



Natural Community Conservation Plan/ Habitat Conservation Plan

Public Draft

September 2014

Prepared for
Orange County Transportation Authority
550 S. Main Street
Orange, CA 92863

U.S. Fish and Wildlife Service 2177 Salk Avenue Carlsbad, CA 92008 Prepared by
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PUBLIC DRAFT

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This chapter provides a brief overview of the Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan (M2 NCCP/HCP or Proposed Plan); and discusses the Proposed Plan's goals and objectives, alternatives considered, potential environmental consequences, and public issues and areas of controversy. This chapter also summarizes the evaluation of alternatives in terms of the Proposed Plan's goals and objectives and describes the process used to select the environmentally superior alternative under the California Environmental Quality Act (CEQA) and the environmentally preferred alternative under the National Environmental Policy Act (NEPA).

Overview

The Orange County Transportation Authority (OCTA) and U.S. Fish and Wildlife Service (USFWS) have prepared this joint Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) to evaluate the potential impacts associated with the issuance of incidental take permits (ITPs) by the California Department of Fish and Wildlife (CDFW) and USFWS for the M2 NCCP/HCP. The M2 NCCP/HCP has been prepared to fulfill the requirements for issuance of an incidental take permit under Section 10 of the federal Endangered Species Act (ESA) and incidental take authorization under Section 2835 of the state Fish and Game Code (California Natural Community Conservation Planning Act—NCCPA). The purpose of the proposed NCCP/HCP is to protect and enhance ecological diversity and function in Orange County, and to contribute to and enhance the integrity and connectivity of the existing protected lands in Orange County.

Background of the Proposed Plan

On November 6, 1990, Orange County voters approved Measure M, a 20-year, half-cent local transportation sales tax. All of the major projects promised to and approved by the voters in 1990 are complete. Funds that go to cities and the County of Orange to maintain and improve local streets and roads, along with transit-fare reductions for seniors and persons with disabilities, were components of Measure M, which ended on March 31, 2011. While the promises made in Measure M have been fulfilled, continued transportation investment still is needed as Orange County continues to grow.

In 2006, Orange County voters approved the renewal of Measure M (M2), a transportation sales tax designed to raise money to improve Orange County's transportation system. Among other things, OCTA proposed 13 freeway improvement projects through Measure M2. As part of the M2 program, at least 5%, or roughly over \$300 million, of the freeway program revenues will be allocated to mitigate the environmental impacts of freeway projects, under the OCTA Mitigation and Resource Protection Program (MRPP). The goals of the MRPP are to engage in comprehensive, rather than piecemeal, mitigation to provide higher-value environmental benefits such as habitat protection, wildlife corridors, and resource preservation in exchange for streamlined project approvals for the freeway program as a whole.

The need for the Proposed Plan is based on the potential that the freeway improvement projects proposed by OCTA through the M2 transportation sales tax measure to result in take of Covered Species (defined in Chapter 2, "Proposed Plan and Alternatives"). In addition, the California

Department of Transportation (Caltrans) is the owner/operator of the freeway system and the improvements are subject to California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) jurisdiction within the Plan Area (i.e., the area in which impacts would be evaluated and conservation would occur). Because these actions could result in the take of Covered Species, they require issuance of individual incidental take permits on a project-by-project basis. The Proposed Plan would streamline the permitting process and assure that take of Covered Species is mitigated in a comprehensive manner through a broad strategy of species and habitat conservation.

In late 2009, the OCTA Environmental Oversight Committee (EOC) and Board of Directors approved the Master Agreement and Planning Agreement to establish the process, roles, responsibilities, and commitments for the preparation of the M2 NCCP/HCP. The goal of this effort is to provide an effective framework to protect and enhance natural resources in Orange County, while improving and streamlining the environmental permitting process for impacts of M2-related projects and activities on sensitive, threatened, and endangered species and their habitats.

Accordingly, OCTA, CDFW and USFWS have identified the following purposes/objectives.

- Streamlining the environmental permitting process for impacts on endangered species by authorizing take of listed and other Covered Species impacted, or potentially impacted, by covered transportation projects in Orange County.
- Reducing the cost and increasing the clarity and consistency of federal and state permitting.
- Sharing the costs and benefits of the habitat conservation plan as widely and equitably as possible.
- Improving the coordination and biological effectiveness of individual project mitigation.
- Protecting and enhancing ecological diversity and function in Orange County, and contributing to and enhancing the integrity and connectivity of the existing protected lands in Orange County.

This Draft EIR/EIS describes the features of the Proposed Plan and its alternatives, including the No Project/No Action Alternative. As required by CEQA and NEPA, this Draft EIR evaluates the potential impacts of the Proposed Plan and all alternatives.

This Draft EIR/EIS incorporates by reference the OCTA Long Range Transportation Plan (LRTP) Program EIR, particularly in the analysis of covered freeway improvement projects in Chapter 4, "Environmental Consequences." The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on Covered Species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with additional review for CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions.

Alternatives Analyzed in the Draft EIR/EIS

Alternative 1: No Project/No Action

Under the No Project/No Action Alternative, the proposed NCCP/HCP, including implementation of conservation measures and creation of a Preserve System, would not be adopted, and permits pursuant to Section 10(a)(1)(B) of ESA and Section 2835 of the NCCPA would not be issued by USFWS and CDFW, respectively.

Under the No Project/No Action Alternative, compliance with ESA and CESA would continue to be addressed project-by-project for each of the M2 freeway projects. Freeway projects with a potential to affect federally listed species would be required to individually comply with ESA through either the preparation of individual habitat conservation plans (HCPs) and Section 10 permit application, or the Section 7 consultation process in cases in which federal authorization (e.g., Section 404 Clean Water Act [CWA] permitting by the U.S. Army Corps of Engineers [USACE]) or funding (e.g., Federal Highway Administration [FHWA] funding for transportation projects) are required. Section 7 compliance would focus on federally listed species and would not address state-listed or non-listed species.

No comprehensive strategies to avoid, minimize, or mitigate effects on sensitive species would be implemented under the No Project/No Action Alternative. No measures that provide for species recovery, as required under NCCPA, would be implemented. With project-by-project conservation and mitigation, listed and non-listed species would not benefit from the landscape-scale conservation actions that would otherwise be implemented through the NCCP/HCP.

Currently, the permitting and mitigation of impacts on special-status species associated with implementation of freeway projects in Orange County is undertaken on a project-by-project basis, which does not provide a mechanism for coordinating regional conservation and can result in potentially less effective biological mitigation.

Alternative 2: Proposed NCCP/HCP (Proposed Plan)

The proposed NCCP/HCP is a regional, comprehensive plan that establishes a framework for complying with state and federal endangered species regulations while accommodating future transportation improvements within the Plan Area. The Proposed Plan is designed to coordinate the process for permitting and mitigating the take of Covered Species associated with implementation of freeway projects in Orange County by implementing a broad strategy for conservation of species and habitats.

The Plan proposes 13 listed and non-listed species for coverage. The Proposed Plan identifies a number of Covered Activities (defined in Chapter 2, "Proposed Plan and Alternatives") including the specific M2 freeway improvement projects and conservation activities in the Preserve Areas, that may result in take of federal- and/or state-listed species or species that may become listed during the 40-year Permit term. These projects and activities are considered in assessing the total amount of Covered Species take that would be expected in the Permit Area and in developing the overall NCCP/HCP conservation strategy. The issuance of ITPs for the Proposed Plan does not confer or imply authorization of any specific covered freeway improvement projects; all covered freeway improvement projects would be subject to future discretionary approval authority within the individual jurisdictions where the activity or project would occur. The ITPs for the Proposed Plan would only authorize conservation and management activities within the NCCP/HCP preserved lands.

