Appendix B. Mitigation, Monitoring and Reporting Program

The Capitol Corridor Joint Powers Authority is committed to ensuring that information is available in appropriate formats to meet the requirements of persons with disabilities. Should you require one of the referenced documents or need a file in an alternative format, please email info@SouthBayConnect.com.

CCJPA South Bay Connect Project

Mitigation Monitoring and Reporting Plan

State Clearinghouse No. 2020060655

Introduction

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to the California Environmental Quality Act (CEQA) and the State CEQA Guidelines. It provides for the monitoring of mitigation measures required of the Capitol Corridor Joint Powers Authority (CCJPA) for the South Bay Connect Project (Project) as set forth in the Environmental Impact Report (EIR) and Findings of Fact.

Section 21081.6 of the California Public Resources Code and Sections 15091(d) and 15097 of the State CEQA Guidelines require public agencies "to adopt a reporting or monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment."

An MMRP is required for the proposed project because the EIR identified potentially significant impacts and mitigation measures to reduce all of those impacts to less than significant levels. The CCJPA Board of Directors adopted these mitigation measures concurrently with the adoption of this MMRP and the Final EIR.

Purpose

This MMRP has been prepared to ensure that all mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner throughout implementation of the proposed project. The MMRP may be modified by CCJPA in response to changing conditions or circumstances.

Roles and Responsibilities

This MMRP gives the CCJPA primary responsibility for taking all actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating that the action has been successfully completed. This report will be kept on file at the CCJPA offices located at 2150 Webster Street, 3rd Floor, Oakland CA 92612.

Supporting Documentation

Findings and related documentation supporting the findings will be maintained in the South Bay Connect Project file and will be made available to the public upon a written public records request.

Mitigation Monitoring Matrix

The MMRP is organized in a matrix format and identifies the required mitigation measures, responsibilities, and the time frame for mitigation and monitoring. The order in which mitigation measures are presented (by resource category) follows the sequence in the Final EIR. The first and second columns identify the mitigation measure. The third column, entitled "Enforcement Agency," refers to the agency responsible for ensuring that the mitigation measure is implemented. The fourth column, entitled "Implementing Party," refers to the party(ies) that will conduct the mitigation and/or monitoring to ensure compliance with the mitigation measure. The fifth column breaks down the mitigation measure into distinct components for which CCJPA, contractor(s), and/or other parties working on the revised Project will be responsible. The final column, entitled "Time Frame/Milestone," refers to the timing for implementing mitigation measures and when monitoring would occur.

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM AES-1: Construction Area Visual Screening	Prior to the commencement of construction activities, Capitol Corridor Joint Powers Authority (CCJPA), will develop a visual resource construction plan (VRCP) for areas that may be affected by construction activities and will be distributed to relevant municipalities for their input to ensure areas that require screening are adequately identified. Construction areas subject to this mitigation measure would be refined by CCJPA based on the size of the area, the nature of the construction activity, the proximity or visibility of the area to public vantage points or residential uses, and the type of visual screening to be implemented during construction activities. Potential visual screening may include, but is not limited to, the following: • Fence with vinyl or mesh banners; • Fence with privacy screens; and • Chain link fence with slat panels.	CCJPA	CCJPA, construction contractor(s), municipalities	1. CCJPA develops VRCP and reviews with local municipalities 2. CCJPA incorporates VRCP into construction specifications 3. Construction contractor carries out construction pursuant to contract specs and VRCP	1. Prior to construction 2. Prior to construction 3. During construction activities
MM AES-2: Construction Lighting Plan	Prior to commencement of construction activities, CCJPA will develop a construction lighting plan (CLP) for areas that could be affected by construction activities. The	CCJPA	CCJPA, construction contractor(s),	1. CCJPA develops CLP and	1. During final design

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	construction lighting plan will be developed during the project design phase. Prior to being finalized, the plan will be reviewed with relevant municipalities to verify that those areas that could be affected by construction activities have been identified. The construction lighting plan will consider the size of the area, the nature of the construction activity, the proximity or visibility of the area to sensitive receptors, and the type of lighting needed during construction activities. In addition, the construction lighting plan will evaluate the following: • Lighting policies/requirements of the local jurisdiction; • Use of glare-free lights, such as color corrected halide lights or balloon lights; • Selection of light fixtures that meet or exceed industry standards for cutoff performance; and • Installation of lights at the proper angle such that spill light is minimized beyond the construction site.		relevant municipalities	reviews with local municipalities 2. CCJPA incorporates CLP into construction specifications 3. Construction contractor carries out construction pursuant to contract specs and CLP	2. Prior to construction 3. During construction activities
MM AES-3: Vegetation Impact, Protection, and Replacement Plan	During final design, CCJPA will develop a vegetation impact, protection, and replacement plan (VIPR) for areas outside of the UPRR right of way that would be affected by construction activities. The vegetation impact, protection, and replacement plan will be developed during the design phase. Prior to being finalized, the plan will be reviewed with relevant municipalities to verify that those areas outside of the UPRR right of way that could be affected by construction activities have been identified. The VIPR Plan will consider the following elements outside of UPRR ROW: • Minimizing size of area for clearing and grubbing; • Requiring that any pruning activity be performed by a Certified Arborist;	CCJPA	CCJPA, construction contractor(s), municipalities	1. CCJPA develops VIPR and reviews with relevant municipalities 2. CCJPA incorporates VIPR into construction specifications 3. Construction contractor carries out construction pursuant to	1. During final design 2. Prior to construction 3. During construction activities

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	• Including vegetation restoration requirements, including use of drought tolerant plant species and avoidance of invasive plant species in areas listed on Table 3.2-1 of the Project EIR; • Incorporating landscape design options to soften vertical structures, minimize surface glare, reduce the visual monotony of the structures, and enhance the aesthetics of the structure; • Using California native species with strong emphasis on vegetation and natural habitat restoration and screening of the rail corridor in non-urbanized areas; • Selecting plant species from local (city or county) jurisdictional plant lists, if available, with an emphasis on adaptability to urban conditions, and placing plants in accordance with Crime Prevention Through Environmental Design principles for urbanized areas; • Developing an irrigation design and a maintenance program that will maximize retention of the selected plant species and minimize potential for takeover by local invasive species. • Minimizing the introduction and spread of Phytophthora species during construction and habitat restoration activities.			contract specs and VIPR	

Vegetation Replacement/Visual Softening Planting Area	Planting Character
Ardenwood Station area outside of UPRR ROW	Urbanized
North and South of Alameda Creek bridge outside of UPRR ROW	Urbanized

Mitigation Measure	Mitigation Measure Description		Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	Alameda Creek bridge outside of UPRR ROW	Urbanized				
	Retaining Walls MP 30.0 to MP 27.65 outside of UPRR ROW	Urbanized				
	Retaining Walls MP 27.65 to MP 26.75 outside of UPRR ROW	Urbanized				
	Retaining Walls MP 26.65 to MP 26.00 outside of UPRR ROW	Urbanized				
	Lowry Road double-track bridge outside of UPRR ROW	Urbanized				
	Crandall Creek double-track bridge or culvert outside of UPRR ROW	Urbanized				
MM AES-4: Landscape Plan for Ardenwood Station	During final design, CCJPA, in coordination with the City of Fremont, will develop a landscape plan (LSP) for the proposed Ardenwood Station's surface parking lot, entrance plaza, and any disturbed vegetation at the Ardenwood Park and Ride or at other areas outside of the UPRR ROW that would be affected by station construction. The LP would include, at a minimum, the following measures: • Shade trees and groundcovers at proposed surface parking lot, along the accessible walkways connecting south pedestrian overcrossing with the station, Dumbarton Court, and Overlake Place to improve aesthetics and to provide shade; • Use of the City of Fremont's Landscape Development Requirements for all areas within the City's jurisdiction (City of Fremont 2019);		CCJPA	CCJPA, construction contractor(s), City of Fremont	1. CCJPA develops LSP and reviews with City of Fremont 2. CCJPA incorporates LSP into construction specifications 3.Construction contractor carries out construction pursuant to contract specs and LSP	1. During final design 2. Prior to construction 3. During construction activities

<table>
<tr><th>Mitigation Measure</th><th>Mitigation Measure Description</th><th>Enforcement Agency</th><th>Implementing Party</th><th>Monitoring and Reporting Action</th><th>Time Frame/ Milestone</th></tr>
<tr><td></td><td>• Station entry plaza landscaping;
• Use of drought tolerant plant species and avoidance of invasive plant species
• Mixed landscape plantings to provide multi-season visual interest, while maintaining clear identification and visibility of the station for the public;
• Irrigation design and maintenance program to support landscaping and minimize takeover by invasive species</td><td></td><td></td><td></td><td></td></tr>
<tr><td>MM AES-5: Aesthetic Plan for Proposed Bridge Structures</td><td>During final design, CCJPA will develop an aesthetic plan for proposed Project bridges (AP-B) that would replace single-track bridge structures with double-track bridge structures or where new bridges would be constructed adjacent to an existing bridge on the same roadway or waterway. The new bridge structures would match the height and aesthetic treatments of the existing bridge structures to the extent possible, given that the new structure(s) must also be compliant with regulatory, rail operations, and constructability requirements.
<table>
<tr><th>Proposed Structure</th><th>Optimal Height</th><th>Color and Surface Finish</th></tr>
<tr><td>Alameda Creek bridge</td><td>Match existing Alameda Creek bridges removed as part of the proposed Project</td><td>Natural steel, CCJPA approved</td></tr>
<tr><td>Lowry Road double-track bridge</td><td>Match existing Lowry Road bridge adjacent to the proposed bridge</td><td>Natural steel, CCJPA approved</td></tr>
</table></td><td>CCJPA</td><td>CCJPA, construction contractor(s)</td><td>1. CCJPA develops AP-B
2. CCJPA incorporates AP-B into construction specifications
2.Construction contractor carries out construction pursuant to contract specs and AP-B</td><td>1. During final design
2. Prior to construction
3. During construction activities</td></tr>
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Mitigation Measure	Mitigation Measure Description			Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	Crandall Creek double-track bridge or culvert	Approximately match existing Crandall Creek bridges removed as part of the proposed Project	Natural steel, CCJPA approved				
MM AES-6: Aesthetic Plan for Proposed Structural Features	During final design, CCJPA will develop an aesthetic plan for the coated new, relocated, and/or replaced ancillary features, fencing, and railings (AP-O) proposed along the proposed Project corridor, but outside of the UPRR ROW. The AP-O will consider, but not be limited to, the following: • Coloring or shading ancillary features outside the UPRR ROW a shade that would be two to three shades darker than the general surrounding area using the prescribed color palette from U.S. Department of the Interior, Bureau of Land Management with a finish to reduce the potential glare; • Coloring and texturizing ancillary features within or adjacent to the UPRR right of way, such as signal equipment, safety gates, signal houses, and pavement markings, to be in accordance with UPRR requirements for consistency throughout the corridor; • Constructing any new fences within the UPRR right-of-way to be in accordance with UPRR and CCJPA requirements. The existing fences affected by the proposed Project outside of the UPRR ROW will be replaced in kind or with black powder coated chain link fences or high-security fences, as determined by CCJPA;			CCJPA	CCJPA, construction contractor(s)	1. CCJPA develops AP-O 2. CCJPA incorporates AP-O into construction specifications 3.Construction contractor carries out construction pursuant to contract specs and AP-O	1. During final design 2. Prior to construction 3. During construction activities

