

Environmental Commitments Record

Introduction

This section comprises a summary of the minimization, avoidance, and mitigation measures described in their respective environmental categories in this Environmental Impact Report/Environmental Assessment. As stated in Chapters 1 and 2, because no actual construction would take place as a result of selecting a Tier I Corridor Alternative, no avoidance, minimization, and/or mitigation measures are proposed for implementation at this time. No project actions requiring permits or approvals from any state, federal, or local agency are required at this time for the Tier I Corridor Project.

As segments of the Tier I corridor are programmed as future Tier II construction-level projects, they will be subject to a separate environmental review that will identify environmental commitments. The avoidance, minimization, and mitigation measures presented in Chapter 2 are conceptual based on program-level information about the Tier I Corridor Alternatives, and these measures are subject to revision based on the changes in the setting, project design, or regulatory requirements in place when individual project segments undergo environmental review.

The measures recommended below comprise the Environmental Commitments Record for the Tier II Auxiliary Lane Alternative.

Background

Both California Environmental Quality Act and/or National Environmental Policy Act regulations require an enforceable mitigation monitoring program be developed for the Tier II Auxiliary Lane Alternative. Per California Environmental Quality Act Guideline 15907(a), to ensure that the mitigation measures identified in the Environmental Impact Report are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions that it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. Under National Environmental Policy Act regulations, a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation (Section 1505.2(c)). The project proponents have committed to implementing several measures as part of the project to minimize and avoid impacts associated with construction of the Tier II Auxiliary Lane Alternative. These measures include, but are not limited to, elements that would be designed into the new facility and implementation of best management practices during construction.

Additional measures are proposed to mitigate the impacts associated with project implementation. Mitigation is defined by both the California Environmental Quality Act and National Environmental Policy Act as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action;
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment;
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project; and
- Compensates for the impacts by replacing or providing substitute resources or environments.

Environmental Commitments Summary

Table F-1 presents the measures committed to by the project proponents to mitigate significant impacts associated with the proposed Tier II Auxiliary Lane Alternative, while Table F-2 presents the measures committed to by the project proponents to avoid or minimize impacts associated with the proposed Tier II Auxiliary Lane Alternative. Only environmental resources for which such measures are proposed are included in Tables F-1 and F-2.

Table F-1: Summary of Proposed Mitigation Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Mitigation Measures
Visual/Aesthetics	2.1.6 Permanent Impacts	<p><u>Mitigation Measures:</u></p> <p>Measures to Preserve Existing Vegetation:</p> <ul style="list-style-type: none"> • Beginning with preliminary design and continuing through final design and construction, save and protect as much existing vegetation as feasible, especially eucalyptus and other skyline trees. • Survey the exact locations for trees and include in plan set. • Protect the drip zone of isolated trees with temporary fencing. • Protect large infield areas of existing plantings to be preserved with temporary fencing. <p>Measures for Retaining Walls:</p> <ul style="list-style-type: none"> • Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the retaining walls. <p>Measures for Bridge Aesthetics:</p> <ul style="list-style-type: none"> • Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the proposed bridges. <p>Measures for Landscape Plantings:</p> <ul style="list-style-type: none"> • Beginning with preliminary design and continuing through final design and construction, landscape and revegetate disturbed areas to the greatest extent feasible. • Include skyline trees in the planting palette to bring down the scale of the new freeway elements. • Include infill shrub planting between Route 1 and Soquel Avenue to the maximum extent possible. • Include vines on a minimum of 20 percent of the fencing between eastbound Route 1 and Soquel Avenue. • Where horticulturally appropriate, provide a permanent irrigation system

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		<p>to all plantings.</p> <ul style="list-style-type: none"> • Include an extended 3-year maintenance period as part of the construction period to provide a single source of maintenance through the establishment period.
	2.4.11 Construction Phase Impacts	<ul style="list-style-type: none"> • The project will be designed to protect as much existing vegetation as feasible, especially eucalyptus and other skyline trees (Visual Impact Assessment Report, Measure VA-1). • Disturbed areas will be revegetated to the greatest extent feasible (Visual Impact Assessment Report, Measure VA-12). • The landscaping and revegetation for the project will include a 3-year plant establishment period to ensure adequate revegetation of the areas impacted by the project (Visual Impact Assessment Report, Measure VA-17).
Cultural Resources	2.1.7 Permanent Impacts	No mitigation measures required.
	2.4.7 Construction Phase Impacts	<p><u>Mitigation Measures:</u></p> <ul style="list-style-type: none"> • If human remains are inadvertently discovered, disturbances and activities shall cease in any area or nearby area suspected to overlie remains, and the County Coroner will be contacted. Pursuant to Public Resources Code Section 5097.98, if the remains are thought to be Native American, then the coroner will notify the Native American Heritage Commission, who will then notify the most likely descendent. At this time, the person who discovered the remains will contact Caltrans District 5's Office of Cultural Resources so that they may work with the most likely descendent on the respectful treatment and disposition of the remains. Further provisions of Public Resources Code 5097.98 will be followed, as applicable. • In the unlikely event that buried cultural resources are inadvertently discovered during any ground-disturbing activities, the project sponsor and Federal Highway Administration would comply with 36 Code of Federal Regulations 800.13 (b)(3), and if applicable, (c), as stipulated in the 2004 Section 106 Programmatic Agreement for Federal-aid Highway Programs in California regarding post-review discoveries. All earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist could assess the nature and significance of the find.
Paleontology	2.2.4 Permanent Impacts	<u>No mitigation measures required.</u>
	2.4.8 Construction Phase	<p><u>Mitigation Measures:</u></p> <ul style="list-style-type: none"> • Assessment Before Construction Starts: This may include a field survey to delimit the specific boundaries of sensitive areas and pre-excavation meetings with contractors and developers. In some cases, it may be necessary to conduct field surveys and/or a salvage program prior to grading to prevent damage to known resources and to avoid delays to construction schedules. Such a program may involve surface collection and/or quarry excavations. A review of the initial assessment and proposed mitigation program by the Lead Agency before operations begin will confirm the adequacy of the proposed program. • Adequate Monitoring: An excavation project will retain a qualified project paleontologist. In areas of known high potential, the project paleontologist shall designate a paleontologic monitor to be present during 100% of the earth-moving activities. If, after 50% of the grading is completed, it can be

