Attachment F: Mitigation Monitoring and Reporting Program

Purpose of the Mitigation Monitoring and Reporting Program

The Peninsula Corridor Joint Powers Board, (JPB) which operates the San Francisco Bay Area's Caltrain passenger rail service, proposes the Guadalupe River Bridge Replacement Project in the City of San Jose, Santa Clara County, California. The purpose of the Project is to address the structural deficiencies of the MT-1 bridge and the geomorphic instability of the Guadalupe River channel in the vicinity of the MT-1 and MT-2 bridges to provide for long-term public safety and service reliability.

The Project is subject to the California Environmental Quality Act (CEQA) and JPB is the lead agency for the purposes of CEQA. Mitigation measures were identified in the Draft Initial Study / Mitigated Negative Declaration (IS/MND) for the Guadalupe River Bridge Replacement Project issued on November 20, 2020 and in the Final IS/MND included in Attachment B of the Final Mitigated Negative Declaration. As part of the CEQA environmental review procedures, Section 21081.6 requires a public agency to adopt a Mitigation Monitoring and Reporting Program (MMRP) to ensure efficacy and enforceability of any mitigation measures applied to a proposed project. The lead agency must adopt an MMRP for mitigation measures incorporated into the project or proposed as conditions of approval. The MMRP must be designed to ensure compliance during project implementation. As stated in Section 21081.6(a)(1):

> *The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.*

Mitigation Measures and Commitments

Table 1 provides a detailed description of the mitigation measures and other environmental commitments incorporated in the Project. The table identifies the impact area, the mitigation measure or commitment, the implementation and verification methods, and the timing of the mitigation action.

Impact or Concern	Mitigation Measure or Other Environmental Commitment	Implementation and Verification Methods	Timing of Action
Air Quality			
Construction Air Pollutant Emissions	The contractor must include the following best management practices (BMPs): 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day or as needed to maintain a minimum soil moisture of 12%. Moisture content can be verified by lab samples or moisture probe. 2. All haul trucks transporting soil, sand, or other loose material off-site will be covered. 3. All excavation, grading, and/or demolition activities will be suspended when average wind speeds exceed 20 miles per hour (mph). 4. All trucks and equipment, including their tires, will be washed prior to leaving the site. 5. Site entrances will be stabilized with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel. 6. All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 7. All vehicle speeds on unpaved temporary access roads will be limited to 15 mph. 8. Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 2 minutes. Clear signage will be provided for construction workers at all access points. 9. Heavy construction equipment and haul trucks over 50 horsepower must meet at least EPA Tier 3 emission standards or be from model year 2010 or newer. Prior to construction, the contractor will submit to JPB a list of all proposed equipment and vehicles (i.e., for off-road equipment, include the California Air Resources Board-issued Equipment Identification Number) and documentation supporting the EPA tier rating for verification of compliance. If an unanticipated need for the use of equipment or a vehicle arises after construction has commenced, the contractor will provide the required documentation of compliance within 14 days after an identified emergency or when the need arises and prior to the use of the equipment or vehicle. 10. All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation. 11. A publicly visible sign will be posted with the telephone number and person to contact at JPB regarding dust complaints. This person will respond and take corrective action within 48 hours. The Air District's phone number will also be visible to ensure compliance with applicable regulations.	Incorporate air quality mitigation commitments in the construction contract specifications. Conduct spot checks on contractor compliance with construction air quality BMPs.	During final design of construction staging plans and during construction
Biological Resources			
Special-status Fish Species	Mitigation Measure BIO-01: In-channel Work Window. All in-channel work will be limited to June 15 through October 15, a timeframe set by CDFW, USFWS, and NMFS as a time when special-status fish are least likely to be present.	Incorporate in final design construction staging plans and specifications.	During final design of construction staging plans and during construction
Special-status Fish Species	Mitigation Measure BIO-02: Minimize Noise and Vibration. The potential for noise and vibration disturbance of fish species will be minimized by using drilled piles for the new bridge piers, rather than impact pile driving.	Incorporate in final design construction staging plans and specifications.	During final design of construction staging plans and during construction
Special-status Fish Species	Mitigation Measure BIO-03: Biological Monitor. A qualified biologist with appropriate knowledge and experience in the biology, life history, and identification characteristics of fish that are likely to be encountered during project activities will be present during all in-water construction activities. In-water construction activities are considered work within the active river channel and include all project-related activities such as river diversion, dam installation and removal, channel dewatering, and fish relocation activities. This monitor will also be given the authority to halt any work they deem may be a cause for concern that may endanger fish or wildlife species or	Incorporate JPB biological monitor in work plan for construction environmental compliance activities.	Prior to the start of construction and during construction

