimum of three separate surveys to look for active nests of migratory birds, including raptors. Surveys will include a search of all trees and shrubs, ruderal areas, and grassland vegetation that provide suitable nesting habitat within 50 feet of disturbance. In addition, a 0.25-mile area from the river will be surveyed for nesting raptors in order to identify raptors that might be affected by pile driving. Surveys should occur during the height of the breeding season (March 1 to June 1), with one survey occurring in each of the 2 consecutive months within this peak period and the final survey occurring within 1 week of the start of construction. If no active nests are detected during these surveys, no additional measures are required. If an active nest is found in the survey area, a no-disturbance buffer will be established to avoid disturbance or destruction of the nest site until the end of the breeding season (September 15) or until a qualified wildlife biologist determines that the young have fledged and moved out of the construction area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with CDFW and will depend on the level of noise or construction disturbance taking place, line-of-sight between the nest and the disturbance, ambient levels of noise and other non-project disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.	Retain a qualified biologist to perform preconstruction surveys and establish a protective buffer for nesting migratory birds, including special-status birds If an active nest is found, coordinate with CDFW regarding extent of buffer.	City of West Sacramento/ contractor	Conduct preconstruction surveys prior to construction per survey guidelines and during height of breeding season (March 1 to June 1) At active nests, establish and maintain no-disturbance buffer until end of breeding season (until September 15) or until qualified wildlife biologist determines young have fledges and moved out of area	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-5: Conduct Preconstruction Surveys for Roosting Bats and Implement Protective Measures To avoid and minimize potential impacts on pallid bat, western red bat, and non-special-status bat species from the removal of trees and buildings, the project proponent will implement the following actions. **Preconstruction Surveys.** Within 2 weeks prior to tree trimming or removal or any building demolition, a qualified biologist will examine trees to be removed or trimmed and buildings planned for demolition with suitable bat roosting habitat. High-quality habitat features (e.g., large tree cavities, basal hollows, loose or peeling bark, larger snags, abandoned buildings, and attics) will be identified, and the area around these features will be searched for bats and bat sign (e.g., guano, culled insect parts, and staining). Riparian woodland and stands of mature broadleaf trees will be considered potential habitat for solitary foliage-roosting bat species. If suitable roosting habitat or bat sign is detected, biologists will conduct an evening visual emergence survey of the source habitat feature, from 0.5 hour before sunset to 1–2 hours after sunset for a minimum of 2 nights. Full-spectrum acoustic detectors will be used during emergence surveys to assist in species identification. If site security allows, detectors should be set to record bat calls for the duration of each night. All emergence and monitoring surveys will be conducted during favorable weather conditions (calm nights with temperatures conducive to bat activity and no precipitation predicted). The biologist will analyze the bat call data using appropriate software and will document the results in a report. **Timing of Tree Removal and Building Demolition.** Exclusion devices will be installed on trees and buildings planned for removal and demolition between September 15 and October 31 to avoid affecting maternal and hibernating bat roosts. The exact timing of removal and demolition will be determined based on the preconstruction surveys of trees and buildings. **Protective Measures.** Protective measures may be necessary if it is determined that bats are using buildings or trees in the BSA as roost sites, or if sensitive bats species are detected during acoustic monitoring. The following measures will be implemented when roosts are found within trees or buildings planned for removal according to the timing discussed above. Specific measures will be approved by the project proponent and CDFW prior to excluding bats from occupied roosts. 1. Exclusion from buildings or bridge structures will not take place until temporary or permanent replacement roosting habitat is available. 2. Exclusion from roosts will take place late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators and will take place during weather and temperature conditions conducive to bat activity. 3. Biologists experienced with bats and bat evictions will carry out or oversee the exclusion tasks and will monitor tree trimming and removal and building demolition, if they are determined to be occupied. 4. Trees that provide suitable roost habitat will be removed in pieces, rather than felling the entire tree, should be removed late in the day or in the evening to reduce the likelihood of evicted bats falling prey to diurnal predators, and will take place during warm weather conditions conducive to bat activity. 