The primary responsibility for Plan implementation rests with OCTA. However, as described in the Proposed Plan, other groups would have secondary responsibility for coordination, plan compliance, and implementation of various aspects of the Proposed Plan. Implementation of the conservation strategy, monitoring program, Covered Project and Activities approvals, and reporting will require coordinated actions among OCTA, Caltrans, Preserve Managers, Monitoring Biologists, Restoration Project Sponsors, and Wildlife Agencies.

In order to comply with the requirements of the ESA, the California Endangered Species Act (CESA), and the NCCPA, the Proposed Plan addresses a number of required elements, including species and habitat goals and objectives; the evaluation of Covered Projects and Activities effects on Covered Species, including indirect and cumulative effects; a conservation strategy; a monitoring and adaptive management program; descriptions of changed circumstances and remedial measures; and identification of funding sources. The key elements of the Proposed Plan are described in Chapter 2.

Non-Covered Species that occur within the Plan Area would continue to be regulated under CESA and ESA. Take of non-covered listed species can be authorized separately from the Proposed Plan under Section 2081 of the Fish and Game Code, or Sections 7 or 10 of the ESA. Impacts on species not covered under the Proposed Plan could also be addressed through the amendment process described in Chapter 8, "Plan Implementation," of the Proposed Plan.

Alternative 3: Federal and State ESA-Listed Species Only NCCP/HCP (Reduced Plan)

Under the Reduced Plan Alternative, only those species that are federally or state-listed as threatened or endangered would be proposed for coverage under the NCCP/HCP. Accordingly, only the following three species would be covered under Alternative 3.

- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Least Bell's vireo (Vireo bellii pusillus)
- Coastal California gnatcatcher (*Polioptila californica californica*)

The amount of land acquisition and Preserve Area assembled would be identical to that of the Proposed Plan. The amount of species-specific habitat restoration required would be less, however, because the conservation strategy measures would be focused only on the three ESA-listed species mentioned above.

Under the Reduced Plan Alternative, no assurances would be provided by USFWS, as part of the ITPs, that the avoidance and mitigation measures provided in the proposed NCCP/HCP would adequately conserve currently non-listed species that may be listed during the term of the NCCP/HCP. Other sensitive species would not be covered, and take would be addressed on a project-by-project basis, similar to the No Project/No Action alternative.

Environmental Consequences

This Draft EIR/EIS evaluates the environmental consequences of the Proposed Plan and its alternatives. A summary of the impact analysis for these alternatives is presented at the end of this chapter (Table ES-1) and in Chapter 4, "Environmental Consequences." In addition, CEQA and NEPA require a review of other issues, which are described in Chapter 5, "Other Required CEQA and NEPA Analyses," of this Draft EIR/EIS.

Significant and Unavoidable Impacts

As evaluated in Chapter 4, "Environmental Consequences," there would be no significant unavoidable (i.e., unmitigable) impacts that would result from conservation activities under the Proposed Plan or its alternatives. All potentially significant impacts resulting from Proposed Plan implementation would either be avoided or would be reduced to below a level of significance with the mitigation measures identified in this Draft EIR/EIS.

Regarding the underlying freeway improvement project impacts, analysis was incorporated by reference from OCTA's 2006 LRTP Program EIR. Some freeway improvement impacts were determined to be significant and unavoidable and a Statement of Overriding Considerations was adopted for the LRTP Program EIR. The freeway improvement impact conclusions have been added in this Draft EIR/EIS analysis for informational purposes only, and these conclusions are not modified in any way by the impact analysis provided herein for the biological mitigation and conservation activities.

Areas of Controversy/Issues

OCTA released a Notice of Preparation (NOP) for the Draft EIR on December 3, 2010, initiating the scoping period. A Notice of Intent (NOI) to prepare an EIS was noticed in the *Federal Register* on December 1, 2010. Written comments were received by OCTA during the scoping period (December 1, 2010, to January 13, 2011). These comments are included as Appendix B to this document.

A scoping meeting was held on Wednesday, December 15, 2010, from 5 p.m. to 7 p.m. at OCTA offices (550 South Main Street, Orange, CA 92863). There were 11 attendees at the scoping meeting. Also in attendance were staff members representing CDFW and USFWS. Attendees represented a variety of community groups, including, residents, environmental groups, and the Orange County Planning Department.

At the scoping meeting, team members were present to provide information to the public on the details of the Proposed Plan, including: the background of the environmental mitigation program, program benefits to the county, components of an NCCP/HCP, descriptions of Covered Species, location of the Plan Area, and the program's next steps. The meeting also informed the public about the details of the environmental process and served as an opportunity for the community to provide feedback to help guide the Plan's development.

The following key issues of public concern regarding the Proposed Plan were identified during the scoping process.

Biological Resources

- Wildlife and endangered species protection must be a priority.
- The January 2011 Department of Interior USFWS Final Critical Habitat for the Arroyo Toad Unit #8 Santa Ana River Basin should be incorporated.
- Continued acquisition and management of lands within the Puente-Chino Hills Wildlife Corridor would further connectivity between this area and Orange County extending to the Santa Ana Mountains.

- Measures should be incorporated into the NCCP/HCP that promote wildlife movement and habitat connectivity within the Puente Chino Hills Wildlife Corridor.
- The Draft EIR/EIS should include a complete assessment of sensitive biological resources and a discussion of direct, indirect, and cumulative impacts on biological resources within and adjacent to the Plan Area.
- Development within wetlands is discouraged.
- Conservation easements should be placed on all acquisition and restoration properties to ensure proper protection.
- The NCCP/HCP should clearly define compatible uses.

Cultural Resources

- Native American Cultural Resources were identified in the Plan Area vicinity as a part of the Native American Heritage Commission (NAHC) Sacred Land File.
- Avoidance of cultural resources in accordance with CEQA should be considered.
- Consultation with Native American tribes regarding the Plan should be conducted in compliance with federal requirements.

Funding

There is potential lack of funding for execution and maintenance of the Proposed Plan.

Land Use

 Certain areas identified for conservation in the Conservation Assessment completed by Conservation Biology Institute are identified as Planning Areas for future development by Rancho Mission Viejo.

Water Quality

• Runoff from the NCCP/HCP must conform to Regional Water Quality Control Board discharge requirements.

CEQA Process

- Each project proposed associated with the NCCP/HCP must have subsequent environmental documentation, and associated technical studies must adhere to Caltrans protocol.
- The Draft EIR/EIS should cover mitigation for losses of habitat associated with highway projects, long-term management of the Preserve Areas, and funding mechanisms.

Summary of Alternative Impacts

Table ES-1 provides an overall summary and comparison of impacts by resource topic across the alternatives. Detailed discussions of potential resource topic impacts by alternative are provided in Chapter 4, "Environmental Consequences."

Environmentally Superior/Preferred Alternative

The impacts associated with Alternatives 2 and 3 are qualitatively similar, though Alternative 2 would provide for a greater level of conservation, particularly through increased restoration. The overall benefit to species would therefore be greater under Alternative 2, without a measurable difference in impacts on the environment. Therefore, the environmentally superior/preferred alternative is Alternative 2, the Proposed Plan.

