

Appendix E Avoidance Minimization and/or Mitigation Summary

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] that follows) would be implemented. During project design, avoidance, minimization, and /or mitigation measures will be incorporated into the project's final plans, specifications, and cost estimates, as appropriate. All permits will be obtained prior to implementation of the project. During construction, environmental and construction/engineering staff will ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of project delivery, long-term mitigation maintenance and monitoring will take place, as applicable. As the following ECR is a draft, some fields have not been completed, and will be filled out as each of the measures is implemented. Note that some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR. An asterisk (*) denotes mitigation for a significant impact under CEQA.

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Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
HUMAN ENVIRONMENT									
Land Use									
<i>Project Features</i>									
PF-LU-1 During final design, design modifications that will minimize or avoid the loss of landscaping and noncompliance with general development standards will be selected, if feasible. If such losses cannot be minimized or avoided and the project still results in the loss of landscaping or other noncompliance with development standards, the California Department of Transportation (Caltrans) will coordinate with the City of Irvine and the City of Tustin, to obtain landscaping or setback variances for properties where the project would reduce the required amount of landscaping below the applicable municipal landscaping and setback requirements. If variances are not granted, any severance damages to the affected parcels will be determined during the right-of-way acquisition process in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E Construction	No						
PF-PR-1 Trail and Pedestrian Facilities Temporary Closure Plan. During final design, a Trail and Pedestrian Facilities Temporary Closure Plan for addressing the short term impacts to existing trails (subject to protection under Section 4(f)) and sidewalks (not subject to protection under Section 4(f)) within the construction limits of the project will be prepared and included in the Transportation Management Plan (TMP). The TMP will be incorporated into the Plans, Specifications, and Estimates (PS&E) for implementation by the Construction Contractor. The Temporary Closure Plan will address the affected trail as well as sidewalks within the project limits. Specifically, the Temporary Closure Plan will address: <ul style="list-style-type: none"> • Identification of trail and pedestrian facilities that will be closed temporarily during construction; • Public awareness and notification plan, including public notices on sidewalks and trail detours/closures, contact information for the Resident Engineer and the Construction Contractor, on-site signing, and other activities to inform the public about issues associated with the trail and sidewalks during project construction; • Developing and implementing detours for temporarily closed trail and sidewalks; • Phasing of trail and sidewalk closures to allow for effective detours to maintain connectivity of these facilities around the construction area; • Coordinating the trail and sidewalk closures and detours with the local jurisdictions with authority over the sidewalks and trails; • Criteria for identifying detour routes and facilities; 	Caltrans Resident Engineer Caltrans Project Engineer Caltrans Right-of-Way	During PS&E Construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
<ul style="list-style-type: none"> Information signing for closures and detours; Requirements for compliance with the Americans with Disabilities Act during construction; Maintaining signing for closures and detours throughout the closure period and replacing lost or damaged signing; and Restoring trail and sidewalk facilities at the completion of project construction. <p>Prior to and during construction activities that will require the temporary closure of a trail or sidewalk, the Project Engineer will require the Construction Contractor to comply with and implement the procedures in the Temporary Closure Plan for the affected trail and sidewalk facilities.</p>									
PF-PR-2: Temporary Closures of Trails and Sidewalks. Prior to any temporary closures of trails, the Project Engineer will obtain approval from the Director of the City of Irvine Public Works Department, and the Parks and Recreation Department, or their representatives, to review the location and need for each trail and sidewalk closure. Detours for each closure will be developed in consultation with the City of Irvine Public Works and Parks and Recreation Directors, or their representatives.	Caltrans Project Engineer	Prior to and during construction							
PF-PR-3: Signing for Alternative Trail Routes. The Resident Engineer will require the project Construction Contractor to develop detour signs, directing trail users to alternative routes. Appropriate directional and informational signage will be provided by the Construction Contractor prior to each closure and far enough away from the closure so that trail users will not have to backtrack to get to the detour route.	Caltrans Resident Engineer	Prior to and during construction	No						
PF-PR-4: Contact Information at Trail Detours. Detour signage shall include the Resident Engineer's contact information and inform trail users to contact the Resident Engineer and/or the Construction Contractor regarding upcoming or active trail closures.	Caltrans Resident Engineer	Prior to and during construction	No						
PF-PR-5: Restoration of Impacted Trail Segments. The Resident Engineer will require the Construction Contractor to return trail segments closed temporarily during construction to their original, or better, condition after completion of construction, prior to their return to the City of Irvine. After project construction, the Resident Engineer will document that both access to and connectivity of all trails and sidewalks have been restored.	Caltrans Resident Engineer	Post construction	No						

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<p>PF-PR-7: Temporary Use of Land from Parks During Construction.</p> <ul style="list-style-type: none"> During final design, the Project Engineer will evaluate the proposed temporary construction easements (TCEs) in Orchard Park and Heritage Park, and will identify opportunities to further reduce the size of the TCEs. The TCEs in Orchard Park and Heritage Park will be shown on the project plans and specifications and will include notes that the Construction Contractor cannot increase the sizes or change the locations of any of the TCEs. Access Restrictions at Temporary Construction Easements. The Project Engineer will require the Construction Contractor to fence and gate all land in Orchard Park and Heritage Park used for the TCEs. The TCEs will be appropriately signed to restrict access to the area by park patrons. The Project Engineer will require the Construction Contractor to maintain the fencing throughout the time the TCEs are used and to remove the fencing only after all construction activity in an area is completed, the TCEs are no longer needed, and the land used for the TCEs are ready to be returned to the property owner. Signing of the Fenced Temporary Construction Easement. The Project Engineer will require the Construction Contractor to provide signing at the TCEs in Orchard Park and Heritage Park explaining why the areas are fenced and access to the TCEs are restricted, the anticipated completion date of the use of the land for the TCEs, and contact information (for both the Project Engineer and the Construction Contractor) for the public to solicit further information regarding the TCEs and the project. Return of Land Used for the Temporary Construction Easement to the Property Owners. The Project Engineer will be required to coordinate the restoration of land used for the TCEs in Orchard Park and Heritage Park with the City of Irvine to restore it to its original or better condition when construction in an area has been completed and the temporary TCEs are no longer needed. 	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E, prior to and during construction	No						