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		<p>demonstrated that the level of monitoring should be reduced, the project paleontologist shall so amend the mitigation program. Paleontologists who monitor excavations must be qualified and experienced in salvaging fossils and authorized to divert equipment temporarily while removing fossils. They shall be properly equipped with tools and supplies to allow rapid removal of specimens. Provision shall be made for additional assistants to monitor or help in removing large or abundant fossils to reduce potential delays to excavation schedules. If many pieces of heavy equipment are in use simultaneously but at diverse locations, each location shall be individually monitored.</p> <ul style="list-style-type: none"> • Macrofossil Salvage: Many specimens recovered from paleontological excavations are easily visible to the eye and are large enough to be easily recognized and removed. Some may be fragile and require hardening before moving. Others may require encasing within a plaster jacket for later preparation and conservation in a laboratory. Occasionally specimens encompass all or much of a skeleton and will require moving either as a whole or in blocks for eventual preparation. Such specimens require time to excavate and strengthen before removal and the patience and understanding of the contractor to recover the specimens properly. It is thus important that the contractors and developers are fully aware of the importance and fragility of fossils for their recovery to be undertaken with the optimum chances of successful extraction. The monitor must be empowered to temporarily halt or redirect the excavation equipment away from the fossils to be salvaged. • Microfossil Salvage: Many significant vertebrate fossils (e.g., small mammal, bird, reptile, or fish remains) are too small to be visible within the sedimentary matrix. Fine-grained sedimentary horizons and paleosols most often contain such fossils. They are recovered through concentration by screen washing. If the sediments are fossiliferous, bulk samples are taken for later processing to recover any fossils. An adequate sample comprises 12 cubic meters (6,000 lb or 2,500 kg) of matrix for each site horizon or paleosol, or as determined by the supervising paleontologist. The uniqueness of the recovered fossils may dictate salvage of larger amounts. To avoid construction delays, samples of matrix shall be removed from the site and will be processed elsewhere. • Preservation of Samples: Oriented samples must be preserved for paleomagnetic analysis. Samples of fine matrices shall be obtained and stored for pollen analysis. Other matrix samples shall be retained with the samples for potential analysis by later workers for clast source analysis, as a witness to the source rock unit and possibly for procedures that are not yet envisioned. • Preparation: Recovered specimens are prepared for identification (not exhibition) and stabilized. Sedimentary matrix with microfossils is screen washed and sorted to identify the contained fossils. Removal of excess matrix during the preparation process reduces storage space. • Identification: Specimens are identified by competent qualified specialists to a point of maximum specificity. Ideally, identification is of individual specimens to element, genus, and species. Batch identification and batch numbering (e.g., "mammals, 75 specimens") shall be avoided. • Analysis: Specimens shall be analyzed by stratigraphic occurrence and by size, taxa, or taphonomic conditions. This results in a faunal list, a stratigraphic distribution of taxa, or evolutionary, ecological, or depositional deductions. • Storage: Adequate storage in a recognized repository institution for the recovered specimens is an essential goal of the program. Specimens will be cataloged and a complete list will be prepared of specimens introduced into the collections of a repository by the curator of the museum or university. Adequate storage includes curation of individual specimens into the

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		<p>collections of a recognized, nonprofit paleontologic specimen repository with a permanent curator, such as a museum or a university. A complete set of field notes, geologic maps, and stratigraphic sections accompany the fossil collections. Specimens are stored in a fashion that allows retrieval of specific, individual specimens by researchers in the future.</p> <ul style="list-style-type: none"> • Site Protection: In exceptional instances, the process of construction may reveal a fossil occurrence of such importance that salvage or removal is unacceptable to all concerned parties. In such cases, the design concept may be modified to protect and exhibit the occurrence with the project's design, e.g., as an exhibit in a basement mall. Under such circumstances, the site may be declared and dedicated as a protected resource of public value. Associated fragments recovered from such a site will be placed in an approved institutional repository. • Final Report: A report is prepared by the project paleontologist includes a summary of the field and laboratory methods, site geology and stratigraphy, faunal list, and a brief statement of the significance and relationship of the site to similar fossil localities. A complete set of field notes, geological maps, stratigraphic sections, and a list of identified specimens accompany the report. The report is finalized only after all aspects of the program are completed. The Final Report, together with its accompanying documents, constitutes the goals of a mitigation project. Full copies of the Final Report are deposited with the Lead Agency and the repository institution. • Compliance: The Lead Agency assures compliance with measures to protect fossil resources from the beginning of the project by: <ol style="list-style-type: none"> 1. Requesting an assessment and program for impact mitigation which includes salvage and protection during the initial planning phases; 2. Arranging for recovered specimens to be housed in an institutional paleontologic repository; and 3. Requiring the Final Report. <p>The supervising paleontologist is responsible for:</p> <ol style="list-style-type: none"> 1. Assessment and development of the program for impact mitigation during initial planning phases; 2. The repository agreement; 3. The adequacy and execution of the mitigation measures; and 4. The Final Report. <p>Acceptance of the Final Report for the project by the Lead Agency signifies completion of the program of mitigation for the project. Review of the Final Report by a vertebrate paleontologist designated by the Lead Agency will establish the effectiveness of the program and adequacy of the report. Inadequate performances in either field comprise noncompliance, and may result in the Lead Agency removing the paleontologist from its list of qualified consultants.</p>
Hazardous Waste Materials	2.2.5 Permanent Impacts	<p><u>Mitigation Measures:</u></p> <ul style="list-style-type: none"> • Remediation monitoring would be conducted at the following Recognized Environmental Conditions sites. These sites are adjacent to the project area. All other sites require no remedial action. <ul style="list-style-type: none"> ○ Former Exxon 7-3604 facility (also listed as Pit Stop Service, Inc.), located at 836 Bay Avenue in Capitola; ○ Redtree Properties, located at 819 Bay Avenue in Capitola; ○ Unocal Station No. 6193, located at 1500 Soquel Drive in Santa Cruz; and ○ BP 11240 facility, located at 2178 41st Avenue in Capitola. • During the final design phase, an asbestos-containing materials investigation will be performed by an inspector certified in accordance

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		<p>with Asbestos Hazardous Emergency Response Act under Toxic Substance Control Act Title II and by California Occupational Safety and Health Administration under State of California rules and regulations (Title 8, California Code of Regulations, Section 1529). Residential and commercial structures being acquired should be tested for asbestos-containing materials and lead-based paint prior to demolition. Asbestos-containing materials will be abated by using a contractor certified to perform such work. Asbestos-containing materials that may be disturbed during construction activities will be managed according to California Occupational Safety and Health Administration regulations (Title 8, California Code of Regulations, Section 1529). The contractor will be required to be certified to perform this work and will comply with all applicable local and state requirements for the removal and disposal of such materials, thus mitigating the impacts.</p> <ul style="list-style-type: none"> • Those sites meeting the definition of a Recognized Environmental Condition will require soil and groundwater sampling for petroleum products and heavy metals, as applicable, along the sites' borders with the project area during the design phase. Final design specifications will require the proper management, removal, and disposal of wooden utility poles along the roadside containing creosote. • Soil sampling shall be conducted for aeriably deposited lead in areas along the shoulders and median of Route 1. In addition to testing for the presence of aeriably deposited lead, the contractor would be required to manage all excavated soils in accordance with all pertinent laws and regulations. • Soil and groundwater sampling shall be conducted within the project area for petroleum products. • During the final design phase, surveys for lead-based paint will be conducted to plan for the demolition of existing structures within the right-of-way. Lead-based paint will be abated by using a contractor certified to perform such work. • During the final design phase, a work plan for the investigation of aeriably deposited lead will be prepared for characterizing the extent of aeriably deposited lead, and investigative sampling work will be performed according to the approved Worker Health and Safety Plan.
	2.4.9 Construction Phase Impacts	<p><u>Mitigation Measures:</u></p> <ul style="list-style-type: none"> • The construction contractor will prepare a Worker Health and Safety Plan for use during construction. The Worker Health and Safety Plan will address any hazardous materials handling during construction activities pursuant to Title 8 of the California Code of Regulations regarding workers' safety and the use of protective equipment during excavation, moving, or handling of contaminated soil or water. The Worker Health and Safety Plan will establish measures to avoid or minimize potential worker and public exposure to airborne contaminant migration by incorporating dust suppression techniques in construction procedures. The plan will also address avoidance and minimization of worker and environmental exposure to contaminant migration via surface water runoff pathways by implementation of comprehensive measure to control drainage from excavations. In addition, the Worker Health and Safety Plan will address handling, storage, and disposal of any hazardous materials used in the construction process. Because construction workers are in the closest proximity to potential hazards, a plan that avoids impacts to construction workers will provide adequate protection for surrounding residents, workers, and the traveling public. • Advanced consultation with representatives of the Soquel Creek Water District, Santa Cruz Environmental Health Department, and Central