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Table ES-1. Overall Impacts Summary by Resource Topic for All Alternatives¹

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Agriculture	0	improvement projects and the biological mitigation and conservation activities would not impact agricultural resources. The possibility exists that parcels of land needed to meet mitigation required for individual covered freeway improvement projects could impact Important Farmland or Williamson Act lands; however, such effects are unlikely and speculative because the sites are not known at this time.	0	There would be no impact on prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use, as the acquired Preserve Areas and areas for the covered freeway improvement projects do not contain land designated as such. Agricultural impacts associated with the biological mitigation and conservation activities under Alternative 2 would not occur.	0	Effects under Alternative 3 would be the same as Alternative 2. Agricultural impacts associated with the biological mitigation and conservation activities under Alternative 3 would not occur.
Air Quality and Greenhouse Gases ²	-	As described in the LRTP Program EIR, covered freeway improvement project construction activities under Alternative 1 would create short-term temporary air emissions. Construction activities associated with transportation facilities of any medium- to large-scale highways or arterials would be expected to individually generate a significant amount of construction activity and therefore exceed the	-	In addition to the impacts from covered freeway improvement projects, Alternative 2 preserve management activity emissions would temporarily generate criteria pollutant (ROG, NO _X , SO _X , CO, PM10, and PM2.5) and GHG (CO ₂ , CH ₄ , and N ₂ O) emissions, which could result in adverse effects on short-term ambient air quality and climate change. Daily emissions estimates would be well below SCAQMD daily mass regional and localized threshold levels, annual emissions	_	Effects under Alternative 3 would be the same as Alternative 2. Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
		significance thresholds established in the CEQA Handbook. This would create a potentially significant short-term impact. These impacts would occur in localized areas, depending on the construction site locations. Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant.		estimates would be well below federal de minimis levels, and annual emissions estimates would be well below both SCAQMD draft GHG thresholds (3,000 MT) and CEQ's reference point (25,000 MT). Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.		
Biological Resources	-	improvement projects under Alternative 1 would have an overall negative effect on biological resources. While project-by-project mitigation may be effective at targeting and preserving high-value habitat, the creation of smaller mitigation sites would likely result in ineffective species conservation across the landscape. Smaller preserve areas may fail to meet preserve design standards to maximize preserve size, incorporate environmental gradients, minimize edges, and preserve habitat linkages. Furthermore, the absence of a	++	Alternative 2 achieves a higher-value conservation than what would be expected through project-by-project mitigation of the covered freeway improvement projects. Conservation would be completed in a comprehensive manner under the NCCP/HCP that would result in large blocks of preserved and restored habitat in locations important for regional conservation. Biological resource impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Alternative 3 achieves a higher-value conservation than what would be expected through project-by-project mitigation of the covered freeway improvement projects (i.e., Alternative 1); however, beneficial effects on Covered and Non-Covered Species would be reduced since the level of species-specific management and restoration efforts would be slightly less with fewer Covered Species. Biological resource impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary comprehensive monitoring and adaptive management program would create less certainty in the long-term success of mitigation sites. Biological resource impacts associated with the biological mitigation and conservation activities would be potentially significant and unavoidable under Alternative 1.	Impact Finding	Summary	Impact Finding	Summary
Cultural Resources ²	-	The potential exists under Alternative 1 for earthmoving activities of covered freeway improvement project activities to have impacts on known and unknown archeological, historic, built environment, and paleontological resources. Potential impacts on these resources would remain significant after implementation of mitigation measures. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities would be potentially significant and unavoidable under Alternative 1.	-	Effects under Alternative 2 would be reduced when compared with Alternative 1 because the preserve sites are known, and cultural resource impacts would be mitigated to less than significant or avoided entirely. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant after mitigation is incorporated.	-	Effects under Alternative 3 would be the same as Alternative 2. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant after mitigation is incorporated.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Geology, Soils, and Seismicity ²		As documented in the LRTP Program EIR, covered freeway improvement projects under Alternative 1 could result in substantial grading or other earth modifications that could generate air and waterborne erosion and slope failure. Earthwork or major cuts into hillsides could create unstable slope conditions and lead to long-term soil erosion, creating potential landslide and falling rock hazards. Therefore, potential impacts related to long-term erosion and slope failure due to covered freeway improvement projects have the potential to generate significant erosion and slope failure impacts, and the LRTP Program EIR identified this impact as significant and unavoidable. However, geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant.		In addition to impacts from covered freeway improvement projects which would be the same as under Alternative 1, any minor construction resulting from covered preserve management activities under Alternative 2, such as the installation of preserve management offices, maintenance sheds, restrooms, wildlife observation platforms, or educational kiosks, would be built according to appropriate standards, including the current IBC and CBC. Geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.		Effects under Alternative 3 would be the same as Alternative 2. Geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.
Hazards and Hazardous Materials	-	Covered freeway improvement projects under Alternative 1 would have potential for accidental release of hazardous	-	Effects under Alternative 2 would be the same as Alternative 1. Hazards and hazardous materials impacts associated with the biological	-	Effects under Alternative 3 would be the same as Alternative 2. Hazards and hazardous materials impacts associated with the biological