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	• Cable railing to be used to maintain corridor-wide railing design consistency and not to block scenic vistas where applicable.				
MM AES-7: Aesthetic Plan for Ardenwood Station Structures, Pedestrian Overcrossings, Grade Separated Structures, Retaining Walls, and Bridges	During final design, CCJPA will develop an aesthetic plan for new structures (AP-NS) with high visibility from SR 84, Industrial Parkway, and Alameda Creek Regional Trail (Table 3.2-3). Prior to being finalized, the plan will be reviewed with relevant municipalities to verify that design plans of the new high-visibility structures are consistent with existing general plan policies and local regulatory requirements. Aesthetic design treatments will consider, but not be limited to, the following: • Selecting colors and textures to recede into views to reduce the overall apparent scale of the proposed structures. Use of earth-toned colors, such as light buff/tan or light gray colors to complement the surrounding vegetation and provide a subtle foreground to surrounding scenic vistas. Using roughened surfaces to provide visual texture, reduce glare, and deter graffiti; • During design, considering the aesthetics of similar local structures to complement the existing cultural and natural landscape and adhering to the local city or county jurisdictional regulations pertaining to aesthetics; • Complying with UP requirements for railroad structures related to structural design and appearance and post-construction access to all facilities for inspections during operations; • Incorporating aesthetics along the rail corridor for new, modified, or relocated retaining walls to correspond with existing retaining walls nearby or	CCJPA	CCJPA, construction contractor(s), relevant municipalities	1. CCJPA develops AP-NS and reviews with relevant municipalities 2. CCJPA incorporates AP-NS into construction specifications 3.Construction contractor carries out construction pursuant to contract specs and AP-NS	1. During final design 2. Prior to construction 3. During construction activities

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	at the original locations, to the extent allowable by UPRR rail standards.				

Proposed Structure	Aesthetic Design Treatments
Ardenwood Station Plaza and platforms	Design structure in a manner that provides a welcoming feel and a sense of arrival to the viewer groups. Incorporate Crime Prevention Through Environmental Design principles in the design. Incorporate design elements and/or public art reflective of community aesthetics in coordination with the City of Fremont. Select structure color and texture to be consistent with the surrounding built environment. Design railings to be visually transparent to soften the mass of the structure.
Ardenwood Station north overcrossing (Fremont)	To the extent possible, design overcrossing as a gateway element and incorporate design features reflective of the City of Fremont community aesthetics in coordination with the City. Select structure color and texture to be consistent with the surrounding built environment. Design railings to the extent possible to be visually

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		transparent to soften the mass of the structure.				
	Ardenwood Station south overcrossing (Hayward)	To the extent possible, design overcrossing as a gateway element and incorporate design features reflective of City of Newark community aesthetics in coordination with the City. Select structure color and texture to be consistent with the surrounding built environment. To the extent possible, design railing to be visually transparent to soften the mass of the structure.				
	Retaining Walls	Add texture to concrete. Add cap to retaining walls.				
	Lowry Road double-track bridge	Concrete texture on abutments				
	Crandall Creek double-track bridge or culvert	Concrete texture on abutments				
MM AES-8: Lighting Plan	During final design, CCJPA will develop a lighting plan (LTP) for the proposed Project to minimize light trespassing and glare. Prior to being finalized, the plan will be reviewed with relevant municipalities to verify that final design plans are consistent with existing general plan policies and local regulatory requirements. The lighting plan will consider, but not be limited to, the following:		CCJPA	CCJPA, construction contractor(s)	1. CCJPA develops LTP and reviews with relevant municipalities 2. CCJPA incorporates LTP	1. During final design 2. Prior to construction

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	• Lighting design will comply with the Illuminating Engineering Society's design guidelines. Lighting fixtures and lighting control systems will conform to the International Dark-Sky Associations' Fixture Seal of Approval program. • Downcast cut-off type fixtures that direct light only toward objects requiring illumination and shields will be used where needed to minimize light pollution. Shielding for lights in parking lots, along pathways, and station platforms will be used to minimize off-site light spillage, ambient light glow, and glare. • Lights will be installed at the lowest allowable height to cast low angle illumination that minimizes incidental light spill onto adjacent properties and open spaces or backscatter into the nighttime sky. Lights will be screened and directed away from adjacent uses to the highest degree possible. • The lowest allowable illuminance level and intensity feasible will be used for security, safety, and personnel access. The number of nighttime lights will be minimized to the extent feasible. • Non-glare finishes will be applied to light fixtures to avoid reflective daytime glare. Energy efficient design with daylight sensors or timed with an on/off program will be used. Aesthetically pleasing light color and fixture types will be selected. • Note that railroad and traffic signals are subject to operational and regulatory requirements and may not meet this mitigation measure.			into construction specifications 3.Construction contractor carries out construction pursuant to contract specs and LTP	3. During construction activities
MM AQ-1: Implement Advanced	CCJPA will require off-road equipment greater than 25 horsepower have engines that meet or exceed either	CCJPA	CCJPA, construction contractor(s)	1. CCJPA incorporations measure into	1. Prior to construction

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Emissions Controls for Off-Road Equipment	U.S. EPA or CARB Tier 4 final off-road emission standards.			construction specifications 2.Construction contractor carries out construction pursuant to contract specifications	2. During construction activities
MM AQ-2: Implement Advanced Emissions Controls for Locomotives Used for Construction	CCJPA will require diesel-powered locomotives used for construction to have engines that meet or exceed either U.S. EPA or CARB Tier 4 locomotive emission standards.	CCJPA	CCJPA, construction contractor(s)	1. CCJPA incorporates measure into construction specifications 2.Construction contractor carries out construction pursuant to contract specifications	1. Prior to construction 2. During construction activities
MM BIO-1: Implement Biological Resources Protection Measures during Construction	CCJPA will implement the following measures during construction to minimize direct and indirect impacts on special-status species: • Prior to the commencement of construction, CCJPA will designate a Project biologist (approved by USFWS, CDFW, and/or the NMFS, as appropriate) (qualified biologist) who has familiarity with special-status plant and wildlife species with the potential to be impacted by the Project. The Project biologist will be responsible for overseeing compliance with protective measures for biological resources during vegetation clearing and work activities within and adjacent to areas of special-status species	CCJPA	CCJPA, qualified biologist, construction contractor(s), and USFWS/NMFS/ CDFW (as applicable)	1. CCJPA identifies Project biologist 2. USFWS, NMFS, and/or CDFW approve qualified biologist 3. CCJPA incorporates measure into construction specifications	1. Prior to construction 2. Prior to construction 3. Prior to construction

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	habitat. The Project biologist will be familiar with the local habitats, plants, and wildlife, and will maintain communications with the contractor to ensure that issues relating to biological resources are appropriately and lawfully managed. The Project biologist may designate other qualified biologists or biological monitors to help oversee Project compliance or conduct preconstruction surveys for special-status species. These biologists will have familiarity with the species for which they will be conducting preconstruction surveys or monitoring during construction activities. • The Project biologist or qualified biologist shall review final plans, designate areas that need temporary fencing measures to identify ESAs (e.g., fencing or flagging) and monitor construction activities within and adjacent to areas with native vegetation communities or special-status plant and wildlife species and their habitats. The qualified biologist shall monitor activities within designated areas during critical times such as vegetation removal, initial ground-disturbing activities, and the installation of BMPs and fencing to protect native species. The qualified biologist will also track Project wildlife and regulatory agency permit requirements, conservation measures, and general avoidance and minimization measures are properly implemented and followed. The qualified biologist shall check construction barriers or exclusion fencing and shall provide corrective measures to the contractor to ensure that the barriers or fencing are maintained throughout construction. • The qualified biologist will have the authority to stop work if a special-status wildlife species is			4. Qualified biologist develops ESA fencing/ flagging plan, in coordination with construction contractor(s) and gets approval from CCJPA 5. Qualified biologist conducts mandatory training for all onsite personnel and contractors; any new personnel trained prior to work start 6. Construction contractor and qualified biologist carry out construction pursuant to contract specifications	4. At least 10 days prior to construction at site of ESAs **5.** Prior to and during construction activities 6. Prior to and during construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	encountered within or adjacent to the proposed Project footprint during construction. The Project biologist or qualified biologist will request that the resident engineer halt work within 100 feet of the encounter (or within an appropriate distance, as determined by the Project biologist or qualified biologist) and confer with CCJPA to confirm proper implementation of species and habitat protection measures. Construction activities shall cease until the Project biologist or qualified biologist determines that the animal will not be harmed or that it has left the construction area on its own. The Project biologist will report any encounters or other non-compliance issue(s) to CCJPA: CCJPA will notify the appropriate regulatory agency(is) within 24 hours of the occurrence. • Prior to the start of construction, all Project personnel and contractors who will be on site during construction will complete mandatory training conducted by the Project biologist or a designated qualified biologist. Any new Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence work. The training will advise workers of potential impacts on special-status vegetation communities and special-status species, and the potential penalties for impacts on such vegetation communities and species. At a minimum, the training will include the following topics: • Occurrences of special status species and special status vegetation communities in the Project area (including vegetation communities				