Impact or Concern	Mitigation Measure or Other Environmental Commitment	Implementation and Verification Methods	Timing of Action
	resources. In addition, biologists with knowledge of the western pond turtle, nesting birds, and control of invasive species will be present during vegetation removal, dewatering, excavation, bank stabilization, and revegetation activities to monitor compliance with environmental requirements.		
Special-status Fish Species	Mitigation Measure BIO-04: Fish Relocation. Prior to dewatering, fish relocation efforts will be implemented to reduce the likelihood of fish becoming stranded as water levels recede. Fish exclusion netting or screens will be installed directly upstream and downstream of the channel segment to be dewatered to prevent fish from re-entering the work area after relocation. The bottom edge of the net or screen will be completely secured to the channel bed. Mesh will be no greater than 1/8-inch diameter. While in place, the fish exclusion netting or screens will be regularly checked and cleaned of debris to permit free flow of water. Fish exclusion netting or screens will be installed prior to fish relocation activities and will be removed once streamflow is diverted through the temporary diversion pipes. Fish relocation and dewatering activities will only occur between June 15 and October 15. Various methods may be used to capture fish (e.g., dip net, beach seine); however, backpack electrofishing is expected to be the most effective, based on habitat complexity and in channel structure (e.g., woody debris, cobble, riprap) within the project area. Backpack electrofishing will follow NMFS (2000) guidelines for electrofishing for anadromous salmonids. All captured fish will be identified, enumerated, and relocated to the nearest appropriate site downstream of the work area. Fish may be temporarily held in 5-gallon buckets with cool, shaded, aerated water. Air and water temperatures will be measured periodically during fish relocation. Any steelhead captured during the fish relocation effort will be held separately from other fish species. A thermometer will be placed in holding containers to ensure temperatures remain suitable. If steelhead appear stressed or if water temperatures become too warm, steelhead will be immediately released downstream of the work area.	Incorporate requirements in work plan for construction environmental compliance activities. Prepare post-construction fish relocation report documenting procedures implemented and number/type of fish relocated and provide to resource agencies as per permit conditions.	Prior and during dewatering
Special-status Fish Species	Mitigation Measure BIO-05: Minimize Fish Stranding and Entrainment. To minimize risks to any special-status fish species that may be present in the project site, a qualified fisheries biologist approved by CDFW, NMFS, and USFWS will be on-site during the dewatering process. Prior to dewatering, the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic invertebrates will be determined. Coffer dams will be constructed using sand or gravel bags sealed with sheet plastic. Coffer dams will be located at the upstream and downstream end of the section of stream getting dewatered. When bypassing streamflow around the work area, streamflow below the construction site will be maintained similar to the unimpeded flow at all times. Pumping will likely be required to temporarily divert flows around the work site during cofferdam construction prior to diverting flows through pipes. Pumps will be placed in flat areas, away from the stream channel, and secured by tying off to a tree or staked in place to prevent movement by vibration. Pump intakes will be screened following NMFS screening criteria to prevent fish entrainment or impingement. Pump intakes will be periodically checked for impingement of fish or amphibians, which if found, will be relocated to a safe location downstream of the dewatered channel segment. Water pumped from the upstream end of the work site will be routed through long sections of hosing around the work site and returned to the river downstream of the downstream coffer dam. The downstream end of the pump hoses will either be submerged in a deep-water section or positioned over a water-dissipating device to reduce scour and limit turbidity increases. A qualified fisheries biologist will be on-site during channel dewatering activities to inspect the dewatered area for any stranded fish and relocate them to nearby suitable habitat. Once the cofferdams are installed and the diversion pipes are in place, all streamflow will be diverted around the worksite through gravity fed diversion pipes. Diversion pipes will not be screened to allow downstream fish migration through the work area. To minimize risks to any special-status fish species that may be present in the project site during re-watering, a qualified biologist approved by CDFW, NMFS, and USFWS will be on-site during the re-watering process. The	Incorporate diversion and pumping procedure requirements in final design plans and specifications. Incorporate monitoring requirements in work plan for construction environmental compliance activities.	During final design of construction staging plans and during construction