5. Structural changes may be made to a known roost proposed for removal in order to create conditions in the roost that are undesirable to roosting bats and encourage the bats to leave on their own (e.g., open additional portals so that the temperature, wind, light, and precipitation regime in the roost change). Structural changes to the roost will be authorized by CDFW and will be performed during the appropriate exclusion timing (listed above) to avoid harming bats. 6. Non-injurious harassment at the roost site, such as ultrasound deterrents or other sensory irritants, may be used to encourage bats to leave on their own. 7. One-way door devices will be used where appropriate to allow bats to leave the roost but not to return. 8. Prior to building demolition and tree removal/trimming, and after other eviction efforts have been attempted, any confirmed roost site will be gently shaken or repeatedly struck with a heavy implement such as a sledge hammer or an axe. Several minutes should pass before beginning demolition work, felling trees, or trimming limbs to allow bats time to arouse and leave the roost. A biological monitor will search downed vegetation for dead and injured bats. The presence of dead or injured bats will be reported to CDFW. Injured bats will be transported to the nearest CDFW-permitted wildlife rehabilitation facility.	Retain a qualified biologist to perform preconstruction surveys and establish protective measures for roosting bats Removal of trees and buildings will not occur from September 15 to October 31 to avoid affecting maternal and hibernating bat roosts.	City of West Sacramento/ contractor	Install exclusion devices between September 15 and October 31 at trees planned for removal and buildings planned for demolition (prior to removal/demolition) Conduct evening visual emergence survey according to details in mitigation measure Conduct preconstruction surveys within two weeks prior to tree trimming or removal, or any building demolition	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife
Mitigation Measure AS-6: Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving The project proponent will require the contractor to implement the following measures to minimize the exposure of listed fish species to potentially harmful underwater sounds. ● The contractor will vibrate all piles to the maximum depth possible before using an impact hammer. ● No more than 20 piles will be driven per day. ● During impact driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work and will limit the total number of hammer strikes to 32,000 strikes per day (i.e., 1,600 hammer strikes per pile, per day) for piles for the temporary trestles), 20,000 strikes per day (i.e., 1,000 hammer strikes per pile, per day) for the piles for the bridge fender system, 12,800 strikes per day (i.e., 1,600 hammer strikes per pile, per day) for piles for the fixed span piers, and 6,000 strikes per day (i.e., 1.500 strikes per pile, per day) for the CISS piles for the movable span piers. ● During impact driving, the project proponent will require the contractor to use a bubble curtain or dewatered cofferdam to minimize the extent to which the interim peak and cumulative SEL thresholds are exceeded (see EIR/EA Chapter 1, *Environmental Commitments* and Natural Environment Study Section 4.4.1.2, *Project Impacts*). ● No pile driving activity will occur at night, thereby providing fish with an extended quiet period during nighttime hours on days pile driving is being conducted for feeding and unobstructed passage.	Implement measures to minimize sound levels during pile driving	City of West Sacramento/ contractor	Prior to final design and during pile driving/impact hammer activities	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-7: Develop and Implement a Hydroacoustic Monitoring Plan The project proponent or their contractor will develop and implement a hydroacoustic monitoring plan. The monitoring plan will be submitted to the resource agencies (CDFW, NMFS, and USFWS) for approval at least 60 days before the start of project activities. The plan will include the following requirements. ● The project proponent or their contractor will monitor underwater noise levels during all impact pile driving activities on land and in water to ensure that peak and cumulative SELs do not exceed estimated values (see NES Tables 4-10 through 4-14). ● The monitoring plan will describe the methods and equipment that will be used to document the extent of underwater sounds produced by pile driving, including the number, location, distances, and depths of the hydrophones and associated monitoring equipment. ● The monitoring plan will include a reporting schedule for daily summaries of the hydroacoustic monitoring results and for more comprehensive reports to be provided to the resource agencies on a monthly basis during the pile driving season. ● The daily reports will include the number of piles installed per day; the number of strikes per pile; the interval between strikes; the peak sound pressure level, sound exposure level, and root mean square per strike; and the accumulated sound exposure level per day at each monitoring station. ● The project proponent or their contractor will ensure that a qualified fish biologist is onsite during impact pile driving to document any occurrences of stressed, injured, or dead fish. If stressed, injured, or dead fish are observed during pile driving, the project proponent or their contractor will stop work immediately to provide fish an opportunity to move out of the area. In addition, the project proponent will coordinate with Caltrans to immediately consult with NMFS to determine the cause of the incident and whether any and which type of additional protective measures are necessary. Protective measures that are determined necessary to protect listed fish species will be implemented by the project proponent within 72 hours of the incident..	Develop and implement a hydroacoustic monitoring plan; submit the plan to CDFW, NMFS, and USFWS for approval	City of West Sacramento/ contractor/ fish biologist	60 days prior to start of project activities, during construction	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife