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	subject to USACE, CDFW, and RWQCB jurisdiction) • The purposes for resource protection • Sensitivity of special status species to human activities • Protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid special status resource areas in the field (i.e., avoided areas delineated on maps or on the Project site by fencing) • Environmentally responsible construction practices • The protocol to resolve conflicts that may arise at any time during the construction process. • Reporting requirements and procedures to follow should a special status species be encountered during construction; and, • Avoidance and minimization measures designed to reduce the impacts on special status species. • The training program will include color photos of special status species and special status vegetation communities. Following the education program, the photos shall be posted in the contractor and resident engineer's office, where the photos will remain throughout the duration of Project construction. Photos of the habitat in which special status species are found will be posted onsite. • The contractor will be required to provide CCJPA with evidence of the employee training (e.g., a sign-in sheet) on request. Project personnel and contractors will be instructed to immediately notify the Project biologist or designated biologist of any incidents that could affect special-status vegetation communities or special-status species				

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	and incidents that could include fuel leaks or injury to any wildlife. The Project biologist will notify CCJPA of any incident and CCJPA will notify the appropriate regulatory agency within 24 hours of notification. • The Project biologist will monitor the Project site immediately prior to and during construction to identify the presence of invasive weeds and will recommend measures to avoid their inadvertent spread in association with the proposed Project. Such measures will include inspection and cleaning of construction equipment and use of eradication strategies. All heavy equipment will be washed and cleaned of debris prior to entering special-status species habitats to minimize the spread of invasive weeds. • At least ten days prior to initiating construction, the Contractor will submit to CCJPA proposed plans for ESA fencing/flagging and initial clearing and grubbing of the proposed Project footprint at that segment. Following implementation of CCJPA-approved delineation plan for ESA's and construction at that segment, CCJPA will submit final plans for initial clearing and grubbing of the proposed Project footprint to the appropriate regulatory agencies for approval; these plans will also identify locations of established ESA protections and will include photographs that show the fenced and flagged ESA limits and all areas to be impacted or avoided, including perimeter fencing and flagging. • All native or special-status plant or wildlife habitat within and adjacent to the designated Project footprint will be designated as ESAs on Project maps. Following CCJPA approval of final plans for ESA fencing and flagging, and initial clearing				

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	and grubbing, and prior to construction, the Contractor will delineate the proposed Project footprint, including construction, staging, lay-down, and equipment storage areas, and establish construction boundaries, with fencing, along the perimeter of the identified construction area to protect adjacent special-status wildlife habitats and special-status plant populations. In areas where fencing cannot be installed, other means of identifying the ESA can be used, such as flagging or paint. ESAs within and adjacent to the proposed Project footprint will be clearly delineated with fencing or flagging prior to construction to inform construction personnel where the ESAs are located. ESAs fencing may include orange plastic snow fence, orange silt fencing, or stakes and flagging in areas of flowing water. No personnel, equipment, or debris will be allowed within the ESAs. The Contractor will install fences in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot or operating heavy equipment. Delineations will be approved by the Project biologist or qualified biologist prior to any ground disturbance. If work inadvertently occurs beyond the flagged or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of CCJPA and the appropriate regulatory agencies. Temporary construction fences, flagging, and markers will be maintained in good repair by the Contractor throughout the duration of work at that segment and will be removed upon completion of proposed Project construction at that segment.				

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	• No work activities, materials or equipment storage or access will be permitted outside the proposed Project footprint. All parking and equipment storage by the contractor related to the Project will be confined to the proposed Project footprint. Areas outside and adjacent to the proposed Project footprint will not be used for parking or equipment storage. Project-related vehicle traffic will also be restricted to the proposed Project footprint and established roads and construction access points. • When nighttime activities are required, then workers will direct all lights for nighttime lighting into the work area and will minimize the lighting of natural habitat areas adjacent to the work area. The contractor will use light glare shields to reduce the extent of illumination. If the work area is located near surface waters, the lighting will be shielded such that it does not shine directly into the water. • Vegetation clearing will be confined to the minimal area necessary to facilitate construction activities. Cleared vegetation and spoils will be disposed of daily at a permanent offsite disposal facility or at a temporary onsite location that will not create habitat for special-status wildlife species. Spoils and dredged material will be disposed of at an approved site or facility in accordance with all applicable federal, state, and local regulations. • Garbage will be disposed of in wildlife proof containers and will be removed from the Project area daily during the construction period. Vehicles carrying trash will be required to have loads covered and secured to prevent trash and				

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	debris from falling onto roads and adjacent properties. • Construction equipment used for the proposed Project will be maintained in accordance with manufacturer's recommendations and requirements and will be maintained to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures). • The Contractor will store construction related vehicles and equipment in the designated staging areas. These areas will not contain native or sensitive natural communities and will not provide habitat for special status plant or wildlife species. • The Contractor will avoid wildlife entrapment by covering or providing escape ramps for excavated steep-walled holes or trenches that are more than 1 foot deep at the end of each construction workday. The qualified biologist will inspect open trenches and holes and will remove or release any trapped wildlife found in the trenches or holes prior to being refilled by the construction contractor. • Wildlife species can be attracted to den-like structures and may enter stored materials or equipment and become trapped or injured. Construction pipes, culverts, or similar features; construction equipment; or construction debris left overnight in areas that may be occupied by wildlife species that could occupy such structures will be inspected by a qualified biologist prior to being used for construction. Such inspections will occur at the beginning of each day's activities for those materials to be used or moved that day. If necessary, and under the direct supervision of				

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	the qualified biologist, the structure may be moved up to one time to isolate it from construction activities, until the wildlife species has moved from the structure of their own volition, has been captured and relocated, or has otherwise been removed from the structure. • Capture and relocation of trapped or injured special-status wildlife species will only be performed by personnel with appropriate state and/or federal permits. CCJPA and resource agencies will be notified by biologists within 24 hours of discovery of injury to or mortality of a special-status species that results from Project-related construction activities or is observed at the construction site. Notification will include the date, time, and location of the incident or of the discovery of an individual special-status species that is dead or injured. For a special-status species that is injured, general information on the type or extent of injury will be included. The location of the incident will be clearly indicated on a USGS 7.5-minute quadrangle and/or similar map at a scale that will allow others to find the location in the field, or as requested by resource agencies. A follow-up report will be prepared for governing regulatory agencies, including dates, locations, habitat description, and any corrective measures taken to protect special-status species encountered. Any general sightings (no injury or mortality) will be recorded per monitoring requirements. For each special-status species encountered, the biologist will submit a completed CNDDB field survey form (or equivalent) to CDFW no more than 90 days after completing the last field visit to the Project site.				

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	• The spread of dust from work sites to sensitive natural communities or habitats for special status plant or wildlife species on adjacent lands will be minimized by use of a water truck. During dry conditions, dirt access roads, haul roads, and spoils areas will be watered at least twice each day when being used during construction. • The Contractor will strictly limit their activities, vehicles, equipment, and construction materials to established roads and the proposed Project footprint limits. Posted speed limit signs on local roads and a 15 mile-per-hour speed limit along access and haul routes will be observed. Extra caution will be used when special-status reptile species may be basking on roads. • To avoid injury or death to wildlife, no firearms will be allowed on the Project site except for those carried by authorized security personnel or local, state, or federal law enforcement officials. • To prevent harassment, injury, or mortality of special-status wildlife species by dogs or cats, no canine or feline pets of workers will be permitted in the construction area. • Plastic monofilament netting or similar material will not be used for erosion control because smaller wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackifier hydroseeding compounds. This limitation will be communicated to the contractor through specifications or special provisions included in the construction bid solicitation package. • Herbicides will be used in accordance with the manufacturer recommended uses and applications, and in such a manner as to prevent primary or secondary poisoning of special-status				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	fish and wildlife species and depletion of prey populations or vegetation upon which they depend. All uses of such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and other appropriate state and federal regulations. Rodenticides will not be used during construction. • Hazardous materials and equipment stored overnight, including small amounts of fuel to refuel handheld equipment, will be stored within secondary containment at least 50 feet from open water to the fullest extent practicable. • The Contractor will be required to conduct vehicle refueling in upland areas where fuel cannot enter Waters of the U.S. or Waters of the State, and in areas that do not have suitable habitat to support special-status species. Fuel containers, repair materials including creosote treated wood, and/or stockpiled material that is left onsite overnight will be secured in secondary containment within the construction work area or a staging area and covered with plastic at the end of each workday. • In the event that no activity is to occur in the work area for the weekend and/or a period of time greater than 48 hours, the Contractor will remove portable fuel containers from the Project site or place them within a secured container. • Equipment and containers will be inspected daily for leaks. Should a leak occur, contaminated soils and surfaces will be cleaned up and disposed of following the guidelines identified in the Stormwater Pollution Prevention Plan (SWPPP), Materials Safety Data Sheets, and				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	any specifications required by other permits issued for the Project. • If maintenance of equipment must occur onsite, fuel/oil pans, absorbent pads, or appropriate containment will be used to capture spills/leaks. Where feasible, maintenance of equipment will occur in upland areas where fuel cannot enter Waters of the U.S. or Waters of the State and in areas that do not have suitable habitat to support special-status species.				
MM BIO-2: Rare Plant Pre-construction Surveys	At least one year prior to initial ground disturbance and during the appropriate blooming period (June through November), a focused survey for rare plants, including Congdon's tarplant and California seablite, will be conducted by a qualified plant ecologist within suitable habitat in the proposed Project footprint (e.g., areas of ruderal grassland, estuarine, and saline emergent wetland habitat) and a 50-foot buffer around the identified suitable habitat. This buffer may be increased by the qualified plant ecologist depending on site-specific conditions and activities planned in the area but must be at least 50 feet wide for permanent impacts. Situations for which a greater buffer may be required include proximity to proposed activities expected to generate large volumes of dust that cannot be effectively mitigated, such as grading; potential for Project activities to alter hydrology supporting the habitat for the species; or proximity to proposed structures that may shade areas farther than 50 feet away. The purpose of the survey will be to assess the presence or absence of Congdon's tarplant and California seablite. If the target species are not found in the impact area or the identified buffer, then no further mitigation will be warranted. If Congdon's tarplant and/or California seablite are observed on or in proximity to the proposed Project site, or during Project surveys, CCJPA will submit California Natural Diversity	CCJPA	CCJPA, qualified biologist, construction contractor(s)	1. Qualified biologist conducts preconstruction survey. 2. CCJPA incorporates avoidance procedures into construction specifications. 3. Construction contractor and qualified biologist carry out construction pursuant to contract specifications	1. At least one year prior to initial ground disturbance and during the appropriate blooming period (June through November) 2. Prior to construction 3. During construction activities (if applicable)

