

DOCKETED

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Appendix D: Environmental Commitments Record (ECR)



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Environmental Commitments Record

Interstate 5 North Coast Corridor Project Improvements

Environmental Generalist: Shay Lynn M. Harrison File: 11-SD-5
 Phone: 619-688-0190 KP: R45.75/R89.15 (PM R28.4/R55.4)
 Date: May 2013 EA: 235800

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
					Initial	Date		Initial	Date
Geotechnical Investigations		Design Engineer / Geologist	Design						
Design Kick Off		Project Management / Design Engineer / Environmental Staff	Design						
Environmental PS&E Review Meeting		Project Management / Environmental Staff	Design						
Pre-Construction Meeting		Project Management / Resident Engineer	Pre-construction						
Pre-Job Meeting		Project Management / Resident Engineer	Construction						
Mid Construction Meeting		Project Management / Resident Engineer	Construction						
Design Features Memorandum		Project Management / Resident Engineer	Post-construction						
Environmental Compliance Review		Project Management / Resident Engineer / Environmental Staff	Construction						
Permits and Approvals									
<i>U.S. Fish and Wildlife Service</i>									
Endangered Species Act Section 7 Consultation – Threatened and Endangered Species		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction						

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<i>U.S. Army Corps of Engineers</i>									
Clean Water Act Section 404 Individual Permit		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction						
Marine Protection Research and Sanctuaries Act Section 103 Permit		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction						
Rivers and Harbors Act Section 408 Permit		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction						
<i>California Department of Fish and Wildlife</i>									
Section 1602 Streambed Alteration Agreement		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction						
<i>Regional Water Quality Control Board</i>									
Clean Water Act Section 401 Certification		Resident Engineer / Construction / Environmental / Qualified Biologist	Pre-construction (NPDES)						
<i>California Coastal Commission</i>									
Coastal Zone Management Act Federal Consistency Determination		Environmental	Pre-construction (PWP / TREP)						
Coastal Development Permits		Resident Engineer / Construction / Environmental	Pre-construction						
<i>Other Applicable Permits</i>									
Comply with project permits		Design Engineer / Environmental	Pre-construction / Construction						
Farmlands / Agricultural Lands / Coastal Zone Impacts									
Temporary impacts to agricultural resources due to construction / assembly and construction staging areas, including temporary conversion of important agricultural lands or other temporary disruption of agricultural activities, would be addressed by returning any affected area to pre-existing agricultural use after project construction is completed.	Section 3.3.4	Design Engineer / Resident Engineer	Design / Construction						
Permanent impacts to active coastal agricultural land within the City of Encinitas and City of Carlsbad would be addressed on a site-specific basis, utilizing a tiered	Section 3.3.4	Project Management <i>(Note: This could</i>	Design / ROW Acquisition / Construction						

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<p>approach. The first tier would be for implementation of in-kind, project-specific action located within the affected jurisdiction, and could include specific activities such as implementation of school or community gardens. Should a project within the affected jurisdiction not be feasible, the second tier would be implemented, which includes payment of an Agricultural Resource Impact Mitigation Fee, pursuant to an approved in-lieu fee program. The fee should be based on net acreage of affected coastal agricultural lands and should reflect the approximate cost of preserving coastal agricultural lands elsewhere in the North Coast Corridor Coastal Zone. Fees would be handled by the affected jurisdiction, and expended in the following order of priority:</p> <ul style="list-style-type: none"> • Purchase of agricultural lands and/or agricultural improvements that would aid in continuing agricultural production within the North Coast Corridor Coastal Zone. • Committing to specific activities that support "urban agriculture," such as farm to school programs, farm to fork restaurants, buy local, farm to grocery stores, vertical farming, farmers markets, innovative approaches to "urban agriculture" that help to create a demonstration project, re-tooling existing agricultural operations to allow for vertical farming, innovative approaches to farming, or substantial reduction in water usage, and/or endowments to programs of study in agricultural sciences in the North Coast Corridor Coastal Zone. • If determined feasible and desirable by the County of San Diego, coordinating with the County to establish a fund to offset loss of Williamson Act subvention funds from the State for 2009/2010. 		<i>require high-level coordination and funding / land purchase commitments)</i>							
<p>Construction staging and phasing plans should be prepared and submitted with each notice of impending development (NOID) for all project-related transportation improvement and associated community enhancement projects and should include information that specifies and quantifies any coastal agricultural resource areas that may be impacted by temporary project construction activities. Analysis of temporary impacts from construction activities should be conducted for each NOID submittal in order to determine any loss of income or coastal agricultural production incurred as a result of the proposed construction activities, and appropriate action / compensation should be applied in the event that impacts are identified.</p>	Section 3.3.4	Design Engineer / Resident Engineer	Design / Construction						

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Plans for habitat restoration on properties supporting existing coastal agricultural uses should be prepared and submitted with the applicable NOID for restoration activities, and should include information that specifies and quantifies any important coastal agricultural resource areas that may be impacted by restoration activities.	Section 3.3.4	Qualified Environmental Staff	Design						
An economic feasibility study should be conducted for any proposed specific project that would result in permanent impacts to coastal agricultural resources in order to determine whether or not continued coastal agricultural production would be possible after the project-related impacts have occurred.	Section 3.3.4	Qualified Environmental Staff	Design						
Community Impacts									
Landscape and streetscape improvements would be provided in affected areas, where possible, and would be consistent with the visual atmosphere, historic architecture, and native vegetation in the area.	Section 3.4.1.4	Design Engineer / Landscape Architect	Design						
Reconfiguration of interchanges, overcrossings and undercrossings along the project corridor would improve pedestrian and bicycle facilities, provide linkages, and allow for improvements to public transit. Project features would serve to improve and facilitate connectivity between communities east and west of I-5 in locations that have been previously bisected by the freeway.	Section 3.4.1.4	Design Engineer	Design						
A Traffic Management Plan (TMP) would be prepared to minimize traffic delays and closures through the use of various traffic handling practices (see Traffic measures.)	Section 3.4.1.4	Traffic Engineer	Design						
A public awareness program would be developed to inform the public of upcoming detours and construction schedules (see Traffic measures.)	Section 3.4.1.4	Public Information Officer / Resident Engineer	Pre-construction / Construction						
Traffic impacts around schools would be noted in the TMP.	Section 3.4.1.4	Traffic Engineer	Design						
Equipment would have sound-control devices to minimize noise, and other specifications to turn off idling equipment and installing temporary acoustic barriers around stationary construction noise sources would be implemented.	Section 3.4.1.4	Resident Engineer	Construction						
Construction equipment and truck staging and maintenance areas would be located as far as feasible and nominally downwind of schools, active recreation areas, and other communities of high-population density.	Section 3.4.1.4	Design Engineer / Resident Engineer	Design / Construction						
In the event any hazardous materials are located within the vicinity of any Oceanside Unified School District school, including but not limited to the Oceanside High School, Caltrans would immediately notify the District and provide an explanation of the remediation measures to address the discovery of any hazardous materials during the construction of the project.	Section 3.4.1.4	Resident Engineer	Construction						

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The project would implement Caltrans' Standard Specifications related to temporary dust and emissions, as well as noise control.	Section 3.4.1.4	Resident Engineer	Construction						
Relocations									
Provide relocation assistance to eligible residents in compliance with Caltrans' Relocation Assistance Program. Displacees that may face difficulty finding suitable relocation resources would be eligible for assistance from Caltrans through the State's relocation program or Last Resort Housing (LRH) Program options, including LRH payments.	Section 3.4.2.4	Project Management / ROW Acquisition	ROW Acquisition						
Utilities and Emergency Services									
The Construction Zone Enhancement Enforcement Program (COZEEP) involves the presence of CHP to improve project safety by encouraging motorists to slow down and use care while driving through construction zones.	Section 3.5.3	Resident Engineer	Construction						
The Freeway Service Patrol program, a cooperative effort between Caltrans, SANDAG and the CHP to alleviate incident-related traffic congestion by operating tow services to aid stranded or disabled vehicles on urban freeways during morning and afternoon commuter periods, would be utilized.	Section 3.5.3	Resident Engineer	Construction						
A TMP would be developed to include various strategies to minimize delay during construction (see Traffic measures.)	Section 3.5.3	Traffic Engineer	Design						
Emergency providers and law enforcement officials would be informed of all detours to avoid or minimize increases in response times.	Section 3.5.3	Public Information Officer / Resident Engineer	Construction						
All applicable regulations regarding solid waste would be complied with as related to construction.	Section 3.5.3	Resident Engineer	Construction						
Coordination with the appropriate utility owners would occur during final design and construction to finalize relocation efforts.	Section 3.5.3	Design Engineer / Resident Engineer	Design / Construction						
Impacts to resources would be avoided when utilities are relocated, and Environmentally Sensitive Areas (ESAs) would be delineated when working near sensitive areas to prevent construction activities from impacting resources.	Section 3.5.3	Design Engineer / Biologist / Resident Engineer	Design / Construction						
Traffic & Transportation / Pedestrian & Bicycle Facilities									
Construction would be phased to minimize traffic delays.	Section 3.6.4.1	Design Engineer / Traffic Engineer / Resident Engineer	Design / Construction						
A comprehensive TMP to minimize traffic delays and closures through the use of various traffic handling practices during construction would be developed after selection of a preferred alternative but prior to the start of construction. Traffic delays would be controlled to the	Section 3.4.1.4, Section 3.5.3, and Section 3.6.4.1	Traffic Engineer / Design Engineer / Public Information Officer / Resident Engineer	Design / Construction						

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<p>extent feasible during periods of many simultaneous construction operations. The TMP is designed to increase driver awareness, ease congestion, and minimize delay during construction. Many TMP components would be implemented prior to construction and could continue after construction with local funding. The components of the TMP would be:</p> <p><u>Public Awareness Program:</u> Strategies that would be considered to increase public awareness may include one or more of the following items:</p> <ul style="list-style-type: none"> • Mailings – construction bulletins, newsletters, public notices • Speakers bureau • Public service announcements: radio, television, and newspapers • Paid advertising • Signs along roadway: changeable message signs • Telephone information line, hotline, “800” number • Updates to local businesses • Webpage <p><u>Traffic Operations Strategies Program:</u> This would include ongoing evaluation of traffic operations and would provide for incident response during construction. Strategies that would be considered may include one or more of the following items:</p> <ul style="list-style-type: none"> • TMP evaluation and adjustment • Alternate route strategies • Construction strategies, including lane closure charts for closing lanes, ramps, and connectors • Delay clauses for the late re-opening of lane closures • Temporary signal location • CHP enforcement of construction zone speed limits during lane closures • Freeway Service Patrol • Demand Management strategies, including improvement to HOV/Managed Lanes and public transit 									
<p>The TMP would include components for pedestrians and bicyclists along with consideration for the motoring public. As well as the items listed for the motoring public, signs would be used, as appropriate, to provide notices of bike and pedestrian closures, detours and other pertinent information. Temporary access would be provided where possible.</p>	Section 3.6.4.2	Traffic Engineer / Design Engineer / Resident Engineer	Design / Construction						

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Visual Aesthetics									
Visual mitigation would consist of adhering to design requirements in consultation with the District 11 DLA and following the Design Guidelines: I-5 NCC Project.	Section 3.7.4	Design Engineer / Landscape Architect	Design						
During project design and construction, the DLA will analyze the visual effects of specific project features, synthesize applicable mitigation measures from this document and the Design Guidelines: I-5 NCC Project, apply those requirements to actual design features in specific locations, and submit proposals to the project design team. The team and DLA will then develop design solutions considered to be reasonable visible mitigation solutions that achieve team consensus, and can in turn be implemented. The DLA also will provide technical assistance during construction and perform mitigation monitoring of all visual mitigation requirements.	Section 3.7.4	Design Engineer / Landscape Architect / Resident Engineer	Design / Construction						
Caltrans will consult with the property owners and/or officials with jurisdiction over recreational areas during project design for potential aesthetic options, as applicable. During the design process, shareholder interaction will continue, guidelines will become more and more specific, locally oriented design details will be added, and a design palette of specific features and products will be developed.	Section 3.7.4	Design Engineer / Landscape Architect / Resident Engineer	Design / Construction						
Mitigation measures that require regular maintenance and are located outside Caltrans right-of-way, such as trees planted along local streets, or measures that require the installation of non-standard equipment within the right-of-way such as pedestrian bridge lighting, can be implemented only if the responsible local government would be willing to maintain them in perpetuity.	Section 3.7.4	Project Management	Design						
The visual mitigation consists of adhering to the following design requirements. The requirements listed below are arraigned by project feature and include required options in order of effectiveness. One or more of these options would be implemented on applicable project features. SOUNDWALLS <ul style="list-style-type: none"> Wherever possible, noise barriers should consist of landscaped berms. A retaining wall may be used to avoid constructing a soundwall on top of a berm. This may result in a barrier with a lower profile than a noise berm / wall combination due to the berm's superior sound attenuation qualities. In situations where a tall retaining wall at the toe of slope would create a visual impact to an adjacent property, a berm with a 1:2 slope on the freeway 	Section 3.7.4	Design Engineer / Landscape Architect	Design						