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PF-PR-6: Permanent Acquisition of Property from Parks and Recreation Resources. All permanent acquisition of property for the proposed project, including any federally funded improvements, will be conducted by the agency with jurisdiction in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act) of 1970 as amended. The Uniform Act establishes minimum standards for federally funded programs and projects that require the acquisition of real property. The Uniform Act's protections and assistance apply to the acquisition, rehabilitation, or demolition of real property for federal or federally funded projects. The conditions of acquisition and compensation for, or replacement or enhancement of, other park property for any park or recreation resources acquired for the project improvements will be developed by Caltrans in consultation with the Orange County Transportation Authority and the City of Irvine (official with jurisdiction of each affected property).	Caltrans Right-of-Way	During PS&E, Prior to construction	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									
Community Impacts									
<i>Project Features</i>									
PF-COM-1: No two consecutive/adjacent off-ramps or two consecutive/adjacent on-ramps in the same direction will be closed concurrently.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E During Construction	No						
PF-COM-2: Business access will be maintained at all times during construction, consistent with California Department of Transportation Section 7-1.03 Public Convenience of Standard Specifications (2010).	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E During Construction	No						
PF-REL-1: Property acquisition will be conducted in compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) (Public Law 91-646, 84 Statutes 1894). The Uniform Act mandates that certain relocation services and payments be made available to eligible residents, businesses, and nonprofit organizations displaced by federal or federally assisted projects. The Uniform Act provides for uniform and equitable treatment by federal or federally assisted programs of persons displaced from their homes, businesses, or farms and establishes uniform and equitable land acquisition policies.	Caltrans Right-of-Way	During PS&E, Prior to construction	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
Utilities and Emergency Services									
<i>Project Features</i>									
<p>PF-UES-1: During final design, utility relocation plans will be prepared in consultation with the affected utility providers/owners for those utilities that will need to be relocated, removed, or protected in-place. If relocation is necessary, the final design will focus on relocating utilities within existing public rights-of-way (ROWs) and/or easements. If relocation outside of existing ROWs or additional public ROWs and/or easements required for the project are necessary, the final design will focus on relocating those facilities to minimize environmental impacts as a result of project construction and ongoing maintenance and repair activities. Utility relocations are anticipated to be completed by the various utility owners prior to or during construction.</p> <p>Prior to utility relocation activities, the Contractor will coordinate with affected utility providers regarding potential utility relocations and inform affected utility users in advance about the date and timing of potential service disruptions.</p>	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E Prior to and during construction During PS&E and prior to utility relocation activities	No						
<p>PF-UES-2 Prior to and during construction, the Contractor will coordinate all temporary mainline, ramp, and arterial roadway closures and detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times, including the identification of alternative routes for emergency vehicles and routes across the construction areas that are developed in coordination with the affected agencies.</p>	Caltrans Project Engineer Caltrans Resident Engineer	Prior to and during construction	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
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Traffic and Transportation/Pedestrian and Bicycle Facilities									
<i>Project Features</i>									
<p>PF-T-1: Transportation Management Plan. A Final Transportation Management Plan (TMP) will be developed in detail during final design, which would be implemented by the construction contractor during project construction to address short-term traffic circulation and access effects during project construction. Specifically, when the TMP is prepared during final design, a qualified traffic engineer will prepare the TMP, which will include, but not be limited to, the elements described below to reduce traveler delays and enhance traveler safety during project construction. The TMP would be closely coordinated with the appropriate entities and stakeholders and will be approved by the Orange County Transportation Authority (OCTA) and the California Department of Transportation (Caltrans) District 12 during final design and incorporated into the plans, specifications, and estimates for implementation by the construction contractor.</p> <p>The purpose of the TMP is to address the short-term traffic and transportation impacts during construction of the project. The objectives of the TMP are to:</p> <ul style="list-style-type: none"> • Maintain traffic safety during construction • Effectively maintain an acceptable level of traffic flow throughout the transportation system during construction • Minimize traffic delays and facilitate reduction of the overall duration of construction activities • Minimize detours and impacts to pedestrians and bicyclists • Foster public awareness of the project and related transportation and traffic impacts • Achieve public acceptance of construction of the project and the TMP measures <p>The TMP will contain, but not be limited to, the following elements intended to reduce traveler delay and enhance traveler safety. These elements will be refined during final design and incorporated in the TMP for implementation during project construction.</p> <ul style="list-style-type: none"> • Public Information/Public Awareness Campaign (PAC). The primary goal of the PAC is to educate motorists (and transit users, bicyclists, and pedestrians as applicable), business owners and operators, residents, elected officials, and government agencies about project construction activities and associated transportation impacts. The PAC is an important tool for reaching target audiences with important construction project information and is anticipated to include, but not be limited to: 	Caltrans Traffic Engineer Caltrans Project Engineer Caltrans Resident Engineer	During PS&E and project construction	No						