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		<p>Coast Regional Water Quality Control Board will be conducted if any dewatering is to be performed during project construction activities. This consultation will be helpful in determining the degree of water treatment and water disposal options during dewatering activities, as well as groundwater investigation/sampling requirements prior to dewatering activities.</p> <ul style="list-style-type: none"> • Paint exceeding hazardous waste criteria under Title 22, California Code of Regulations, will require disposal in a Class I disposal site. Paint used for lane striping of the existing roadway will be tested for lead-based paint prior to removal to determine proper disposal methods. • Wooden poles within the project footprint would be properly managed if removed and disposed of. • If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), work shall cease in the vicinity of the suspect material, the area shall be secured as necessary, and all appropriate measures shall be taken to protect human health and the environment. Appropriate measures shall include notification of regulatory agency(ies) and compliance with the various regulatory agencies' laws, regulations, and policies. • Soil generated by construction activities shall be stockpiled onsite in a secure and safe manner. All contaminated soils determined to be hazardous or nonhazardous waste shall be adequately profiled (sampled and analyzed) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal agencies laws, in particular, the Regional Water Quality Control Board, the Department of Toxic Substances Control, and County of Santa Cruz Environmental Health Services. Groundwater pumped from the subsurface shall be contained onsite in a secure and safe manner prior to treatment and disposal to ensure that environmental and health issues are resolved pursuant to applicable local, state, and federal laws, regulations, and policies. Material from structures that are removed or modified by the project will be handled and disposed of in accordance with all local, state, and federal requirements.
Natural Communities	2.3.1 Permanent and Construction Impacts ¹	<p><u>Mitigation Measures:</u></p> <p>The following measures are required to mitigate impacts on wetland habitats:</p> <ol style="list-style-type: none"> 1. A qualified biological monitor(s) will ensure compliance with mitigation measures within the project environmental documents. Monitoring shall occur throughout the length of construction or as directed by the regulatory agencies. Full-time monitoring shall occur during vegetation removal, water diversion and temporary erosion control installation. Monitoring may be reduced to part time once construction activities are under way and the potential for additional impacts are reduced. 2. During project activities, the biological monitor(s) shall coordinate with federal, state, and local agencies and the construction contractor to ensure that construction schedules comply with biological mitigation requirements. 3. Prior to project implementation, the project site shall be clearly flagged or fenced so that the contractor is aware of the limits of allowable site access

¹ Permanent and construction measures have been combined in the biology section to be consistent with Section 2.3.

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		<p>and disturbance. Areas within the designated project site that do not require regular access shall be clearly flagged as off-limit areas to avoid unnecessary damage to sensitive habitats or existing vegetation within the project site.</p> <ol style="list-style-type: none"> 4. Prior to project implementation, a project Erosion Control Plan shall be prepared. 5. During project activities, erosion control measures shall be implemented. Silt fencing, fiber rolls, and barriers (e.g., hay bales) shall be installed between the project site and adjacent wetlands and other waters. At a minimum, silt fencing shall be checked and maintained daily throughout the construction period. The contractor shall also apply adequate dust control techniques, such as site watering, during construction. 6. To control erosion during and after project implementation, standard Caltrans Best Management Practices shall be implemented. 7. During project activities, work occurring within stream channels shall be conducted during the dry season if possible (April 15 – October 15). If in-stream work will be necessary a Diversion and Dewatering Plan shall be prepared and implemented. 8. Before work begins, a Hazardous Materials Response Plan shall be prepared and shall be implemented during construction to allow a prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take if a spill occurs. 9. During project activities, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area and at least 20 meters (~66 feet) from wetlands, other waters, or other aquatic areas. This staging area shall conform to best management practices applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. 10. During project activities, all project-related hazardous materials spills within the project site shall be cleaned up immediately. Spill prevention and clean-up materials shall be onsite at all times during construction. 11. The biological monitor(s) shall ensure that the spread or introduction of invasive exotic plant species will be avoided to the maximum extent possible. When practicable, invasive exotic plants in the project site will be removed and properly disposed. 12. During construction, trash shall be contained, removed from the worksite, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas. 13. During project activities, no pets shall be allowed on the construction site. <p>Riparian Forest</p> <p>In addition to the measures 1 through 12 described above under the Tier II Auxiliary Lane Alternative, the following measures are specific to riparian forest:</p> <ol style="list-style-type: none"> 1. Impacts to riparian vegetation will be offset by replacement planting on-site using a 3:1 ratio for each individual riparian tree removed that is greater than 6 inches in diameter at breast height (defined as 4.5 feet above the ground, on the uphill side of the tree), and for all riparian habitat acreage that is lost. It should be noted that regulatory agencies may require a higher ratio for replacement planting. 2. Compensatory mitigation for Tier II Auxiliary Lane Alternative impacts shall include in-kind, on-site replacement of riparian vegetation. Regulatory agencies may require a higher ratio for compensatory

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		<p>mitigation. At a minimum, restoration and/or enhancement efforts shall achieve a 75% success ratio at the end of a 5-year period and shall require no further maintenance for survival. All mitigation activities will be conducted within the watershed that is being impacted. The compensatory mitigation will be implemented immediately following project completion. Compensatory mitigation plantings shall be monitored quarterly. Any required maintenance shall also occur quarterly. Maintenance activities include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Quarterly reports and annual monitoring reports shall be submitted to Caltrans, the Regional Transportation Commission, and the affected regulatory agencies. The annual monitoring report submitted at Year 5 shall serve as a final completion report if the mitigation is successful.</p>
Wetlands and Other Waters	2.3.2 Permanent and Construction Impacts	<p><u>Mitigation Measures:</u></p> <p>The measures identified above for natural communities also apply to jurisdictional wetlands and waters impacts, in addition to the following measures:</p> <ol style="list-style-type: none"> 1. During project activities, work occurring within stream channels will shall be conducted during the dry season if possible (April 15 – October 15), if possible. If in-stream work will be is necessary, a Diversion and Dewatering Plan will be prepared and implemented. 2. During project activities, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area at least 20 meters (~66 feet) from wetlands, other waters, or other aquatic areas. This staging area shall conform to best management practices applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles be checked and maintained daily to ensure proper operation and to avoid potential leaks or spills. 3. Affected wetlands shall be mitigated at a 1:1 restoration ratio for temporary impacts and at a 3:1 enhancement ratio for permanent impacts to wetlands and other waters. Compensatory mitigation for Tier II Auxiliary Lane Alternative impacts shall include in-kind, on-site replacement of vegetation. 4. At a minimum, compensatory mitigation restoration and/or enhancement efforts shall achieve a 75% success ratio at the end of a 5-year period and shall require no further maintenance for survival. All mitigation activities will be conducted within the affected watershed, if feasible. The compensatory mitigation will be implemented immediately following project completion. Compensatory mitigation plantings shall be monitored quarterly. Any required maintenance shall also occur quarterly. Maintenance activities will include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Quarterly reports and annual monitoring reports be submitted to Caltrans, the Regional Transportation Commission, and the affected regulatory agencies. The annual monitoring report submitted at Year 5 will serve as a final completion report if the mitigation is successful.
Threatened and Endangered Species	2.3.5 Permanent and Construction Impacts	<p><u>Mitigation Measures:</u></p> <p><i>Tidewater Goby</i></p> <p>Compensatory mitigation of impacted freshwater marsh habitat described in Section 2.3.2 will mitigate impacts to the tidewater goby and its habitat because compensatory mitigation will occur onsite. Specifically, any impacts to Rodeo Gulch would be mitigated directly onsite.</p> <ol style="list-style-type: none"> 1. If in-stream work is proposed to occur Rodeo Gulch, incidental take