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<p>side that is 6 ft high (minimum) and screening shrubs would be used. This size berm should allow enough space to provide screening shrubs in front of the wall.</p> <ul style="list-style-type: none"> • In areas too narrow to place a planting pocket, the soundwall would be recessed behind the face of barrier at a sufficient distance to allow architectural features to be included on the face of the soundwall. Placing a soundwall directly on top of a concrete barrier should be avoided if at all possible. • Whenever possible, soundwalls would incorporate planting on both sides. In some cases, retaining walls and/or a concrete barrier at the edge of the shoulder may be needed to provide the required planting space. • In some areas, the use of setbacks and return sections in wall layouts would be used. • In cases where the right-of-way is narrow, a minimum 5-ft wide planting area would be provided between the back of the barrier and the face of the soundwall. • In areas where space for architectural detailing does not exist, vertical concrete safety barriers would be considered. Vertical barriers add 12 in of additional width in which architectural elements such as pilasters and wall caps can be included. • In situations where noise receptors are located above the elevation of the freeway, transparent soundwalls located at the top of slope on the right-of-way line or on private property would be used if the benefited property owner agrees to maintain wall surfaces. Locating walls at higher elevations nearer receptors substantially reduces the height of walls to achieve "line of sight" noise reductions. • If possible, translucent materials would be placed on top of soundwalls to reduce their apparent height and create a greater sense of openness. Translucent materials should be placed above areas of potential vehicle impact, out of easy reach, and should consist of vandal-resistant materials. 									
<p>ARCHITECTURAL DETAILING</p> <ul style="list-style-type: none"> • Soundwalls would be designed to be visually compatible with the surrounding community. Architectural detailing such as pilasters, wall caps, interesting block patterns, and offset wall layouts would be used to add visual interest and reduce the apparent height of the walls. Poured-in-place 	Section 3.7.4	Design Engineer / Landscape Architect	Design						

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integrally colored concrete construction techniques would be encouraged where visual consistency with retaining walls is desired. Enhanced surface materials such as mosaic tile and weathering steel would also be used where appropriate.									
<p>RETAINING WALLS</p> <ul style="list-style-type: none"> Retaining walls that follow the contours of the topography and maintain a constant elevation at the top of wall would be used where appropriate. Wall layouts and profiles should be composed of long radius curves, with no tangents or points of intersection. Wall faces should be battered at a 1:6 horizontal / vertical ratio. Walls should be located at mid-slope. This type of wall is visually compatible with surrounding terrain and provides room at the base for a slope that contains landscape screening. Where appropriate, retaining walls over 19.7 ft in height would be divided into separate structures sufficiently offset from one another to create a planting area between the two. Whenever possible, retaining walls would be located at mid slope in cut sections to provide a buffer area for landscape screening between the wall and the freeway. Wherever possible, retaining walls would be located at the top of slope in fill sections to provide a buffer area for landscape screening between the wall and the community. In areas where insufficient space exists to include planting buffers between freeway retaining walls and adjacent community features such as frontage roads, the use of viaduct retaining walls would be considered. Viaduct retaining walls would cantilever the roadway to form a wall recess in which spatial articulation and planting can occur. In areas where retaining walls must be placed close to the traveled way, space would be reserved between the wall and the safety barrier to include a 5-ft wide planting pocket. In areas too narrow to place a planting pocket, the retaining wall would be recessed behind the face of barrier at a sufficient distance to allow architectural features to be included on the face of the retaining wall. In areas where space for architectural detailing does not exist, vertical concrete safety barriers 	Section 3.7.4	Design Engineer / Landscape Architect	Design						

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<p>would be considered. Vertical barriers add 12 in of additional width in which architectural elements such as mechanically stabilized earth wall panel relief, pilasters, and wall caps can be included.</p> <ul style="list-style-type: none"> • Wall faces would be battered at a 1:6 maximum horizontal / vertical ratio wherever possible to reduce the apparent scale of the wall and give the wall a more natural appearance. The batter also can serve as a barrier safety shape where the base of wall exhibits a smooth surface facing traffic. • Alternatives to standard cable rail barrier would be used to complement enhanced wall designs. Options would include integral solid concrete parapets or alternative metal materials. Design details are contained in the Design Guidelines: I-5 NCC Project. • Architectural features, textures, and integral concrete colors would be used to mitigate the appearance of retaining wall surfaces. Walls would incorporate architectural features such as pilasters and caps to provide shadow lines, provide relief from monolithic appearance, and reduce their apparent scale. Enhanced surface materials such as mosaic tile and weathering steel would also be used where appropriate to meet community design goals. Design details are contained in the Design Guidelines: I-5 NCC Project. • Mechanically stabilized earth (MSE) walls can have custom designed panels that include integral color and enhanced surface texture, and a minimum 4-in reveal on each panel. Placement of landscaped slopes, soundwalls, barriers, drainage conveyances, and other roadway features can require special design. • Low profile (e.g., Caltrans Type 60S) or see-through (e.g., Caltrans Type 80) safety barriers would be used if at all possible in areas where standard height barriers would diminish views of scenic resources from the freeway. 									
<p>OVERCROSSING, UNDERCROSSING, BRIDGE, AND DAR STRUCTURES</p> <ul style="list-style-type: none"> • Bridge type selection and all other structure design should be consistent with the design themes contained in the Design Guidelines: I-5 NCC Project. Some mitigation features may be new or non-standard and require approvals or design exceptions. 	Section 3.7.4	Design Engineer / Landscape Architect	Design						

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<ul style="list-style-type: none"> • Wherever possible, abutments would be short seat abutments placed at the top of slopes. The visual mass of abutments would be minimized as much as possible. High cantilever abutments would be used in locations where space does not exist for short seat abutments at the top of a slope. • At each overcrossing, bridge abutments would be of the same type to produce a symmetrical appearance. Where overcrossing structures are replaced, high cantilever abutments would be used in lieu of secondary tie-back walls. Temporary tie back walls would be terrain-contoured walls and would receive architectural features consistent with permanent walls in the viewshed. Temporary tie-back walls would be removed when overcrossing structures are reconstructed. • In locations where retaining walls must be incorporated into abutments, they would be designed as terrain-contoured walls if possible, and located away from the edge of shoulder to allow space for a planted buffer at their base. • Slope paving would be enhanced with integral concrete color, texture, and deeply textured facing materials such as veneer block or natural rock. • Bridge signage would be designed to visually integrate with bridge architecture. Concrete sign pedestals would be consistent in appearance with bridge design themes. • Sidewalks would be provided on both sides of each overcrossing. They would have a 6-ft minimum width on a two-lane structure with a curb-to-curb width of 32 ft or less. On wider streets, both sidewalks would be a minimum of 10 ft in width. Sidewalk widths would be selected based on SANDAG regional guidelines (<i>Planning and Designing for Pedestrians</i>, June 2002) and local pedestrian design guidelines. Where possible, sidewalks would receive score patterns, surface texture, and/or integral color. • Wherever possible, low profile barrier separations between pedestrian and vehicular traffic would be provided on overcrossings where Caltrans policy prohibits or restricts architectural features and pedestrian amenities on or near concrete bridge rails. Sidewalks in these locations would be a minimum of 10 ft in width. 									

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<ul style="list-style-type: none"> • Pedestrian lighting, enhanced fencing and railings, and other urban amenities would be provided on each overcrossing whenever feasible. Local agency streetscape design guidelines would be continued within Caltrans right-of-way at each overcrossing and interchange whenever feasible. Container trees located on structures would also be provided in locations where the responsible local agency has requested them and agreed to maintain them in perpetuity. • Where possible, bicycle shoulders, lanes, or paths would be provided on both sides of each overcrossing. A minimum shoulder width of four ft would be provided for Class III facilities. • Bridge abutments should be of the same type on all four quadrants to give widened undercrossings a symmetrical appearance. • Bridge widening should be done using box girder construction wherever possible. Girders should be similar in appearance on both sides of the bridge to produce a symmetrical appearance. • In locations where street widening occurs, tie-back walls should be terrain-contoured walls, and receive architectural features consistent with those required for retaining walls and with community values and goals. • Pedestrian sidewalks 10 ft in width (minimum) should be provided at undercrossings on both sides of the street wherever possible. In all cases, existing sidewalk configurations on local streets would be continued across Caltrans right-of-way. • Bicycle shoulders, lanes, or paths should be provided at each undercrossing. The type of facility would consider regional and local planning goals. A minimum shoulder width of 4 ft should be provided for Class III facilities. • Enhanced pedestrian lighting including bridge soffit lighting should be provided at each undercrossing. • Slope paving at undercrossings should be enhanced with deeply textured facing materials such as scored veneer block or natural rock to add visual interest and deter graffiti. • Mitigation measures listed for overcrossing and undercrossing structure symmetry, abutment design, tie-back walls, slope paving, sidewalks, bicycle routes, and streetscape features would also 									

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<p>apply to freeway bridges as appropriate.</p> <ul style="list-style-type: none"> • See-through bridge rails such as Caltrans Type 80 rail should be used on freeway bridges with views to ocean, rivers, lagoons, or other scenic resources, unless noise abatement is necessary. • Pedestrian overcrossings should be a minimum of 15 ft in width. • Pedestrian lighting, enhanced fencing, railings, architectural features, and other urban amenities should be provided on each pedestrian overcrossing. Existing streetscape elements and design themes would be continued within Caltrans right-of-way. • DAR retaining walls should have a 15-ft maximum height, allowing approximately 10 ft of minimum vertical clearance under the connecting ramp structure. • Pedestrian and bicycle traffic on existing overcrossings to be converted to DAR overcrossings should be routed to a separate pedestrian overcrossing structure in the immediate vicinity, if possible. • On structures where pedestrians are present, sidewalks should be 15 ft in width on each side. Bridge barriers, fences, and sidewalks should be designed to provide standard stopping sight distance at DAR termini to enable pedestrians to be visible to drivers. Barrier separations between pedestrian and vehicular traffic should be provided if Caltrans policy requires bridge barriers to adhere to freeway crash standards. • Bicycle shoulders, lanes, or paths should be provided on both sides of each DAR overcrossing open to non-vehicular traffic. The type of facility would consider regional and local planning goals. A minimum shoulder width of 4 ft should be provided for Class III facilities. • Pedestrian lighting, enhanced fencing and railings and other urban amenities should be provided on each DAR local street overcrossing and be consistent with local values and goals. Existing streetscape elements and design themes should be continued within Caltrans right-of-way at each DAR overcrossing. Local streetscape guidelines should be followed. Enhancements or enhancement features such as decorative lighting and street 									