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<ul style="list-style-type: none"> • Rideshare information • Brochures and mailers • Media releases • Paid advertising • Public meetings • Broadcast fax and email services • Telephone hotline • Notification to targeted groups • Commercial traffic reporters/feeds • Project website • Visual information • Local cable television and news • Internet postings • Traveler Information Strategies. The effective implementation of a traveler information system during construction is crucial for enabling motorists (including transit users, bicyclists, and pedestrians as applicable) to make informed decisions about their travel plans and options with real-time traffic information. That real-time traffic information will include information on mainline, ramp, lane, and arterial closures and detours; travel delays; access to adjacent land uses; "businesses are open" signing; and other signing and information to assist travelers in navigating through, around, and in construction areas. Key components of the traveler information system are anticipated to include, but not be limited to: <ul style="list-style-type: none"> • Fixed and portable changeable message signs • Ground-mounted signs • Automated work zone information systems • Highway advisory radio • Lane closure website • Caltrans highway information network • Bicycle and pedestrian information • Commute Smart website • Incident Management. Effective incident management will ensure that incidents in and near construction areas are cleared quickly and do not result in substantial delays for the traveling public in the vicinity of work zones. Incident management includes, but is not limited to: <ul style="list-style-type: none"> • Caltrans Construction Zone Enhanced Enforcement Program (COZEEP) • Freeway Service Patrol • Traffic surveillance stations • Caltrans Transportation Management Center 									

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<ul style="list-style-type: none"> • Traffic management team • Towing services • Construction Strategies. The TMP will include procedures to lessen the transportation effects of project-related construction activities and will include, but not be limited to, consideration of the following: <ul style="list-style-type: none"> • Conflicts with other projects and special events • Construction staging alternatives • Mainline lane closures • Local road closures • Ramp and connector closures (no two consecutive on- or off-ramps in the same direction would be closed at the same time) • Pedestrian and bicycle detours and facility closures • Traffic control improvements • Coordination with other projects • Project phasing • Traffic screens • Truck traffic restrictions • Demand Management. Temporarily reducing the overall traffic volumes on the project segment of I-5 could reduce the short-term adverse effects of construction on traffic operations. The TMP will include, but not be limited to, the following strategies that could reduce vehicular demand in the Study Area during project construction: <ul style="list-style-type: none"> • Rideshare incentives • Transit services • Shuttle services • Variable work hours and telecommuting • Park-and-ride lots • Alternate Route Strategies. The TMP will provide strategies for notifying motorists, pedestrians, and bicyclists of planned construction activities. This notification will allow travelers to make informed decisions about their travel plans, including the consideration of possible alternate routes. The TMP will finalize the detour and alternate routes for motorists (and transit users, bicyclists, and pedestrians as applicable), specifically addressing the following: <ul style="list-style-type: none"> • Mainline lane closures • Ramp/connector closures • Local road closures • Temporary highway or shoulder use • Local street improvements 									

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<ul style="list-style-type: none"> Temporary detours and closures of bicycle and pedestrian facilities Traffic signal coordination The construction contractor will implement the measures in the TMP during construction.									
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									
Visual/Aesthetics									
<i>Project Features</i>									
PF-VIS-1 Preservation of Existing Landscape. Damage to existing vegetation, especially mature, established trees, within the project limits or in close proximity to the project limits shall be minimized as much as possible.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E and project construction	No						
PF-VIS-2 Replacement Landscape and Irrigation in Areas Impacted by Construction. All areas disturbed by the proposed roadway improvements or grading operations will receive replacement planting where feasible, to lessen the impacts of construction. All proposed landscaping within State right-of-way will utilize the California Department of Transportation (Caltrans) approved plant materials and match existing in-kind plant species. All proposed landscaping will conform to the latest Model Water Efficient Landscape Ordinance.	Caltrans Project Engineer Caltrans Resident Engineer Caltrans Landscape Architect	During PS&E, post construction	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
PF-VIS-3 Aesthetic Treatments for New Noise Barriers, Retaining Walls, and Elevated Features. To reduce the visual impact of new noise barriers and other elevated structures, the use of aesthetic treatments consisting of color, textures, and/or artistic designs compatible with existing walls/structures shall be determined. If the only option is to match existing in-kind, new noise barriers shall be supplemented with self-attaching vines to soften their appearance and applied with anti-graffiti coating (if allowable) to discourage graffiti. Other elevated structures, such as replacement (taller) bridge structures, may be reduced in scale by planting skyline-type trees at the interchange quadrants or in areas with proper clearance from the required Caltrans setbacks.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E Construction	Yes						
Cultural Resources									
<i>Project Features</i>									
PF-CR-1: Discovery of Cultural Materials. If cultural materials are discovered during site preparation, grading, or excavation, the construction contractor will divert all earthmoving activity within and around the immediate discovery area until a qualified archaeologist can assess the nature and significance of the find. At that time, coordination will be maintained with the California Department of Transportation (Caltrans) District 12 Environmental Branch Chief or the District 12 Native American Coordinator to determine an appropriate course of action. If the discovery of cultural materials occurs outside the Caltrans right-of-way, then coordination with the appropriate local agency will be conducted.	Caltrans Project Engineer Caltrans Archaeologist Caltrans Resident Engineer	During construction and post construction (if necessary)	No						

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PF-CR-2: Discovery of Human Remains. If human remains are discovered during site preparation, grading, or excavation, California State Health and Safety Code (H&SC) Section 7050.5 states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the Orange County Coroner shall be contacted. If the remains are thought to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC), who pursuant to California Public Resources Code (PRC) Section 5097.98, will then notify the Most Likely Descendant (MLD). At that time, the persons who discovered the remains will contact the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of California PRC 5097.98 are to be followed as applicable.	Caltrans Project Engineer Caltrans Archaeologist Caltrans Resident Engineer	During construction and post construction (if necessary)	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
CR-3 Construction Monitoring. If the California Department of Transportation (Caltrans) determines that monitoring is necessary, an Archaeological Monitoring Area would be delineated on project plans during the Plans, Specifications, and Estimates (PS&E) phase and incorporated into the final construction contract. Ground-disturbing activities would be monitored by a qualified Archaeologist and/or Native American monitor within the defined Archaeological Monitoring Area. A final Archaeological Monitoring Report would then be required after construction is completed to document the monitoring efforts and any resources identified.	Qualified Archaeologist, Caltrans Project Engineer Caltrans Resident Engineer	During PS&E and during construction	No						
PHYSICAL ENVIRONMENT									
Hydrology and Floodplains									
<i>Project Features</i>									
No project features required									
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No mitigation is required.									