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	Data Base (CNDDB) forms and maps to the CNDDB within five working days of the sightings. In addition, if California seablite is found, consultation with USFWS would be required.				
MM BIO-3: Rare Plant Avoidance Buffers	To the extent feasible, and in consultation with a qualified plant ecologist and USFWS, CCJPA and/or its contractors will design and construct the Project to avoid and minimize impacts on all populations of Congdon's tarplant and California seablite within the proposed Project footprint or within the identified buffer of the impact area. Avoided Congdon's tarplant and California seablite populations will be protected by establishing and enforcing ESAs with fencing and appropriate signage between plant populations and the impact area. If a reduced buffer is needed for temporary impacts, the qualified plant ecologist will work with the Project construction team to minimize temporary indirect impacts (e.g., watering of construction areas periodically during construction to minimize dust mobilization). Such populations located in the impact area or the identified buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around Congdon's tarplant and California seablite individuals to be avoided will be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the site). This marking will be maintained intact and in good condition throughout Project-related construction activities. • If more than 10 percent of a population of Congdon's tarplant (by occupied area or individuals) would be impacted as determined by a qualified plant ecologist, then Mitigation Measure MM BIO-4 will be implemented.	CCJPA	CCJPA, qualified biologist, construction contractor(s), and USFWS (if applicable)	1. CCJPA, in consultation with a qualified plant ecologist and USFWS, develops and incorporates avoidance procedures for Congdon's tarplant and CA seablite populations into construction specifications. 2. Construction contractor and qualified biologist carry out construction pursuant to contract specifications and avoidance procedures	1. Prior to initial ground disturbance or vegetation removal 2. During construction activities (if necessary)

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• If complete avoidance of California seablite is not feasible, then Mitigation Measure MM BIO-4 will be implemented.				
MM BIO-4: Rare Plant Mitigation/Habitat Mitigation Management Plan	If avoidance of more than 10 percent of the existing Congdon's tarplant is not feasible, and complete avoidance of California seablite individuals and/or populations is not feasible, CCJPA will consult relevant regulatory agency(ies) (e.g. CDFW/USFWS) regarding compensatory mitigation to be provided via the preservation, enhancement, and management of occupied habitat for the species, or the creation and management of a new population, or as directed by CDFW/USFWS. • To compensate for impacts on Congdon's tarplant, off-site habitat occupied by the species will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and at least one occupied acre preserved for each occupied acre affected), for any impact over the 10 percent significance threshold. Alternately, seed from the population to be impacted may be harvested and used either to expand an existing population (by a similar number/occupied area to compensate for impacts to Congdon's tarplant beyond the 10 percent significance threshold) or establish an entirely new population in suitable habitat. • Areas proposed to be preserved as compensatory mitigation for impacts on Congdon's tarplant and/or California seablite must contain verified extant populations of the species, or in the event that enhancement of existing populations or establishment of a new population is selected, the area must contain suitable habitat for the species as identified by a	CCJPA	CCJPA, qualified biologist, qualified plant/ restoration ecologist, construction contractor(s), and CDFW/USFWS (if applicable)	1. CCJPA incorporates measure into construction specifications 2. CCJPA/ construction contractor consults with CDFW/ USFWS on Congdon's tarplant; implements mitigation, as necessary 3. CCJPA/ construction contractor consults with CDFW/ USFWS on California seablite; implements mitigation, as necessary 4. CCJPA and qualified plant or restoration ecologist identifies	1. Prior to construction 2. If avoidance of 10%+ not feasible during construction activities (if necessary). 3. If total avoidance is not possible 4. Before continuing construction activities in area of Congdon's tarplant and/or California seablite (if necessary).

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	qualified plant ecologist. Mitigation will be achieved through a combination of in-kind creation, restoration, and/or enhancement as determined to be appropriate through consultation with the resource agencies. Mitigation will first be considered onsite, then with an approved mitigation bank, and thirdly through offsite mitigation. The appropriate permit applications will be submitted to state and federal regulatory agencies. The permits issued by these agencies will finalize the mitigation requirements.			mitigation and prepares HMMP if mitigation lands are required for effects to either species	5. During construction activities
	A habitat mitigation and monitoring plan (HMMP) will be developed and implemented for the mitigation lands. That plan will include, at a minimum, the following information: • A summary of habitat impacts and the proposed mitigation; • A description of the location and boundaries of the mitigation site and description of existing site conditions; • A description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for Congdon's tarplant and California seablite; • A description of measures to transplant individual plants or seeds from the impacted area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist); • Proposed management activities to maintain high-quality habitat conditions for Congdon's tarplant and California seablite; • A description of habitat and species monitoring measures on the mitigation site, including			5. Construction contractor and qualified biologist carry out construction pursuant to contract specifications	