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furniture would be incorporated if local agencies accept permanent maintenance responsibility. Container trees located on structures should also be provided in locations where the responsible local agency has requested them and agreed to maintain them in perpetuity.									
<p>FREEWAY INTERCHANGES</p> <ul style="list-style-type: none"> Continuity of street and pedestrian facilities should be maximized wherever possible by converting existing non-stop freeway ramp entries and exits to ramp termini placed perpendicular to the street. The use of roundabouts should also be considered to create a more balanced relationship between interchange and community by decreasing required roadway width. Establishment of a continuous pedestrian realm on both sides of local streets as they pass through the interchange should be accomplished by utilizing design features such as street trees, pedestrian lighting, landscaped parkways located between sidewalk and curb, enhanced sidewalk paving that continues across freeway ramps, and islands of refuge in street and ramp medians. Pedestrian and transit facilities should conform to SANDAG Pedestrian Design Guidelines and any applicable local streetscape design standards and guidelines. Urban design features such as benches, bollards (short posts to divert or exclude automobiles), directional signage, and trash receptacles should also be included as appropriate. Specific guidelines and/or specific interchange streetscape plans were developed as part of Design Guidelines: I-5 NCC Project. Bicycle facilities should be preserved or upgraded to conform to the San Diego Regional Bike Plan, applicable local standards, and General Plan circulation element goals. Interchange landscaping should reflect the visual character and goals of its locality. Enhanced interchange landscaping should be considered in cases where the responsible local agency would provide maintenance in perpetuity. Entry features should be included as transitional visual elements into local communities where appropriate. Traditional decorative entry signage with text should not be used. Specific interchange landscape 	Section 3.7.4	Design Engineer / Landscape Architect	Design						

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<p>themes may be developed as part of the Design Guidelines: I-5 NCC Project.</p> <ul style="list-style-type: none"> • Detention basins located at freeway interchanges or in areas of high visibility should incorporate the following design features. Basins would be located at least 10 ft from clear recovery areas whenever possible to allow landscape screening to be installed. Basins should appear to be natural landscape features such as dry streambeds or riparian areas. Where possible they should be shaped in an informal, curvilinear manner, incorporate slope rounding, variable gradients, and be similar to the surrounding topography to deemphasize a defined outer edge. Maintenance access drives should be located in unobtrusive areas away from local streets and would consist of inert materials or herbaceous groundcover that is visually compatible with the surrounding landscape. All visible concrete structures and surfaces should be of special design and adhere to the Design Guidelines: I-5 NCC Project. Rock slope protection would consider use of aesthetically pleasing whole material of various sizes. Standpipes and other vertical appurtenances should be placed in unobtrusive locations and be painted an unobtrusive color. Where possible, bio-swales should be located in non-obtrusive areas, be designed to appear as natural features, and incorporate applicable mitigation measures listed above for detention basins. • The use of Caltrans standard freeway appurtenances on local streets should be avoided or minimized wherever possible. Crash cushions, metal beam guardrail, end anchor assemblies, concrete barriers, sign standards, light standards, signal standards, and chain-link fencing are examples of such features that are addressed in the Design Guidelines: I-5 NCC Project. The use of access control fencing at interchanges should be minimized and located in unobtrusive locations when its use is necessary. Electrical control cabinets and other utility boxes should be located in unobtrusive locations away from sidewalks wherever possible. Raised medians should be used wherever possible to allow for pedestrian islands of refuge, create a visual break in the ground plane, and provide space for street tree planting. 									

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<p>MANCHESTER AVENUE TRANSIT CENTER Site amenities for transit users should be provided; such as covered bus shelters, pedestrian lighting, benches, litter receptacles, tree grates, bollards, and bicycle racks. Landscaping and enhanced pedestrian paving would be an integral part of the station features. A sidewalk 10 ft in width should be provided along the west side of the transit center access road from the bus platform to Manchester Avenue. It should be located 6 ft from the back of curb to create a landscaped parkway.</p>	Section 3.7.4	Design Engineer / Landscape Architect	Design						
<p>FREEWAY LANDSCAPE</p> <ul style="list-style-type: none"> The Design Guidelines: I-5 NCC Project contain a landscape concept plan for the project. In general, freeway landscaping would utilize California native plants. The landscape design would be consistent with the character of adjacent community landscape. In communities that are characterized by ornamental landscaping, freeway landscaping would include native plants with an ornamental appearance in an enhanced design. Trees, shrubs, and groundcover would be installed. In less-developed areas of the corridor, drought-tolerant native trees and shrubs would be planted in an informal design. Areas adjacent to native habitat would receive native plantings and hydroseed. Landscape plantings adjacent to habitat would be designed in consultation with the District Biologist. Landscaped areas would be irrigated with an underground automatic system. Reclaimed water would be used wherever possible. A thorough weed abatement/exotic removal program would be implemented prior to hydroseeding and continue through plant establishment. All landscaped areas will have underground automatic sprinkler systems. Since the project would result in the loss of a majority of existing landscaped roadside areas, steps should be taken to create new areas for mitigation replacement planting within the freeway facility at the edge of shoulder, between concrete median and separator barriers, or between barriers and walls wherever the available width allows. Minimum widths for planting are 2 ft between barrier and wall, and 6 ft between median or separator barriers. Where possible, safety barriers at the edge of shoulder should facilitate tree and shrub planting in roadside areas that are too narrow to allow standard clear recovery area planting setbacks to be used. 	Section 3.7.4	Design Engineer / Landscape Architect / Biologist	Design						

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<ul style="list-style-type: none"> Existing median oleanders would be preserved wherever possible. Since freeway widening would disturb the roots of existing plants, the following measures would be implemented. A new automatic irrigation system would be installed in the median and the oleanders would be irrigated and fertilized on a regular basis before, during, and after project construction. The oleanders would be watered, fertilized, and pruned under the direction of a certified arborist prior to the commencement of median grading. The oleanders would remain in place undisturbed during construction. Existing non-vigorous oleanders would be replaced with new oleanders planted from 5-gallon containers at the direction of the Resident Engineer. Oleanders that do not survive during construction or plant establishment would be replaced using oleanders planted from containers. Existing weeds and volunteer plants within the median would be removed. A plant establishment period of one year would be provided. Following plant establishment, a mitigation monitoring period of three years would be implemented to ensure plant survival. In locations where freeway widening brings traffic into close proximity to parallel local streets such as Ida Avenue in Solana Beach, Villa Cardiff Drive, Devonshire Drive, Orpheus Avenue, and Piraeus Street in Encinitas; Avenida Encinas in Carlsbad; and Brooks Street, Garfield Street, and Buena Street in Oceanside, landscape buffers would be created between the freeway and street. Buffers would include elements such as street trees and shrubs, sidewalks, and solid screen walls for access control. Inclusion of some buffers may require local street widths to be adjusted. Implementation of this mitigation measure is contingent on local agency approval and commitment to maintain the streetscape buffer in perpetuity. Slopes would be graded 1:2 or flatter (vertical / horizontal) to support planting and irrigation. Steeper slopes may be possible if they are serrated and contain benches wide enough to accept plants from #15 containers. Grading should utilize techniques such as slope rounding, slope sculpting, and variable gradients to approximate the appearance of natural topography. Implement signage, lighting, and miscellaneous 									

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<p>freeway feature mitigation designs as detailed in the Design Guidelines: I-5 NCC Project.</p> <ul style="list-style-type: none"> • Lighting and signage pedestals on structures should be placed at pilasters or be incorporated in other architectural features, where possible. • Freeway lighting and signage should conform to the Design Guidelines: I-5 NCC Project, including directing lighting away from sensitive habitats and reducing glare. • Concrete lighting and signage pedestals should be designed in such a way that vertical barrier transitions are not required. • Electrical and signal equipment at ramp termini should be placed in visually unobtrusive locations. • Median barriers would receive integral concrete color and the application of a heavy sandblast texture to barrier surfaces visible from the freeway. Heavy sandblast texture would create an irregular surface relief to a depth of 3/8 in. • Narrow landscape areas beyond the gore would be paved for worker safety. Paving would incorporate a tan color and rough surface texture consistent with corridor design themes. Concrete vegetation control would be a tan color. • Signage with movable elements or self-illuminated features such as changeable message signs would be excluded from viewsheds containing scenic resources if at all possible. The DLA would assist in the placement of all such signage. • Access control fencing would be placed in visually unobtrusive locations of interchanges and bridges where possible. It is recommended that it be of special design and consist of enhanced materials where appropriate and maintained by the responsible local agency in perpetuity. • Where possible, retaining walls and soundwalls near right-of-way boundaries would be designed in such a way that access control fencing would not be needed. The “dead” spaces that occur between walls and fences would be avoided if at all possible. • Concrete interceptor ditches would not be placed adjacent to residential property, at interchanges, or adjacent to pedestrian use areas if at all possible. Alternatives such as subterranean drainage placed below finish grade or planted geo-reinforced drainage surfaces would be used. • Detention basins located in areas visible to the 									

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<p>public would incorporate the same mitigation features required for basins located at interchanges.</p> <ul style="list-style-type: none"> • Bio-swales and linear drainage ditches would be designed to appear as natural features and incorporate applicable mitigation measures listed above for detention basins. • Concrete drainage devices located in areas of high visibility would be located, designed, and colored to be unobtrusive in appearance. • Soft surface or segmented hard surface plantable alternatives to concrete ditches and rock slope protection would be utilized in all project areas visible to the public, where possible. • The use of pervious concrete for storm water pollution prevention would be considered. Project features such as interceptor ditches, inlet aprons, gutters, maintenance access roads, maintenance vehicle pullouts, and parking lots could consist of pervious concrete and perhaps reduce the project footprint. • Real estate parcels in whole or in portion that are purchased for freeway widening but not required for use as permanent State right-of-way would be considered as potential opportunities for community pocket parks or public open space. This would be considered at the request of the responsible local agency and relinquished to them to maintain in perpetuity. • Existing overhead utilities that are located near the freeway and requiring relocation due to freeway widening would be relocated underground where possible. 									
Cultural Resources									
<p>Caltrans will undertake efforts to avoid causing impacts to archaeological sites. Prior to construction, a Cultural Resources Treatment Plan will be developed. This plan will include an Archaeological Monitoring Area (AMA) Action Plan and an ESA Action Plan. Combined, these plans would delineate AMA and ESA locations where a “qualified” archaeological monitor and a Native American monitor will be present during construction, identify the individuals involved, and their roles and responsibilities.</p>	Section 3.8.4	Cultural	Pre Construction						
<p>AMA and ESAs will be depicted on the design / construction plans. A letter will be sent to the Resident Engineer’s file, along with a copy of the AMA and ESA Action Plan. The archaeologist and Native American monitor would be present at the pre-construction meeting.</p>	Section 3.8.4	Design / Cultural / Construction	Pre Construction						

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The archaeologist and Native American monitor will work with Caltrans Construction Liaison to accurately delineate the boundaries of those sites requiring the establishment of ESAs. Fencing will be placed around ESA sites, as appropriate. ESA sites will be avoided by all construction activity.	Section 3.8.4	Cultural / Environmental Stewardship	Pre Construction / Construction						
A "qualified" archaeological monitor and a Native American monitor will be present at AMA and ESA locations during construction activities.	Section 3.8.4	Cultural / Construction	Construction						
The construction contract will contain language related to unanticipated discoveries should they be made during construction, including diverting activities away from such finds until an archaeologist could assess their nature and significance. If unanticipated discoveries occur, Section 106 consultation with the SHPO would be reopened, if appropriate. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find.	Section 3.8.4	Design / Cultural / Construction	Construction						
If unanticipated human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities would cease in any area or nearby area suspected to overlie remains, and the County Coroner would be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, the Coroner would notify the Native American Heritage Commission (NAHC), who would then notify the Most Likely Descendant (MLD). At the same time, the person who discovered the remains would contact the District 11 Chief of the Environmental Resources Branch so that they could work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 would be followed, as applicable.	Section 3.8.4	Design / Cultural / Construction	Construction						
Hydrology and Water Quality									
The structures over Los Peñasquitos Creek would be designed to entirely span the floodplain.	Section 3.9.4	Design Engineer	Design						
The replacement of the Sorrento Valley Road Culvert would remove an existing constriction point in Carmel Valley Creek and lower the base floodplain.	Section 3.9.4	Design Engineer	Design						
The replacement of the Batiquitos Lagoon Bridge would reduce an existing constriction point in the lagoon and lower the base floodplain.	Section 3.9.4	Design Engineer	Design						
Standard engineering practices would be used, where feasible, to facilitate drainage.	Section 3.9.4	Design Engineer	Design						
The area affected by construction would be limited through utilization of barriers or fences to protect sensitive areas.	Section 3.9.4	Design Engineer / Resident Engineer	Design / Construction						