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					Initials	Date		Initials	Date
Water Quality and Storm Water Runoff									
<i>Project Features</i>									
PF-WQ-1 Prior to commencement of construction activities, the Build Alternative shall obtain coverage under the State Water Resources Control Board's (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) Order No. 2009-0009-DWQ, as amended by 2010-0014-DWG and 2012-0006- DWQ, NPDES No. CAS000002, or any other subsequent permit. This shall include submission of Permit Registration Documents, including a Notice of Intent for coverage under the permit to the SWRCB via the Storm Water Multiple Application and Report Tracking System (SMARTS) shall be obtained. Construction activities shall not commence until a Waste Discharge Identification Number is obtained from SMARTS. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented to address all construction-related activities, equipment, and materials that have the potential to impact water quality. The SWPPP shall identify the sources of pollutants that may affect the quality of storm water and include Best Management Practices (BMPs) to ensure that the potential for soil erosion, sedimentation, and spills is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Upon completion of construction activities and stabilization of the site, a Notice of Termination shall be implemented via SMARTS.	Caltrans Resident Engineer Caltrans Project Engineer	Prior to construction Construction Post-construction	No						
PF-WQ-2 If dewatering is required, construction site dewatering shall comply with one of two orders, or any subsequent orders that apply to groundwater discharges to surface waters within the Santa Ana Region depending on the nature of the groundwater. Order No. R8-2015-0004 (NPDES No. CAG998001) covers general waste discharge requirements (WDRs) for discharges to surface waters that pose an insignificant (de minimus) threat to water quality within the Santa Ana Region. This order would be applicable to the project if it can be demonstrated that the groundwater being discharged to surface waters does not contain pollutants of concern (selenium and nitrates) in the discharge. However, if groundwater in the Study Area is found to contain petroleum hydrocarbons, solvents, metals, and/or salts, the project would be subject to Order No. R8-2007-0041, as amended by Order No. R8-2009-0045 (NPDES No. CAG918002). Order No. R8-2009-0045 covers general discharge permits for discharges to surface waters of groundwater resulting from groundwater dewatering operations and/or groundwater cleanup activities at sites within the San Diego Creek/Newport Bay Watershed polluted by petroleum hydrocarbons, solvents, metals and/or salts, or nutrients, selenium, and other pollutants of Total Maximum Daily Loads (TMDL) concern. Under both orders, permittees are required to monitor their	Caltrans Resident Engineer Caltrans Project Engineer	Prior to construction Construction	No						

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discharges from groundwater extraction waste from construction to ensure that effluent limitations for constituents are not exceeded.									
PF-WQ-3 The Build Alternative shall comply with the provisions of the NPDES Permit, Statewide Storm Water Permit, WDRs for the State of California, Department of Transportation (Caltrans) Order No. 2012-0011-DWQ, as amended by WQ 2014-0077-DWQ, NPDES No. CAS000003 (Caltrans Permit) or any subsequent permit.	Caltrans Resident Engineer Caltrans Project Engineer	Prior to and during construction	No						
PF-WQ-4 Caltrans-approved Design Pollution Prevention BMPs shall be implemented to the maximum extent practicable (MEP) consistent with the requirements of the Caltrans Permit. Design Pollution Prevention BMPs include preservation of existing vegetation; discharge into closed drainage systems and lined channels; protection of disturbed slope areas with temporary or permanent erosion control measures; conveyance systems such as overside drains, ditches, and rock slope; and revegetation or replacement planting of disturbed soil areas.	Caltrans Project Engineer Caltrans Resident Engineer	Prior to and during construction	No						
PF-WQ-5 Caltrans-approved Treatment BMPs shall be implemented to the MEP consistent with the requirements of the Caltrans Permit. Treatment BMPs may include biofiltration swales, biofiltration strips, and detention basins.	Caltrans Project Engineer Caltrans Resident Engineer	Prior to and during construction	No						
Avoidance, Minimization, and/or Mitigation Measures									
No mitigation is required.									
Geology/Soils/Seismic/Topography									
Project Features									
PF-GEO-1 Geotechnical Investigation. During the Plans, Specifications, and Estimates (PS&E) phase, a detailed geotechnical investigation will be conducted by qualified geotechnical personnel to assess the geotechnical conditions at the project area. The geotechnical investigation will include exploratory borings to investigate site-specific soils and conditions and to collect samples of subsurface soils for laboratory testing. Those soil samples will be tested to evaluate liquefaction potential, collapsibility potential, stability, and corrosion potential. The project-specific findings and recommendations of the geotechnical investigation will be summarized in a Structure Foundation Report and a Geotechnical Design Report to be submitted to the California Department of Transportation (Caltrans) for review and approval. Those findings and recommendations will be incorporated in the final design of the Build Alternative.	Caltrans Project Engineer Qualified geotechnical personnel Caltrans Resident Engineer	During PS&E and prior to construction	No						
PF-GEO-2 Revegetation. Prior to construction, revegetation of graded slopes should be performed to minimize erosion, and runoff should be diverted from each slope face using earthen berms and/or concrete swales at the top of each slope.	Caltrans Project Engineer Caltrans Resident Engineer	Post construction	No						
Avoidance, Minimization, and Mitigation Measures									
No mitigation is required.									