Mitigation Measure AS-8: Monitor Turbidity in the Sacramento River The project proponent will require their contractor to monitor turbidity levels in the Sacramento River during in-water construction activities (e.g., pile driving, extraction of temporary sheet piles used for cofferdams, and placement of RSP). Turbidity will be measured using standard techniques upstream and downstream of the construction area to determine whether changes in ambient turbidity levels exceed the thresholds derived from the *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region* (Central Valley Regional Water Quality Control Board 2018). If it is determined that turbidity levels exceed the Basin Plan thresholds, the project proponent or their contractor will adjust work to ensure that turbidity levels do not exceed the Basin Plan thresholds.	Monitor turbidity levels in the Sacramento River using standard techniques upstream and downstream of the construction area	City of West Sacramento/ contractor	During in-water construction activities	City of West Sacramento, City of Sacramento, Central Valley Regional Water Quality Control Board, U.S. Fish and Wildlife Service, National Marine Fisheries Service
Mitigation Measure AS-9: Implement Cofferdam Restrictions The following restrictions will be implemented during installation of the cofferdams and cofferdam dewatering. ● The extent of cofferdam footprints will be limited to the minimum necessary to support construction activities. ● Sheet piles used for cofferdams will be installed and removed using a vibratory pile driver. ● Cofferdams will be installed and removed only during the proposed in-water work window (between May 1 and November 30). ● Cofferdams will not be left in place over winter where they could be overtopped by winter/spring flows and when juveniles of listed species are most likely to be present in the construction area. ● All pumps used during dewatering of cofferdams will be screened according to CDFW and NMFS guidelines for pumps. ● Cofferdam dewatering and fish rescue/relocation from within cofferdams will commence immediately following cofferdam closure to minimize the duration that fish are trapped in the cofferdam.	Implement cofferdam restrictions during installation of cofferdams and cofferdam dewatering	City of West Sacramento/ contractor	During installation of the cofferdams and cofferdam dewatering	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-10: Prepare and Implement a Fish Rescue and Relocation Plan The project proponent or their contractor will develop and implement a fish rescue and relocation plan to recover any fish trapped in cofferdams. The fish rescue and relocation plan will be submitted to the resource agencies (CDFW, NMFS, and USFWS) for approval at least 60 days before initiating activities to install cofferdams. At a minimum, the plan will include the following. ● A requirement that fish rescue and relocation activities will commence immediately after cofferdam closure and that dewatering has sufficiently lowered water levels inside cofferdams to make it feasible to rescue fish. ● A description of the methods and equipment proposed to collect, transfer, and release all fish found trapped within cofferdams. Capture methods may include seining, dip netting, and electrofishing, as approved by CDFW, NMFS, and USFWS. The precise methods and equipment to be used will be developed cooperatively by CDFW, NMFS, USFWS, and the project proponent or their contractor in advance of project implementation. ● A requirement that only CDFW-, NMFS-, and USFWS-approved fish biologists will conduct the fish rescue and relocation. ● A requirement that fish biologists will contact CDFW, NMFS, and USFWS immediately if any listed species are found dead or injured. ● A requirement that a fish rescue and relocation report be prepared and submitted to CDFW, NMFS, and USFWS within 5 business days following completion of the fish relocation. Data will be provided in tabular form and at a minimum will include the species and number rescued and relocated, approximate size of each fish (or alternatively, approximate size range if a large number of individuals are encountered), date and time of their capture, and general condition of all live fish (e.g., good–active with no injuries; fair–reduced activity with some superficial injuries; poor–difficulty swimming/orienting with major injuries). For dead fish, additional data will include fork length and description of injuries and possible cause of mortality if it can be determined.	Develop and implement a fish rescue and relocation plan to recover any fish trapped in cofferdams as detailed in this mitigation measure	City of West Sacramento/ contractor; CDFW-, NMFS-, and USFWS-approved fish biologists	60 days prior to initiating activities to install cofferdams; during construction	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife