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ESAs would be designed to demarcate and protect floodplain habitats.	Section 3.9.4	Design Engineer / Resident Engineer	Design / Construction						
Best Management Practices (BMPs) would be implemented to control erosion and runoff and address potential water quality impacts during the planning and design, construction, and operational stages.	Sections 3.9.4 and 3.10.4	Design Engineer / Resident Engineer	Design / Construction						
Caltrans would implement a program, defined by the Statewide Storm Water Management Plan (SWMP), to reduce the discharge of pollutants to the storm water drainage systems that serve the highway and highway-related properties, facilities, and activities.	Section 3.10.4	Design Engineer / Resident Engineer	Design / Construction						
Complete a Storm Water Data Report (SWDR), which summarizes the storm water decisions made by the Project Development Team, at the beginning of the project and update the SWDR as the project progresses through design. In the final SWDR, include exhibits showing tributary drainage areas, percentages of "treatment," water quality impairments and types of design pollution prevention, construction and maintenance BMPs that will be incorporated into the project.	Section 3.10.4	Design Engineer	Design						
<p>Short-term impacts to water quality during the construction phase would be prevented / minimized through the use of Construction Site BMPs, as required under the Construction General Permit. A combination of erosion and sediment control BMPs would be used to address both storm water and non-storm water discharges during construction. Construction Site BMPs that would be implemented as appropriate for the project cover the following categories:</p> <ul style="list-style-type: none"> • Temporary Soil Stabilization • Temporary Sediment Control • Wind Erosion Control • Tracking Control • Non-Storm Water Management • Waste Management and Materials Pollution Control <p>More information on the various types of BMPs covered under each one of these categories is found in Caltrans Construction Site BMPs Manual.</p>	Section 3.10.4, Caltrans Construction Site BMPs Manual	Design Engineer / Resident Engineer	Design / Construction						
Long term impacts during Caltrans operation and maintenance of its facilities would be prevented / minimized through the use of Design Pollution Prevention (DPP) BMPs, Treatment BMPs, and Maintenance BMPs.	Section 3.10.4	Design Engineer / Resident Engineer	Design / Construction						
Maintenance BMPs would be ongoing for the life of the facility, and are required to be conducted in accordance with the Caltrans Storm Water Quality Handbook, Maintenance Staff Guide (Guide).	Section 3.10.4	Design Engineer / Resident Engineer / Operations	Design / Construction / Post-construction						

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The peak flow rate, runoff velocities, and erosive characteristics of the soils in the area would be assessed with regard to downstream watercourses to determine potential impacts and appropriate mitigation, if required.	Section 3.10.4	Design Engineer	Design						
The project would preserve the existing vegetation outside the work areas, stabilize slopes with vegetative cover, and keep the total paved area to a practical minimum.	Section 3.10.4	Design Engineer / Resident Engineer	Design / Construction						
DPP BMPs would be implemented to prevent downstream erosion, stabilize disturbed soil areas, and maximize vegetated surfaces consistent with Caltrans policies. The selection of the specific DPP BMPs is an iterative process that begins at the planning stages and is refined during the design phase. DPP BMPs that would be implemented as appropriate for the project include: <ul style="list-style-type: none"> • Consideration of Downstream Effects Related to Potentially Increased Flow • Preservation of Existing Vegetation • Concentrated Flow Conveyance Systems <ul style="list-style-type: none"> ○ Ditches, Berms, Dikes, and Swales ○ Overside Drains ○ Flared Culvert End Sections ○ Outlet Protection / Velocity Dissipation Devices • Slope / Surface Protection Systems <ul style="list-style-type: none"> ○ Vegetated Surfaces ○ Hard Surfaces 	Section 3.10.4	Design Engineer / Resident Engineer	Design / Construction						
Review and propose low impact development (LID) features throughout the project footprint. Final selection will be made during final design once drainage, grading and other design features are determined and used as a basis for feasibility and siting locations. Features that function as LID measures include, but are not limited to: <ul style="list-style-type: none"> • Surface vegetation, such as biofiltration swales and strips • Soil amendments, such as compost and surface roughening • Subsurface storage, such as dry-wells, infiltration trenches, or swales underlain with permeable soil layers • Small detention areas, such as cisterns, traps, and check dams • Pervious materials, such as paving stone and porous concrete, when used in lieu of impervious materials at locations outside the highway prism • Disconnected drainage that relies upon overland flow rather than pipe networks to convey runoff to discharge locations 	Section 3.10.4	Design Engineer	Design						

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<ul style="list-style-type: none"> Contour grading, grading that follows natural flow paths and terrain with an emphasis upon slope rounding and gradual elevation changes. 									
<p>In conformance with the recently adopted statewide permit (Order 2012-0011-DWQ effective date of July 1, 2013), conduct a risk-based approach to ensure the project would not cause a decrease in lateral (bank) and vertical (channel bed) stability in receiving stream channels. Assess pre-project channel stability and implement mitigation measures that are appropriate to protect structures and minimize stream channel bank and bed erosion. Include discussion of hydromodification as well as LID and other BMPs in the SWDR.</p>	Section 3.10.4	Design Engineer	Design						
<p>Treatment BMPs are required under the SWMP to prevent or minimize the long-term potential impacts from Caltrans facilities or activities. The following approved treatment BMPs are considered to be technically and fiscally feasible for all of the build alternatives:</p> <ul style="list-style-type: none"> Biofiltration Systems Infiltration Devices Detention Devices Dry Weather Flow Diversions Gross Solid Removal Devices Multi-Chambered Treatment Train Wet Basin Traction Sand Traps Media Filters 	Section 3.10.4								
<p>Preliminary locations of some of the treatment BMPs are shown on the Project Features Maps (<i>Figures 2-3.3, Sheets 1 through 68</i>). If the proposed project proceeds to the design phase, the locations of these treatment BMPs would be further evaluated to determine feasibility in relation to right-of-way limitations, environmental constraints, or hydraulic capacity. In areas where treatment BMPs have been identified, but cannot be incorporated due to above mentioned reasons, the equivalent minimum would be identified and implemented. In addition, vegetation would be maximized and every effort would be made to ensure the successful establishment of landscaping and erosion control throughout the project limits. The project would also consider any future treatment BMPs that might be approved by Caltrans from the ongoing research and monitoring program.</p>	Section 3.10.4	Design Engineer / Landscape Architect	Design						
<p>The District Erosion Control Specialist, in coordination with the project Biologist and Landscape Architect, would determine the appropriate planting / seeding mix to ensure</p>	Section 3.10.4	Design Engineer / Landscape Architect / Biologist	Design / Construction						

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that proposed vegetation is consistent with existing vegetation within the corridor, as well as any specific requirements by local entities.									
Minimization measures would be implemented during construction at crossings over six designated "navigable" waterways. Minimization measures at waterways can typically include, but are not limited to: flagging the perimeter of the proposed impact area to restrict access; training all contractors and construction personnel on sensitive resources, such as navigable vessel use; scheduling construction outside of breeding season(s) or conducting pre-construction surveys for presence / absence of sensitive species; restricting equipment, material storage, and staging to disturbed areas; designing the project to avoid / reduce storm water impacts where feasible, or otherwise control sediment with silt fencing, gravel bags, hay bales, and fiber rolls; controlling fugitive dust; restricting changing oil and/or refueling to designated areas; constructing velocity dissipation structures at drainage outlets; directing all lighting to the construction area during night time construction; and temporarily diverting water around the work area by use of sandbags, gravel dams, or cofferdams.	Section 3.10.4	Design Engineer / Biologist / Resident Engineer	Design / Construction						
Geology / Soils / Seismic / Topography									
For preliminary design purposes, soils at all the lagoons and river valleys would be assumed to be predisposed to liquefaction.	Section 3.11.4	Design Engineer	Design						
The use of large retaining structures to accommodate embankment widening over the lagoons would be avoided when possible.	Section 3.11.4	Design Engineer	Design						
Drainage for proposed improvements would be constructed in accordance with Caltrans Highway Design Manual.	Section 3.11.4	Design Engineer / Resident Engineer	Design / Construction						
Impacts to water quality would be minimized by directing surface runoff away from the top of slopes, and also by not allowing runoff to discharge over the top of slopes.	Section 3.11.4	Design Engineer / Resident Engineer	Design / Construction						
Surface water would be conveyed offside by appropriate erosion-reducing devices.	Section 3.11.4	Design Engineer / Resident Engineer	Design / Construction						
Where groundwater is present, subsurface drainage devices would be installed, if applicable.	Section 3.11.4	Design Engineer / Resident Engineer	Design / Construction						
Settlement waiting periods would be employed at all soft soil locations before establishment of the final grade.	Section 3.11.4	Resident Engineer	Construction						
Caltrans personnel would be present during project construction to observe all cuts, foundation subgrade, and embankment subgrade to assure that all appropriate provisions are enforced. If unanticipated subsurface conditions are encountered, a geotechnical representative	Section 3.11.4	Resident Engineer	Construction						

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would be notified to make additional recommendations to the Resident Engineer, who in turn would direct the contractor. Instrumentation for measuring settlement or slope distress, and periodic surveying for ground movement, would be included during construction in areas where the potential for ground movement or failure exists.									
Grading and roadway work would be performed in accordance with Caltrans Standard Plans and Specifications.	Section 3.11.4	Resident Engineer	Construction						
To avoid surface erosion, which may supply an unacceptable sediment load to the watershed, temporary slopes would not be left unprotected throughout the wet season.	Section 3.11.4	Resident Engineer	Construction						
Concentrated flows would not be allowed on slopes.	Section 3.11.4	Resident Engineer	Construction						
Appropriate construction scheduling, soil trackifiers, geosynthetic mats, and plastic sheeting are some of the techniques that may be used to avert excessive slope erosion.	Section 3.11.4	Resident Engineer	Construction						
Paleontology									
A qualified principal paleontologist (M.S. or Ph.D. in paleontology or geology familiar with paleontological procedures and techniques) would be retained to be present at pre-grading meetings to consult with grading and excavation contractors.	Section 3.12.4	Paleontologist	Construction						
A paleontological monitor, under the direction of the qualified principal paleontologist, would be on site to inspect cuts for fossils at all times during original grading involving sensitive geologic formations.	Section 3.12.4	Paleontological Monitor	Construction						
When fossils are discovered, the paleontologist (or paleontological monitor) would recover them. Construction work in these areas would be halted or diverted to allow recovery of fossil remains in a timely manner.	Section 3.12.4	Paleontologist / Paleontological Monitor	Construction						
Fossil remains collected during the monitoring and salvage portion of the mitigation program would be prepared, sorted, and cataloged.	Section 3.12.4	Paleontologist / Paleontological Monitor	Construction						
Once the grading plan is finalized, the types, depth, and locations of the construction activities would be analyzed to finalize the Paleontological Mitigation Monitoring Plan (PMMP), prepared by a qualified principal paleontologist.	Section 3.12.4	Design Engineer / Paleontologist	Design						
A Paleontological Mitigation Monitoring Report (PMMR) would be prepared by a qualified principal paleontologist to document the results of the mitigation program, including construction monitoring, fossil salvage laboratory preparation of salvaged specimens, curation of prepared specimens, and storage of curated specimens.	Section 3.12.4	Paleontologist	Post-construction						
Although all fossils collected remain the property of the	Section 3.12.4	Paleontologist	Post-						