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period of a minimum of five years for preserved populations and a minimum of 10 years for enhanced or established populations do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (e.g., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); • If a new population is established, the new population must contain at least 200 individuals or the same number of impacted individuals, whichever is greater, by year five. This is to ensure the created population will be large enough to expect to persist and gain sufficient dedicated pollination services. If year five is a poor weather year for summer and fall-blooming annual plants and reference populations show a decline, this criterion can be measured in the next year occurring with average or better rainfall; and • Contingency measures for mitigation elements that do not meet performance criteria. The HMMP will be prepared by a qualified plant or restoration ecologist. CDFW and USFWS approval of the HMMP will be required before Project impacts on Congdon's tarplant or California seablite occur.				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM BIO-5: Monarch Butterfly Avoidance	Prior to construction, CCJPA will ensure that a qualified biologist will conduct a pre-construction survey for overwintering monarchs or milkweed plants within 50 feet of the Project. If overwintering monarchs are found to be present in any tree within 50 feet of any disturbance area or milkweed is found within 50 feet of any disturbance area during the pre-construction survey, the following guidelines will also be implemented: • The tree and/or milkweed will be mapped, delineated with ESA fencing, and avoided; • The modification and/or minimizing of herbicide usage to promote growth of milkweed and flowering plants outside of UPRR ROW; and • Use local seed mixes that include a variety of flowering plants and milkweed.	CCJPA	CCJPA, qualified biologist, construction contractor(s)	1. CCJPA incorporates avoidance procedures into construction specifications. 2. Qualified biologist conducts survey for butterflies or habitat within 50 feet of project 3. Qualified biologist implements listed guidelines and avoidance procedures (if applicable) 4. Construction contractor carries out construction pursuant to contract specifications and guidelines	1. Prior to construction 2. Prior to construction 3. Prior to and during construction activities (if necessary) 4. During construction activities (if necessary)
MM BIO-6: Bumble Bee Pre-construction Surveys	Within one year prior to construction, CCJPA will perform a habitat assessment for Crotch's and western bumble bee be conducted within the proposed Project footprint and an appropriate survey buffer be established by a qualified biologist with experience surveying for and observing Crotch's and western bumble bee. If the qualified biologist determines that suitable habitat is	CCJPA	CCJPA, qualified biologist, construction contractor(s)	1. Qualified biologist assesses habitat for bees and buffer set; presence/ absence surveys if habitat identified	1. Within one year prior to construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	present, surveys will be conducted to determine the presence/absence of Crotch's and western bumble bee. Surveys will be conducted during flying season when the species are most likely to be detected above ground, between March 1 to September 1. Survey results, including negative findings, will be submitted to the CDFW prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's and/or western bumble bee. At minimum, a survey report will provide the following: • A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's and/or western bumble bee; • Field survey conditions including name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched; • Map(s) showing the location of nests/colonies; and, • A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found, a sufficient description of biological conditions, primarily impacted habitat, will include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species). If the target species is not found in the impact area, then no further mitigation will be warranted. If Crotch's bumble bee or western bumble bee individuals are found within the survey area, then MM BIO-7 will be implemented.			2. CCJPA incorporates measure into construction specifications 3. Qualified biologist implements avoidance procedures (if applicable) 4. Construction contractor carries out construction pursuant to contract specifications and survey report	2. Prior to construction activities 3. During construction activities (if necessary) 4. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM BIO-7: Bumble Bee CESA Section 2080 Coordination	If a qualified biologist determines Crotch's and/or western bumble bees are present within the proposed Project footprint, CCJPA will develop a plan to minimize impacts to Crotch's and western bumble bee be developed in consultation with a qualified entomologist during final design. The plan will include effective, specific, enforceable, and feasible measures. An avoidance plan will be submitted to CDFW prior to implementing Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's and/or western bumble bee. If Crotch's and/or western bumble bees are determined to be present within the proposed Project footprint and it is determined the species will be impacted by Project implementation, appropriate mitigation will be determined in consultation with CDFW. If Crotch's and/or western bumble bee is detected during the survey, and if impacts to Crotch's and/or western bumble bee cannot be feasibly avoided during proposed Project construction and activities, CCJPA and a designated qualified entomologist will coordinate with CDFW to obtain appropriate permit for incidental take of Crotch's and/or western bumble bee prior to commencement of Project activities in habitat occupied by the bumble bees. The incidental take permit will quantify and provide appropriate mitigation for impacts on Crotch's and/or western bumble bee habitat. Mitigation for impacts to Crotch's and/or western bumble bee habitat would be at a ratio comparable to the Project's level of impacts.	CCJPA	CCJPA, qualified biologist, CDFW (if applicable), qualified entomologist (if applicable), construction contractor(s)	1. CCJPA incorporates measure into construction specifications 2. If bees are present, develop avoidance plan and submits to CDFW for approval 3. If bees will be impacted, consult with CDFW on mitigation. 4. Construction contractor carries out construction pursuant to contract specs and avoidance plan 5. Qualified biologist implements avoidance procedures (if applicable)	1. Prior to construction 2. Prior to construction; part of CDFW Incidental Take permit 3. Prior to construction; part of CDFW Incidental Take permit 4. During construction activities (if necessary) 5. During construction activities (if necessary)
MM BIO-8: Steelhead and	In-water work within and over Alameda Creek will be restricted to a seasonal window when surface water flows are lowest, and steelhead and green sturgeon are least likely to be present. The specific work windows will be in	CCJPA	CCJPA, qualified biologist, construction contractor(s),	1. CCJPA incorporates measure into construction specs	1. Prior to construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
Green Sturgeon Work Window	accordance with the terms of the NMFS Programmatic Biological Opinion (June 15 to October 15) and as determined during NMFS consultation, if warranted.		NMFS (if applicable)	2. Construction contractor and qualified biologist carries out construction pursuant to contract specs	2. During construction activities
MM BIO-9: Dewatering and Aquatic Species Relocation Plan	To avoid and minimize effects to water quality and take of aquatic species, the project footprint within Alameda Creek will be dewatered prior to construction. During advanced design and permitting with regulatory agencies, CCJPA will prepare a Dewatering Plan and Aquatic Species Relocation Plan. The plans will be submitted as part of the regulatory permit applications required under the Clean Water Act Section 404 with the USACE, the Clean Water Act Section 401 with the RWQCB, and the Lake and Streambed Alteration Agreement with CDFW as well as USFWS and NMFS. The plans will include but not be limited to the following: • Minimum qualifications for the Project Biologist who will be responsible to monitor in-water construction activities, oversee dewatering, and implement relocation of aquatic species. • Restrictions on work within the channel. Dewatering of the channel will be limited to the minimum footprint necessary to complete the work. The Dewatering Plan will include details noting type and location for placement of necessary fill, cofferdams, pipes, and sequencing of activities. After completion of construction, materials used for dewatering will be removed and the channel restored to the original condition.	CCJPA	CCJPA, qualified biologist, construction contractor(s), USACE/USFWS/ CDFW/RWQCB (if applicable)	1. CCJPA incorporates measure into construction specs 2. CCJPA/ construction contractor prepares Dewatering Plan/ Aquatic Species Relocation Plan for Alameda Creek 3. Construction contractor carries out construction pursuant to contract specs and 404, 401, LSAA permits 4. Qualified biologist implements avoidance procedures	1. Prior to construction 2. Prior to construction; part of 401/404/LSAA permits for in-water work 3. During construction activities 4. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• Methods, best management practices, and release locations (i.e., Bay-side or landside) for the relocation of special-status fish and other aquatic species to appropriate suitable habitat. The Aquatic Species Relocation Plan will include provisions to limit stress to aquatic species, ensure the quickest relocation to appropriate habitat, and documentation requirements for reporting to permitting agencies.				
MM BIO-10: Steelhead and Green Sturgeon Habitat Replacement	Prior to construction activities, CCJPA will coordinate with the National Marine Fisheries Service (NMFS) to determine mitigation ratios for permanent impacts on Central California Coast Distinct Population Segment steelhead habitat and green sturgeon (Southern DPS) critical habitat. Mitigation will include on-site restoration, in-lieu fee payment, purchase of mitigation credits at a NMFS-approved mitigation bank, or as defined by NMFS as part of consultation.	CCJPA	CCJPA, qualified biologist, construction contractor(s), NMFS	1. CCJPA coordinates with NMFS on mitigation ratios and implements mitigation	1. Prior to construction
MM BIO-11: Western Pond Turtle Pre-construction Surveys	A qualified biologist will conduct a pre-construction survey for western pond turtle prior to any proposed ground disturbing activities occurring within 350 feet of Alameda Creek, and the proposed Project footprint. The survey area will include all disturbance areas within 350 feet of water line, all habitat between the disturbance areas and the water line, and the edge of Alameda Creek and the percolation ponds. In areas of suitable habitat, the qualified biologist will conduct a pre-construction survey for the species within 48 hours prior to construction activities before construction equipment mobilizes to the proposed Project footprint. If pond turtles or their nests are found, the biologist will prepare a relocation plan and submit it to the California Department Fish and Wildlife (CDFW) for written acceptance prior to starting Project activities, and then implement the plan. A	CCJPA	CCJPA, qualified biologist, construction contractor(s), CDFW (if applicable)	1. CCJPA incorporates measure into construction specs 2. Qualified biologist conducts preconstruction survey within 350 ft of Alameda Creek 3. Qualified biologist prepares a pond turtle relocation plan;	1. Prior to construction 2. Prior to construction 3. Prior to construction start at Alameda Creek area

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	pond turtle habitat improvement plan will also be prepared and implemented if required by CDFW. Construction activities will avoid pond turtles and their nests including an appropriate buffer as determined by the qualified biologist.			submit to CDFW for approval. 4. If habitat identified, qualified biologist conducts species surveys 5. If nests found, qualified biologist will implement relocation plan 6. Construction contractor carries out construction pursuant to contract specs 7. Qualified biologist implements avoidance and relocation plan, as necessary	4.Within 48 hours before construction equipment mobilizes to the Project footprint (if necessary). 5. Prior to construction start at Alameda Creek area (if necessary). 6. During construction activities 7. During construction activities
MM BIO-12: Nesting Migratory Birds, Special-	CCJPA and its contractors will conduct vegetation removal, where required to construct Project features, during the non-breeding season for migratory birds and	CCJPA	CCJPA, qualified biologist, construction	1. CCJPA incorporates	1. Prior to construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
Status Birds, and Raptor Pre-construction Surveys	raptors (generally between September 16 and January 14) to the extent feasible. If construction activities occur between January 15 and September 15, a qualified biologist will conduct a preconstruction survey (within seven days prior to construction activities) to determine whether any active bird nests are present and, if so, identify their locations. The results of the surveys will be submitted to CCJPA (and made available to the wildlife agencies [USFWS/CDFW], upon request) prior to initiation of any construction activities. Should nesting birds be found, a qualified biologist will determine exclusionary buffers. Project activity will not commence within the buffer areas until a qualified biologist has determined that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and CCJPA determine that such an adjustment would not be likely to adversely affect the nest. The qualified biologist will monitor the active nest during construction to confirm that the buffer is adequate and will document and provide notification when the nest has fledged or failed. Consultation with CDFW may be required if species of state-listed special concern, or fully protected species are observed.		contractor(s), CDFW/USFWS (if applicable)	measure into construction specs 2. CCJPA/ contractors will conduct veg removal, where required 3. If construction between 1/15 & 9/15, qualified biologist conducts preconstruction survey. Results to CCJPA and made available to USFWS/ CDFW. 4. Construction contractor carries out construction pursuant to contract specs 5. Qualified biologist implements avoidance procedures (including exclusionary buffers, if applicable)	2. Prior to construction, during non-breeding season 3. Within seven days prior to construction activities 4. Prior to and during construction 5. Prior to and during construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM BIO-13: Burrowing Owl Habitat Assessment	Prior to the start of construction activities, CCJPA will retain a qualified biologist to conduct a focused burrowing owl habitat assessment in areas of ruderal and grassland habitat within the proposed Project footprint in accordance with the methodologies outlined in the California Department of Fish and Wildlife's (CDFW's) 2012 Staff Report on Burrowing Owl Mitigation. If burrowing owls or the presence of suitable burrows are detected during the burrowing owl habitat assessment, the qualified biologist, in coordination with CCJPA and CDFW, will implement avoidance, minimization, and mitigation methodologies outlined in CDFW's 2012 Staff Report on Burrowing Owl Mitigation prior to initiating Project-related activities that may impact burrowing owls or burrowing owl habitat.	CCJPA	CCJPA, qualified biologist, construction contractor(s), CDFW (if applicable)	1. CCJPA incorporates measure into construction specs 2. Qualified biologist conducts focused owl habitat assessment 3. If owls present, qualified biologist (in coordination with CCJPA/ CDFW), implement AMMs. 4. Construction contractor carries out construction pursuant to contract specs 5. Qualified biologist implements avoidance procedures (if applicable.	1. Prior to construction 2. Prior to construction 3.Prior to construction in area of owls (if necessary). 4. During construction activities 5. During construction activities (if necessary)
MM BIO-14: Salt Marsh Harvest Mouse Avoidance	Salt marsh harvest mouse (SMHM) will be assumed present within the proposed Project footprint; therefore, the following measures below would be implemented:	CCJPA	CCJPA, qualified biologist, construction contractor(s)	1. CCJPA incorporates measure into construction specifications	1. Prior to construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• A barrier will be installed at limits of the construction work area to exclude SMHM from the construction area: i. This exclusionary barrier, which will be shown on the Project plans and will be constructed and installed under the guidance of a biologist qualified to survey for SMHM (must meet permit requirements and be approved by USFWS), will consist of a three-foot tall, tight cloth, smooth plastic, or sheet-metal (or similar material approved by the USFWS) fence toed into the soil at least 3 inches deep and supported with stakes placed on the inside of the barrier; ii. A qualified biologist will conduct a preconstruction survey of the area every morning, prior to construction activities commencing for the day; iii. The qualified biologist will monitor the installation of the exclusionary barrier and will remain on site to monitor all work performed adjacent to SMHM ESAs; iv. Excavations or open trenches in or adjacent to SMHM habitat will either be backfilled or closed at the end of the construction day, or escape ramps will be provided; v. Following the installation of the exclusionary barrier, the qualified biologist will check its integrity each morning that construction activities occur and will have construction personnel initiate repairs, under the supervision of			2. Contractor and qualified biologist implements avoidance procedures (if necessary) 3. Construction contractor carries out construction pursuant to contract specifications 4. Construction contractor backfills or closes any excavations/ open trenches	2. Prior to construction and each morning prior to work commence during construction when in SMHM habitat 3. During construction activities 4. End of each day when in SMHM habitat