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Paleontology									
<i>Project Features</i>									
No Project Features are required.									
<i>Avoidance, Minimization, and Mitigation Measures</i>									
PAL-1* Paleontological Mitigation Plan. A qualified paleontologist shall prepare a Paleontological Mitigation Plan (PMP) following the guidelines in the California Department of Transportation (Caltrans) Standard Environmental Reference (SER), Environmental Handbook, Volume 1, Chapter 8 – Paleontology (June 2016 or more current) and guidelines developed by the Society of Vertebrate Paleontology (SVP 2010). The PMP shall be prepared concurrently with final design plans during the Plans, Specifications, and Estimates (PS&E) phase.	Caltrans Paleontologist, Caltrans Project Engineer/ Office Engineer Caltrans Resident Engineer	During PS&E, construction and post construction (if necessary)	No						
Hazardous Materials									
<i>Project Features</i>									
PF-HAZ-1 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of aerially deposited lead (ADL) containing material at a permitted disposal facility.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E and construction	No						
PF-HAZ-2 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of the generated traffic striping waste at a permitted disposal facility.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E and construction	No						
PF-HAZ-3 A Caltrans special provision will be included as part of the Project Specifications and Estimates (PS&E) package to ensure proper removal, handling, and disposal of asbestos containing materials (ACMs) and lead based paints (LBPs) at a permitted disposal facility.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						

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PF-HAZ-4 During excavation, the Construction Contractor will monitor soil excavation for visible soil staining, odor, and the possible presence of unknown hazardous material sources. If hazardous material contamination or sources are suspected or identified during project construction activities, the Construction Contractor will be required to cease work in the area and to have an environmental professional evaluate the soils and materials to determine the appropriate course of action required, consistent with the Unknown Hazards Procedures in Chapter 7 of the Caltrans <i>Construction Manual</i> (July 2017). Adequate protection to construction workers will be provided with the implementation of a Health and Safety Plan and Soil management Plan.	Caltrans Project Engineer Caltrans Resident Engineer	During construction	No						
PF-HAZ-5 Site investigations will be performed at the properties that may be either partially acquired for the project and will be completed during the PS&E phase. The site investigations will determine whether more extensive subsurface investigation will be needed. If deemed necessary, subsurface investigations will be performed according to the recommendations of the assessment.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E	No						
PF-HAZ-6 A preliminary site investigation will be completed during PS&E on several properties which are identified as partial acquisitions for the Build Alternative, and several properties which are not proposed for acquisition or use as partial but are adjacent to the project limits. The preliminary site investigation will assess the presence or absence of impacts associated with the hazardous waste storage area observed at these parcels.	Caltrans Project Engineer Caltrans Resident Engineer	During PS&E	No						
Avoidance, Minimization, and Mitigation Measures									
No mitigation is required.									
Air Quality									
<i>Project Features</i>									
PF-AQ-1 The Contractor must comply with the California Department of Transportation (Caltrans) Standard Specifications for Construction (2015) Section 14. Prior to the issuance of grading permits or approval of grading plans, a dust control plan shall be a part of the construction contract standard specifications, which shall include measures to meet the requirements of the South Coast Air Quality Management District (SCAQMD) Rules 402 (Nuisance) and 403 (Fugitive Dust) (Section [d2] and Table 1).	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
PF-AQ-2 Water or dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions. Fugitive dust emissions must meet a "no visible dust" criterion either at the point of emissions or at the right-of-way line, depending on local regulations. <ul style="list-style-type: none"> Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas. Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions. 	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						

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					Initials	Date		Initials	Date
<ul style="list-style-type: none"> A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely revegetation of disturbed slopes as needed to minimize construction impacts to existing communities. Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly. Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used. All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the materials to the top of the truck) will be provided to minimize the emission of dust (particulate matter) during transportation. Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to decrease particulate matter. Mulch will be installed or vegetation planted as soon as practical after grading to reduce windblown particulate in the area. 									
PF-AQ-3 In order to further minimize construction-related emissions, all construction vehicles and construction equipment would be required to be equipped with the State-mandated emission control devices pursuant to State emission regulations and standard construction practices.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
<i>Avoidance and Minimization Measures</i>									
AQ-4 Project grading plans shall show the duration of construction. Ozone precursor emissions from construction equipment vehicles shall be controlled by maintaining equipment engines in good condition and in proper tune per manufacturers' specifications, to the satisfaction of the Resident Engineer, which may include periodic inspections of construction equipment.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
AQ-5 To further reduce construction emissions from nitrogen oxides (NO _x), particulate matter less than 10 microns in size (PM ₁₀) and particulate matter less than 2.5 microns in size (PM _{2.5}) and health impacts to sensitive receptors, Caltrans will require the use of 2010 model year diesel haul trucks that conform to the 2010 U.S. Environmental Protection Agency (EPA) truck standards or newer diesel haul trucks (e.g., material delivery trucks and soil import/export) during construction. If Caltrans determines that 2010 model year or newer diesel haul trucks are not feasible, Caltrans will use trucks that meet EPA 2007 model year NO _x emissions requirements, at a minimum. Successful contractor(s) must demonstrate the ability to supply the compliant diesel haul trucks for use prior to any ground disturbing and construction activities.	Caltrans Resident Engineer Caltrans Project Engineer	Construction	No						

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					Initials	Date		Initials	Date
Caltrans will require periodic reporting and provision of written documentation by contractors, and conduct regular inspections to the maximum extent feasible to ensure compliance.									
Noise									
<i>Project Feature</i>									
PF-N-1 The control of noise from construction activities will conform to the California Department of Transportation (Caltrans) Standard Specifications, Section 14-8.02, "Noise Control." The nighttime noise level from the contractor's operations, between the hours of 9:00 p.m. and 6:00 a.m., will not exceed 86 A-weighted decibels (dBA) one-hour A weighted equivalent continuous sound level (L _{eq} (h)) at a distance of 50 feet. In addition, the contractor would equip all internal combustion engines with a manufacturer-recommended muffler and will not operate any internal combustion engine on the job site without the appropriate muffler.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
PF-N-2 Noise Barrier Nos. 1.1, 3.3, 4.1, 6.1, 6.2, and 11.2/11.4 were determined to be feasible and reasonable. These noise barriers will be considered for construction. The final decision on construction of the noise barriers will be made during final design.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									
BIOLOGICAL ENVIRONMENT									
Natural Communities									
<i>Project Feature</i>									
PF-BIO-1 Delineation of Environmentally Sensitive Areas. Prior to construction, highly visible barriers (e.g., orange construction fencing) will be installed along the boundaries of the proposed project footprint to designate Environmentally Sensitive Areas (ESAs) that are to be preserved. ESAs will also be delineated on the design plans. No project activity of any type will be permitted within these ESAs. In addition, heavy equipment, including motor vehicles, will not be allowed to operate within the ESAs. All construction equipment will be operated in a manner so as to prevent accidental damage to ESAs. No structure of any kind, or incidental storage of equipment or supplies, will be allowed within these protected zones. Construction-related Best Management Practices (BMPs) such as silt fence barriers, fiber rolls, and gravel bag berms will be installed at the ESA boundary to prevent accidental deposition of fill material in areas where vegetation is immediately adjacent to planned grading activities.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	Prior to construction Construction	No						