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	downstream cofferdam will be removed first. Clean river run gravel may be left in the stream channel, provided it does not impede streamflow or fish passage. After the downstream cofferdam is removed, the diversion pipes will be removed in sections beginning at the downstream end and working toward the upstream end. The upstream cofferdam will be removed last. To the extent feasible, all temporary diversion structures and the supportive material will be removed within 48 hours after in-channel work for each work window is completed.		
Stormwater Control	Mitigation Measure BIO-06: Develop a Stormwater Pollution Prevention Plan (SWPPP). A SWPPP will be developed and implemented for the Project that includes BMPs for erosion and sediment controls such as protecting existing storm drain inlets and stabilizing disturbed areas. Specific BMPs that may be implemented to reduce the sediment load of stormwater runoff from the adjacent upland materials management areas include installing control devices (e.g., earth berms, asphalt curbs, silt fences/curtains, or other barriers) around the materials handling areas and protecting existing catch basins with silt fences, asphalt curbs, or gravel bags. Under the SWPPP, contractors will store fuel and chemicals in such a manner to prevent accidental spills from affecting stormwater (e.g., kept within secondary containment). The SWPPP will include a spill control plan, which will address spills of hazardous materials in the materials handling areas. A full complement of oil spill clean-up equipment will be on-site and available for immediate deployment should there be an accidental discharge of fuel, lubricant, or hydraulic oils. Specific elements of the SWPPP will include the following commitments: ○ Fueling and servicing of mobile equipment will be restricted to at least 100 feet from the top of bank. ○ Consideration will be given to maintaining a vegetated buffer strip between staging/excavation areas and receiving waters. ○ Slopes with exposed soil will be stabilized (e.g., with erosion control blankets), and channels will be protected (e.g., using silt fences or straw wattles). ○ Stockpiling or placement of erodible materials in waterways or along areas of natural stormwater flow where materials could be washed into waterways will be prohibited. ○ Stockpiled soil will be stabilized with geotextile or plastic covers. ○ Site ingress/egress locations will be stabilized. ○ All trash from the site will be removed daily to avoid attracting potential predators. Personnel will clean the work site before leaving each day by removing all litter and construction-related materials. ○ Fiber rolls used for erosion control will be certified as free of noxious weed seed. Filter fences and mesh will be of material that will not entrap reptiles and amphibians. Erosion control measures will be placed between the outer edge of the buffer and the project site. ○ Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life. ○ Washing of vehicles will be permitted only at approved areas.	Incorporate the requirement for the contractor to prepare the SWPPP and implement additional special commitments in final contract specifications. Conduct spot checks of SWPPP implementation by the contractor as part of construction environmental compliance monitoring.	During final design and during construction
Wetland and Riparian Habitat	Mitigation Measure BIO-07: Develop a Habitat Mitigation and Monitoring Plan (HMMP). Compensatory mitigation for unavoidable impacts on wetland/riparian areas will be provided through development of an HMMP. The HMMP will include a conceptual riparian mitigation planting plan, including species composition, success criteria, and a monitoring schedule. As part of the riparian planting plans, native trees affected by the Project will be replaced at a 3:1 ratio, and non-native trees will be replaced with native trees at a 1:1 ratio. The HMMP will also include conceptual designs for in-channel improvements (e.g., in-channel structures to improve fish habitat quality) and a post-construction fish passage monitoring schedule. The HHMP will include evaluation of bioengineered bank treatments that incorporate live vegetation. Maintenance of natural stream characteristics, such as riffle-pool sequences, riparian canopy, sinuosity, floodplain, and a natural channel bed, will be important considerations in the mitigation design. Topsoil and gravel material incorporated in the restoration of the channel will be reused from material removed during construction to the extent practicable. The HMMP will be incorporated in JPB's permit applications to USACE, CDFW, and RWQCB.	Develop HMMP in conjunction with permit applications and incorporate restoration designs in the project's final design plans and specifications. Provide biological monitor oversight of the construction of restoration measures and conduct post-construction monitoring/reporting to resource agencies completed per permit conditions.	During final design/permitting, and during construction