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
		materials or the disturbance of contaminated soils. However, impacts would be less than significant impacts after mitigation. Hazards and hazardous materials impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant after mitigation.		mitigation and conservation activities under Alternative 2 would be less than significant after mitigation.		mitigation and conservation activities under Alternative 3 would be less than significant after mitigation.
Hydrology and Water Quality	-	Covered freeway improvement projects under As documented in the LRTP Program EIR, Alternative 1 would result in temporary and permanent impacts on drainage and stormwater quality, including the general categories of increased stormwater runoff from increased impervious surfaces, increased amounts of automotive waste transported into local drainages, increased erosion and siltation in local drainages, degradation of groundwater quality, and exposure to flooding. The LRTP Program EIR determined that this impact during project operation would be significant and unavoidable. However, for the	+	While covered freeway improvement project impacts would be the same as Alternative 1, the implementation of an NCCP/HCP would result in a larger acreage of biological resources mitigation/conservation that would also benefit hydrology and water quality. The acquisition of large blocks of Preserve lands and funding of restoration projects would contribute to the protection and enhancement of natural hydrologic functions and improvement of water quality. Hydrology and water quality impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Effects under Alternative 3 would be the same as Alternative 2. Hydrology and water quality impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary biological mitigation and conservation activities, the incorporation of project design features, along with the use of identified BMPs, would reduce potential hydrology and water quality impacts to less than significant.	Impact Finding	Summary	Impact Finding	Summary
Land Use	-	Under Alternative 1, development within the incorporated portions of the county would be consistent with general plan guidance; however, mitigation for covered freeway improvement impacts would occur on a case-by-case basis and could result in inconsistencies between existing, adjacent, and planned land uses. The LRTP Program EIR identified a significant and unavoidable impact related to land use for the covered freeway improvement projects. However, land use impacts related to the biological mitigation and conservation activities under Alternative 1 would be less than significant.	+	Impacts associated with covered freeway improvement projects would the same as Alternative 1. Restoration activities would not result in changes in land use from the current nature of the Preserves that would result in environmental impacts. Alternative 2 would have beneficial impact on recreational resources by protecting the Preserve Areas from development and increasing the availability of passive recreational resources on properties that were privately owned. Land use impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Effects under Alternative 3 would be the same as Alternative 2. Land use impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Noise ²	-	The LRTP Program EIR determined that long-term noise impacts from the covered freeway improvement projects would be significant and unavoidable, and construction activities associated with covered freeway improvement projects under Alternative 1 would generate noise from the movement of construction vehicles, and construction activities. Noise impacts associated with the biological mitigation and conservation strategies under Alternative 1 would result in minimal to no operational noise and much less construction activity and its associated noise. Furthermore, construction activities would be carried out in compliance with the California Department of Transportation (Caltrans) Construction Noise Criteria, and mitigation measures would be implemented to reduce impacts to less than significant.	-	In addition to noise associated with covered freeway improvement projects as under Alternative 1, Alternative 2 could result in specific construction-related noise from restoration and conservation management activities (e.g., invasive species removal) within the Preserve System. Conservation activities under the Proposed Plan would not result in long-term noise-sensitive land uses being exposed to noise in excess of an established standard because implementation of the Proposed Plan would not result in permanent noise. Furthermore, all construction activities would be carried out in compliance with Caltrans Construction Noise Criteria, and mitigation measures would be implemented. Therefore, noise impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant with mitigation incorporated.	-	Effects under Alternative 3 would be the same as Alternative 2. Noise impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant with mitigation incorporated.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Socioeconomics and Environmental Justice	+	The LRTP Program EIR determined that the development of covered freeway improvement projects under Alternative 1 could result in the disturbance and/or loss of land currently used for residential or business purposes. The acquisition and relocation of existing homes and businesses required by certain projects that are part of the LRTP would result in a less than significant impact after mitigation. Socioeconomic impacts associated with the biological mitigation and conservation activities would be less than significant because the conservation of land would not substantially affect, in an adverse manner, the provision of housing, employment, and economic well-being. Construction of covered freeway improvement projects would have a beneficial impact on employment and the local economy, which is burdened by the continuing effects of the recession following the financial crisis. Therefore, the	+	Covered freeway improvement effects, as well as biological mitigation and conservation activities, on housing, employment, and economic wellbeing under Alternative 2 would be the same as those described under Alternative 1. Impacts would be less than significant. In addition to impacts from covered freeway improvement projects as described in Alternative 1, construction activities in Preserve Areas under Alternative 2 would have beneficial impacts on employment and the local economy. No adverse impact would occur.	+	Effects under Alternative 3 would be the same as Alternative 2. Impacts would be less than significant.

	Alternative 1: No Project/No Action		A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
		Proposed Plan may also have beneficial effects on employment and the local economy for minority and low-income groups through the conservation of biological resources in the community. Impacts would be less than significant.				
Transportation and Circulation	+	Based on the analysis completed in the LRTP Program EIR, short-term traffic impacts associated with covered freeway improvement projects under Alternative 1 could occur during construction activities. Covered freeway improvement projects would have a positive effect on the transportation system in Orange County (OCTA 2006) and would not conflict with applicable congestion management plans, ordinances, or policies. Moreover, implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 1.	+	In addition to the short-term traffic impacts associated with covered freeway improvement projects under Alternative 1, conservation activities under Alternative 2 could impact congestion levels during restoration activities, but this impact would be less than significant and mitigation would not be required. As with Alternative 1, covered freeway improvement projects would have a positive effect on the transportation system in Orange County (OCTA 2006) and would not conflict with applicable congestion management plans, ordinances, or policies. Implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 2.	+	Effects under Alternative 3 would be the same as Alternative 2. Implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 3.

Orange County Transportation Authority Executive Summary

	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan
Resource Topic	Impact	Impact	Impact
	Finding Summary	Finding Summary	Finding Summary

¹ The findings within this table are for the purpose of evaluating the Proposed Plan and based on the information presented in the OCTA LRTP Program EIR (2006).

Notes:

- 0 = no substantial change relative to current conditions
- = negative trend relative to current conditions
- + = positive trend relative to current conditions
- ++ = substantial positive trend relative to current conditions

² The OCTA LRTP Program EIR (2006) identified potentially significant unavoidable effects resulting from covered freeway improvement projects in this environmental resource topic.

Orange County Transportation Authority	Executive Summary

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Introduction/Purpose and Need

1.1 Introduction

The Orange County Transportation Authority (OCTA), in coordination with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW),¹ is preparing a Measure M2 (M2) Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP or Proposed Plan). In addition, this combined Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) is being prepared for the Plan pursuant to the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

CEQA requires that the potentially significant environmental impacts of proposed projects be reduced to a less-than-significant level through adoption of feasible avoidance, minimization, or mitigation measures. CEQA applies to certain activities in California undertaken by either a public agency or a private entity that must receive some discretionary approval from a California government agency. In approving the Proposed Plan, CDFW must comply with CEQA. Similarly, OCTA must comply with CEQA prior to adopting the Proposed Plan as the Permittee. OCTA is serving as the Lead Agency under CEQA, and CDFW is a Responsible Agency under CEQA with permit issuance authority.

NEPA applies to all federal agencies and to most of the activities they manage, regulate, or fund that affect the human environment. USFWS is the Lead Agency under NEPA in its consideration of issuing an Incidental Take Permit (ITP)² to OCTA under Section 10 of the federal Endangered Species Act (ESA).

The Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all proposed preserve acquisition and management activities described in the Proposed Plan regarding impacts on Covered Species and jurisdictional wetlands and waters associated with the covered freeway projects analyzed in OCTA's 2006 Long Range Transportation Plan (LRTP) Program EIR. Future freeway improvement projects that receive take coverage under the ITP for implementation of the NCCP/HCP must also comply with CEQA (and possibly NEPA) through separate, project-specific environmental analyses. It is expected that the conservation provided in the Proposed Plan will be sufficient to meet all CEQA mitigation standards for impacts on the special-status species and natural communities that are covered in the Proposed Plan. Future CEQA documents for applicants that receive *take* coverage under the Proposed Plan will incorporate the conservation measures from the Proposed Plan to comply with CEQA for the Covered Species and natural communities that are addressed in the Proposed Plan. The Proposed Plan implements a conservation strategy designed to achieve a comprehensive set of biological goals and objectives.

¹ On January 1, 2013, the California Department of Fish and Game changed its name to the California Department of Fish and Wildlife (CDFW). The enabling legislation for CDFW remains as California Department of Fish and Game Code.

² The ITP issued by USFWS would be for the take of Covered Species and would not authorize the underlying activities.

Furthermore, as an NCCP, the Proposed Plan provides for broad-based planning to preserve natural communities at the ecosystem scale.

1.1.1 Overview of the Proposed NCCP/HCP

The M2 NCCP/HCP is intended to provide an effective framework to protect and enhance natural resources in Orange County while streamlining the environmental permitting process for impacts of Covered Projects and Covered Activities (defined in Chapter 2, "Proposed Plan and Alternatives") on sensitive, threatened, and endangered species and their habitats. Once approved, the Proposed Plan would allow OCTA to streamline the permitting for take authorization of Covered Species obtained from CDFW and USFWS, collectively referred to herein as the "Wildlife Agencies," for a collection of activities and projects in Orange County that would otherwise require project-by-project review and permitting, which is generally costly and time-consuming for applicants and often results in uncoordinated and only marginally effective biological mitigation. In addition, the Proposed Plan would provide comprehensive species, wetlands, and ecosystem conservation and conservation for threatened and endangered species in Southern California.