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PF-BIO-2 Restoration of Temporary Impacts. Areas of natural habitat that are temporarily affected by construction activities will be restored to a natural condition. The restoration effort will emulate surrounding vegetation characteristics and/or return to previous conditions. Restoration plans will be prepared during final design and included in the Plans, Specifications, and Estimates (PS&E) package. The revegetation plan will be prepared consistent with the California Department of Transportation (Caltrans) landscape architecture guidelines and requirements. Restoration plans will be reviewed and approved by the Wildlife Agencies (the California Department of Fish and Wildlife [CDFW] and the United States Fish and Wildlife Service [USFWS]).	Caltrans Project Engineer, Resident Engineer, Generalist, and Biologist	During PS&E Post construction							
PF-BIO-3 Best Management Practices During Construction. All equipment maintenance, staging, and dispensing of fuel, oil, or any other such activities will occur in developed or designated nonsensitive upland habitat areas. The designated upland areas will be located in such a manner as to prevent any spill runoff from entering waters of the United States.	Caltrans Project Engineer, Resident Engineer, Generalist, and Biologist	During construction	No						
PF-BIO-4 Biological Monitoring. A qualified Biologist will monitor construction activities adjacent to Peters Canyon Wash, for the duration of the proposed project to ensure that practicable measures are being employed to avoid and minimize incidental disturbance of habitat and Covered Species inside and outside the proposed project footprint. Opportunities to further avoid and minimize impacts on Covered Species will be explored.	Caltrans Project Engineer, Resident Engineer, and Biologist	During construction	No						
PF-BIO-5 On-Site Training. When in or near natural habitat areas in Peters Canyon Wash, all personnel involved in the on-site project construction will be required to participate in a pre-construction environmental training program to understand the avoidance and minimization obligations on the proposed project.	Caltrans Project Engineer, Resident Engineer, and Biologist	Prior to construction During construction	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No measures are required.									
Wetlands and Other Waters									
<i>Project Feature</i>									

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
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PF-WET-1 Regulatory Permitting. Prior to initiation of construction, permits shall be obtained for the proposed project through the United States Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA), the State Water Resources Control Board (SWRCB) pursuant to Section 401 of the CWA, and the California Department of Fish and Wildlife (CDFW) pursuant to Section 1602 of the California Fish and Game Code. The Section 404 permit will utilize the Orange County Transportation Authority's (OCTA) Letter of Permission (LOP) Procedures. The 1602 permit will be obtained utilizing the OCTA's Renewed Measure M (M2) Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) approved mitigation and within the approved mitigation ratio caps. The Section 401 authorization will be obtained from the SWRCB utilizing the approved M2 mitigation.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E	No						
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No mitigation measures are required									
Plant Species									
<i>Project Feature</i>									
No Project Features are required									
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
No mitigation is required									
Animal Species									
<i>Project Feature</i>									
PF-BIO-11 Avoidance of Breeding Season. If Caltrans/OCTA determines that avoidance of the avian breeding season (January 1 to September 30) is not feasible, at least two weeks prior to the initiation of the proposed project activities during the nesting bird/raptor season, a qualified Biologist with experience in conducting breeding bird surveys will conduct weekly bird surveys to detect presence/absence of migratory and resident bird species occurring in suitable nesting habitat that would be directly or indirectly disturbed and (as access to adjacent areas allows) any other such habitat within an appropriate buffer distance of the disturbance area. The need for a presence/absence survey prior to initiating activities during the breeding season will be included in the PS&E for the project. Generally, the buffer distance should be 300 feet (500 feet for federally and State-listed bird species and nesting raptors); however, because the proposed project occurs along a noisy freeway, a buffer distance as low as 100 feet for common species and non-raptors could be appropriate. If a narrow buffer distance is warranted, Caltrans/OCTA will have a qualified Biologist identify the appropriate buffer distances for raptors and non-raptors in consultation with the Caltrans Resident Engineer and will notify CDFW. The surveys will continue on a weekly basis with the last survey being conducted no more than three days prior to the initiation of the proposed project activities. If a nesting bird species is found, Caltrans/OCTA will do the following to avoid and minimize impacts on native birds	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and prior to construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
					Initials	Date		Initials	Date
<p>and the nest or eggs of any birds:</p> <ul style="list-style-type: none"> Implement default 300-foot minimum avoidance buffers for all birds and 500-foot minimum avoidance buffers for all raptor species. The breeding habitat/nest site will be fenced and/or flagged in all directions, and this area will not be disturbed until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area, or the young will no longer be impacted by the project. If a narrower buffer distance is determined appropriate by the qualified biologist, then Caltrans/OCTA will develop a project specific Nesting Bird Management Plan. The site specific nest protection plan will be developed collaboratively with the Wildlife Agencies and submitted to the Wildlife Agencies, although the Wildlife Agencies will not be responsible for approving the narrower buffer distance and the Nesting Bird Management Plan. The Plan should include detailed methodologies and definitions to enable a qualified avian biologist to monitor and implement nest specific buffers based on topography, vegetation, species, and individual bird behavior. This Nesting Bird Management Plan will be supported by a Nest Log that tracks each nest and its outcome. The Nest Log will be submitted to the Wildlife Agencies at the end of each week. Caltrans/OCTA may propose an alternative plan for avoidance and nesting birds for the Wildlife Agencies' review and approval. Flagging, stakes, and/or construction fencing will be used to demarcate the inside boundary of the buffer between the proposed project activities and the nest. Caltrans/OCTA personnel, including all contractors working on site, will be instructed on the sensitivity of the area. Caltrans/OCTA will document the results of the recommended protective measures described above to demonstrate compliance with applicable State and federal laws pertaining to the protection of native birds. The Biological Monitor will be present on site during all grubbing and clearing of vegetation to ensure that these activities remain within the proposed project footprint (i.e., outside the demarcated buffer); to ensure that the flagging/stakes/fencing is being maintained; and to minimize the likelihood that active nests are abandoned or fail due to the proposed project activities. The Biological Monitor will send weekly monitoring reports to Caltrans/OCTA and the OCTA NCCP Administrator during the grubbing and clearing of vegetation and will notify 									