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State, the collection must be properly curated at an approved facility (preferably local to the project location) and preserved for future researchers. A complete set of field notes, geologic maps, stratigraphic sections, and a copy of the final report should be curated with the fossils.			construction						
Hazardous Waste / Materials									
Wherever possible, the project alternatives follow the existing I-5 alignment to avoid and/or minimize impacts from hazards and hazardous materials. In particular, avoidance of the gasoline stations and soil excavation at Manchester Avenue, Birmingham Drive, Palomar Airport Road, Tamarack Avenue, and Carlsbad Village Drive would be considered.	Section 3.13.4	Design Engineer	Design						
Soil excavated from agricultural land and nurseries may require reuse or proper off-site disposal, with further testing necessary at Manchester Avenue, between Birmingham Drive and Palomar Airport Road, and at Cannon Road.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
Soils from landfills near Piraeus Street may be reused or disposed as non-hazardous material at the appropriate landfill location; however, the Maxson Street site would be avoided. Further hazardous waste investigation may be necessary on individual parcels to be acquired.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
Environmental Engineering staff would be kept informed of parcel takes and changes in scope or design since further hazardous waste investigation may be necessary on individual parcels to be acquired.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
Since there are chemical constituents present in soil and groundwater within the I-5 corridor, soil excavation activities would be performed under the guidelines of a site-specific Soil Management Plan and Health and Safety Plan.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
The Department of Toxic Substances Control (DTSC) lead variance would be followed for ADL soil excavated in the median. Soil in the median along I-5 to a depth of two ft is hazardous with regard to soluble ADL concentrations. This soil may be reused on site in accordance with a DTSC lead variance issued to Caltrans. If this criterion cannot be met, then disposal of ADL soil would be a necessary at a Class I landfill. Soil excavated as a whole along the shoulders may be reused as clean material with regard to ADL, unless soil adjacent to the shoulder is segregated from the whole. The DTSC lead variance will apply for segregated soil from the shoulder.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
A NPDES permit would be obtained, which would include measures for impacts to service stations. If soil from abutment excavations at Via de la Valle, Birmingham Drive, Brooks Street, Palomar Airport Road, Carlsbad Village	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						

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Drive, or Mission Avenue would be exported, however, the soil may require further characterization for petroleum hydrocarbons, volatile organic compounds, or semi-volatile organic compounds to evaluate the proper disposal method.									
Although investigation near the Olympus and Maxson Street landfills did not encounter wastes associated with the landfills, it is recommended that widening activities in the vicinity of these landfills be moved to the west to avoid the landfill sites. If parcels were acquired at these landfill locations, excavated soil would require further characterization to evaluate the proper disposal method.	Section 3.13.4	Design Engineer	Design / ROW Acquisition						
If soil from locations containing farmland or nurseries is exported, further characterization for pesticide / herbicides would be warranted to evaluate the proper disposal method.	Section 3.13.4	Design Engineer / Resident Engineer	Design / Construction						
Because historical chemical spill locations along I-5 are unknown, a contingency should be written into the construction contract to address this potential hazardous waste issue.	Section 3.13.4	Design Engineer	Design						
Asbestos and lead paint may be in structures demolished during construction and must be handled and disposed of properly.	Section 3.13.4	Resident Engineer	Construction						
Treated wood waste in sign and guardrail posts must be handled and disposed of properly.	Section 3.13.4	Resident Engineer	Construction						
Air Quality									
Air Quality measures to minimize construction-related emissions include: <ul style="list-style-type: none"> The construction contractor would comply with Caltrans' Standard Specifications in Section 14(2010). Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in CA Code of Regulations Title 17, Section 93114. Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads. 	Section 3.14.4	Resident Engineer	Construction						
<ul style="list-style-type: none"> Construction-related impacts from fugitive dust, PM₁₀, and PM_{2.5} would be minimized by the 	Section 3.14.4	Resident Engineer	Construction						

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<p>following strategies:</p> <ul style="list-style-type: none"> • Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18. • Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right-of-way line, depending on local regulations. • Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas. • Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions. • Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities. • Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic. • Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation. • Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter. • Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues, and may need to use controls such as dampened straw. 									
<p>To minimize exposure to diesel particulate emissions, the following measures would be implemented:</p> <ul style="list-style-type: none"> • Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly. • Near sensitive air receptors, establish 	Section 3.14.4	Design Engineer / Resident Engineer	Design / Construction						

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Environmentally Sensitive Areas or their equivalent within which construction activities involving the extended idling of diesel equipment would be prohibited, to the extent feasible.									
Noise The following control measures would be implemented in order to minimize noise disturbances at sensitive receptors during periods of construction: <ul style="list-style-type: none"> All equipment items would have manufacturers' recommended noise abatement measures, such as mufflers, engine enclosures, and engine vibration isolators intact and operational All construction equipment would be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices Idling equipment would not be allowed A construction noise-monitoring program would be implemented to limit impacts Noisier operations would be planned during times least sensitive to receptors Rests between construction activities would be planned so that noisy activities would be followed by more quiet activities Noise levels would be kept relatively uniform and impulsive noises avoided Good public relations would be maintained with the community to minimize objections to the unavoidable construction impacts. Frequent activity updates of all construction activities would be provided. Ongoing communication would occur between the Caltrans Resident Engineer, the Oceanside Unified School District, and Oceanside High School. 	Section 3.15.14	Design Engineer / Resident Engineer	Design / Construction						
Design and install noise abatement at the locations recommended in the Final NADR.	Section 3.15.14	Design Engineer / Resident Engineer	Design / Construction						
Energy Efforts to minimize energy consumption during construction include: <ul style="list-style-type: none"> Public awareness campaigns to encourage carpooling and commuting during non-peak traffic hours The recycling of materials, such as, damaged metal beam / guardrail, light standards, pipes, bridge materials, and/or used rebar salvaged as metal scrap The use of recycled materials, such as asphalt and 	Section 3.16.14	Design Engineer / Public Information Officer / Resident Engineer	Design / Construction						

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concrete roadway materials through creation of road-base materials after crushing and grinding <ul style="list-style-type: none"> • Reuse of soil and vegetation where practicable • The salvage of material such as roadside sign posts, and sign structures, chain link fence fabric, lighting standards, and/or traffic signal standards and appurtenances • The use of energy-efficient construction vehicles 									
The following measures relevant to energy use during operations are consistent with other discussions in this Final EIR/EIS: <ul style="list-style-type: none"> • Incorporate bicycle-friendly intersections at interchange ramps, in coordination with the responsible local jurisdictions • Incorporate low water use landscaping • Develop and implement a comprehensive TMP to increase driver awareness, ease congestion, and minimize delay during construction (see Traffic measures.) 	Section 3.16.14	Design Engineer / Landscape Architect / Traffic Engineer / Resident Engineer	Design / Construction						
Natural Communities									
BO1. To minimize impacts to all habitats, 2:1 slopes will be used along the freeway and retaining walls will be used on cut slopes.	Section 3.17.3 and Appendix O	Design Engineer	Design						
BO2. No riprap will be used in channel bottoms for bridge construction to minimize impacts to aquatic habitats.	Section 3.17.3 and Appendix O	Design Engineer	Design						
BO3. Retaining walls 6 feet or lower in height will be used as feasible on fill slopes within lagoons to minimize impacts to aquatic habitats from the bike / pedestrian path. Retaining walls will also be used as feasible on cut slopes through coastal mesas to minimize project impacts to sensitive upland habitats.	Section 3.17.3 and Appendix O	Design Engineer	Design						
BO4. The I-5 lagoon bridges will be lengthened to accommodate a channel bottom width of at least 261, 134, and 105 feet at San Elijo, Batiquitos, and Buena Vista Lagoons, respectively, consistent with the recommendations in the lagoon bridge optimization studies (Moffatt & Nichol 2012a and b, Everest International Consultants, Inc. 2012).	Appendix O	Design Engineer	Design						
BO5. Project work within open water habitat in the San Luis Rey River in occupied goby critical habitat will be minimized to approximately 500 square feet of permanent impacts from bridge pilings, 0.3 acre of bridge shading, and 0.2 acre of temporary impacts. Cofferdams at bridge footings will be used such that project construction will not require diversion or	Section 3.17.3 and Appendix O	Design Engineer / Resident Engineer	Design / Construction						

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relocation of the active channel. The project will not conduct actions that will result in the breach of seasonal San Luis Rey River estuary berms. Construction berms will not be used within the San Luis Rey River and all lagoons to minimize impacts on the active channel and avoid sedimentation impacts.									
BO6. Project landscaping will follow the provisions set forth in Executive Order 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway Right-of-ways. No invasive species listed in the National Invasive Species Management Plan, the State of California Noxious Weed List, or the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory list will be included in the landscaping plans for the proposed project. Landscaping will not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas will be directed away from adjacent native habitats and contained and/or treated within the development footprint.	Section 3.22.4 and Appendix O	Design Engineer / Landscape Architect / Biologist	Design						
BO7. Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the roadway, Park and Rides, and other project facilities, and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats. Lighting adjacent to lagoons will be fitted with bird control spikes to ensure that raptors will not be able to use lighting as a perch to prey on listed bird species. With the exception of pathway lighting for the North Coast (NC) Bike Trail, there will be no night lighting of trails within lagoons, wildlife corridors, and sensitive habitat areas. Pathway lighting for the NC Bike Trail will be of the lowest illumination necessary for safety and will be designed to avoid light spill into adjacent sensitive habitats and wildlife movement areas. Caltrans will coordinate with the CFWO regarding the design of pathway lighting for the NC Bike Trail to ensure that the lighting will not negatively affect wildlife movement in the project area. Caltrans will review the permanent lighting plans and then submit them to the CFWO for review and approval.	Section 3.17.3 and Appendix O	Design Engineer / Biologist	Design						
BO8. All pedestrian trails and bike paths will be fenced in	Section 3.17.3	Design Engineer /	Design						

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a manner that will encourage users to remain on the trails and paths. In areas where wildlife movement is expected, such as along river and lagoon bridge benches, fencing will be designed in a manner that will encourage users to remain on the trails and paths but which will not preclude wildlife from moving through habitat areas and accessing pedestrian benches during flood events (e.g., [three rail] spilt rail fencing). Signage will be posted and maintained at conspicuous locations to inform users about adjacent sensitive habitats and species as well as access restrictions. Plans for fencing and signage for each phase of project construction will be submitted to the CFWO for approval at least 5 days prior to initiating project impacts in each phase. Fencing and signage will be installed prior to completion of each phase of project construction.	and Appendix O	Biologist							
BO9. The following wildlife connectivity features will be constructed to ensure that ecosystem functions are maintained for the benefit of listed species: a. At Carmel Creek, a 10-foot-wide bench will be constructed at the south bridge abutment, and the existing 8-foot-wide bench at the north bridge abutment will be maintained. The south bench will be modified to allow for usage by pedestrians and bikes and is expected to provide for wildlife usage at night and during flood events. The project will elevate the Sorrento Valley Road Bike Path Connector to the west of the bridge and remove sediment under and southwest of the bike path to remove an existing constraint to flood flows and to improve wildlife connectivity from east to west. b. At the proposed bridge over Los Peñasquitos and Soledad Creeks, the existing bridge provides for a substantial dry movement area with a 2:1 slope to the north, which will be maintained. A new 16-foot-wide bench may be added at the south bridge abutment for both pedestrians and wildlife depending upon clearance. c. At San Dieguito Lagoon, the existing bridge provides for a substantial dry movement area to the south, and an existing 12-foot-wide pedestrian pathway will be maintained to the north that is expected to provide for wildlife movement at night and during flood events.	Section 3.17.3 and Appendix O	Design Engineer / Biologist / Biological Monitor	Design / Construction / Post-construction						

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<p>Existing pier walls constrain visibility and openness under the bridge. If possible, Caltrans will cut openings in existing and proposed pier walls to improve visibility and openness. The south bank of the channel will not be armored.</p> <p>d. At San Elijo Lagoon, a 12-foot-wide wildlife bench will be constructed to the south, and existing pedestrian pathways to the north and south will be maintained and are expected to provide for wildlife movement at night and during flood events.</p> <p>e. At Batiquitos Lagoon, a 16-foot-wide wildlife bench will be constructed on the south bridge abutment and a 16-foot wide pedestrian path will be maintained on the north bridge abutment that is expected to provide for wildlife movement at night and during flood events.</p> <p>f. At Agua Hedionda Lagoon, 16-foot-wide benches for pedestrian and wildlife use will be constructed at both the north and south bridge abutments.</p> <p>g. At Buena Vista Lagoon, 16-foot-wide benches for wildlife movement will be constructed at both the north and south bridge abutments.</p> <p>h. At the San Luis Rey River, a pedestrian trail will be constructed mid-slope on the north bridge abutment that is expected to provide for wildlife movement at night and during flood events.</p> <p>i. Bridges where wildlife movement is expected will use columns rather than pier walls to improve visibility and openness and encourage usage by wildlife, including Carmel Creek, Los Peñasquitos and Soledad Creeks, and all lagoons (with the exception of San Dieguito Lagoon and the San Luis Rey River where pier walls may be required for stability).</p> <p>j. To the maximum extent feasible, rock slope protection will be avoided at wildlife benches. If rock slope protection is required, modifications (e.g., small pebble, dirt, soil covered rip rap, or grouted movement pathways) will be made such that animals of all sizes can use the wildlife benches.</p> <p>k. Monitoring will be conducted on the effectiveness of the wildlife connectivity features such that the effectiveness of wildlife connectivity features can be improved and to</p>									