The Proposed Plan is intended to offset project-related impacts on threatened and endangered species and their habitat in a manner that protects and enhances ecological diversity and function in Orange County, and enhances the integrity and connectivity of the existing protected lands in Orange County. To that end, the Proposed Plan describes how the conservation actions undertaken by OCTA to acquire preserves, fund restoration projects, and implement avoidance and minimization measures would achieve a level of conservation that exceeds conservation targets and provides for conservation of Covered Species and their habitat within areas important for regional conservation. The Proposed Plan also describes the responsibilities associated with operating and maintaining the Preserves acquired to offset the anticipated impacts, and covers potential impacts on species associated with preserve management and monitoring. As part of the NCCP, the Proposed Plan would provide conservation for listed species and help preclude the need to list additional Covered Species in the future.

OCTA is requesting CDFW to issue a permit that authorizes take for all the Covered Species under the California Natural Community Conservation Planning Act (NCCPA). OCTA is also requesting USFWS to issue a permit that authorizes incidental take of all Covered Species (defined in Chapter 2, "Proposed Plan and Alternatives) on the Covered Species list under the ESA. The Proposed Plan includes a conservation strategy to minimize and mitigate potential impacts on Covered Species and provides for their conservation and management. CDFW and USFWS will issue take permits to OCTA under the NCCPA and ESA, respectively, that OCTA will use for the M2 transportation improvement projects and activities covered by the Plan. CDFW and USFWS will also provide assurances to OCTA that no further commitments of funds, land, or water will be required to address impacts on Covered Species beyond what is described in the Proposed Plan.

The Proposed Plan also is intended to serve as the framework for subsequent applications for compliance with other regulatory permits. OCTA intends to cooperate with CDFW, the San Diego and Santa Ana Regional Water Quality Control Boards (RWQCBs), the State Water Resources Control Board (State Water Board), and the U.S. Army Corps of Engineers (USACE) to develop and operate streamlined regional permit programs for aquatic resources under Section 1602 of the California Fish and Game Code relating to Streambed Alteration Agreements, the Porter-Cologne Water Quality Control Act (Porter-Cologne), and Sections 401 and 404 of the Clean Water Act (CWA).

The permits issued by the Wildlife Agencies will name specific Covered Species that are either currently listed as threatened or endangered or that may become listed during the permit term. The Proposed Plan addresses 13 listed and non-listed species, which are composed of 10 wildlife species and three plant species. These species were identified on the basis of an initial assessment of the potential occurrence of listed and sensitive non-listed species and their habitat in the Plan Area, and the potential effect of proposed Covered Projects and Covered Activities and conservation measures on listed species or species that could become listed during the term of the Proposed Plan.

1.1.2 Background of the Proposed NCCP/HCP

On November 6, 1990, Orange County voters approved Measure M, a 20-year, half-cent local transportation sales tax. All of the major projects approved by the voters in 1990 are complete. Funds that go to cities and the County of Orange to maintain and improve local streets and roads, along with transit-fare reductions for seniors and persons with disabilities, were components of Measure M, which ended on March 31, 2011. While the promises made in Measure M have been fulfilled, continued transportation investment is still needed as Orange County continues to grow.

In 2006, Orange County voters approved the renewal of M2, a transportation sales tax designed to raise money to improve Orange County's transportation system. Among other things, OCTA proposed 13 freeway improvement projects through Measure M2. As part of this program, at least 5%, or just over \$300 million, of the freeway program revenues will be allocated to mitigate the environmental impacts of the proposed freeway projects under the OCTA Mitigation and Resource Protection Program (MRPP). The goal of the MRPP is to engage in comprehensive mitigation, rather than piecemealed, to provide higher-value environmental benefits such as habitat protection, preservation and/or implementation of wildlife corridors, and resource preservation in exchange for streamlined project approvals for the freeway program as a whole. Through the M2 Ordinance, an Environmental Oversight Committee (EOC) was created in 2008 which consists of representatives from the OCTA Board of Directors (Board), environmental coalition, Wildlife Agencies, USACE, and the public.

In January 2010, the OCTA EOC and Board) approved the Master Agreement and Planning Agreement to establish the process, roles, responsibilities, and commitments for the preparation of the M2 NCCP/HCP. The goal of this effort is to provide an effective framework to protect and enhance natural resources in Orange County, while improving and streamlining the environmental permitting process for impacts of M2-related projects and activities on sensitive, threatened, and endangered species and their habitats.

1.1.2.1 Plan Area

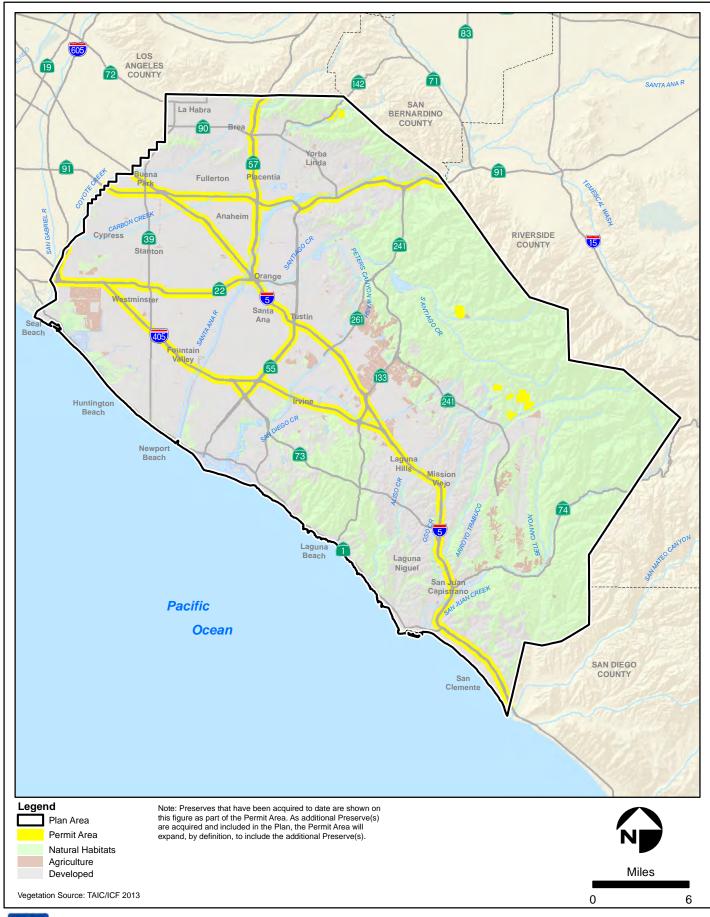
The Plan Area is the broad area in which all planning would occur for the Proposed Plan. The Plan Area includes the entirety of Orange County, totaling approximately 511,200 acres (Figures 1-1 and 1-2). The Plan Area is located south of Los Angeles County, north of San Diego County, and west of Riverside County. The western county line is the Pacific Ocean. The Plan Area was defined as the area in which impacts would be evaluated and conservation would occur.