Mitigation Measure AS-11: Develop and Implement a Barge Operations Plan The project proponent or their contractor will develop and implement a barge operations plan. The barge operations plan will be submitted to the resource agencies (CDFW, NMFS, and USFWS) for approval at least 60 days before the start of project activities. The plan will address the following. ● Bottom scour from propeller wash. ● Bank erosion or loss of submerged or emergent vegetation from propeller wash or excessive wake. ● Accidental material spillage. ● Sediment and benthic community disturbance from accidental or intentional barge grounding or deployment of barge spuds (extendable shafts for temporarily maintaining barge position) or anchors. ● Hazardous materials spills (e.g., fuel, oil, and hydraulic fluids). The barge operations plan will serve as a guide to barge operations and to a biological monitor, who will evaluate barge operations during construction with respect to stated performance measures. This plan, when approved by the resource agencies, will be read by barge operators and kept aboard all vessels operating at the construction site.	Develop and implement a barge operations plan to outline barge operations as detailed in this mitigation measure	City of West Sacramento/ contractor; CDFW, NMFS, and USFWS	60 days prior to start of project activities	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Wildlife
Mitigation Measure AS-12: Prevent the Spread or Introduction of Aquatic Invasive Species The project proponent or their contractor will implement the following actions to prevent the potential spread or introduction of aquatic invasive species associated with operation of barges and other in-water construction activities. Species of concern related to the operation of barges and other equipment in the lower Sacramento River include invasive mussels (e.g., quagga mussels [*Dreissena bugensis*] and zebra mussels [*Dreissena polymorpha*]) and aquatic plants (e.g., Brazilian waterweed [*Egeria densa*] and hydrilla [*Hydrilla verticillata*]) (California Department of Fish and Game 2008). ● Coordinate with the CDFW Invasive Species Program to ensure that the appropriate BMPs are implemented to prevent the spread or introduction of aquatic invasive species. ● Educate construction supervisors and managers about the importance of controlling and preventing the spread of aquatic invasive species. ● Train vessel and equipment operators and maintenance personnel in the recognition and proper prevention, treatment, and disposal of aquatic invasive species. ● Prior to departure of vessels from their place of origin and before in-water construction equipment is allowed to operate within the waters of the Sacramento River, thoroughly inspect and remove and dispose of all dirt, mud, plant matter, and animals from all surfaces that are submerged or may become submerged, or places where water can be held and transferred to the surrounding water.	Prevent the spread of aquatic invasive species according to protocol described in this mitigation measure	City of West Sacramento/ contractor	Prior to and during construction	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife; National Marine Fisheries Service, U.S. Fish and Wildlife Service

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure AS-13: Minimize or Avoid Permanent Bridge Lighting from Directly Radiating on Water Surfaces of the Sacramento River The project proponent or their contractor will minimize or avoid the effects of permanent bridge lighting on special-status fish species by implementing the following actions. ● Minimize nighttime lighting of the bridge structure for aesthetic purposes. ● Use the minimal amount of lighting necessary to safely and effectively illuminate vehicular, bicycle, and pedestrian areas on the bridge. ● Shield and focus lights on vehicular, bicycle, and pedestrian areas away from the water surface of the Sacramento River.	Shield construction lights to avoid illuminating river Minimize and shield permanent bridge lighting Also refer to requirements in *Mitigation Measure AES-3: Apply Minimum Lighting Standards*	City of West Sacramento/ contractor, project design team	During final project design and bridge construction Prior to and during nighttime construction activities	City of West Sacramento, City of Sacramento; National Marine Fisheries Service, U.S. Fish and Wildlife Service