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<p>inform decision-making for future projects. This monitoring will include research on the degree to which various undercrossings are used by target species. Remote cameras will be used to document use of wildlife undercrossings. Monitoring will be conducted over a minimum of 5 years following construction of each wildlife connectivity feature to allow wildlife to become accustomed to the wildlife connectivity features. Annual monitoring reports, including photographs, modifications made to wildlife connectivity features to improve their functionality, and recommendations, will be provided to the CFWO each year for the duration of the 5-year monitoring period following each phase of project construction.</p> <p>I. Wildlife benches will be maintained in perpetuity to ensure that wildlife connectivity in the project area is not lost over time. The wildlife connectivity plan will include a detailed explanation of how wildlife benches will be maintained and how the maintenance will be funded.</p>									
<p>BO10. Caltrans will submit final project design plans to the CFWO for review and approval, based on the draft plans dated August 22, 2012, with the following revisions: 1) measures, such as the use of fabric weed barriers and mulch, will be incorporated into the design plans to limit the establishment and spread of invasive species along the oleander median; 2) gateway undercrossings and overcrossings adjacent to lagoons will not include decorative night lighting or vertical features that may be used as a perch by raptors to prey upon listed species; 3) the design and elevation of suspended pedestrian bridges will not impede access by maintenance dredges at lagoons; 4) invasive species will be removed from planting palettes; 5) plans will clearly show that areas of temporary impact to native habitats will be replanted with native species; and 6) plans will specify that the height of vegetation planted near coastal lagoons will be limited (e.g., coastal sage and chaparral species up to approximately 8 feet in height) to prevent perching and predation by raptors on listed species.</p>	Section 3.17.3, Section 3.22.4 and Appendix O	Design Engineer / Landscape Architect / Biologist	Design						
<p>BO11. Because the project is expected to start in 2014 and</p>	Section 3.21.4	Biologist	Design / Pre-						

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be phased over approximately 21 years, Caltrans will conduct updated surveys for the gnatcatcher, rail, and manzanita within 1 year prior to the commencement of vegetation clearing and construction activities for each project phase to ensure that survey information remains up to date. FHWA and Caltrans acknowledge that Section 7 consultation will be reinitiated if survey results indicate that additional impacts to these species may occur beyond those addressed in this biological opinion.	and Appendix O		construction						
BO12. <i>Caulerpa taxifolia</i> surveys will be completed before and after construction at each of the lagoons to ensure there is no infestation within project limits. If <i>Caulerpa taxifolia</i> is found, measures will be implemented to eradicate it from the area.	Section 3.22.4 and Appendix O	Biologist	Pre-construction / Post-construction						
BO13. Prior to construction equipment entering open water habitat in the San Luis Rey River, all gobies within the project impact footprint will be captured and relocated to a proximal and safe location, and gobies will be excluded from re-entering the project impact footprint. Caltrans will submit a goby capture, relocation, and exclusion plan to the CFWO for review and approval. The plan will include relocation of native species and removal of non-native species captured with gobies during the relocation effort. Capture methods will follow commonly accepted techniques for fish capture such as seining. The plan will be prepared and implementation will be overseen by a CFWO-approved biologist knowledgeable of goby biology and ecology.	Section 3.21.4 and Appendix O	Biologist	Pre-construction / Construction						
BO14. Prior to construction in areas with manzanita, all manzanita in the project impact footprint (including the approximately 6 individuals currently known and any other individuals found in updated surveys) will be salvaged and translocated to the Dean property, which is near the currently known salvage locations. Caltrans will submit a manzanita translocation plan to the CFWO for review and approval. The plan will be prepared and implementation will be overseen by a CFWO-approved biologist knowledgeable of manzanita biology and ecology and translocating sensitive plant species. There has been limited success with translocation of this species; therefore, seed will be collected prior to impacts and used to	Section 3.21.4 and Appendix O	Biologist	Pre-construction / Construction / Post-construction						

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propagate additional plants at a facility that has experience working with manzanita and specializes in the propagation of native plants. The manzanita plants grown from seed will also be planted at the Dean property. A field review will be conducted with the CFWO to review and approve the locations where the manzanita plants will be planted on the Dean property. The translocated manzanita population will be monitored for a minimum of 5 years to document success or failure of the translocation efforts.									
BO15. The clearing and grubbing of native wetland and riparian habitats will occur between September 16 and March 14 and the clearing and grubbing of native upland habitats for the project will occur between September 1 and February 14, to avoid the rail and gnatcatcher breeding seasons, respectively [or sooner than September 16 or September 1, if a biologist knowledgeable of gnatcatcher and rail biology and ecology approved by the CFWO demonstrates to the satisfaction of the CFWO that all rail or gnatcatcher nesting is complete]. Caltrans will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts.	Section 3.21.4 and Appendix O	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction						
BO16. Pile driving for bridge construction near the lagoons and San Luis Rey River will be completed between September 16 and February 14 to minimize construction noise impacts to rail and gnatcatcher breeding. Pile driving may commence earlier in the fall if a biologist knowledgeable of gnatcatcher and rail biology and ecology approved by the CFWO demonstrates to the satisfaction of the CFWO that all rail and gnatcatcher breeding is complete within the area where construction noise will exceed ambient levels as a result of pile driving. Caltrans will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts.	Section 3.21.4 and Appendix O	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction						
BO17. Noise barriers will be installed at the edge of temporary impact areas near sensitive resources where feasible depending on inundation and effective heights required for walls. Noise walls would not be effective where fill slopes are	Section 3.21.4 and Appendix O	Design Engineer / Biologist / Resident Engineer	Design / Construction						

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significantly higher than impact areas.									
BO18. All construction equipment used for the project will be equipped with properly operating and maintained mufflers.	Section 3.21.4 and Appendix O	Resident Engineer	Construction						
BO19. During in-water bridge construction activities at all lagoons and the San Luis Rey River, bubble curtains or other methods to minimize acoustical impacts to aquatic species will be implemented. These measures will be developed in coordination with the CFWO when project design and construction methodology is further developed.	Section 3.21.4 and Appendix O	Design Engineer / Biologist / Resident Engineer	Design / Construction						
BO20. If nighttime construction is necessary, all lighting used at night for project construction (e.g., staging areas, equipment storage sites, roadway) will be selectively placed and directed onto the roadway or construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.	Section 3.21.4 and Appendix O	Biologist / Resident Engineer / Biological Monitor	Design / Construction						
BO21. Appropriate best management practices (BMPs) will be used to control erosion and sedimentation and to capture debris and contaminants from bridge demolition and construction to prevent their deposition in coastal lagoons and waterways. No sediment or debris will be allowed to enter lagoons, creeks, rivers, or other drainages. All debris from the demolition and construction of bridges will be contained so that it does not fall into channels. Appropriate BMPs will be used during construction to limit the spread of resuspended sediment and contain debris. These may include cofferdams, blasting mats, silt curtains, turbidity curtains and/or other barriers. Water within cofferdams will not be returned to the San Luis Rey River or lagoons until it is clear and clean. This may be accomplished through the use of desiltation tanks or other appropriate measures. Collected sediments will be removed from the site and disposed of properly. BMPs (e.g., gravel bags) will be used at the discharge point to avoid erosion.	Section 3.17.3 and Appendix O	Design Engineer / Resident Engineer	Design / Construction						
BO22. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.	Section 3.20.4 and Appendix O	Design Engineer / Resident Engineer	Design / Construction						
BO23. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will	Section 3.17.3 and Appendix O	Design Engineer / Resident Engineer	Design / Construction						

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be restricted to designated areas that are a minimum of 100 feet from drainages / lagoons and associated plant communities, to preclude adverse water quality impacts. Fuel cans and fueling of tools will not be allowed inside the drainages.									
BO24. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate BMPs.	Section 3.17.3 and Appendix O	Resident Engineer	Construction						
BO25. Cationic polymers are attracted to the hemoglobin in fish gills and can cause suffocation at relatively low concentrations. Cationic polymers will not be used for dust control.	Section 3.20.4 and Appendix O	Design Engineer / Resident Engineer	Design / Construction						
BO26. Bioswales and detention basins will be placed to avoid impacts to wetlands (e.g., these features will not be located at the base of slope within lagoons).	Section 3.17.3 and Appendix O	Design Engineer / Biologist	Design						
BO27. The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site. All spoils and material disposal will be disposed of properly.	Section 3.17.3 and Appendix O	Resident Engineer	Construction						
BO28. If fill must be borrowed from or disposed of offsite, the construction contractor will identify any necessary borrow and disposal sites and provide this information to Caltrans for review. Caltrans will review borrow and disposal site information and submit the information to the CFWO. If borrow or disposal activities may affect a listed species or critical habitat, FHWA/Caltrans will reinitiate Section 7 consultation. ⁵ ⁵ Under the current process, FHWA would reinitiate formal consultation and Caltrans (acting for FHWA) would reinitiate informal consultation.	Section 3.17.3 and Appendix O	Design Engineer / Biologist / Project Management / Resident Engineer	Construction						
BO29. Contractors and construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint.	Section 3.17.3 and Appendix O	Resident Engineer	Construction						
BO30. Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or deplete wildlife in adjacent habitats.	Section 3.20.4 and Appendix O	Resident Engineer	Construction						
BO31. A CFWO-approved biologist (Biological Monitor ⁶) will be on site during: a) initial clearing and grubbing; and b) weekly during project construction within 500 feet of offsite gnatcatcher, rail, goby, and manzanita habitat to ensure compliance with all conservation measures. Caltrans will submit the biologist's name, address, telephone number, and	Section 3.21.4 and Appendix O	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction						

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<p>work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts. The contract of the Biological Monitor will allow direct communication with the CFWO at any time regarding the proposed project. The Biological Monitor will be provided with a copy of this consultation. The Biological Monitor and a Caltrans Project Biologist⁷ will be available during pre-construction and construction phases to review grading plans, address protection of sensitive biological resources, monitor ongoing work, and maintain communications with the Resident Engineer to ensure that issues relating to biological resources are appropriately and lawfully managed. The Biological Monitor will perform the following duties:</p> <p>a. Perform a minimum of three focused preconstruction surveys, on separate days, to determine the presence of gnatcatchers or rails in the project impact footprint. Surveys will begin a maximum of 30 days prior to performing vegetation clearing / grubbing, and one survey will be conducted the day immediately prior to the initiation of vegetation clearing. If any gnatcatchers or rails are found in the project impact footprint, the Biological Monitor will direct construction personnel to begin vegetation clearing / grubbing in an area away from the gnatcatchers and/or rails. It will be the responsibility of the Biological Monitor to ensure that gnatcatchers and rails will not be injured or killed by vegetation clearing / grubbing. The Biological Monitor will also record the number and location of gnatcatchers and rails disturbed by vegetation clearing / grubbing. Caltrans will notify the CFWO at least 7 days prior to vegetation clearing / grubbing to allow the CFWO to coordinate with the Caltrans Project Biologist on potential bird flushing activities;</p> <p>b. Oversee installation of and inspect the construction fencing and erosion control measures a minimum of once per week to ensure that any breaks in the fencing or erosion control measures are repaired immediately and that rails have not entered the project impact footprint;</p> <p>c. Implement the goby capture, relocation and</p>									

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<p>exclusion plan; and manzanita translocation plan;</p> <p>d. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;</p> <p>e. Train all contractors and construction personnel on the biological resources associated with the project and ensure that training is implemented by construction personnel. At a minimum, training will include: 1) the purpose for resource protection; 2) a description of the gnatcatcher, rail, goby, and manzanita and their habitats; 3) the conservation measures that should be implemented during project construction to conserve the gnatcatcher, rail, goby, and manzanita, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); 4) environmentally responsible construction practices; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with violating the Act;</p> <p>f. Request that the Resident Engineer halt work, if necessary, and confer with the Caltrans Project Biologist and the CFWO to ensure the proper implementation of species and habitat protection measures. The Caltrans Project Biologist will report any noncompliance issue to the CFWO within 24 hours of its occurrence;</p> <p>g. Monitor the project site immediately prior to and during construction to identify the presence of invasive weeds and recommend measures to avoid their inadvertent spread in association with the project. Such measures may 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 a lagoon area to minimize the spread of invasive weeds;</p> <p>h. Submit monthly email reports (including photographs of impact areas) to the Caltrans Project Biologist during clearing of, and</p>									