Vicinity Map

Figure 1-1





Plan and Permit Area

Figure 1-2

1.1.2.2 Permit Area

The Permit Area is the area in which OCTA is requesting authorization from CDFW and USFWS for projects and activities that may result in take of Covered Species. The Permit Area includes those lands in the Plan Area that are defined by one or both of the following parameters.

- The lands along existing freeways (Interstate [I-] 5, I-405, I-605, State Route [SR-] 22, SR-55, SR-57, SR-91) in which M2 freeway improvement projects will be constructed (Covered Projects).
- The boundary of any land acquired in fee title or conservation easement and managed under the Proposed Plan (i.e., Preserves).

1.1.2.3 Relationship to Other Protected Areas

More than 75% of the natural habitat in Orange County is already in some form of habitat protection. Two subregional plans (Orange County Central-Coastal NCCP/HCP and Orange County Southern Subregion Habitat Conservation Plan [HCP]) have been approved by USFWS in the Plan Area, establishing a habitat reserve network and perpetual land management program. In addition, the Western Riverside Multiple Species Habitat Conservation Plan (MSHCP) borders the Plan Area to the east (Figure 1-3). Finally, other protected areas are found in the Plan Area in the form of public lands (local, state, and federal) and privately held conservation areas. The Plan will expand and complement the existing preserve network by focusing on prioritized property acquisitions to conserve unprotected areas in core habitat areas and linkages, and funding of restoration projects on lands currently protected to contribute to the enhancement of habitat for Covered Species.

1.1.3 Overview of CEQA and NEPA

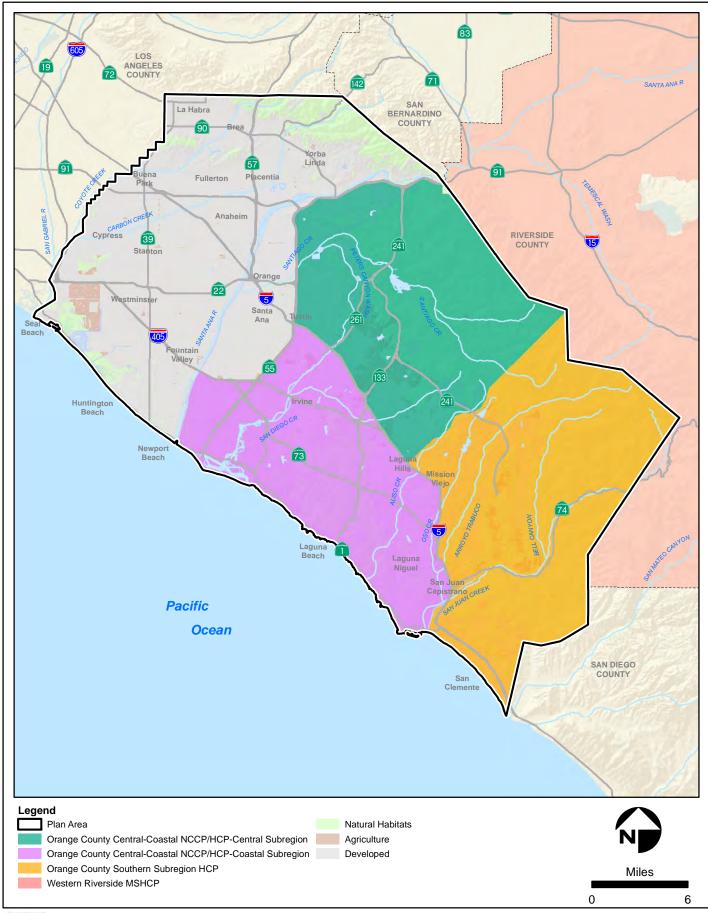
1.1.3.1 California Environmental Quality Act

CEQA requires state and local agencies to evaluate the potential environmental implications of their actions and aims to prevent adverse environmental impacts of those actions by requiring those agencies, when feasible, to avoid or reduce potentially significant environmental impacts. The State CEQA Guidelines serve as the primary source of interpretation of CEQA.

As set forth in California Code of Regulations (CCR), title 14, section 15063, CEQA requires that the Lead Agency prepare an EIR when the Lead Agency determines that a project may have a significant effect on the environment. Public agencies are required to comply with CEQA for discretionary actions, including prior to adopting NCCPs. OCTA, as the Lead Agency under CEQA, has determined that the proposed NCCP/HCP may result in a significant impact on the environment, and an EIR must be prepared.

1.1.3.2 National Environmental Policy Act

NEPA provides an interdisciplinary framework for federal agencies to prevent environmental damage and contains action-forcing procedures to ensure that federal agency decision-makers take environmental factors into account for all alternatives. NEPA applies to all federal agencies and to most of the activities they manage, regulate, or fund that affect the human environment. It requires all agencies to consider and to publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. The Council on Environmental Quality





(CEQ) adopted regulations and other guidance that provide detailed procedures that federal agencies must follow to implement NEPA.

NEPA requires that every federal agency prepare an EIS for proposed legislation or other major federal actions "significantly affecting the quality of the human environment" (U.S. Government Code [USC], title 42, section 4332; Code of Federal Regulations [CFR], title 40, section 1501). USFWS, as the Lead Agency under NEPA, has determined that the issuance of an ITP to OCTA under ESA Section 10 constitutes a major federal action; therefore, an EIS must be prepared.

1.1.3.3 Joint CEQA/NEPA Document

When a project is subject to review under both CEQA and NEPA, state and local agencies are encouraged to cooperate with federal agencies in the environmental review process and to prepare a joint environmental document. This Draft EIR/EIS concurrently satisfies the requirements of both CEQA and NEPA in one document. OCTA is the local Lead Agency with responsibility for compliance under CEQA, and USFWS is the federal Lead Agency responsible for compliance under NEPA. CDFW, as the state agency issuing the permit, is a Responsible Agency under CEQA.

This Draft EIR/EIS is an informational document intended to provide public decision-makers, responsible and trustee agencies, other interested agencies and parties, and the general public with an assessment of potential environmental effects of the Proposed Plan. This Draft EIR/EIS has been prepared pursuant to CEQA and NEPA and fulfills the procedural and content requirements of each law. This Draft EIR/EIS identifies the Proposed Plan and alternatives, and evaluates the potential environmental consequences and impacts associated with implementation of the Proposed Plan and alternatives.

As required by Section 15096 of the CEQA guidelines, CDFW, as a Responsible and Trustee Agency, is required to utilize the analysis contained within this Draft EIR/EIS for its approval of the NCCP portion of the Proposed Plan and as a basis for making findings as required by CEQA. Once approved, OCTA would be responsible for implementation of the Proposed Plan. OCTA and the Wildlife Agencies would have cooperative implementation obligations under the Implementing Agreement (IA).

CEQA refers to the activities evaluated in an EIR as a proposed project undertaken, supported, or permitted by a public agency, whereas NEPA refers to the activities evaluated in an EIS as a proposal for action by a federal entity. This document uses the term *Proposed Plan* to refer to the NCCP/HCP and all federal, state, and local agency actions or approvals that would be issued or undertaken based on it.