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Caltrans/OCTA and the OCTA NCCP Administrator immediately if the proposed project activities take, possess, or needlessly destroy the nest or eggs of any bird, any bird of prey, or any active bird nests or eggs. Within 48 hours of damage to an active nest or eggs or observed death or injury of birds protected under State law or the Migratory Bird Treaty Act (MBTA), Caltrans/OCTA will notify the USFWS/CDFW.									
<i>Avoidance, Minimization, and/or Mitigation Measures</i>									
BIO-6 Western Pond Turtle Avoidance and Minimization Plan. As a condition of the Orange County Transportation Authority (OCTA) Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) and to avoid take, Caltrans/OCTA will prepare a Western Pond Turtle Avoidance and Minimization Plan for review and approval by the CDFW. This Plan will describe: (1) the methodology for pre-construction surveys based on the planned start of construction (i.e., within or outside the season when western pond turtles are active); (2) exclusionary measures that will be installed around the construction impact area to exclude turtles; (3) the methodology for relocation of western pond turtles outside the construction impact area; (4) identification of a relocation site at a nearby location in the same watershed as the proposed project; (5) biological monitoring requirements during construction; and (6) avoidance measures to be implemented during construction to avoid and minimize impacts on the western pond turtle. The Avoidance and Minimization Plan will be incorporated into the Plans, Specifications, and Estimates (PS&E) for the project.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and during construction	No						
BIO-7 Western Pond Turtle Pre-Construction Surveys. Two weeks prior to ground-disturbing activities (including placement of heavy equipment) in or near aquatic habitats, Caltrans/OCTA will ensure that a pre-construction survey is conducted for western pond turtle as described in the Western Pond Turtle Avoidance and Minimization Plan. The pre-construction surveys will be conducted by a CDFW-approved qualified Biologist (i.e., one with western pond turtle trapping/handling experience and who holds a CDFW Scientific Collecting Permit to carry out these activities) to determine their presence or absence within the construction footprint. The pre-construction survey will include a trapping effort that will be consistent with United States Geological Survey (USGS) trapping protocols. If nonnative species are captured during the trapping effort, they will be removed. The trapping effort will be combined with a visual survey; the Wildlife Agency-approved/qualified Biologist will walk the impact area to search for any potential breeding areas and existing nests. To the extent possible, pre-construction surveys will be conducted under weather conditions when western pond turtles are expected to be active. If construction begins under conditions that would not be conducive to western pond turtle activity,	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and during nighttime work for project construction	No						

Task and Brief Description	Responsible Branch, Staff	Timing / Phase	NSSP Req.	Action Taken to Comply with Task	Task Completed		Remarks	Environmental Compliance	
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pre-construction surveys may be conducted more than two weeks prior or would use alternative methodology to detect aestivating turtles as described in the Western Pond Turtle Avoidance and Minimization Plan and approved by the Wildlife Agencies. A report documenting the pre-construction survey results and measures that will be required during construction as described in the Western Pond Turtle Avoidance and Minimization Plan will be provided to Caltrans/OCTA/Wildlife Agencies prior to commencing construction or within two weeks of completion of field surveys, whichever is earlier. If western pond turtles are found within the construction footprint, the occupied habitat and an appropriate buffer (as determined by a qualified Biologist) will be avoided to the maximum extent practicable. The pre-construction survey requirements will be incorporated into the PS&E for the project.									
BIO-8 Western Pond Turtle Exclusion and Relocation. If western pond turtles are present in the Biological Study Area (BSA) during pre-construction surveys, the exclusion and relocation of western pond turtles will be implemented as described in the Western Pond Turtle Avoidance and Minimization Plan and approved by the CDFW. The Avoidance and Minimization Plan will be incorporated into the PS&E for the project.	Caltrans Biologist, Resident Engineer, and Project Engineer	During PS&E and construction	No						
BIO-9 Biological Monitoring in Western Pond Turtle Occupied Habitat. Biological monitoring will occur as described in the Western Pond Turtle Avoidance and Minimization Plan. Exclusionary fencing will be used to ensure western pond turtles are kept out of the construction area as described in the Western Pond Turtle Avoidance and Minimization Plan. Exclusionary fencing will be maintained throughout the duration of construction. The Avoidance and Minimization Plan will be incorporated into the PS&E for the project.	Caltrans Biologist, Resident Engineer, and Project Engineer	During PS&E and construction	No						
BIO-10 Avoidance and Minimization of Western Pond Turtle Habitat. Construction will avoid work in ponded or flowing water within 1,500 feet of known turtle locations unless alternative avoidance and minimization measures described in the Western Pond Turtle Avoidance and Minimization Plan are approved by the Wildlife Agencies. The Avoidance and Minimization Plan will be incorporated into the PS&E for the project.	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
BIO-12 Pre-Construction Roosting Bat Surveys. Nighttime exit counts and acoustic surveys shall be performed by a qualified Bat Biologist at all structures that may be subject to proposed project-related impacts. These surveys shall be performed during the bat maternity season (April 1–August 31) well in advance of construction in order to provide adequate time for mitigation planning. The need for pre-construction roosting bat surveys will be included in the PS&E for the project.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						
BIO-13 Avoidance of Maternity Roosts. Within 500 feet of structures where maternity roosting is confirmed, demolition and pile-driving activities shall avoid the	Caltrans Biologist, Resident Engineer, and Project Engineer	During construction	No						