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<p>construction within, 500 feet of gnatcatcher, rail, goby, and manzanita habitats. The monthly reports will document that authorized impacts were not exceeded and general compliance with all conditions. The reports will also outline the location of construction activities, the type of construction that occurred, and equipment used. These reports will specify numbers, locations, and sex of gnatcatchers, rails, and gobies (if observed), their observed behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to these species. The Caltrans Project Biologist will review reports and forward them to the CFWO. Raw field notes should be available upon request by the CFWO; and</p> <p>i. Submit a final report to Caltrans Project Biologist within 120 days of the completion of construction for each project phase that includes: photographs of habitat areas that were to be avoided and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved. As-built construction drawings with an overlay of habitat that was impacted and avoided will be provided as well once they have been completed. The Caltrans Project Biologist will review the report and forward it to the CFWO.</p> <p>⁶ The Biological Monitor will be familiar with the federally listed species potentially affected by the project (i.e., gnatcatcher, rail, goby and manzanita) and with the habitats that support these species. ⁷ The Caltrans Project Biologist will be a Caltrans biologist familiar with the federally listed species potentially affected by the project and with the habitats that support these species; he/she will be the primary contact for the CFWO during project implementation.</p>									
<p>BO32. All native or sensitive habitats outside and adjacent to the permanent and temporary construction limits will be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, orange silt fencing, or in areas of flowing water, with stakes and flagging. No personnel, equipment or debris will be allowed within the ESAs. Fencing and flagging will be installed in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot</p>	<p>Section 3.21.4, Section 3.17.3 and Appendix O</p>	<p>Design Engineer / Biologist / Resident Engineer / Biological Monitor</p>	<p>Design / Pre-construction / Construction</p>						

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and operating heavy equipment. At the bridge construction areas where there is the potential for rail movement under the bridges, fencing will be installed in a manner that will direct rails to the open channel under bridges to the extent feasible. Caltrans will submit to the CFWO for approval, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install temporary fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced and flagged limits of impact and all areas to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact all work will cease until the problem has been remedied to the satisfaction of the CFWO. Temporary construction fencing and markers will be maintained in good repair until the completion of each phase of project construction and removed upon completion of each project phase.									
BO33. During project construction all invasive species included on National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory list found growing within the project right-of-way will be removed. Weed removal will be conducted within the project right-of-way at least once per year during the construction period. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area.	Section 3.22.4, Section 3.17.3 and Appendix O	Resident Engineer / Biological Monitor	Construction						
BO34. A channel large enough for fish and rail movement will be kept open throughout project construction in the San Luis Rey River and each of the lagoons. Prior to initiation of construction in the San Luis Rey River and each of the lagoons, Caltrans will submit a plan to the CFWO for maintaining a channel for fish and/or rail movement in the San Luis Rey River and each of the lagoons.	Section 3.21.4 and Appendix O	Biologist / Resident Engineer	Pre-construction / Construction						
BO35. Permanent and temporary impacts to gnatcatchers, rails, gobies, manzanita, and critical habitat for the gnatcatcher and goby (as summarized in Tables 3 and 4 of the BO [Appendix O]) resulting from the I-5 North Coast Corridor Project will be offset through habitat creation restoration, and preservation /	Section 3.21.4 and Appendix O	Biologist / Project Manager	Design						

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enhancement as shown in Table 5 and Figures 22-31 of the BO (Appendix O). Implementation of these conservation measures is phased ahead of project impacts. In addition, large-scale lagoon restoration and lagoon management endowments shown in Table 5 of the BO (Appendix O) will be implemented to provide additional conservation to offset impacts from the I-5 North Coast Corridor Project, Los Angeles to San Diego Rail Corridor, and I-5 / State Route-78 Interchange Project (with project elements as listed in the REMP).									
<p>BO36. Caltrans will submit draft San Dieguito Lagoon W19, Hallmark, Dean, San Elijo Uplands, Deer Canyon, Laser, and La Costa wetland and upland creation / restoration / enhancement plans to the CFWO for review and approval prior to initiating project impacts. Caltrans will provide the final plans to the CFWO. The final plans will include the following information and conditions:</p> <p>a. All final specifications and topographic-based grading, planting and irrigation plans (0.5-foot contours and typical cross-sections for wetlands and 10-foot contours for uplands) for the creation / restoration / enhancement sites. All wetland mitigation areas will be graded to the same elevation as adjacent existing Corps jurisdictional wetlands areas, and/or to within 1-foot of the groundwater table, and will be left in a rough grade state with micro topographic relief (including channels for wetlands) that mimics natural topography. All upland habitat creation / restoration / enhancement sites will be prepared for planting by decompacting the top soil in a way that mimics natural upland habitat top soil to the maximum extent practicable while maintaining slope stability. Topsoil and plant materials salvaged from the impacted areas (including live herbaceous, shrub and tree species) will be transplanted to, and/or used as a seed / cutting source for, the creation and enhancement areas to the maximum extent practicable. Planting and irrigation will not be installed until the CFWO has approved of the site grading. All plantings will be installed in a way that mimics natural plant distribution and not in rows.</p> <p>b. Planting palettes (plant species, size and</p>	Section 3.17.3 and Appendix O	Biologist	Design / Construction / Post-construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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<p>number/acre) and seed mix (plant species and pounds/acre). The multitude of plant palettes proposed in the draft plans will include native species specifically associated with the habitat type(s). Unless otherwise approved by the CFWO, only locally native species (no cultivars) obtained within San Diego County available from as close to the project area as possible will be used. The source and proof of local nativeness of all plant material and seed will be provided.</p> <p>c. Container plant survival will be 80 percent of the initial plantings for the first 5 years. At the first and second anniversary of plant installation, all dead plants will be replaced unless their function has been replaced by natural recruitment.</p> <p>d. A final implementation schedule that indicates when all native habitat impacts, as well as native habitat creation / restoration / enhancement grading, planting and irrigation will begin and end. Necessary site preparation and planting will be completed during the concurrent or next planting season (i.e., late fall to early spring) after receiving the CFWO's approval of grading.</p> <p>e. Five years of success criteria for creation / restoration / enhancement areas including: separate percent cover criteria for herbaceous understory, shrub midstory, and tree overstory, and a total percent absolute cover for all three layers at the end of 5 years for wetlands, and a total percent absolute cover for uplands; evidence of natural recruitment of multiple species for all habitat types; 0 percent coverage will be maintained for Cal-IPC's "Invasive Plant Inventory" species, and no more than 10 percent coverage for other exotic / weed species.</p> <p>f. A minimum 5 years of maintenance and monitoring of creation / restoration / enhancement areas, unless success criteria are met earlier and all artificial water supplies have been off for at least 2 years.</p> <p>g. A qualitative and quantitative vegetation monitoring plan with a map of proposed sampling locations. Photo points will be used for qualitative monitoring and stratified random sampling will be used for all quantitative monitoring.</p> <p>h. Contingency measures in the event of creation /</p>									

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance		
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<p>restoration / enhancement failure.</p> <p>i. Annual mitigation maintenance and monitoring reports will be submitted to the CFWO no later than December 1 of each year.</p> <p>j. If maintenance of a wetland creation / restoration / enhancement area potentially occupied by rails is necessary between March 15 and September 15, a biologist with knowledge of rail biology and ecology and approved by the CFWO will survey for rails within the creation / restoration / enhancement area, access paths to it, and other areas susceptible to disturbances by creation / restoration / enhancement site maintenance. Surveys will consist of three visits separated by 2 weeks starting April 1 of each maintenance/monitoring year. Restoration work will be allowed to continue on the site during the survey period. However, if rails are found during any of the visits, the applicant will notify and coordinate with the CFWO to identify measures to avoid and/or minimize effects to the rail (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).</p> <p>k. If maintenance of a coastal sage scrub restoration / enhancement area is necessary between February 15 and August 31, a biologist with knowledge of the biology and ecology of gnatcatchers and approved by the CFWO will survey for gnatcatchers within the creation / restoration / enhancement area, access paths to it, and other areas susceptible to disturbances by site maintenance. Surveys will consist of three visits separated by 2 weeks starting March 1 of each maintenance/monitoring year. Work will be allowed to continue on the site during the survey period. However, if gnatcatchers are found during any of the visits, Caltrans will notify and coordinate with the CFWO to identify measures to avoid and/or minimize effects to the gnatcatcher (e.g., nests and an appropriate buffer will be flagged by the biologist and avoided by the maintenance work).</p>										
BO37. Perpetual biological conservation easements or other conservation mechanisms acceptable to the CFWO will be recorded over the areas created,	Section 3.17.3 and Appendix O	Biologist / Project Management	Pre-construction / Post-							