Mitigation Measure TE-1: Avoid and Minimize Effects on Valley Elderberry Longhorn Beetle The following measures from the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (U.S. Fish and Wildlife Service 2017) have been slightly modified for this project. ● Fencing. The elderberry shrub will be fenced 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. ● Worker education. A qualified biologist will provide training for all contractors, work crews, and any onsite 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 noncompliance. ● Construction monitoring. At a minimum, a qualified biologist will monitor the work area on a weekly basis to ensure that all avoidance and minimization measures are implemented. ● Timing. As much as feasible, all activities that could occur within 50 meters (165 feet) of the elderberry shrub will be conducted outside of the flight season of the VELB (March–July).	Install fencing as a barrier between the construction area and elderberry shrub(s) Keep damaging activities at least 20 feet from dripline of elderberry shrub(s) Contractors and construction crews will be educated on VELB status and how to avoid Retain a qualified biological monitor to inspect work weekly	City of West Sacramento/ contractor	Prior to and during ground disturbance such as grading and excavation activities	City of West Sacramento, City of Sacramento, U.S. Fish and Wildlife Service
Mitigation Measure TE-2: Conduct Focused Surveys for Nesting Swainson's Hawk prior to Construction The project proponent will retain a wildlife biologist experienced in surveying for Swainson's hawk to conduct surveys for the species in the spring/summer prior to construction. The surveys will be conducted within the limits of disturbance and in a buffer area up to 0.25 mile from the limits of disturbance. The size of the buffer area surveyed will be based on the type of habitat present and the line-of-sight from the construction area to surrounding suitable breeding habitat. Surveys will follow the methods in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). A minimum of six surveys will be conducted according to these methods. If a variance of the survey distance or number of surveys is necessary, the project proponent will coordinate with CDFW regarding appropriate survey methods based on proposed construction activities. Surveys generally will be conducted from February to July. Survey methods and results will be reported to the project proponent and CDFW.	Retain a qualified biologist to determine the presence/absence of Swainson's Hawk	Project proponent; wildlife biologist	Prior to project construction and from February to July	City of West Sacramento, City of Sacramento, California Department of Fish and Wildlife
Mitigation Measure TE-3: Purchase Channel Enhancement Credits for Impacts on Critical Habitat Permanent impacts on critical habitat (bank and substrate below the OHWM and water column habitat), totaling 1.87 acres (up to 57,600 square feet [1.32 acre] from bridge shading of aquatic habitat and new bridge piers; 24,126 square feet [0.55 acre] from RSP; and 84 square feet [0.002 acre] from bridge fender system) will be mitigated at a 3:1 ratio. The project proponent proposes to mitigate the permanent loss of critical habitat through purchase of 5.61 acres of mitigation credits at a NMFS- and USFWS-approved anadromous fish and delta smelt conservation bank.	Compensate for permanent impacts on critical habitat through purchasing credits as a 3:1 ratio	City of West Sacramento	Prior to issuance of grading permit	City of West Sacramento, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Caltrans

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure WW-1: Compensate for Loss of Perennial Stream The project proponent will comply with any regulatory requirements determined as part of the state (Section 401 Water Quality Certification or WDRs, LSAA) and federal (Section 404 and Section 10 permits) processes for the work that would occur in the Sacramento River. The project proponent will compensate for permanent fill of up to 0.431 acre of non-wetland waters of the U.S. in the Sacramento River by purchasing mitigation bank credits, which can be in the form of preservation or creation credits using the following minimum ratios. ● A minimum of 2:1 (2 acres of mitigation for each acre filled), for a total of up to 0.862 acre, if credits are for preservation of habitat; or, ● A minimum of 1:1 (1 acre of mitigation for each acre filled), for a total of up to 0.431 acre if credits are for creation of habitat. The actual compensation ratios will be determined through coordination with the Central Valley RWQCB and USACE as part of the permitting process. The project proponent will compensate for permanent loss of perennial stream by implementing one or a combination of the following options. ● Purchase credits for created riparian stream channel at a USACE-approved mitigation bank with a service area that encompasses the project area, such as the Liberty Island Conservation Bank, Cosumnes Floodplain Mitigation Bank, Fremont Landing Conservation Bank, Elsie Gridley Mitigation Bank, River Ranch Wetland Mitigation Bank, or other approved bank with available riparian stream credits. The project proponent will provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits. ● Compensate out-of-kind for loss of perennial stream by implementing compensatory mitigation for cottonwood riparian forest impacts described in Mitigation Measure NC-4. The acreage restored or created to compensate for loss of perennial stream will be added to the acreage restored or created for loss of riparian habitat.	Purchase credits or provide out-of-kind compensation Provide written documentation to resource agencies that credits/compensation has been provided at the required ratios according to permit terms and regulatory agency requirements	City of West Sacramento/ contractor	Per the terms of each regulatory permit Prior to construction	City of West Sacramento, City of Sacramento, U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board, California Department of Fish and Wildlife