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recognized bat maternity season (April 1–August 31) to prevent potential mortality of flightless young bats. The avoidance of maternity roosts will be included in the PS&E for the project.									
BIO-14 Biological Monitoring by a Bat Specialist. Construction activities at structures housing maternity colonies shall be coordinated with a qualified Bat Biologist and the CDFW. The need for monitoring by a bat specialist will be included in the PS&E for the project.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and nighttime work for project construction	No						
BIO-15 Bat Evictions. If direct impacts to bat-roosting habitat are anticipated, humane evictions and exclusions of roosting bats should be performed under the supervision of a qualified Bat Biologist in the fall (September or October) prior to any work activities that would result in direct impacts or direct mortality to roosting bats. This action will be performed in coordination with the CDFW. To avoid potential mortality of flightless juvenile bats, evictions and exclusions of bats cannot be performed during the maternity season (April 1–August 31). Winter months are also inappropriate for bat eviction because not all individuals in a roost will emerge on any given night. In addition, long-distance movements to other roost sites are more difficult during the winter when prey availability is scarce, resulting in high mortality rates of evicted bats. The requirements described above for bat eviction will be included in the PS&E for the project.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E Construction	No						
BIO-16 Alternate Bat-Roosting Habitat. Alternate bat-roosting habitat structures should be installed on the structure prior to the eviction/exclusion of bats from that structure. The design, numbers, and locations of these roost structures should be determined in consultation with a qualified Bat Biologist. If permanent direct impacts to bat-roosting habitat are anticipated and a humane eviction/exclusion is performed, alternate roosting habitat shall be provided to ensure no net loss of bat-roosting habitat. This action shall be coordinated with the CDFW and a qualified Bat Biologist to ensure that the installed habitat will provide adequate mitigation for impacts. The requirements described above for alternative bat-roosting habitat will be included in the PS&E for the project.	Caltrans Biologist Caltrans Resident Engineer Caltrans Project Engineer	During PS&E Construction	No						
BIO-17 Night Lighting During Construction. At structures where night roosting is confirmed, work shall be limited to the daylight hours to the greatest extent feasible to avoid potential disruption of foraging. If night work cannot be avoided, night lighting shall be focused only on the area of direct work, airspace access to and from the roost features of the structure shall not be obstructed, and light spillover into the adjacent foraging areas shall be minimized to the greatest extent feasible. Limitations on night lighting will be included in the PS&E for the project.	Caltrans Biologist, Resident Engineer, and Project Engineer	During PS&E and construction	Yes						

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					Initials	Date		Initials	Date
BIO-18 Avoidance of Foliage-Roosting Bats. To the greatest extent feasible, tree trimming/removal activities shall be performed outside the bat maternity season, which occurs from April 1 through August 31, to avoid direct impacts to nonvolant (flightless) young that may roost in trees within the Study Area. This period also coincides with the bird nesting season (February 1 - September 30). If trimming or removal of trees during the bat maternity season (April 1 - August 31) cannot be avoided, LSA recommends that a qualified Biologist will monitor tree removal. Activities to avoid effects to foliage-roosting bats described above will be included in the PS&E for the project.	Caltrans Biologist, Resident Engineer, and Project Engineer	During PS&E Construction	No						
Invasive Species									
<i>Project Feature</i>									
PF-IS-1 Weed Abatement Program. In compliance with Executive Order 13112, and guidance from the Federal Highway Administration (FHWA), the landscaping and erosion control plans included in the project will not use species listed as invasive. A weed abatement program shall be developed for the proposed project and incorporated into the Plans, Specifications, and Estimates (PS&E) package to avoid and/or minimize the importation of nonnative plant material during and after construction. At a minimum, the program shall include the following measures: <ul style="list-style-type: none"> • During construction, invasive plant material will be removed from the proposed project work area. All removed invasive plant material will be disposed of properly in a landfill or other suitable facility. • During construction, the Construction Contractor shall inspect and clean construction equipment at the beginning of each day and prior to transporting equipment from one project location to another. • During construction, soil and vegetation disturbance will be minimized to the greatest extent feasible. • During construction, the Construction Contractor shall ensure that all active portions of the construction site are watered a minimum of twice daily, or more often when needed, due to dry or windy conditions, to prevent excessive amounts of dust. • During construction, the Construction Contractor shall ensure that all material stockpiled is sufficiently watered or covered to prevent excessive amounts of dust. • During construction, soil, gravel, and rock will be obtained from weed-free sources. • Only certified weed-free straw, mulch, and/or fiber rolls will be used for erosion control. • After construction, affected native vegetation impacted or removed will be revegetated with plant species that are native to the vicinity as approved 	Caltrans Resident Engineer Caltrans Project Engineer	During PS&E and construction	No						

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by the District Biologist. <ul style="list-style-type: none"> After construction, all revegetated areas will comply with EO 13112. Erosion control and/or revegetation sites will be monitored after construction to detect and control the introduction/invasion of nonnative species. The monitoring period will be determined in consultation with resource agencies. Eradication procedures (e.g., spraying and/or hand weeding) will be outlined should an infestation occur; the use of herbicides will be prohibited within and adjacent to native vegetation, except as specifically authorized and monitored by the District Biologist. All woody invasive species will be removed from the proposed project limits. 									
<i>Avoidance, Minimization, and/or Mitigation Measures</i> No mitigation is required.									