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		<p>authorization from the U.S. Fish and Wildlife Service through a Federal Endangered Species Act Section 7 Biological Opinion and Incidental Take Statement shall be acquired, if deemed necessary by the U.S. Fish and Wildlife Service. Formal consultation with U.S. Fish and Wildlife Service may be necessary if a Section 404 permit is issued.</p> <ol style="list-style-type: none"> 2. A component including a description of tidewater goby, its ecology, and the need for conservation of the species will be integrated into the worker environmental training program. 3. Prior to construction, if it is necessary to dewater/divert areas within Rodeo Gulch prior to project implementation, a U.S. Fish and Wildlife Service-approved biologist shall conduct a pre-construction survey for tidewater goby and use seining, dip-nets, or other approved methods to capture and relocate tidewater goby from the areas to be dewatered to areas with suitable habitat outside of the area of proposed disturbance. 4. If dewatering/stream diversion is necessary, a Diversion and Dewatering Plan shall be prepared and implemented to allow for passage of aquatic species through the site during construction. At a minimum, the form and function of all pumps used during the dewatering activities shall be checked twice daily by the biological monitor(s) to ensure a dry work environment and minimize adverse effects to aquatic species and habitats. 5. During project activities, if pumps are incorporated to assist in temporarily dewatering the site, intakes shall be completely screened with no larger than 0.2-inch wire mesh to prevent tidewater goby and other sensitive aquatic species from entering the pump system. Pumps shall release the additional water to a settling basin, allowing the suspended sediment to settle out prior to re-entering the stream(s) outside the isolated area. 6. During dewatering/diversion activities, or if tidal fluctuations breach a formerly dewatered and isolated project site, the U.S. Fish and Wildlife Service-approved biological monitor(s) or other U.S. Fish and Wildlife Service-approved biologist(s) shall supervise site dewatering and relocate tidewater goby and other stranded aquatic species. 7. If it is determined by the biological monitor(s) or the U.S. Fish and Wildlife Service-approved biologist(s) that impacts to tidewater goby could exceed the levels authorized by the U.S. Fish and Wildlife Service, they will notify the resident engineer (the engineer that is directly overseeing construction activities) immediately. The resident engineer will either resolve the situation immediately by stopping the actions that are causing the problem and notifying the appropriate resource agency as soon as is reasonably possible. No work will resume until the issue is resolved. 8. Following construction, temporary impacts to streamside vegetation used as sheltering areas or streambed sandbars, gravels, and cobbles used by fish species will be restored to their pre-construction conditions, at a minimum. <p><i>California Red-Legged Frog</i></p> <ol style="list-style-type: none"> 1. Onsite mitigation for, and onsite replacement of, freshwater marsh and riparian vegetation per the project compensatory mitigation for wetlands and riparian habitat (described in Sections 2.3.2) will also mitigate any impacts to California red-legged frog and its habitat; this mitigation will be onsite within the shall occur with regards to the relocation site prior to the capture of any California red-legged frogs. 2. Before any construction activities begin, a U.S. Fish and Wildlife Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures to be implemented to conserve the California red-legged frog during the project, and all project boundary limits. Brochures, books, and briefings may be

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Environmental Category	EA/EIR Section	Mitigation Measures
		<p>used in the training session, provided that a qualified person is on hand to answer questions.</p> <ol style="list-style-type: none"> 3. A U.S. Fish and Wildlife Service-approved biologist will be present at the worksite until all California red-legged frogs have been removed, workers have been instructed, and disturbance of the habitat has been completed. After this time, the state or local sponsoring agency will designate a person to monitor onsite compliance with all minimization measures. The U.S. Fish and Wildlife Service-approved biologist will ensure that this monitor receives the training outlined above in measure 4 and in the identification of California red-legged frogs. If the monitor or the U.S. Fish and Wildlife Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected to a degree that exceeds the levels anticipated by the Federal Highway Administration and the U.S. Fish and Wildlife Service during the review of the proposed action, he or she will notify the resident engineer (the engineer that is directly overseeing construction activities) immediately. The resident engineer will resolve the situation by stopping the actions that are causing the problem and notifying the U.S. Fish and Wildlife Service as soon as is reasonably possible. No work will resume until the issue is resolved.6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas. 4. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from the riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. The monitor will ensure that contamination of habitat does not occur during such operations. Before of work begins, the Federal Highway Administration will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take if a spill occurs. 5. Habitat contours will be returned to their original configuration at the end of the project activities. This measure will be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and Federal Highway Administration determine that it is not feasible or modification of original contours would not benefit the California red-legged frog. 6. The number of access routes, size of staging areas, and the total area of activity will be limited to the minimum necessary to achieve the project goal. Environmentally sensitive areas will be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable. 7. The Federal Highway Administration will attempt to schedule work activities for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and informal consultation between the Federal Highway Administration and the U.S. Fish and Wildlife Service during project planning shall be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

Table F-1: Summary of Proposed Mitigation Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Mitigation Measures
		<p>8. To control sedimentation during and after project implementation, the Federal Highway Administration and the sponsoring agency will implement Best Management Practices outlined in any authorizations or permits issued under the authorities of the Clean Water Act that it receives for the specific project. If Best Management Practices are ineffective, the Federal Highway Administration will attempt to remedy the situation immediately, in consultation with the U.S. Fish and Wildlife Service.</p> <p>9. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. The methods and materials used in any dewatering will be determined by the Federal Highway Administration in consultation with U.S. Fish and Wildlife Service on a site-specific basis. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.</p> <p>10. Unless approved by the U.S. Fish and Wildlife Service, water will not be impounded in a manner that could attract California red-legged frogs.</p> <p>11. A U.S. Fish and Wildlife Service-approved biologist will permanently remove any individuals of exotic species, such as bullfrogs (<i>Rana catesbeiana</i>), crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.</p> <p>12. If the Federal Highway Administration demonstrates that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.</p> <p>13. To ensure that diseases are not conveyed between work sites by the U.S. Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all time.</p> <p>14. Project sites will be revegetated with an assemblage of native riparian, wetlands, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. These measures will be implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service and the Federal Highway Administration determine that it is not feasible or practical.</p> <p>15. The Federal Highway Administration will not use herbicides as the primary method used to control invasive, exotic plants. However, if the Federal Highway Administration determines that the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the California red-legged frog:</p> <ol style="list-style-type: none"> a. The Federal Highway Administration will not use herbicides during the breeding season for the California red-legged frog. b. The Federal Highway Administration will conduct surveys for the California red-legged frog immediately prior to the start of any herbicide use. If found, California red-legged frogs will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.