1.1.3.4 Incorporation by Reference

In accordance with State CEQA Guidelines Section 15150, an EIR may incorporate by reference all or portions of another document that are a matter of public record or are generally available to the public. When appropriate, relevant information contained in other environmental documents, including, but not limited to, OCTA's 2006 LRTP Program EIR, will be incorporated by reference into Chapter 3, "Affected Environment," and Chapter 4, "Environmental Consequences." When information is incorporated into resource chapters by reference to other environmental documents, introductory text for the resource being analyzed describes the rationale for incorporating information by reference. In addition to incorporating by reference, for convenience, information and environmental determinations from the LRTP Program EIR are summarized in this document. This explanation is followed by a brief summary of relevant conclusions drawn from these other documents.

1.2 Plan Purpose/Objectives

CEQA requires an EIR to contain a statement of the objectives sought by the project proponents. Similarly, NEPA requires the lead agency to describe the underlying purpose of the action and alternatives.

The purpose of the Plan is to protect and enhance ecological diversity and function in Orange County, and to contribute to and enhance the integrity and connectivity of the existing protected lands in Orange County. In accordance with this OCTA, CDFW, and USFWS have identified the following purposes/objectives.

- Streamlining the environmental permitting process for impacts on endangered species by authorizing take of listed and other Covered Species impacted, or potentially impacted, by covered transportation projects in Orange County.
- Reducing the cost and increasing the clarity and consistency of federal and state permitting.
- Sharing the costs and benefits of the habitat conservation plan as widely and equitably as possible.
- Improving the coordination and biological effectiveness of project mitigation.
- Protecting and enhancing ecological diversity and function in Orange County, and contributing to and enhancing the integrity and connectivity of the existing protected lands in Orange County.

1.3 Need for the Plan

NEPA requires that the lead agency also identify the need for the action. The need for the Proposed Plan is based on the potential that the 13 freeway improvement projects proposed by OCTA on California Department of Transportation (Caltrans) property within the Plan Area could result in the take of Covered Species, thereby requiring issuance of individual incidental take permits on a project-by-project basis. The Proposed Plan is designed so that take of Covered Species is mitigated in a comprehensive manner through a broad strategy of species and habitat conservation.

1.4 Decisions to Be Made

1.4.1 California Department of Fish and Wildlife

The decision to be made by CDFW is whether to approve the NCCP and issue an ITP for the state-listed species that are covered in the proposed NCCP/HCP, pursuant to Section 2835 of the Fish and Game Code. The determination as to whether the criteria for approval of the NCCP and issuance of an ITP have been met is described in CDFW's ITP decision and CEQA findings. CDFW would also execute the IA.

In accordance with the NCCPA (California Fish and Game Code, Section 2800 et seq.), CDFW would approve the NCCP for implementation after making the following findings, based upon substantial evidence in the record.

- 1. The proposed NCCP/HCP has been developed consistent with the process identified in the planning agreement entered into pursuant to Section 2810.
- 2. The proposed NCCP/HCP integrates adaptive management strategies that are periodically evaluated and modified on the basis of information from the monitoring program and other sources; these strategies will assist in providing for the conservation of Covered Species and ecosystems within the Plan Area.
- 3. The proposed NCCP/HCP provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term management of habitat reserves or other measures that provide equivalent conservation of Covered Species appropriate for terrestrial, aquatic, and marine habitats within the Plan Area.
- 4. The development of Preserve Systems and conservation measures in the Plan Area provides, as needed for the conservation of species, all of the following.
 - a. Conserving, restoring, and managing representative natural and semi-natural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.
 - b. Establishing one or more Preserves or other measures that provide equivalent conservation of Covered Species within the Plan area, and linkages between the Preserves and adjacent habitat areas outside the Plan Area.
 - c. Protecting and maintaining habitat areas that are large enough to support sustainable populations of Covered Species.
 - d. Incorporating a range of environmental gradients (e.g., slope, elevation, aspect, coastal or inland characteristics) and high habitat diversity to provide for shifting species distributions due to Changed Circumstances.
 - e. Sustaining the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the habitat areas within the Plan area.
- 5. The proposed NCCP/HCP identifies activities, and any restrictions on those activities, allowed within Preserve Areas that are compatible with the conservation of species, habitats, natural communities, and their associated ecological functions.
- 6. The proposed NCCP/HCP contains specific conservation measures that meet the biological needs of Covered Species and are based on the best available scientific information regarding the status of Covered Species and the impacts of permitted activities on those species.
- 7. The proposed NCCP/HCP contains a monitoring program.
- 8. The proposed NCCP/HCP contains an adaptive management program.
- 9. The proposed NCCP/HCP includes the estimated timeframe and process by which the Preserves or other conservation measures are to be implemented, including obligations of landowners and Plan signatories, and consequences of the failure to acquire lands in a timely manner.
- 10. The proposed NCCP/HCP contains provisions that ensure adequate funding to carry out the conservation actions identified in the Plan.

Section 2835 of the NCCPA allows CDFW to authorize take in an NCCP for any identified species whose conservation and management is provided for in the Plan, whether or not the species is listed as threatened or endangered under the California Endangered Species Act (CESA) or ESA.

NCCPs require appropriate compliance with CEQA. The CEQA document for the NCCP must include a specific mitigation, monitoring, and reporting program consistent with the requirements of Division 13 (commencing with Section 21000) of the Public Resources Code. CDFW, as a Responsible Agency under CEQA, would be required to adopt the EIR and make findings based on the EIR.

1.4.2 U.S. Fish and Wildlife Service

USFWS and the National Marine Fisheries Service (NMFS) administer the ESA. The ESA requires USFWS and NMFS to maintain lists of threatened and endangered species and affords substantial protection to listed species. NMFS's jurisdiction under the ESA is limited to the protection of marine mammals (with the exception of manatees and sea otters), marine fishes, and anadromous fishes³; all other species are subject to USFWS jurisdiction. No species under NMFS jurisdiction are included in the Proposed Plan; therefore, NMFS jurisdiction is not included in the description below.

USFWS can list species as either *endangered* or *threatened*. An endangered species is at risk of extinction throughout all or a significant portion of its range (ESA Section 3[6]). A threatened species is likely to become endangered in the foreseeable future (ESA Section 3[19]). Section 9 of the ESA prohibits the take of any fish or wildlife species listed under the ESA as endangered and most species listed as threatened.⁴ *Take*, as defined by the ESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Harm* is defined as "any act that kills or injures the species, including significant habitat modification." Section 9 prohibits the "removal or reduction to possession" of any listed plant species "under federal jurisdiction" (i.e., on federal land, where federal funding is provided, or where federal authorization is required). Even though under ESA there is no prohibition of take of plants on nonfederal lands, the Plan covers many plants. Some plants are covered in order to meet regulatory obligations under ESA Section 7 and to comply with CESA. Incidental take authorization is also requested for plants to provide no-surprises assurances for these species (see M2 NCCP/HCP, Chapter 8, "Plan Implementation").

The ESA includes mechanisms that provide exceptions to the Section 9 take prohibitions. These are addressed in the ESA under Section 7 for federal actions and Section 10 for nonfederal actions.

1.4.2.1 Section 7

Section 7 of the ESA requires all federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of habitat critical to such species' survival. To ensure that its actions do not result in jeopardy to listed species or in the adverse modification of critical habitat,⁵ each federal agency must consult with USFWS regarding federal agency actions that have the potential to harm listed species. Consultation begins when the federal agency submits a written request for initiation to USFWS, along with the agency's biological assessment (BA) of its proposed action, and

³ *Anadromous fishes* are fish that spend part of their life cycle in the ocean and part in fresh water. NMFS has jurisdiction over anadromous fish that spend the majority of their life cycle in the ocean.