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	a qualified biologist immediately as needed.				
MM BIO-15: Salt Marsh Harvest Mouse Immediate Work Stoppage	If a salt marsh harvest mouse or an animal that could be a harvest mouse (e.g., a similar species of mouse), is observed within the work area during construction activities, work will stop immediately, and the qualified biologist will be immediately notified. The animal will be allowed to leave the area on its own and will not be handled.	CCJPA	CCJPA, qualified biologist, construction contractor(s)	1. CCJPA incorporates measure into construction specifications 2. Construction contractor carries out construction pursuant to contract specifications 3. If mouse observed by construction personnel within work area, work stops, and qualified biologist notified.	1. Prior to construction 2. During construction activities 3. During construction activities (if necessary)
MM BIO-16: Bat Habitat Suitability Assessment and Surveys	A qualified and CDFW-approved bat biologist will survey potentially suitable structures and vegetation during bat maternity season, prior to construction, to assess the potential for the structures and vegetation's use for bat roosting and bat maternity roosting, as maternity roosts are generally formed in spring. The qualified bat biologist will also perform preconstruction surveys or temporary exclusion within 2 weeks prior to construction, as bat roosts can change seasonally. These surveys will include a combination of structure inspections, exit counts, and acoustic surveys.	CCJPA	CCJPA, qualified biologist, construction contractor(s), CDFW (if applicable)	1. CCJPA incorporates measure into construction specifications 2. Qualified biologist conducts preconstruction survey of structures 3. Qualified biologist conducts	1. Prior to construction 2. Prior to construction during maternity season

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	If a roost is detected, a bat management plan will be prepared if it is determined that Project construction would result in direct impacts on roosting bats. The bat management plan will be submitted to California Department Fish and Wildlife (CDFW) prior to implementation and include appropriate avoidance and minimization efforts such as: • Temporary Exclusion. If recommended by the qualified bat biologist, to avoid indirect disturbance of roosting bats adjacent to construction activities, temporary bat eviction and exclusion devices will be installed under the supervision of a qualified and permitted bat biologist prior to the initiation of construction activities. Eviction and subsequent exclusion will be conducted during the fall (September or October) to avoid trapping flightless young bats inside during the summer months or hibernating/overwintering individuals during the winter. Such exclusion efforts are dependent on weather conditions, take a minimum of 2 weeks to implement, and must be continued to keep the structures free of bats until the completion of construction. All eviction and/or exclusion techniques will be coordinated between the qualified bat biologist and the appropriate resource agencies (e.g., CDFW) if the structure is occupied by bats. If deemed appropriate, the biologist may recommend installation of temporary bat panels during construction. If a roost is detected but would only be subject to indirect impacts: • Daytime Work Hours. All work conducted under the occupied roost will take place during the day. If this is not feasible, lighting and noise will be			preconstruction survey/ adds exclusions, if necessary 4. If bat roost detected with potential direct impacts, qualified biologist develops bat management plan and submits to CDFW for approval. 5. If bat roost detected and potential indirect impacts only, construction work limited to daytime hours to extent possible. 6. Construction contractor carries out construction pursuant to contract specifications 7. Qualified biologist implements avoidance procedures (if applicable).	3. Within 2 weeks prior to construction 4. Prior to construction in bat roost area 5. During construction activities (if necessary). 6. During construction activities 7. During construction activities (if necessary).

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	directed away from night roosting and foraging areas.				
MM BIO-17: Compensate for the Loss of Sensitive Natural Communities	Prior to construction, CCJPA will ensure that permanent direct impacts on sensitive natural communities, including California Sensitive Natural Communities, Critical Habitat, EFH, and jurisdictional aquatic resources (e.g. waters of the State or waters of the U.S.) such as riverine, freshwater emergent wetland, lacustrine, estuarine, and saline emergent wetland, will be mitigated through the purchase of credits at a minimum ratio of 2:1 for native habitats and a minimum ratio of 1:1 for non-native habitats. This will be done through in-lieu fee payment to an appropriate mitigation bank for enhancement, restoration, and/or creation of riparian habitat within approved watersheds and/or funding of a minimum 1:1 ratio of habitat enhancement at approved conservation easements/mitigation banks. The final mitigation acreage will be confirmed during review of final engineering drawings and may be modified during the agency consultation and permitting process (e.g., CDFW, RWQCB, USFWS, USACE, NMFS). Per expected permit conditions, CCJPA will provide written evidence to the resource agencies that compensation has been acquired prior to construction. Alternatively, as part of the permitting process, CCJPA may provide a plan/proposal for regulatory resource approval to conduct on or offsite habitat creation/enhancement to compensate for the Project's direct impacts to sensitive natural communities. All sensitive natural communities subject to temporary construction disturbance will be restored by CCJPA and its contractors in accordance with a post construction Erosion Control and Habitat Restoration Plan (ECHRP). The ECHRP will address all temporarily disturbed areas, be prepared by a qualified biologist, be developed as part of the CDFW LSAA process and be reviewed and approved by relevant agencies prior to implementation. If	CCJPA	CCJPA, qualified biologist, CDFW/RWQCB/ USFWS/USACE/ NMFS (if applicable)	1. Permanent Impacts – CCJPA, in coordination with agencies, identifies and implements minimum 1:1 mitigation for sensitive natural communities 2. Temporary Impacts – CCJPA and Contractors create a ECHRP for restoration of temporarily effected sensitive natural communities 3. Construction contractor carries out construction pursuant to contract specs and ECHRP	1. Prior to construction; as part of CDFW LSAA permitting 2. Prior to construction; as part of CDFW LSAA permitting 3. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	mitigation banks are not available at the time that mitigation will be implemented, coordination with agencies would occur to identify appropriate mitigation (i.e., permittee responsible mitigation).				
MM BIO 18: Protected Trees Pre-construction Surveys	Prior to the start of construction activities, CCJPA will retain a qualified arborist, to conduct a pre-construction survey for protected trees (e.g., historic trees, mature native trees, or any mature trees) that may require removal, pruning or may otherwise be impacted by the proposed Project. The pre-construction survey will identify the types, location, sizes, health of protected trees and summarize survey findings in a tree protection report. The tree protection report will be submitted to the applicable city for review and concurrence. The report will include but not be limited to the following: • Recommended avoidance and impact minimization measures, replacement value, and feasibility of relocation for protected trees subject to removal. • Methods and measures for relocation of protected trees to appropriate suitable habitat. • Identification of which of the surveyed trees these measures apply to, and if any other tree permit requirements are necessary to comply with municipal policies and ordinances.	CCJPA	CCJPA, qualified arborist, construction contractor(s), applicable cities	1. CCJPA incorporates measure into construction specifications. 2. Qualified arborist conducts preconstruction survey for protected trees and develops a tree protection report 3. Construction contractor carries out construction pursuant to contract specs and tree protection report	1. Prior to construction 2. Prior to construction 3. During construction activities
MM BIO-19: Fish Passage and Noise Analysis	To evaluate potential impacts to native fish species and fisheries resources, CCJPA will conduct a fish passage analysis during final Project design. The proposed Project will be designed and constructed so that it does not present a barrier to fish passage, create predatory holding habitats, or result in operational noise exceeding 150 dB. CCJPA will coordinate with the necessary regulatory agencies, including NMFS and CDFW prior to	CCJPA	CCJPA, qualified biologist, CDFW/ NMFS	1. CCJPA coordinate with NMFS/CDFW during design and prior to start of fish passage analysis	1. During conceptual through final design