Table F-1: Summary of Proposed Mitigation Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Mitigation Measures
		<ul style="list-style-type: none"> c. Giant reed and other invasive plants will be cut and hauled out by hand and the stems painted with glyphosate or glyphosate-based products, such as Aquamaster or Rodeo. d. Licensed and experienced Federal Highway Administration staff or a licensed and experience contractor will use a hand-held sprayer for foliar application of Aquamaster or Rodeo where large monoculture stands occur at an individual project site. e. All precautions will be taken to ensure that no herbicide is applied to native vegetation. f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water). g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 miles per hour. h. No herbicides will be applied within 24 hours of forecasted rain. i. Application of all herbicides will be done by a qualified Federal Highway Administration staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins. j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The Federal Highway Administration will ensure that contamination of habitat does not occur during such operations. Before work begins, the Federal Highway Administration will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take if a spill occurs. <p>16. Upon completion of any project for which this programmatic consultation is used, the Federal Highway Administration will ensure that a Project Completion Report is completed and provided to the Ventura Fish and Wildlife Office. The Federal Highway Administration should include recommended modification of the protective measures if alternative measures would facilitate compliance with the provisions of this consultation. In addition, the Federal Highway Administration will reinstate formal consultation in the event any of the following thresholds are reached as a result of projects conducted under the provisions of this consultation:</p> <p>The Federal Highway Administration will reinstate consultation when, as a result of projects conducted under the provisions of this consultation:</p> <ul style="list-style-type: none"> a. 10 California red-legged frog adults or juveniles have been killed or injured in a given year (for this and all other standards, an egg mass is considered to be one California red-legged frog); b. 50 California red-legged frogs have been killed or injured in total; c. 20 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in any given year; d. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been permanently lost in total;

Table F-1: Summary of Proposed Mitigation Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Mitigation Measures
		<ul style="list-style-type: none"> e. 100 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in any given year; or, f. 500 acres of critical habitat for the California red-legged frog that include the primary constituent elements of aquatic breeding and non-breeding aquatic habitat and upland and dispersal habitat have been temporarily disturbed in total.

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
HUMAN ENVIRONMENT		
Land Use	2.1.1.1 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> The project alignment has been adjusted to fit within existing right-of-way where feasible; In the vicinity of Rodeo Gulch, include retaining walls on both sides of the roadway to minimize impacts; Exceptions to design standards are proposed to reduce right-of-way impacts in the vicinity of the Chanticleer Avenue pedestrian overcrossing.
Community Impacts - Relocations	2.1.3.2 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> Minimize right-of-way requirements. Financial compensation for partial property loss will be provided in accordance with procedures in the Caltrans Right-of-Way Manual.
	2.4.3 Construction Phase Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> The Transportation Management Plan described in Section 2.4.1 will include traffic rerouting, a detour plan, and public information procedures will be developed during the design phase with participation from local agencies, local communities, business associations, and affected drivers. Early and well-publicized announcements and other public information measures will be implemented prior to and during construction to minimize confusion, inconvenience, and traffic congestion. As part of the Transportation Management Plan, construction planning will minimize nighttime construction in residential areas and minimize daytime construction impacts on retail and commercial areas. During the construction phase of the project, some parking restrictions may be required on a temporary basis. A public outreach program would be implemented throughout the construction period to keep the public informed of the construction schedule and scheduled parking and roadway closures, including detour routes and if available, alternative parking. The acquisition of temporary construction easements shall conform to the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.
Utilities and Emergency Services	2.1.4 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> Coordination with utility providers would be initiated during the preliminary engineering phase of the project and would continue through final design and construction. Caltrans and the Regional Transportation Commission would coordinate with the utility providers to plan utility relocations, identify potential conflicts, ensure that construction of the proposed project minimizes disruption to utility operations, and formulate strategies for overcoming problems that may arise. Design, construction, and inspection of utilities relocated for the project would be done in accordance with Caltrans requirements.
	2.4.2 Construction Phase Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> Caltrans and the Regional Transportation Commission would coordinate with the affected service provider in each instance to ensure that work is in accordance with the appropriate requirements and criteria. If unexpected underground utilities are encountered, the construction contractor will coordinate with the utility provider to develop plans to address the utility conflict, protect the utility if needed, and limit service interruptions. A public outreach plan implemented in conjunction with project construction and the Transportation Management Plan will involve

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		communication with the affected communities to plan any utility interruptions and keep the public informed of construction activities. <ul style="list-style-type: none"> Caltrans and the Regional Transportation Commission will coordinate with emergency service providers and through the public information program to avoid emergency service delays by ensuring that all providers are aware well in advance of road closures or detours.
Traffic and Transportation/ Pedestrian and Bicycle Facilities	2.1.5 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> None.
	2.4.1 Construction Phase Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> Implementation of a Transportation Management Plan that addresses circulation for transit, bicycles, pedestrians, and private vehicles. The Transportation Management Plan would include a public outreach program to communicate any such closures and detours as described below under Section 2.4.4, Community Impacts. Lane and ramp closure charts would be included in the final Transportation Management Plan and in the project specifications. In the event of temporarily obstruction of any pedestrian walkways or bicycle paths, the Transportation Management Plan would identify nearby alternate routes, including pedestrian routes that meet Americans with Disabilities requirements, as appropriate. The Transportation Management Plan will include an evaluation of potential impacts as a result of diverting traffic to alternate routes. The Traffic Management Plan would include measures to minimize, avoid, and/or mitigate impacts to alternate routes, such as agreements with local agencies to provide enhanced infrastructure on arterial roads or intersections to deal with detoured traffic. The Traffic Management Plan may also provide for contracting with local agencies for traffic personnel, especially for special event traffic through or near the construction zone. Coordination with transit and private shuttle services to plan for any rerouting. To minimize disruption to the traveling public during construction of the Tier II Auxiliary Lane Alternative, a comprehensive strategy would be developed to minimize disruption and ensure the safe movement of vehicles through and around the construction site.
Visual/ Aesthetics	2.1.6 Permanent Impacts	<u>Avoidance/Minimization Measures</u> Measures for Noise Barriers (if included in final project): <ul style="list-style-type: none"> Beginning with preliminary design and continuing through final design and construction, develop construction plans that apply aesthetic treatments to the soundwalls. Include vine plantings on one or both faces of soundwalls wherever feasible (given Caltrans setback and maintenance requirements). If vines are only planted on one side of the wall, include vine portals in the design of the wall to accommodate vine access to both sides of the wall. Measures for Fencing and Barriers: <ul style="list-style-type: none"> If bridge rail is used at Rodeo Creek Gulch retaining walls, use Type 80 rail with aesthetic treatment. Include aesthetic treatment on concrete median barrier consistent with the visual character of the corridor and the adjacent community. Replace existing chain link fencing between eastbound Route 1 and Soquel Avenue with ornamental fencing. Measures for Stormwater Treatment Facilities: <ul style="list-style-type: none"> Beginning with preliminary design and continuing through final design and

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>construction, use drainage and water quality elements, where required, that maximize the allowable landscape.</p> <ul style="list-style-type: none"> • Locate basins so that they would be at least 10 feet from the edge of the Caltrans plant setback to allow landscape screening to be installed. • Design basins so that they appear to be a natural landscape feature, such as a dry streambed or a riparian pool. They shall be shaped in an informal, curvilinear manner. • Basin slope grading shall incorporate slope rounding, variable gradients, and be similar to the surrounding topography to de-emphasize the edge. If a wall or hard feature is necessary, it will be worked into the overall design concept. • Employ grading design of any ponds or swales that is sympathetic to corridor aesthetics. • Locate maintenance access drives in unobtrusive areas away from local streets. Such drives will consist of inert materials or herbaceous groundcover that is visually compatible with the surrounding landscape. • Basins shall be designed so that chain-link perimeter fencing is not required. • Design all visible concrete structures and surfaces to visually blend with the adjacent landscaping and natural plantings. • Design rock slope protection to consist of aesthetically pleasing whole material with a variety of sizes. • Limit the use of bioswales within landscape areas. If they must be used, locate them in non-obtrusive areas and design them to appear natural.
	2.4.11 Construction Phase Impacts	<u>Avoidance/Minimization Measures:</u> None.
Cultural Resources	2.1.7 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> None.
	2.4.7 Construction Phase Impacts	<u>Avoidance/Minimization Measures:</u> None.
PHYSICAL ENVIRONMENT		
Hydrology and Floodplain	2.2.1 Permanent Impacts	<u>Avoidance/Minimization Measures:</u> <ul style="list-style-type: none"> • Better end treatments, such as wingwalls, would be considered at major culvert crossings where culvert improvements are proposed to improve hydraulics. • Undersized existing culverts would be replaced with larger sizes (or parallel systems). • Implement outlet protection, velocity dissipation devices, and possible peak-flow attenuation basins as need to maintain preconstruction stormwater flows by metering or detaining post-construction flows to preconstruction rates prior to discharge to a receiving water body or municipal separate storm sewer system. • The project proponents will work closely with the Santa Cruz County Planning Department to determine if floodplain map revisions are necessary.