Cultural Resources				
Mitigation Measure CUL-1: Conduct Mandatory Cultural Resources Awareness Training for Construction Personnel Before any ground-disturbing work occurs in the project area, a qualified archaeologist will be retained to conduct mandatory contractor/worker cultural resources awareness training for construction personnel. The awareness training will be provided to all construction personnel (contractors and subcontractors), to brief them on the need to avoid effects on cultural resources adjacent to and within construction areas and the penalties for not complying with applicable state and federal laws and permit requirements.	Conduct cultural resources awareness training for construction personnel and contact qualified archaeologist Include construction worker training requirements on grading and construction plans.	City of West Sacramento/ contractor; qualified archaeologist	Prior to ground-disturbing construction activities	City of West Sacramento and City of Sacramento, Caltrans
Mitigation Measure CUL-2: Implement Avoidance and Notification Procedures for Cultural Resources Discovered during Construction Prior to project construction the project proponents will implement the phased approach and management plan for site P-34-000619 pursuant to Stipulation XII.B of the Section 106 Programmatic Agreement, as described in the project's *Finding of No Adverse Effect* and its Appendix D, *Phased Identification Plan.* The project proponents shall inform its contractor(s) of the possibility of subsurface archaeological deposits within the project area by including the following directive in contract documents: "If prehistoric or historical archaeological deposits are discovered during project activities, all work within 100 feet of the discovery shall be redirected and a qualified archaeologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations regarding the treatment of the discovery. Project personnel shall not collect or move any archaeological materials or human remains and associated materials. Archaeological resources can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt, or quartzite toolmaking debris; bone tools; culturally darkened soil (i.e., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone-milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse." If archaeological deposits are identified during project subsurface construction, all ground-disturbing activities within 100 feet shall be redirected and a qualified archaeologist contacted to assess the situation and consult with agencies as appropriate. The archaeologist shall first determine whether such deposits are historical resources as defined in 14 CCR §15064.5(a) and as required of the lead agency at 14 CCR §15064.5(c)(1). If these deposits do not qualify as historical resources, a determination will be made whether they qualify as unique archaeological resources, pursuant to 14 CCR §15064.5(c)(3). If the deposit qualifies as a historical resource or a unique archaeological resource, it will need to be avoided by adverse effects or such effects must be mitigated. Mitigation may consist of, but is not necessarily limited to, systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, and accessioning recovered archaeological materials at an appropriate curation facility. Public educational outreach also may be appropriate. Upon completion of the assessment, the archaeologist will prepare a report documenting the methods and results and provide recommendations for the treatment of the archaeological materials discovered. The report will be submitted to the project proponents and the Northwest Information Center.	Conduct cultural resources awareness training for construction personnel and contact qualified archaeologist Include cultural resources discovery, identification, and notification guidelines on grading and construction plans.	City of West Sacramento/ contractor	During ground-disturbing construction activities and immediately upon inadvertent archaeological discoveries, including human remains	City of West Sacramento, City of Sacramento, Caltrans

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Mitigation Measure CUL-3: Stop Work if Human Remains are Encountered during Ground-Disturbing Activities If human remains are encountered, these remains shall be treated in accordance with California Health and Safety Code Section 7050.5. The project proponents shall inform its contractor(s) of the cultural sensitivity of the project area for human remains by including the following directive in contract documents: "If human remains are encountered during project activities, work within 100 feet of the discovery shall be redirected and the County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods." In the event that human remains are encountered during project activities, work within 100 feet of the discovery will be redirected and the County Coroner notified immediately. At the same time, an archaeologist will be contacted to assess the situation and consult with agencies as appropriate. Project personnel should not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist will prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the Most Likely Descendant. The report will be submitted to the project proponents and the Northwest Information Center.	Conduct cultural resources awareness training for construction personnel and contact County Coroner Include cultural resources discovery, identification, and notification guidelines on grading and construction plans.	City of West Sacramento/ contractor	During ground-disturbing construction activities and immediately upon inadvertent archaeological discoveries, including human remains	City of West Sacramento, City of Sacramento, Caltrans