Impact or Concern	Mitigation Measure or Other Environmental Commitment	Implementation and Verification Methods	Timing of Action
Erosion Control	Mitigation Measure BIO-08: Implement Construction-related BMPs. To minimize impacts on water quality, the Project will include measures to avoid and minimize potential adverse effects on listed species. The following are specific measures relevant for the protection of steelhead: ○ Construction will occur only during dry periods. ○ Prior to storm events, all construction activities will cease, and appropriate erosion control measures will be implemented. ○ Soil, silt, or other organic materials will not be placed, stockpiled, or stored where such materials could pass into surface water or surface water drainage courses during unexpected rain events. ○ All areas disturbed by project activities will be protected from washout or erosion prior to the onset of the rainy season. ○ All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. ○ Prior to initiation of any waterside work, erosion control measures will be used throughout all phases of operation where silt and/or earthen fill threaten to enter waters of the U.S and/or state. ○ To prevent inadvertent entrapment of animals during excavation, all excavated, steep-walled holes or trenches more than 2-feet deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks.	Incorporate BMPs in final contract specifications. Verify compliance by the contractor through spot checks as part of construction environmental compliance monitoring.	During final design and during construction
Nesting Birds	Mitigation Measure BIO-09: Nesting Birds. If practicable, construction will be scheduled to commence outside the avian nesting season (e.g., prior to February 1 or after September 15). If construction must occur within the avian nesting season (from February 1 to September 15), all suitable habitats located within the project's area of disturbance, including staging and storage areas plus a 250-foot buffer around these areas, will be thoroughly surveyed, as feasible, for the presence of active nests by a qualified biologist no more than 5 days before commencement of any site disturbance activities and equipment mobilization. If project activities are delayed by more than 5 days, an additional nesting bird survey will be performed. Active nesting is present if a bird is building a nest, sitting in a nest, a nest has eggs or chicks in it, or adults are observed carrying food to the nest. The results of the surveys will be documented. If pre-construction nesting bird surveys result in the location of active nests, no site disturbance and mobilization of heavy equipment (including but not limited to equipment staging, fence installation, clearing, grubbing, vegetation removal, fence installation, demolition, and grading), will take place within 250 feet of non-raptor nests and 1,000 feet of raptor nests, or as determined by a qualified biologist in consultation with CDFW, until the chicks have fledged. The biologist will prepare a written record of survey results and implementation of any avoidance/minimization measures to be kept on file at the Caltrain office. The biologist will monitor any active nests to determine when young have matured sufficiently to have fledged.	Incorporate nesting bird surveys and protection in work plan for construction environmental compliance activities. Inform contractor of nesting bird protection requirements through incorporation in final specifications. Maintain records of nesting bird survey results and follow-up activities.	During final design, before construction and during construction.
Roosting Bats	Mitigation Measure BIO-10: Roosting Bats. A qualified biologist will conduct a preconstruction survey will within 14 days prior to construction activities. If an occupied maternity or colony roost is detected, the biologist will contact CDFW to determine the appropriate buffer relative to the: ○ proximity and noise level of project activities; ○ distance and amount of vegetation or screening between the roost and construction activities; and ○ species-specific needs, if known, such as sensitivity to disturbance. The buffer will remain in place until construction is completed. If the roost is in vegetation or in a structure that is planned to be removed, the qualified biologist will work with CDFW to devise a plan to exclude the bats and develop and implement any needed mitigation measures. The biologist will prepare a written record of survey results and implementation of any avoidance/minimization measures to be kept on file at the Caltrain office. The biologist will recommend additional measures if a bat roost is found.	Incorporate bat surveys and protection in work plan for construction environmental compliance activities. Inform contractor of roosting bat protection requirements through incorporation in final specifications. Maintain records of bat survey results and follow-up activities.	During final design, before construction and during construction.