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
	2.4.12 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> Preparation and implementation of a Storm Water Pollution Prevention Plan during project construction that identifies all onsite drainage facilities, placement of appropriate stormwater and non-stormwater pollution controls, erosion and sediment control, spill response and containment plans, inspection scheduling, maintenance and trailing of construction personnel.
Water Quality and Storm Water Runoff	2.2.2 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> Use of biofiltration devices or infiltration devices as preferred Treatment Best Management Practices, and consideration of opportunities for other Treatment Best Management Practice devices such as: media filters, detention devices, wet basins, and multi-chambered treatment trains. Permanent erosion control measures shall be applied to all new or exposed slopes. Preservation of Existing Vegetation – At all locations, preserving existing vegetation is beneficial. The following general steps shall be taken to preserve existing vegetation during the Design Phase: <ol style="list-style-type: none"> Identify and delineate in contract documents all vegetation to be retained. Designer shall provide specification in contract documents that the Contractor shall delineate the areas to be preserved in the field prior to the start of soil-disturbing activities. Designer shall provide specification in contract documents that the Contractor shall minimize disturbed areas by locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce areas of cut and fill. Designer shall, when specifying the removal of vegetation, consider provisions included in the contract documents to minimize impacts (i.e., increased exposure or wind damage) to the adjacent vegetation that will be preserved. Proper design of the following drainage facilities to handle concentrated flows: <ul style="list-style-type: none"> Ditches, berms, dikes, and/or swales Overside drains Flared end sections Outlet protection/velocity dissipation devices Slope/Surface Protection Systems – The following control measures must be implemented to stabilize slopes that are created or modified by the project: <ul style="list-style-type: none"> Vegetated surfaces Hard surfaces Incorporate in the design documents, construct and ensure long-term, continuous operation of stormwater treatment measures (biofiltration or infiltration facilities are preferred) to provide treatment of stormwater runoff in accordance with the State Water Resources Control Board’s Order No. 99-06 DWQ (the 1999 Caltrans Municipal Stormwater Permit). The delineation in the contract documents of vegetation to be retained shall include vegetation below the top of the bank at Soquel Creek and Rodeo Creek Gulch, to the maximum extent practicable. Stormwater treatment facilities incorporated in the project shall be protected from concentrated flows by the incorporation of rock slope protection or other hard material at the inlets to the treatment facilities.

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
	2.4.13 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> • Minimum construction control measures such as limiting access routes, stabilization of de-vegetated areas and using sediment controls and filtration. • Erosion and sediment control, including soil stabilization, measures to prevent a net increase in sediment load in storm water, and controls to reduce tracking sediment onto roads and erosion. • Non-stormwater management will include provisions to reduce and control discharges other than storm water. • Post-construction stormwater management will include measures for ongoing (permanent) protection for water resources. • Waste management and disposal will address equipment maintenance waste, used oil, and batteries etc. All waste must be disposed of as required by state and federal law. • Maintenance, inspection and repair and monitoring measures require an ongoing program to ensure that all controls are in place and operating as designed. • The Regional Transportation Commission will prepare and submit an annual report on the construction project to the Regional Water Quality Control Board, which must certify compliance with the Storm Water Pollution Prevention Plan.
Geology/Soils/ Seismic/ Topography	2.2.3 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> • A site-specific seismic hazard engineering analysis will be conducted during final design, which will include engineering recommendations for retaining walls, expansive soil treatment, cuts and fills, and bridge foundation elements. • The specific seismic hazard engineering analysis will include design measures to address surface drainage, slope maintenance, and surface protection/erosion control. In addition, the seismic hazard engineering analysis will include design measures to minimize the potential damage from ground shaking, fault rupture, liquefaction, lateral spreading, and slope stability. The following requirements and Best Management Practices will be incorporated as part of the seismic hazard engineering analysis: • Replanting will be incorporated into project plans to protect any new slopes. • Permanent erosion control measures, such as infiltration devices, media filters, and detention devices, will be applied to all new and/or exposed slopes. Ditches, berms, dikes, swales, overside drains, flared end sections, and outlet protection/velocity dissipation devices will be designed to handle concentration flows. • Slope/surface protection systems with vegetated surfaces and hard surfaces will be employed to minimize erosion. • To minimize potential damage from ground shaking, structures associated with this project will meet maximum credible earthquake standards, as established by the Caltrans Office of Earthquake Engineering. Caltrans has established Seismic Design Criteria for incorporating seismic loads in the design of structures. Structure design, including bridges, will reflect these design guidelines. Impacts from ground shaking and fault rupture are to be mitigated using appropriate Caltrans design methods, such as the use of stone columns, subexcavation, dynamic compaction, or dewatering methods. • For foundation design of structures having concentrated loads (e.g.,

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>bridges), design will address the additional loads generated by the liquefaction conditions. The most suitable method(s) will be selected based on site-specific subsurface investigations conducted as part of the seismic hazard engineering analysis.</p> <ul style="list-style-type: none"> • Site-specific engineering recommendations to minimize impacts from lateral spreading will be incorporated into the final design plans and construction contract documents. Angled piles may be needed to lessen lateral pressures of creek banks to resist lateral spreading. • Localized movements along creek banks will be controlled by incorporating in the project design appropriate permanent slope protection, including rock riprap or revetment. Structures, such as retaining walls, will be required to mitigate specific conditions. Site-specific engineering recommendations to minimize long-term impacts due to landsliding will be defined based upon field testing during the final design phase and incorporated in the final design.
	2.4.6 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> • Open excavations will be shored, taking into consideration surcharge loads from nearby structures and examination of the potential for lateral movement of the excavation walls. • Heavy construction equipment, building materials, excavated soil, and vehicle traffic shall be kept away from the edge of excavations, generally a distance equal to or greater than the depth of the excavation. • During wet weather, storm runoff shall be directed from entering excavation areas as feasible. • Sidewalks, slabs, pavement, and utilities adjacent to proposed excavations shall be adequately supported during construction.
Paleontology	2.2.4 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u> None.</p>
	2.4.8 Construction Phase	<p><u>Avoidance/Minimization Measures:</u> None.</p>
Hazardous Waste Materials	2.2.5 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u> None.</p>
	2.4.9 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u> None.</p>
Air Quality	2.2.6 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u> None.</p>
	2.4.4 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> • The construction contractor shall comply with Caltrans' Standard Specifications Section 7-1.01F and Section 10 of Caltrans' Standard Specifications (2006). <ul style="list-style-type: none"> ○ Section 7, "Legal Relations and Responsibility," addresses the contractor's responsibility on many items of concern, such as air pollution; protection of lakes, streams, reservoirs, and other water bodies; use of pesticides; safety; sanitation; convenience of the public;

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>and damage or injury to any person or property as a result of any construction operation. Section 7-1.01F 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.</p> <ul style="list-style-type: none"> ○ Section 10 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18. ● The construction contractor shall apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. ● The construction contractor shall spread soil binder on any unpaved roads used for construction purposes and on all project construction parking areas. ● The construction contractor shall wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions. ● The construction contractor shall properly tune and maintain construction equipment and vehicles. ● The construction contractor shall use low-sulfur fuel in all construction equipment as provided in Title 17 California Code of Regulations, Section 93114. ● The construction contractor shall 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. ● The construction contractor shall locate equipment and materials storage sites as far away from residential and park uses as practical. Construction areas shall be kept clean and orderly. ● The construction contractor shall establish Environmentally Sensitive Areas for sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited, to the extent that is feasible. ● The construction contractor shall 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. ● The construction contractor shall 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 reduce PM₁₀ and deposition of particulate matter during transportation. ● The construction contractor shall remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter. ● The construction contractor shall 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. ● The construction contractor shall install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. ● According to Caltrans Standard Specification Provisions, idling time for lane closure during construction is restricted to 10 minutes in each direction. ● The construction contractor must comply with Monterey Bay Unified Air Pollution Control District rules, ordinances, and regulations in regards to air quality restrictions.