Geology and Soils				
Mitigation Measure PAL-1: Educate Construction Personnel in Recognizing Fossil Material All construction personnel will receive training provided by a qualified professional paleontologist experienced in teaching non-specialists to ensure that construction personnel can recognize fossil materials in the event that any are discovered during construction.	Conduct paleontological resources awareness training for construction personnel Include construction worker training requirements on grading and construction plans.	City of West Sacramento/ contractor	Prior to ground-disturbing construction activities	City of West Sacramento, City of Sacramento
Mitigation Measure PAL-2: Stop Work if Fossil Remains Are Encountered during Construction If fossil remains (particularly vertebrate remains) are discovered during earth-disturbing activities, activities will stop immediately until a State-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and may include preparation of a report for publication describing the finds. The project proponent will ensure that recommendations regarding treatment and reporting are implemented.	Immediately cease all work activities around the immediate area of discovery and contact a State-registered professional geologist or qualified professional paleontologist to assess the find Include paleontological resources discovery, identification, and notification guidelines on grading and construction plans.	City of West Sacramento/ contractor; State-registered professional geologist or qualified professional paleontologist	During ground-disturbing construction, immediately upon inadvertent paleontological discoveries	City of West Sacramento and City of Sacramento

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Hazards and Hazardous Materials				
Mitigation Measure HAZ-1: Conduct Phase II Site Assessments prior to Construction For sites identified as high or medium risk, a Phase II preliminary environmental screening will be completed within the project boundaries at these parcels to assess subsurface soil and/or groundwater, and the presence of wells. At a minimum, the Phase II preliminary screening will investigate each parcel within the project area where construction is anticipated to disturb the subsurface soil or encounter groundwater. Should the preliminary screening indicate the presence of wells or soil or groundwater contamination within the project area, a Phase II assessment will be conducted to investigate the depth and lateral extent of contamination within the project area. Low-risk sites will be re-evaluated (e.g., conduct owner interviews and a site survey) when site access is obtained. An additional Phase II assessment may be recommended if hazardous materials are identified. The project proponent will conduct a Phase II assessment within the proposed acquisition area of the parcels described below. ● The following APNs in West Sacramento will be assessed for possible soil/groundwater contamination: – Alternative B only: 058-034-028, 058-280-003, 058-350-008, 058-990-007, 058-990-011. – Alternative C only: 058-270-007, 058-270-008, 058-270-009, 058-270-012, 058-270-014. – Alternatives B and C: 058-270-006, 058-270-011, 058-280-005, 058-280-006, 058-350-001. ● The following APNs in Sacramento will be assessed for possible soil/groundwater contamination: 009-0012-008, 009-0012-009, 009-0012-064, 009-0012-029, 009-0012-071, 009-0012-072, 009-0020-001, 009-0020-002, 009-0223-007, 009-0223-012, 009-0223-016, 009-0232-005, 009-0232-009, 009-0232-016, 009-0232-017, 009-0232-018, 009-0235-007, 009-0237-005, 009-0237-010, 009-0237-028, 009-0030-054. ● Areas along South River Road, Jefferson Boulevard, and 15th Street in West Sacramento and along Broadway, Front Street, 3rd Street, and 5th Street in Sacramento will be assessed for potential ADL impacts ● In West Sacramento, APNs 058-270-011 (Alternatives B and C), 058-280-007 (Alternative C only), 058-990-007, and 058-990-11 (Alternative B only); in Sacramento, APNs 009-0012-009, 0090012-29, 009-0020-02, 009-0223-007, 009-0223-012, and 009-0223-016 will be evaluated for the potential for metals, TPH, lead, arsenic, and creosote impacts for all construction activities that will result in soil excavation within railroad or former railroad easements at these parcels. Based on the findings of the Phase II investigation, if a soils management plan and health and safety plan are necessary, they will be prepared and implemented. The Phase II assessment will include sampling and laboratory analysis to confirm the presence of hazardous materials and may include the following. ● Surficial soil and water samples ● Testing of underground storage tanks ● Subsurface soil borings ● Groundwater monitoring well installation, sampling, and analysis (may be appropriate on neighboring properties as well to determine the presence of contamination)	Conduct Phase II Site Assessment at parcels identified as high or medium risk Implement soils management plan and health and safety plan	City of West Sacramento/ contractor	Prior to ground-disturbing construction activities	City of West Sacramento and City of Sacramento