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Western Pond Turtle	Mitigation Measure BIO-11: Western Pond Turtle. A qualified biologist will conduct pre-construction surveys for western pond turtle in the study area prior to the initiation of construction activities. If western pond turtle is found in the study area during pre-construction surveys, CDFW will be notified within 72 hours to determine the appropriate measures to prevent impacts on the species. A qualified biologist will be present during vegetation clearing and during any dewatering activities. If any western pond turtles are observed in the construction area, including any dewatered areas, they will be captured and relocated to an appropriate location up or downstream of the construction area in coordination with CDFW. The qualified biologist will have the authority to stop construction until the western pond turtle can be safely relocated.	Incorporate western pond turtle surveys and protection in work plan for construction environmental compliance activities. Inform contractor of western pond turtle protection requirements through incorporation in final specifications. Maintain records of survey results and follow-up activities.	During final design, before construction and during construction.
Worker Environmental Awareness Training	Mitigation Measure BIO-12: Worker Environmental Awareness Training. Before any construction activities begin, an approved biologist will conduct a training session for all construction personnel to discuss special-status species that may occur in the project site (western pond turtle and various nesting birds). The biologist will inform all construction personnel about the life history of the relevant species, the regulatory protections afforded each species, and protective actions to implemented if special-status species are observed during construction.	Incorporate training in work plan for construction environmental compliance. Maintain records of training materials and construction personnel training attendance.	Before the start of construction and during construction (for new employees)
Environmentally Sensitive Areas and Ordinance Trees	Mitigation Measure BIO-13: Environmentally Sensitive Areas. Clearing within the project site will be confined to the minimal area necessary to facilitate construction activities. To ensure that construction equipment and personnel do not affect sensitive aquatic or terrestrial habitat identified within or adjacent to the project boundary, bright-colored barrier fencing will be erected to clearly delineate the habitat to be avoided (environmentally sensitive areas). Fencing will also be used to mark ordinance trees to be protected in-place within temporary construction access/staging areas.	Prohibit construction activities outside the ESA boundaries. Conduct random inspections of ESA fencing to ensure it is properly installed along the project boundaries.	Before the start of construction and during construction
Invasive species	Mitigation Measure BIO-14: Control of Invasive Species. Invasive species within the limits of construction work will be removed under the supervision of a biologist to ensure removal and disposal methods minimize further propagation. Seed mixtures applied for erosion control will not contain invasive non-native species.	Incorporate in final plans and specifications. Document compliance in post-construction reporting to resource agencies required by permit conditions.	During final design and construction.
Cultural Resources			
Archaeological Resources	If an unanticipated archaeological resource is discovered during construction, construction will be halted in the area of the find until an archaeologist assesses the resource. If human remains are uncovered, construction will be halted in the area where burial finds are discovered, and conduct the notifications and coordination required by law with the County Coroner and California Native American Heritage Commission	Include in contract specifications, with a requirement for contractor to inform construction workers of need to stop work if cultural materials are encountered.	During preparation of contract specifications and during construction
Hazardous Materials			
Contaminated Soil and/ or Sediment	Soil will be stockpiled and sampled for Petroleum Hydrocarbons (TPH) and mercury prior to reuse in the project area. Any excavated soils or sediment that would require disposal off-site will require chemical profiling prior to disposal. Excavated sediment or soil containing exceeding mercury levels will be remediated if necessary. The proper use of personal safety equipment during sediment movement will be required. Potentially contaminated materials will be handled and disposed of in compliance with local, state and federal regulations. Disposal will occur at permitted landfills.	Include soil and sediment handling and disposal requirements in contract.	During preparation of contract specifications and during construction
Lead-based Paint	The contractor performing demolition activities on the bridge structure will be required to comply with the California/Occupational Safety and Health Administration Lead in Construction Standards for protection of workers; properly control and contain paint dust and debris resulting from the demolition operation; and properly contain and dispose of the resulting paint chips, dust, and debris.	Incorporate lead-based paint management requirements in contract specifications. Verify lead-based paint control standards are being implemented during demolition phase through construction environmental compliance monitoring.	During preparation of contract specifications and during construction
Creosote-treated Wood	The contractor will be required to handle, store, and dispose of creosote-treated wood according to California Department of Toxic Substances Control's Alternative Management Standards for treated wood waste. The standards are an alternative to the full hazardous waste regulations and allow for treated wood waste to be disposed of at approved solid waste landfills (as opposed to special hazardous materials disposal facilities). Wood waste will not be stored near the Guadalupe River. Pile removal will be conducted in dry conditions to eliminate	Incorporate creosote management plan in contract specifications. Verify the plan is being implemented during removal of wood piles/handling of waste through construction	During preparation of contract specifications and during construction