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
Noise and Vibration	2.2.7 Permanent Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> Noise abatement in form of short soundwalls or building acoustical treatment must be considered for one house with the future predicted traffic noise levels of 75 A-weighted decibels or higher.
	2.4.5 Construction Phase Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ul style="list-style-type: none"> Construction activities shall comply with Section 14-8.02 "Noise Control" of Caltrans' 2010 Standard Specifications and Standard Special Provisions. All internal combustion engines must be equipped with the manufacturer-recommended muffler. Do not exceed a maximum sound level (L_{max}) of 86 decibels (A-weighted) at 50 feet from the job site activities from 9 p.m. to 6 a.m. As directed by the resident engineer, the contractor shall implement appropriate additional noise abatement measures including, but not limited to, changing the location of stationary construction equipment, turning off idling equipment, rescheduling construction activity, notifying adjacent residents in advance of construction work, or installing acoustic barriers around stationary construction noise sources.
Energy	2.2.8	<p><u>Avoidance/Minimization Measures:</u></p> <p>None.</p>
BIOLOGICAL ENVIRONMENT		
Natural Communities	2.3.1 Permanent and Construction Impacts ²	<p><u>Avoidance/Minimization Measures:</u></p> <p>Measures 1-12 and Measures 1-2 for Riparian Forest listed in Table F-1 for Natural Communities are also avoidance and minimization measures for all other affected natural communities.</p> <p>Coast Live Oak Woodland</p> <p>In addition to the measures 1 through 12 described above under the Tier II Auxiliary Lane Alternative, the following measures are specific to coast live oak Woodland.</p> <ol style="list-style-type: none"> All coast live oak woodland and individual oaks that are not planned for removal shall be delineated on the project plans and provided protective fencing at a distance no less than the dripline of the affected tree canopy. Project equipment shall not be permitted to enter the coast live oak dripline canopy at any time during the project. During project activities, erosion control measures shall be implemented. Silt fencing, fiber rolls, and barriers (e.g., hay bales) shall be installed between the project site and adjacent coast live oak woodlands. At a minimum, silt fencing shall be checked and maintained daily throughout the construction period. The contractor shall also apply adequate dust control techniques, such as site watering, during construction. During project activities, the cleaning and refueling of equipment and vehicles shall occur only within a designated staging area and at least 20 meters (~66 feet) from coast live oak woodlands. This staging area shall conform to Best Management Practices applicable to attaining zero discharge of stormwater runoff. At a minimum, all equipment and vehicles shall be checked and maintained daily to ensure proper operation and avoid potential leaks or spills. Any coast live oak tree that is removed as part of Tier I or Tier II activities shall be replaced at a 10:1 ratio. Oak tree replacement efforts shall achieve 75% success at the end of a 5-year period, and require no further

² Permanent and construction measures have been combined in the biology section to be consistent with Section 2.3.

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>maintenance for survival. These replacement plantings shall be located on-site and shall be closely associated with existing coast live oak woodland habitat to provide continuity with the existing coast live oak woodland habitat. The compensatory mitigation will be implemented immediately following project completion. Compensatory mitigation plantings shall be monitored quarterly. Any required maintenance shall also occur quarterly. Maintenance activities include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Quarterly reports and annual monitoring reports and a final completion report will be submitted to Caltrans, the Regional Transportation Commission, and the affected regulatory agencies. The annual monitoring report submitted at Year 5 shall serve as a final completion report if the mitigation is successful.</p>
Wetlands and Other Waters	2.3.2 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u> None.</p>
Plant Species	2.3.3 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ol style="list-style-type: none"> 1. If areas with special-status plant species cannot be avoided, impacts to special-status plant species will be mitigated by implementing the following measures, which are provided on a conceptual basis for the Tier I Corridor Alternatives and will be considered mitigation commitments for the Tier II Auxiliary Lane Alternative for any impacts to special-status plant species that may be identified in future botanical surveys: (a) replace species within the project right-of-way through installation of plantings/seed material; and/or (b) retain topsoil and duff material from the project site, or mitigation bank within the known geographic range of the species, for redistribution on the site following construction. A minimum replacement ratio of 2:1 shall be provided. Planting materials and methods, short- and long-term maintenance requirements, success criteria, and monitoring and reporting methodology shall be implemented so that replacement plantings shall have a 75% survivability goal. For annual species, seeding of the targeted special-status species shall achieve 15 percent relative cover within 5 years. The percent cover shall be determined using a recognized methodology, selected by the project biologist in coordination with the appropriate resource agencies; however, the Daubenmire or point intercept methods as described by Sampling Vegetation Attributes (Natural Resources Conservation Service 1996) are recommended. Compensatory mitigation plantings shall be monitored quarterly. Any required maintenance shall also occur quarterly. Maintenance activities will include weeding, debris removal, replanting (if necessary), repair of any vandalism, fertilizing, and/or pest control. Maintenance activities will be dictated by the results of the quarterly monitoring effort. Quarterly reports and annual monitoring reports shall be submitted to Caltrans, the Regional Transportation Commission, and the affected regulatory agencies. The annual monitoring report submitted at Year 5 shall serve as a final completion report if the mitigation is successful. 2. An environmental training program shall be developed to educate construction personnel about special-status plant species that could be encountered during construction, and the avoidance and minimization measures being employed to prevent or reduce impacts to these species. 3. If federally listed plant species are determined to occur within the biological study area and cannot be avoided, the project must obtain incidental take authorization from U.S. Fish and Wildlife Service through a Federal Endangered Species Act Section 7 Biological Opinion and Incidental Take