Mitigation Measure HAZ-2: Develop and Implement Plans to Address Worker Health and Safety The project proponent will develop and implement the necessary plans and measures required by Caltrans and federal and state regulations, including a health and safety plan, BMPs, and an injury and illness prevention plan. The plans will be prepared and implemented to address worker safety when working with potentially hazardous materials, including potential lead or chromium in traffic stripes, ADL, and other construction-related materials within the right-of-way during any soil-disturbing activity.	Develop and implement a health and safety plan, BMPs, and an injury and illness prevention plan	City of West Sacramento/ contractor	Prior to ground-disturbing construction activities	City of West Sacramento and City of Sacramento Caltrans

Broadway Bridge Project, Mitigation Monitoring Plan				
Mitigation Measures	**Action(s)**	**Implementing Party**	**Timing**	**Monitoring Party**
Noise				
Mitigation Measure NOI-1: Use Best Noise Control Practices during Construction The contractor(s) will implement noise control methods such that noise does not exceed applicable noise ordinance standards specified by the City of West Sacramento or the City of Sacramento, as applicable. Measures that can be implemented to control noise include the following. ● Limiting heavy equipment use to daytime hours between 7:00 a.m. and 6:00 p.m. ● Limiting pile driving to times of day that would be least disruptive to residences. ● Locating noise-generating equipment as far away as practical from residences. ● Equipping all construction equipment with standard noise attenuation devices such as mufflers to reduce noise, and equipping all internal combustion engines with intake and exhaust silencers in accordance with manufacturer's standard specifications. ● Establishing equipment and material haul routes that avoid residential uses to the extent practical, limiting hauling to the hours between 7:00 a.m. and 10:00 p.m., and specifying maximum acceptable speeds for each route. ● Using electrically powered equipment in place of equipment with internal combustion engines where practical. ● Restricting the use of audible warning devices such as bells, whistles, and horns to those situations that are required by law for safety purposes. ● Providing noise-reducing enclosures around stationary noise-generating equipment. ● Providing temporary construction noise barriers between active construction sites that are near residences. The construction contractor will develop a noise control plan that identifies specific feasible control measures that will be implemented. The noise control plan will be submitted to and approved by the project sponsor before construction begins. Prior to construction, the project sponsor will make a construction schedule available to residents living in the vicinity of construction areas and designate a noise disturbance coordinator. The coordinator will be responsible for responding to complaints regarding construction noise and ensure that reasonable measures are implemented to correct the source of disturbance, where feasible. A sign containing the contact telephone number for the noise disturbance coordinator will be conspicuously posted on construction site boundary fencing, and this information also will be included in the notification of the construction schedule.	Use noise-reducing construction practices Develop and submit a construction noise control plan to specific noise ordinance limits	City of West Sacramento/ contractor	Prior to issuance of grading permit and during project construction	City of West Sacramento and City of Sacramento
Traffic/Transportation				
Mitigation Measure TRA-1: Construct Roadway and Intersection Modifications in West Sacramento (Alternative C) By the open-to-traffic year of the project, the City of West Sacramento will construct the following roadway modifications. ● On South River Road at the intersection with Broadway, extend the northbound right-turn pocket to 275 feet, and add a second southbound left-turn lane. ● On Alameda Boulevard at the intersection with Jefferson Boulevard, change the eastbound and westbound protected left turns to permitted left-turn signal phasing. ● On South River Road at the intersection with Alameda Boulevard, extend the northbound left-turn pocket to a 175-foot length, and extend the southbound right-turn pocket to 250 feet. By the design year, the City of West Sacramento will construct the following. ● Install a traffic signal at the intersection of Jefferson Boulevard and Circle Street, add signal coordination with the intersection of Jefferson Boulevard and Alameda Boulevard.	Construct intersection modifications by open-to-traffic year at South River Road at the intersection with Broadway, Alameda Boulevard at the intersection with Jefferson Boulevard, South River Road at the intersection with Alameda Boulevard Install traffic signal at the intersection of Jefferson Boulevard and Circle Street and add signal coordination with the intersection of Jefferson Boulevard and Alameda Boulevard by design year	City of West Sacramento/ contractor	Concurrent with project construction	City of West Sacramento and City of Sacramento