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	the risk of suspension of creosote-containing sediments.	environmental compliance monitoring.	
Noise			
Construction Noise	Mitigation Measure NOI-01: Turn off idling equipment. When not in use, idling equipment will be turned off. All equipment will be turned off within 2 minutes of idling.	Incorporate idling limitation in construction contract specifications. Conduct random spot checks on contractor compliance with idling limit as part of construction environmental compliance monitoring.	During preparation of contract specifications and during construction
Construction Noise	Mitigation Measure NOI-02: Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators, intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment will be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices.	Incorporate in construction contract specifications.	During preparation of contract specifications and during construction
Construction Noise	Mitigation Measure NOI-03: Temporary perimeter noise barriers or curtains. Prior to the start of construction, the contractor will prepare a construction noise mitigation plan that incorporates noise mitigation measures to reduce ground-level nighttime noise at the first-row residences along Mclellan Avenue by at least 7 dBA. Noise mitigation options could include temporary perimeter noise barriers and/or installation of noise blankets or shrouds on pile drivers to provide additional attenuation. Different combinations of temporary noise mitigation measures may be needed during different project phases, and these details will need to be established in the noise mitigation plan. Noise mitigation must ensure that no vegetation removal outside the permitted limits of disturbance is required. The noise mitigation plan must also address temporary barrier maintenance issues, such as periodic graffiti removal or selection of materials that discourage graffiti.	Incorporate requirement to develop construction noise mitigation plan in the construction specifications and monitor implementation of the plan during construction.	During preparation of contract specifications and during construction
Construction Noise	Mitigation Measure NOI-04: Implement a Community Outreach Program. JPB will keep residents informed regarding construction plans so residents can plan around periods of particularly high noise levels and to provide a conduit for residents to express any concerns or complaints. The Community Outreach Program may include a project hotline for receiving construction-related noise and vibration complaints and to assist in addressing them. Advance public notice will be provided to nearby residents regarding planned construction activities (such as demolition or pile driving) that must be performed at night or on weekends.	Establish hotline and protocol for addressing complaints.	During construction