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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restored, and/or preserved / enhanced by the project at the San Dieguito Lagoon W19, Hallmark, Dean, San Elijo Uplands, Deer Canyon, Laser, and La Costa properties. The conservation mechanisms will specify that no easements or activities (e.g., fuel modification zones, public trails, drainage facilities, walls, maintenance access roads, utility easements) that will result in soil disturbance and/or native vegetation removal will be allowed within the biological conservation easement areas, with exceptions as documented in the Constraints sections of Mitigation Site Assessments for these properties and where the acreage of impacts is not included in the mitigation acreage totals in Table 5 of the BO (Appendix O). Draft Mitigation Site Assessments have been provided to the CFWO for our review and comment. A copy of final Mitigation Site Assessments will be provided to the CFWO that clearly document constraints and demonstrate compliance with the requirement that the acreage of impacts resulting from constraints is not included in the mitigation acreage totals in Table 5 of the BO (Appendix O). Revised draft conservation mechanisms will be provided to the CFWO for review and approval. Caltrans will also submit the final conservation mechanisms to the CFWO. Caltrans anticipates that they will not be able to place the conservation easements or other conservation mechanisms for these properties prior to initiating project impacts; however, annual reports will be provided on their status until the conservation mechanisms are recorded over the properties, which will occur either within 1-year of the issuance of this biological opinion, or within 1-year of purchase of each property, unless a written extension is requested by Caltrans showing good faith efforts to achieve the recordation and the extension request is granted by the CFWO.			construction						
BO38. Caltrans will prepare and implement perpetual management, maintenance, and monitoring plans for the San Dieguito Lagoon W19, Hallmark, Dean, San Elijo Uplands, Deer Canyon, Laser, and La Costa properties. Caltrans will also establish non-wasting endowments for amounts approved by the CFWO based on Property Analysis Records (PAR) (Center for Natural Lands Management ©1998) or similar cost estimation methods, to secure the ongoing funding for	Section 3.17.3 and Appendix O	Biologist / Project Management	Pre-construction / Post-construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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the perpetual management, maintenance and monitoring of these properties. Caltrans will submit draft long-term management plans for the properties to the CFWO for review and approval. The long-term management plans will include, but not be limited to, the following: 1) the PAR or other cost estimation results for the non-wasting endowment; 2) proposed land manager's name, qualifications, business address, and contact information; 3) method of protecting the resources in perpetuity (e.g., conservation easement), monitoring schedule, measures to prevent human and exotic species encroachment, funding mechanism, and contingency measures should problems occur. Caltrans will submit the final long-term management plans to the CFWO. Caltrans anticipates that the long-term management plans will not be prepared prior to initiating project impacts; however, annual reports will be provided on their status until the final management plans have been provided and the endowments have been established, which is anticipated to occur when the projects are projected to meet criteria (as documented in Table 5 of the BO [Appendix O]) and will occur within 1 year of achieving applicable success criteria for each property.									
BO39. Caltrans will establish a non-wasting endowment for an amount approved by the CFWO, based on reliable and current estimates of maintenance costs, for long-term maintenance of Batiquitos and Los Peñasquitos Lagoons, including lagoon inlet maintenance and dredging. Caltrans will submit the estimates and information to demonstrate that the endowment will be non-wasting, and will adequately cover the costs of maintenance, to the CFWO for review and approval. Caltrans will make the endowment available for use within 1 year of establishment of the endowment, which will be established no later than December 1, 2015. Any delay in availability of funds will be reviewed and approved by the CFWO.	Section 3.17.3 and Appendix O	Project Management	Pre-construction / Post-construction						
BO40. Caltrans will fund, in full, a large-scale salt water lagoon restoration at San Elijo Lagoon and/or Buena Vista Lagoon through the REMP ⁸ . Caltrans will submit revised drafts of the REMP to the CFWO for review and comment. Large-scale lagoon restoration funding will be used solely for salt water lagoon restoration, which will restore tidally-	Section 3.21.4 and Appendix O	Biologist / Project Management	Design / Pre-construction / Post-construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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<p>influenced habitats that are comparable with project impacts, for the benefit of listed species. Allocation of funding for large-scale salt water lagoon restoration will be determined, in coordination with the CFWO, prior to initiating project impacts. Caltrans will submit a copy of the final REMP and funding proposal to the CFWO for review and approval.</p> <p>⁸ A separate section 7 consultation with the Federal lead agency for the restoration project will be required to address impacts to listed species resulting from large-scale lagoon restoration.</p>									
<p>BO41. Caltrans will establish non-wasting endowments for amounts approved by the CFWO, based on reliable and current estimates of maintenance costs, for long-term maintenance of the large-scale lagoon restoration at San Elijo Lagoon and/or Buena Vista Lagoon. Caltrans will submit the endowment estimates to the CFWO for review and approval. The endowments are anticipated to be established during the year in which the large-scale lagoon restoration work is completed and no later than December 1, 2019 unless a written extension is requested by Caltrans showing good faith efforts to establish the endowment and the extension request is granted by the CFWO. Funds will be available for use within one year of establishment of the endowments.</p>	Section 3.17.3 and Appendix O	Biologist / Project Management	Construction / Post-construction						
<p>BO42. All areas of temporary impact, as quantified in Table 2 of the BO (Appendix O), will be revegetated and restored with native species. These areas will be returned to original grade, as feasible. Prior to initiating project impacts, a restoration plan will be developed for the temporary impact areas. The plan will be submitted to the CFWO for review and approval. This plan will include a detailed description of restoration methods, slope stabilization, and erosion control, criteria for restoration to be considered successful, and monitoring protocol(s). Following the completion of construction activities within each area of impact, the restoration plan will be implemented for a minimum of 5 years, unless success criteria are met earlier and all artificial water has been off for at least 2 years. Temporary impact areas will be planted as soon as possible following re-grading after completion of construction to prevent encroachment by nonnative plants.</p>	Section 3.17.3 and Appendix O	Design Engineer / Biologist / Landscape Architect / Resident Engineer /	Design / Construction / Post-construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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BO43. Cut and fill slopes adjacent to native habitats will be revegetated with native habitats with similar composition to those within the project study area as feasible, including over 86 acres of slopes near lagoons and other open space that will be revegetated with coastal sage scrub. Duff and rare plants from areas with coastal sage scrub, maritime succulent scrub, and maritime chaparral may be salvaged from the project impact footprint to the extent practicable to aid in revegetating slopes with native habitats (excluding areas with invasive nonnative species such as African veldt grass and onion weed). The revegetated areas will have temporary irrigation and will be planted with native container plants and seeds selected in coordination with the Caltrans Project Biologist. At least 3 years of plant establishment/maintenance on these slopes will be conducted to control nonnative plants. Bioswales and detention basins will be planted with appropriate species as determined in coordination with the Caltrans Project Biologist and storm water pollution prevention professional. These areas will be planted as soon as possible following completed construction to prevent encroachment by nonnative plants. Slopes and interchanges located adjacent to developed urban areas will be planted with native and drought tolerant non-invasive species selected by the biologist and landscape architect.	Section 3.17.3 and Appendix O	Design Engineer / Biologist / Landscape Architect / Resident Engineer / Biological Monitor	Design / Construction / Post-construction						
<p>REASONABLE AND PRUDENT MEASURES</p> <p>Caltrans will implement significant conservation measures as part of the proposed action to minimize the incidental take of gnatcatchers, rails, and gobies. In addition to these conservation measures, the following reasonable and prudent measures are necessary to monitor and report the effects of the incidental take on gnatcatchers, rails, and gobies:</p> <ol style="list-style-type: none"> 1. FHWA and/or Caltrans will monitor and report on compliance with the established take exemptions for gnatcatchers associated with the proposed action. 2. FHWA and/or Caltrans will monitor and report on compliance with the established take exemptions for rails associated with the proposed action. 3. FHWA and/or Caltrans will monitor and report on compliance with the established take exemptions for gobies associated with the proposed action. 	Appendix O	Biologist / Resident Engineer / Biological Monitor	Construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
					Initial	Date		Initial	Date
Coastal California Gnatcatcher									
1.1 Prior to initiating each phase of the proposed project, three preconstruction surveys will be conducted within all suitable gnatcatcher habitat within the footprint for that phase of the project, within 30 days prior to initiation of vegetation removal activities, to verify that no more than 6 gnatcatcher pairs in phase 1, 8 gnatcatcher pairs in phase 2, and 1 gnatcatcher pair in phase 3 (unless bridge construction is moved forward in project phasing to avoid impacts to coastal wetlands in which case take of 4 pairs of gnatcatchers would be advanced from phase 2 to phase 1), with 15 pairs in total, will be taken as a result of the project. Prior to initiating each phase of the project, FHWA and/or Caltrans will provide to the CFWO a map showing the distribution of gnatcatchers relative to the project footprint for that phase, an estimate of the number of gnatcatcher territories that will be impacted by the project in that phase, and the cumulative total of gnatcatcher territories impacted by the project to date, or confirm in writing that maps, distribution information, and the number of territories that will be impacted by the project as shown in the BA remain correct.	Appendix O	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction						
1.2 FHWA and/or Caltrans will notify the CFWO within 30 days of completing removal of gnatcatcher occupied habitat in each project phase. The purpose of this notification is to ensure that impacts to gnatcatcher-occupied habitat from the proposed project do not exceed the take exemptions.									
Light-footed Clapper Rail									
2.1 Prior to initiating each phase of the proposed project, three preconstruction surveys will be conducted within all suitable rail habitat within the footprint for that phase of the project, within 30 days prior to initiation of vegetation removal activities, to verify that no more than one pair in phase 1, two pairs in phase 2, and one pair in phase 3 (unless bridge construction is moved forward in project phasing to avoid impacts to coastal wetlands in which case take of all four pairs of rails would occur in phase 1), with four pairs in total, will be taken as a result of the project. Prior to initiating each phase of the project, FHWA and/or Caltrans will provide to the CFWO a map showing the distribution of rails relative to the project footprint for that phase, an	Appendix O	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
					Initial	Date		Initial	Date
<p>estimate of the number of rail territories that will be impacted by the project in that phase, and the cumulative total of rail territories impacted by the project to date, or confirm in writing that maps, distribution information, and the number of territories that will be impacted by the project as shown in the BA remain correct.</p> <p>2.2 FHWA and/or Caltrans will notify the CFWO within 30 days of completing removal of rail occupied habitat in each project phase. The purpose of this notification is to ensure that impacts to rail-occupied habitat from the proposed project do not exceed the take thresholds.</p>									
<p>Tidewater Goby</p> <p>3.1 Within 30 calendar days of the completion of project activities within goby habitat, FHWA and/or Caltrans will provide the CFWO with a report documenting the area of goby habitat impacted, the number of dead or injured gobies observed in the action area, and the number of gobies captured and released. The report will include information on the general condition of all gobies that were killed, injured, and captured/released. It will also include an assessment of how or why gobies may have been injured or killed and information on where gobies were captured and released. Caltrans will report incidences of take (observed death or injury or capture and relocation of gobies) to the CFWO within 3 days. All field notes and other documentation generated by the biological monitor will be made available to the CFWO upon request. The purpose of this notification is to ensure that impacts to goby-occupied habitat from the proposed project do not exceed the take thresholds.</p>	Appendix O	Biologist / Biological Monitor	Post-construction						
<p>DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS</p> <p>Upon locating dead, injured, or sick individuals of threatened or endangered species, initial notification must be made to the Division of Law Enforcement in either San Diego, California, at 619-557-5063 or in Torrance, California, at 310-328-6307 within 3 working days. Notification should also be sent by telephone and writing to the office in Carlsbad, California, at 6010 Hidden Valley Road, Suite 101, Carlsbad, California 92011, 760-431-9440. Written notification must be made within 5 calendar days and include the collection date and time, the location of the animal, and any other pertinent information. Care</p>	Appendix O	Biologist / Resident Engineer / Biological Monitor	Construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The remains of intact specimens shall be placed with educational or research institutions holding the appropriate State and Federal permits. Remains shall be placed with the San Diego Natural History Museum, San Diego. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution by the authorized biologist prior to implementation of the action.									
Eelgrass surveys would be completed at all lagoons with the exception of Buena Vista prior to bridge construction. In lagoons where eelgrass is identified in proximity to I-5 improvements, eelgrass surveys would continue during and after construction, and mitigation would be implemented in accordance with the Resource Enhancement and Mitigation Program (REMP).	Section 3.17.3	Biologist / Resident Engineer / Biological Monitor	Pre-construction / Construction / Post-construction						
Impacts to native upland habitats would be mitigated on a corridor-wide basis through the proposed North Coast Corridor REMP.	Section 3.17.3	Biologist	Design						
Any seeding of native upland habitats would be completed between October and February to ensure that the seed has proper conditions for germination.	Section 3.17.3	Biologist / Biological Monitor	Construction						
Wetlands and Other Waters									
Bioswales/detention basins would be placed in the loop ramps, and bioswales would be placed on slopes (i.e., not at base of slope within lagoons), as appropriate to treat runoff from the freeway.	Section 3.18.4	Design Engineer	Design						
Sensitive Plant Species									
Seed would be collected or plants would be salvaged to the extent practicable in the impact areas as mitigation. Salvaged plants and seed would be planted in mitigation sites, on revegetated new slopes, or in revegetated areas that were temporarily impacted. The majority of these species could potentially be salvaged or mitigated by planting in an off-site preserve.	Section 3.19.4	Biologist / Biological Monitor	Construction						
Sensitive Animal Species									
Exclusion devices would be installed on bridge drain holes and ledges during the non-breeding season (September 1 through February 15) to stop swallows, swifts, and any other birds or bats from nesting on or within bridges to be demolished.	Section 3.20.4	Biologist / Resident Engineer	Construction						
In-water construction activities at the San Luis Rey River would take place outside of the steelhead migration window when steelhead adults and juveniles are expected to be using the lower reach of the San Luis Rey River.	Section 3.21.4	Biologist / Resident Engineer	Construction						

Task and Brief Description	Reference	Responsible Branch / Staff	Timing / Phase	Action Taken to Comply with Task	Task Completed		Remark	Environmental Compliance	
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Silt curtains, coffer dams, and/or other barriers would be used to prevent steelhead from entering the construction zone and prevent sedimentation and debris from entering the river.	Section 3.21.4	Biologist / Resident Engineer	Construction						
Best management practices would be implemented during construction to minimize impacts on steelhead and aquatic habitat in the San Luis Rey River. These include sediment control measures to minimize erosion and impacts to water quality, measures to prevent debris and fresh concrete from entering the river channel, and fueling and maintenance of heavy machinery in areas away from the river channel and sensitive habitats.	Section 3.21.4	Biologist / Resident Engineer	Construction						
All removal of native vegetation or non-native shrubs and trees located within the impact areas would be completed outside of the bird breeding season (February 15 to August 31), if possible, to avoid impacts to nesting birds. Otherwise, a qualified biologist would thoroughly survey all vegetation prior to removal to ensure there are no nesting birds on site. If nesting birds are identified on site, vegetation removal would be delayed until the chicks have fledged or the nest has failed.	Section 3.17.3	Biologist / Resident Engineer	Construction						

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