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	initiating the analysis, and will consult with NMFS and CDFW during development of conceptual through the final design plans. NMFS and CDFW will be engaged for coordination during design.			2. CCJPA and qualified biologist conduct fish passage analysis to inform design	2. During final design
MM BIO-20: Salt Marsh Harvest Mouse Habitat Replacement	Prior to construction activities, CCJPA will coordinate with the USFWS to determine mitigation ratios for impacts on SMHM. Pending consultation with USFWS, mitigation may include on-site restoration, in-lieu fee payment, purchase of mitigation credits at a USFWS-approved mitigation bank, or as defined by USFWS as part of consultation.	CCJPA	CCJPA, USFWS (if applicable)	CCJPA coordinate with USFWS to determine mitigation ratios	Prior to construction activities; as part of Section 7 consultation.
MM CUL-1: Temporary Construction Easement Review and Installation of a Horizontal and Vertical Environmentally Sensitive Area for P-01-011558, as appropriate	At or before the 90 percent rail design phase, the need for the Temporary Construction Easement (TCE) at the location of P-01-11558 will be reviewed and if no longer needed, the TCE will be removed from the construction plans. If the TCE is still needed in the vicinity of P-01-011558, a horizontal and vertical ESA will be established to exclude project construction activities from the vicinity of P-01-011558. The method of ESA installation will be determined during the design phase and will be indicated on the construction documents. The ESA will be monitored by a qualified archaeologist (meeting the minimum professional qualifications standards (PQS) set forth by the Secretary of the Interior (SOI) (codified in 36 CFR Part 61; 48 FR 44739) during any ground disturbing preconstruction or construction work in the boundaries of the TCE.	CCJPA	CCJPA, qualified archaeologist	1. CCJPA will review the need for TCE at P-01-11558; if not needed, it will be removed. If needed ESAs will be established to exclude construction activities 2. Qualified archaeologist monitors ESA during work within ESA boundaries (if necessary)	1. At or before the 90 percent rail design phase and prior to construction 2. During construction activities
MM CUL-2: Implement Archaeological	Once the Project footprint reaches a 30% percent level of rail design and prior to the start of construction, an Archaeological Testing and Evaluation Plan (ATEP) will	CCJPA	CCJPA, qualified archaeologist, consulting tribal	1. Qualified archaeologist drafts ATEP and	

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
Testing and Evaluation Plan	be implemented by a qualified archaeologist in consultation with CCJPA to support the evaluation of the subsurface extent of cultural resources potentially impacted by the project. The ATEP should consist of a site-specific context, research design, and field methods to evaluate known resources, and identify resource types that may be encountered within areas of high sensitivity and deep ground disturbance. This plan should include, but not be limited to: • background and anticipated resource types; • research questions that can be addressed by the collection of data from the defined resource types; • field methods and procedures including: • procedures to determine whether a buried component of a known site extends horizontally into the Project footprint; • geoarchaeological trenching or coring; and • cataloging and laboratory analysis. The ATEP will be submitted to CCJPA and the local consulting tribal representatives for review prior to implementation. The results of the ATEP will be summarized in a technical document that will determine whether further study is necessary. The technical document will also determine whether additional mitigation will be needed. The technical document will be provided to CCJPA for review and approval and submitted to the Northwest Information Center (NWIC).		representatives, NWIC	gets review and approval by consulting tribal representatives and CCJPA; results in technical memo that is also provided to NWIC 2. CCJPA incorporates measure into construction specifications. 3. Qualified archaeologist implements an ATEP in consultation with CCJPA 4. Construction contractor carries out construction pursuant to contract specs and ATEP conclusions	1. Following 30% design and prior to construction activities 2. Prior to construction activities 3. Following 30% design and prior to construction activities 4. During construction activities
MM CUL-3: Installation of a Horizontal and Vertical Environmentally	During the design phase, the Project plans will be reviewed to determine if the refinements in the project design allow for avoidance of previously recorded and additional sites identified during the archaeological testing conducted for the project. If the sites can be	CCJPA	CCJPA, qualified archaeologist, construction contractor(s)	1. CCJPA reviews Project plans to determine avoidance and	1. Prior to construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
Sensitive Area (ESA) for previously recorded and newly identified archaeological sites as appropriate	avoided, a horizontal and vertical ESA will be established at designated locations to exclude project construction activities from the vicinity of these sites. The method of ESA installation will be determined during the design phase and will be indicated on all plans, specifications, and estimates. The ESA will be monitored by a qualified archaeologist during any ground disturbing preconstruction or construction work in the vicinity of the ESA.			establish ESA and adds to specs 2. CCJPA incorporates measure into construction specifications. 3. Qualified archaeologist oversees contractor installation of ESA. 34. Construction contractor carries out construction pursuant to contract specifications 54. Qualified archaeologist monitors ESA area	activities in area of archaeological sites 2. Prior to construction activities in area of archaeological sites 3. Prior to construction activities in area of archaeological sites 4. During construction activities 54. During construction activities
MM CUL-4: Draft and Implement Archaeological Monitoring, Avoidance, and Treatment Plan	Upon completion of the archaeological testing and evaluation, and prior to the start of construction, an Archaeological Monitoring, Avoidance, and Treatment Plan (AMATP) will be developed by a registered professional archaeologist in consultation with CCJPA and local tribal representatives. Monitoring will be required at all recorded site locations, including those proposed to be avoided by project construction.	CCJPA	CCJPA, qualified archaeologist, construction contractor(s), local tribal representatives, NWIC, CSLC	1. CCJPA incorporates measure into construction specifications. 2.Qualified archaeologist, in consultation with	1. Prior to construction activities 2. Upon completion of

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	The AMATP will include protocols that outline archaeological roles and monitoring best practices, anticipated resource types, and an Unanticipated Discovery Protocol. The Unanticipated Discovery Protocol will describe steps to follow if unanticipated archaeological discoveries are made during Project work and identify a chain of contact. The AMATP will be submitted to consulting tribal representatives and CCJPA for review prior to implementation. Following the completion of ground disturbance associated with Project construction, the results of the archeological monitoring and avoidance pursuant to the AMATP will be summarized in a technical document. The technical document will be provided to CCJPA for review and approval and submitted to the NWIC. The final disposition of archaeological and historical resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission.			CCJPA and local tribal representatives, drafts AMATP 3. Qualified archaeologist implements AMATP 4. Construction contractor carries out construction pursuant to contract specifications 5. Qualified archaeologist drafts technical memo with results of AMATP and provides to CCJPA for approval, then filed with NWIC 6. If resources recovered on State lands, requires coordination and approval from CSLC on final disposition of finds	archaeological testing and evaluation and prior to construction activities 3. Prior to construction start in areas of recorded site locations 4. During construction activities 5. Following completion of construction disturbance at areas of AMATP **6.** Following completion of construction disturbance at areas of AMATP

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM CUL-5: Tribal Monitoring	Tribal monitoring will be required during construction activities at all recorded precontact archaeological site locations, including those proposed to be avoided by project construction. Tribal monitors will be provided a minimum of one week's advance notice prior to the commencement of ground disturbing or construction work.	CCJPA	CCJPA, qualified archaeologist, construction contractor(s), tribal monitors	1. CCJPA incorporates measure into construction specifications	1. Prior to construction activities
				2. Tribal monitoring of work at recorded sites	2. During construction. CCJPA provides at least 1-week advance notice to tribes
				3. Construction contractor carries out construction pursuant to contract specifications	3. During construction activities
MM GEO-1: Paleontological Resources Mitigation Plan	A Paleontological Resource Mitigation Plan (PRMP) will be prepared by a qualified paleontologist following Society of Vertebrate Paleontologists (SVP) guidelines and implemented during the construction phase of the Project (SVP, 2010). The PRMP will include provisions for construction workers to attend a paleontological resource awareness training session. It will determine the extent to which paleontological mitigation is necessary and establishes the ground rules for the program. The PRMP will discuss fossil discovery, recovery, and subsequent handling. The extent of any monitoring recommended would be dictated by the design of the proposed Project and would be determined during design by a qualified principal	CCJPA	CCJPA, qualified paleontologist, construction contractor(s), resident engineer, CSLC	1. CCJPA incorporates measure into construction specifications	1. Prior to construction activities
				2. Qualified paleontologist prepares PRMP; provides training to construction personnel	2. Prior to construction activities
				3. Qualified paleontologist conducts	3. During construction

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	paleontologist (who holds a Master of Science or Doctorate degree in paleontology or geology and is familiar with paleontological procedures and techniques). The principal paleontologist would review the construction plans with proposed excavation sites to determine which, if any, Project components would involve earthmoving activities at depths sufficient to warrant monitoring. The principal paleontologist would review the construction schedule to develop the required monitoring schedule. Paleontological resources should also be discussed at the pre-bid meeting. A qualified principal paleontologist would be made aware of the excavation schedule and remain on call during the period of construction specified in the PRMP. If fossils are discovered during construction, the construction crew would immediately notify the resident engineer, who would stop work within 60 feet of the finding. The resident engineer would notify the qualified principal paleontologist who would evaluate the find as soon as possible. If the resource were determined to be potentially significant, CCJPA would be notified, and a recovery program would be initiated. The final disposition of paleontological resources recovered on State lands under the jurisdiction of the California State Lands Commission must be approved by the Commission. The State Lands Commission will be notified by the Project's principal paleontologist or Resident Engineer in the event of a significant find. The PRMP will outline steps to follow to resolve disposition of finds under State Lands Commission jurisdiction.			monitoring or remains on call 4. Construction contractor carries out construction pursuant to contract specs and PRMP 5. If fossils are discovered, resident engineer or construction contractor notifies qualified paleontologist to evaluate find; if potentially significant, qualified paleontologist notifies CCJPA and CSLC and initiates recovery program. 6. If resources recovered on State lands, requires coordination and approval from CSLC on final disposition	activities (if necessary). 4. During construction activities 5. During construction activities (if necessary) 6. During construction activities (if necessary)