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>Statement.</p> <ol style="list-style-type: none"> 4. If feasible, avoid disturbance in areas with special-status plant species. Areas with special-status plant species to be avoided shall be marked on project plans and marked in the field with flagging and/or brightly colored fencing to facilitate plant recognition and avoidance. 5. If plant species listed by the state as endangered or threatened are found to occur within the biological study area and cannot be avoided, the project must obtain incidental take authorization from the California Department of Fish and Wildlife through a California Endangered Species Act Section 2081 Incidental Take Permit. Species that are considered State Rare by the California Department of Fish and Wildlife must be completely avoided because the California Department of Fish and Wildlife currently does not have a legal mechanism to allow for “take.” 6. Under California Code of Regulations Section, Title 14, Section 786.9, the take of plants listed as rare by the California Native Plant Society may be authorized by the California Department of Fish and Wildlife using the same procedures and under the same conditions as incidental take permits, voluntary local programs, natural community conservation plans, safe harbor agreements, and scientific/educational/management permits. During the California Environmental Quality Act project analysis, the California Department of Fish and Wildlife may require implementation of specific mitigation measures for impacts to rare plants found within the biological study area. 7. If the biological monitor(s) or the agency-approved biologist(s) determines that impacts to special-status plant species exceed the levels that are authorized by the affected regulatory agency, he/she will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will resolve the situation immediately by stopping the actions that are causing the problem and notifying the appropriate resource agency as soon as is reasonably possible. No work will resume until the issue is resolved.
Animal Species/Special Status Wildlife	2.3.4 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <p><i>Foothill Yellow-legged Frog</i></p> <p>The avoidance and minimization measures for California red-legged frog (listed below under Section 2.3.5 Threatened and Endangered Species) will also be applicable for foothill yellow-legged frog. In addition, the following mitigation measure specifically applies to foothill yellow-legged frog.</p> <ol style="list-style-type: none"> 1. If project-related construction will impact aquatic areas and if regulatory agency approval allows, qualified biologists shall conduct a pre-construction survey for foothill yellow-legged frog in aquatic areas where construction will occur. The qualified biologists shall capture and relocate any foothill yellow-legged frog (if present) or other sensitive aquatic species to suitable habitat outside the area of impact. A letter of permission from the California Department of Fish and Wildlife will be obtained to relocate foothill yellow-legged frog and other California Special Concern species from work areas encountered during construction within the biological study area as necessary. <p><i>Western Pond Turtle</i></p> <p>The avoidance and minimization measures for California red-legged frog will also be applicable for foothill western pond turtle. In addition, the following mitigation measure specifically applies to western pond turtle.</p> <ol style="list-style-type: none"> 1. If project-related construction will impact aquatic areas and if regulatory agency approval allows, qualified biologists shall conduct a preconstruction survey for the western pond turtle in aquatic areas where construction will occur. The qualified biologists shall capture and relocate

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>any western pond turtle (if present) or other sensitive aquatic species to suitable habitat outside the area of impact. A letter of permission from California Department of Fish and Wildlife will be obtained to relocate western pond turtle and other California Special Concern species encountered during construction from work areas.</p> <p><i>Cooper's Hawk and Short-eared Owl</i></p> <p>The following measures apply to Cooper's Hawk and Short-eared Owl, as well as all other birds protected by the Migratory Bird Treaty Act and California Fish and Game Code.</p> <ol style="list-style-type: none"> 1. If feasible, tree removals shall be scheduled to occur in the fall and winter (between September 1 and February 15), outside of the typical nesting season. 2. If vegetation removal is proposed to occur during the typical bird-nesting season (February 15 to August 31), a nesting bird survey of the area of disturbance shall be conducted by qualified biologists no more than 2 weeks prior to construction to determine presence/absence of nesting birds within the project area. 3. If evidence of migratory bird nesting that may be impacted by construction activities is discovered, or when birds are injured or killed as a result of construction activities, the contractor shall immediately notify the engineer or biological monitor. A 500-foot radius of the nest shall be designated an environmentally sensitive area for nesting raptors, and a 250-foot radius shall be designated an environmentally sensitive area for other nesting avian species, unless otherwise directed by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife. Nests, eggs, or young of birds covered by the Migratory Bird Treaty Act and California Fish and Game Code would not be moved or disturbed until the end of the nesting season or until the young fledge, whichever is later, nor would adult birds be killed, injured, or harassed at any time. The environmentally sensitive area designation shall remain in place until such time that the nest is no longer considered active by the qualified biologist. Written notification shall be provided to Caltrans, the Regional Transportation Commission, and the resource agencies by the qualified biologist. 4. If white tailed kite is identified within the biological study area at any time during the proposed project, the biological monitor shall thoroughly document the species activity and ensure that immediate project activities avoid any impacts to the species. If there is a potential for take, the California Department of Fish and Wildlife shall be contacted immediately to ensure that avoidance of take is maintained throughout the duration of project activities 5. Vegetation removal in potential nesting habitats shall be monitored and documented by the biological monitor(s) regardless of time of year. <p><i>Roosting Bats</i></p> <ol style="list-style-type: none"> 1. A qualified biologist shall conduct surveys for bat species that could be utilizing existing structures or trees as roosting habitat. If bats are identified as utilizing areas within the biological study area for day or night roosting, the qualified biologist shall identify the species of bat present. The biologist(s) conducting the preconstruction surveys shall also identify the nature of the bat utilization of the bridge (i.e., maternity roost, day roost, night roost). 2. If bat species are identified as roosting in areas that will be impacted a plan to exclude bat species from impact areas shall be prepared. This plan shall discuss methods of eliminating bat access to the identified roosting habitat prior to construction so that bats are not able to return to and occupy the roost. The appropriate timing for exclusion implementation shall be determined when the species is identified as occurring within the

Table F-2: Summary of Proposed Avoidance and Minimization Measures for the Tier II Auxiliary Lanes Project		
Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		<p>project site. Roost areas shall be surveyed by a qualified biologist prior to implementing exclusion methods to ensure that no bats are trapped within. Exclusion methods may include, but are not limited to, wire mesh, spray foam, or fabric placement. The plan shall be submitted to the appropriate regulatory agency for approval.</p> <ol style="list-style-type: none"> 3. Demolition of existing structures and vegetation removal shall occur outside of the bat maternity roosting season, typically during the spring and summer months. 4. If bats cannot be excluded from bat roosts, work activities shall be avoided within 100 feet of active maternity roosts until bat pups have been weaned and are deemed independent by a qualified biologist. Regulatory agencies shall be contacted for additional guidance if roosting bats are observed within the biological study area during construction. 5. A qualified biologist shall be present periodically during construction activities to monitor bat populations that may be utilizing the bridge and to ensure that all practicable measures are employed to avoid incidental disturbance to special-status bat species. Monitoring will be timed to occur during key construction events (e.g., removal of existing structures or trees with roosting habitat). 6. If the proposed project permanently affects a major roost location, compensatory mitigation would be required. Compensatory mitigation shall include replacement of suitable habitat that follows the guidance included within <i>California Bat Mitigation Techniques, Solutions, and Effectiveness</i>, prepared for Caltrans (H.T. Harvey 2004).
Threatened and Endangered Species	2.3.5 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u> <u>None.</u></p>
Nesting Birds	2.3.6 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u> The measures included in Section 2.3.4 for Cooper's hawk and short-eared owl would avoid or minimize impacts to nesting birds. No additional avoidance or minimization measures are necessary.</p>
Invasive Species	2.3.7 Permanent and Construction Impacts	<p><u>Avoidance/Minimization Measures:</u></p> <ol style="list-style-type: none"> 1. The landscaping and erosion control included in the project will not use species listed as invasive. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or next to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur. 2. To avoid the spread of invasive species, the contractor will stockpile topsoil and redeposit the stockpiled soil on the slopes after construction of the new bridge is complete, or transport all topsoil to a certified landfill for disposal. 3. During construction, the project will make all reasonable efforts to limit the use of imported soils for fill. Soils currently existing on-site should be used for fill material. If imported fill material must be used, the imported material must be obtained from a source that is known to be free of invasive plant species; or the material must consist of purchased clean material such as crushed aggregate, sorted rock, or similar. 4. The landscape and restoration planting plans must emphasize the use of native species expected to occur in the area. Project plans must avoid the use of plant species that the California Invasive Plant Council, California Exotic Pest Plant Council, California Department of Fish and Wildlife, or

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Environmental Category	EA/EIR Section	Avoidance and Minimization Measures
		other resource organizations considers to be invasive or potentially invasive. Prior to issuance grading, all project landscape and restoration plans shall be verified to ensure that the plans do not include the use of any species considered invasive by the California Invasive Plant Council, California Exotic Pest Plant Council, California Department of Fish and Wildlife.

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