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
MM HYD-1: Balancing cut and fill and increasing flow and detention capacity	Impacts within an existing floodplain or floodway will be mitigated by balancing cut and fill of earthwork, installing equalizer pipes to perpetuate flood flows, or implementing underground storage or add detention basins to provide more flood flow storage.	CCJPA	CCJPA, construction contractor(s)	1. CCJPA incorporates measure into construction specs and plans 2. Construction contractor carries out construction pursuant to contract specifications.	1. Prior to construction activities 2. During construction activities
MM HYD-2: Dewatering permit in case of contaminated groundwater	If the groundwater is found to be contaminated, a dewatering permit will be obtained from the San Francisco Regional Water Quality Control Board and the Alameda County Water District. An Active Treatment Systems may be specified by the permit conditions if the quality of the groundwater warrants their use.	CCJPA	CCJPA, construction contractor(s), SFRWQCB, ACWD	1. CCJPA incorporates measure into construction specifications 2. Construction contractor carries out construction pursuant to contract specifications 3. If contaminated groundwater is found, construction contractor(s) to get dewatering permit	1. Prior to construction activities 2. During construction activities 3. During construction activities (if necessary)
MM NOI-1: Construction Noise Control Plan	CCJPA, in coordination with the construction contractor(s), and local jurisdiction(s), will prepare and implement a Construction Noise Control Plan to reduce the impact of temporary construction-related noise on nearby noise-sensitive receptors. The Construction Noise	CCJPA	CCJPA, construction contractor(s), local jurisdiction(s)	1. CCJPA incorporates measure into construction specifications	1. Prior to construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	Control Plan will include but may not be limited to the following best practices: • Install temporary construction site sound barriers near noise sources. • Use moveable sound barriers at the source of the construction activity. • Avoid the use of impact pile drivers where possible near noise-sensitive areas or use quieter alternatives (e.g., drilled piles) where geological conditions permit. • Locate stationary construction equipment as far as possible from noise-sensitive sites. • Reroute construction-related truck traffic along roadways that will cause the least disturbance to residents. • Use low-noise emission equipment. • Implement noise-deadening measures for truck loading and operations. • Line or cover storage bins, conveyors, and chutes with sound-deadening material. • Use acoustic enclosures, shields, or shrouds for equipment and facilities. • Use high-grade engine exhaust silencers and engine-casing sound insulation. • Minimize the use of generators to power equipment. • Limit use of public address systems. • Grade surface irregularities on construction sites. • Monitor and maintain equipment to meet noise limits. • Establish an active community liaison program to keep residents informed about construction and to provide a procedure for addressing noise complaints.			2. CCJPA creates CNCP in coordination with construction contractor(s)and local jurisdiction(s) 3. Construction contractor(s) carries out construction pursuant to contract specs and CNCP	2. Prior to construction activities 3. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• A Construction Noise Control Plan will be developed and implemented to measure noise during construction, including the type of equipment and sensors to be used, a location plan for monitoring equipment, and the following additional requirements: ▪ Planned frequency of monitoring for all instruments. ▪ Noise thresholds will be identified, that if exceeded, could be potentially harmful to sensitive receptors. ▪ Corrective action plans will be identified prior to work start to be implemented should maximum noise threshold be reached or exceeded. ▪ To the extent possible, the construction team will be required to conduct the work in such a manner that noise does not exceed threshold limits. ▪ A Monitoring Exceedance Report for any exceedance occurrence will be completed by the construction team and submitted to CCJPA, which will describe: o what noise measurement values were recorded that exceeded the allowable limits, o where the impacted instruments are located, o when the exceedances occurred, o when work was stopped because of the exceedance(s), o what demolition and\or construction activities caused the exceedance(s),				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	○ what actions were taken to limit and reduce noise levels, and ○ when demolition and\or construction activities were resumed.				
MM NOI-2: Creation of Noise Quiet Zones	Prior to the start of construction activities, if establishment of a Quiet Zone is determined to be feasible by the local jurisdiction(s), CCJPA will be responsible for reasonable costs associated with construction of the necessary at-grade crossing improvements to qualify for establishing a Quiet Zone, while recognizing that Quiet Zone approval is ultimately outside the authority of CCJPA. This phased program will include the development of engineering studies and coordination agreements to design, construct, and enforce potential quiet zones at the following grade crossings on the Coast Subdivision: • Jarvis Avenue (City of Newark); • Alvarado Boulevard (City of Union City); • Dyer Street (City of Union City); • Union City Boulevard (City of Union City): • Grant Avenue (unincorporated community of San Lorenzo); and • Lewelling Boulevard (unincorporated community of San Leandro). CCJPA will consider options for establishing quiet zones including, but not limited to, the following FRA pre-approved supplemental safety measures: • Four-quadrant gate system. This measure involves the installation of at least one gate for each direction of traffic to fully block vehicles from entering the crossing. • Gates with medians or channelization devices. This measure keeps traffic in the proper travel	CCJPA	CCJPA, construction contractor(s), local jurisdictions	1. CCJPA incorporates measure into construction specifications 2. If Quiet Zone is approved, CCJPA pays reasonable costs for necessary improvements 3. If Quiet Zone not approved, CCJPA pays reasonable costs for building sound installation 4. Construction contractor carries out construction pursuant to contract specifications	1. Prior to construction activities 2. Prior to or during construction activities (if necessary). 3. Prior to or during construction activities (if necessary). 4. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	lanes as it approaches the crossing, thus denying the driver the option of circumventing the gates by travelling in the opposite lane. • One-way street with gates. This measure consists of one-way streets with gates installed so that all approaching travel lanes are completely blocked. This option may not be feasible or acceptable to local jurisdictions at all locations. • Road closure. This measure consists of closing the road to through travel at the at-grade crossing. This option may not be feasible or acceptable to local jurisdictions at all locations. In addition to these pre-approved supplemental safety measures, the Federal Railroad Administration (FRA) also identifies a range of other measures that may be used to establish a quiet zone. These could be modified supplemental safety measures or non-engineering measures which might involve law enforcement or public awareness programs. Alternative safety measures must be approved by the FRA based on the prerequisite that they provide an equivalent level of safety as the sounding of horns. This phased program will also consider the use of wayside horns as part of a quiet zone. While not avoiding the sounding of a horn, wayside horns affect a smaller area than train-mounted horn. Wayside horns can be used when the other measures above are not adequate to avoid the use of a horn. If quiet zones are not feasible or unacceptable to the resident's community and/or jurisdiction, CCJPA will offer financial support for application of building sound insulation at the impacted residences at the following locations:				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• Coast Subdivision North Section: 3 residences located on the southwest side of the existing railroad ROW between Farallon Drive and Lewelling Boulevard. • Coast Subdivision North Section: 1 residence located on the northeast side of the existing railroad ROW between Lewelling Boulevard and Grant Avenue. • Coast Subdivision Central Section: 1 residence located on the northeast side of the existing railroad ROW between Grant Avenue and Skywest Golf Course. • Coast Subdivision Central Section: 2 residences located on the northeast side of the existing railroad ROW between Union City Boulevard and Smith Street. • Coast Subdivision South Section: 9 residences located on the northeast side of the existing railroad ROW between Smith Street and Alameda Creek. • Coast Subdivision South Section: 4 residences located on the southwest side of the exiting railroad ROW between Jarvis Avenue and Cedar Boulevard Park. • Coast Subdivision South Section: 1 residence located on the northeast side of the existing railroad ROW between Cedar Boulevard Park and Clark Avenue. Building sound insulation improvements may include, but not be limited to the following: • Application of an extra layer of glazing to the windows; • Sealing holes in exterior surfaces that act as sound leaks; and				

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• Provision of forced ventilation and air-conditioning so that windows do not need to be opened. ○ During final design of the Project, CCJPA will coordinate with individual residents identified as candidates for sound insulation. The coordination will include testing of existing outdoor to indoor noise reduction and specific measures required to meet the interior noise level criterion.				
MM NOI-3: Construction Vibration Control Plan	CCJPA, in coordination with the Construction Contractor and local jurisdiction(s), will prepare and implement a construction Vibration Control Plan to reduce the impact of temporary construction-related vibration on nearby sensitive receptors. The VCP will include but not be limited to the following: • Avoid the use of impact pile drivers where possible near vibration-sensitive areas or use alternative construction methods (e.g., drilled piles) where geological conditions permit. • Avoid vibratory compacting/rolling in close proximity to structures. • Require vibration monitoring during vibration-intensive activities. • A Vibration Monitoring Plan will be developed and implemented to measure vibration during construction, including the type of equipment and sensors to be used, a location plan for monitoring equipment, and the following additional requirements: • Identify frequency of monitoring for all instruments,	CCJPA	CCJPA, construction contractor(s), local jurisdictions	1. CCJPA incorporates measure into construction specifications 2. CCJPA creates CVCP in coordination with construction contractor(s)and local jurisdiction(s) 3. Construction contractor(s) carries out construction pursuant to contract specs and CVCP	1. Prior to construction activities 2. Prior to construction activities 3. During construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	• Vibration and deformation thresholds that if exceeded, could be potentially damaging to sensitive receptors and/or structures, • Corrective action plans identified prior to work start to be implemented should maximum vibration be reached or exceeded, • To the extent possible, the construction team will be required to conduct the work in such a manner that vibrations do not exceed threshold limits, • A Monitoring Exceedance Report for exceedance occurrences will be completed by the construction team and submitted to CCJPA, which will describe: o what vibration measurements values were recorded that exceeded the allowable limits, o where the impacted instruments are located, o when the exceedances occurred, o when work was stopped because of the exceedance(s), o what demolition and\or construction activities caused the exceedance(s), o what actions were taken to limit and reduce vibrations, and when demolition and\or construction activities were resumed.				
MM REC-1: Detour Plan for the Alameda Creek Regional Trail	Two weeks prior to temporary trail closures, CCJPA in coordination with the East Bay Regional Park District (EBRPD), the Bay Conservation and Development Commission (BCDC), and the Metropolitan Transportation Commission (MTC), as possible, will develop a detour plan for short-term closures of the	CCJPA	CCJPA, construction contractor(s), EBRPD, BCDC, MTC	1. CCJPA incorporates measure into construction specifications	1. Prior to construction activities

Mitigation Measure	Mitigation Measure Description	Enforcement Agency	Implementing Party	Monitoring and Reporting Action	Time Frame/ Milestone
	Alameda Creek Regional Trail and any affected bridges or waterways. The detour plan will be available to the public on EBRPD and CCJPA's websites. To the extent feasible, short-term closures will be scheduled during off-peak trail use days or times.			2. CCJPA and construction constructor(s) coordinate with EBRPD, BCDC, and MTC to develop detour plan for Alameda Creek Regional Trail and affected bridges/waterways 3. Construction contractor carries out construction pursuant to contract specifications	2. Two weeks prior to temporary trail closures 3. During construction activities