⁴ The protection of threatened species under Section 9 is discretionary through a rule issued under Section 4(d) of the ESA. By regulation, USFWS automatically affords Section 9 protection to threatened species at the time of listing. These protections later can be modified by USFWS through a 4(d) rule.

⁵ *Critical habitat* is defined as specific geographic areas, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described in the *Federal Register*.

USFWS accepts that BA as complete. If USFWS concludes that the action is not likely to adversely affect a listed species, the action may be conducted without further review under ESA. Otherwise, USFWS must prepare a written biological opinion (BO) describing how the agency's action will affect the listed species and its critical habitat. The issuance of a permit for the Plan is a federal action that triggers a Section 7 consultation. USFWS will consult internally to address this requirement.

If the BO concludes that the proposed action would jeopardize the continued existence of a listed species or adversely modify its critical habitat, the opinion must suggest "reasonable and prudent alternatives" that would avoid that result. If the BO concludes that the project as proposed would involve the take of a listed species, but not to an extent that would jeopardize the species' continued existence, the BO must include an incidental take statement. *Incidental take* is take that is "incidental to, and not intended as part of, an otherwise lawful activity" (64 CFR 60728). The incidental take statement specifies an amount of take that may occur as a result of the action and may suggest reasonable and prudent measures to minimize the impact of the take. If the action complies with the BO and incidental take statement, it may be implemented without violation of the ESA, even if incidental take occurs.

Authorization through Section 7, rather than Section 10 and an HCP, is required for projects with a federal nexus. This means that projects with federal involvement cannot directly use an approved HCP for their take authorization. However, it is expected that Covered Activities with a federal nexus will use the conservation measures described in the Plan as their mitigation under the Section 7 consultation process, thereby streamlining the consultation process. Unless otherwise required by law or regulation, USFWS will ensure that the BO for the proposed project covered by the Plan is consistent with the BO issued for the NCCP/HCP and the federal permit. USFWS will not impose measures on applicants for coverage under the Plan in excess of those that have been or will be required by the Implementing Agreement,⁶ the Plan, and the permits, unless otherwise required by law or regulation. Federal agencies cannot receive the regulatory assurances available under Section 10 of the ESA. See M2 NCCP/HCP Chapter 8, Section 8.6.1.1, for federal assurances related to Section 7 consultations associated with the Plan.

Most projects in the Plan Area with a federal nexus will require a permit under Section 404 of the CWA. USACE, as the Permitting Agency under CWA, must consult with USFWS or NMFS on the effects of their action on federally listed species.

1.4.2.2 Section 10

Until 1982, state, local, and private entities had no means to acquire incidental take authorization, as could federal agencies under Section 7. Private landowners and local and state agencies risked being in direct violation of the ESA no matter how carefully their projects were implemented. This statutory dilemma led Congress to amend Section 10 of the ESA in 1982 to authorize the issuance of an ITP to nonfederal project proponents upon completion of an approved conservation plan. The term *conservation plan* evolved into *HCP* in the early 1990s.

In cases where federal land, funding, or authorization is not required for an action by a nonfederal entity, the take of listed species must be permitted by USFWS through the Section 10 process. Private landowners, corporations, state agencies, local agencies, and other nonfederal entities must

⁶ The Implementing Agreement is a legal document, signed by all parties, that identifies roles and responsibilities of all parties, including the Permittees and the Wildlife Agencies. The agreement typically incorporates actions from the conservation plan that are contractually agreed to by all parties. See Appendix B for the Implementing Agreement for this Plan.

obtain a Section 10(a)(1)(B) incidental take permit for take of federally listed fish and wildlife species "that is incidental to, but not the purpose of, otherwise lawful activities."

The take prohibition for listed plants is more limited than for listed fish and wildlife. Under Section 9(a)(2)(B) of the ESA, endangered plants are protected from "removal, reduction to possession, and malicious damage or destruction" in areas that are under federal jurisdiction. Section 9(a)(2)(B) of the ESA also provides protection to plants from removal, cutting, digging up, damage, or destruction where the action takes place in violation of any state law or regulation or in violation of a state criminal trespass law. Thus, the ESA does not prohibit the incidental take of federally listed plants on private or other non-federal lands unless the take or action resulting in take requires federal authorization or is in violation of state law. Thus, Section 10 incidental take permits are necessary only for take of wildlife and fish species. The Section 7(a)(2) prohibition against jeopardy, however, applies to plants, and the USFWS may not issue a Section 10(a)(1)(B) incidental take permit if the issuance of that permit would result in jeopardy to a listed plant species.

To receive a Section 10(a)(1)(B) incidental take permit, the permit applicant is required to provide the following.

- A complete description of the activity sought to be authorized.
- The common and scientific names of the species sought to be covered by the permit, as well as the number, age, and sex of such species, if known.
- An HCP.

The HCP must specify the following mandatory elements.

- The impact that will likely result from the taking of Covered Species.
- The steps the applicant will take to monitor, minimize, and mitigate such impacts; the funding that will be available to implement such steps; the implementation of adaptive management; and the procedures to be used to deal with unforeseen circumstances.⁷
- The alternative actions to taking of Covered Species the applicant considered and the reasons why such alternatives are not proposed to be utilized.
- Such other measures that the Director [of the Department of Interior or Commerce] may require as being necessary or appropriate for purposes of the Plan (50 CFR 17.22[b]).

The M2 NCCP/HCP is intended to satisfy these requirements.

To receive an incidental take permit, Section 10(a)(2)(B) of the ESA requires that the following criteria be met.

- The taking will be incidental to otherwise lawful activities.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure adequate funding for the HCP and procedures to deal with unforeseen circumstances.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.

⁷ *Unforeseen Circumstances* are changes in circumstances affecting a Covered Species or geographic area covered by the HCP that could not reasonably have been anticipated by the Plan developers, and that result in a substantial and adverse change in the status of a Covered Species.

- The applicant will ensure that other measures that USFWS may require as being necessary or appropriate will be provided.
- USFWS has received such other assurances as may be required that the HCP will be implemented.

Prior to the approval of an HCP, USFWS is required to undertake an *internal* Section 7 consultation because issuance of an incidental take permit is a federal action. (See the discussion of ESA Section 7, above.) Elements specific to the Section 7 process that are not required under the Section 10 process (e.g., analysis of impacts on designated critical habitat, analysis of impacts on listed plant species, and analysis of indirect and cumulative impacts on listed species) are included in the Plan to meet the requirements of Section 7.

1.4.3 Orange County Transportation Authority

OCTA would be responsible for adopting the NCCP/HCP, certifying the EIR, making findings pursuant to the EIR, and executing the IA. OCTA is requesting that CDFW issue a permit that authorizes take of all Covered Species under CESA. OCTA is also requesting that USFWS issue a permit authorizing incidental take of listed species under ESA. The Proposed Plan will authorize take of listed and other Covered Species that are impacted, or potentially impacted, by the Covered Projects and Activities while providing comprehensive species, wetlands, and ecosystem conservation and conservation and management for endangered species in Southern California.

1.4.4 California Department of Transportation (Caltrans)

Caltrans, as owner/operator of the state highway system, would most often be the Construction Lead of covered freeway improvement projects. In certain circumstances, OCTA may be the Construction Lead for selected M2 projects, with Caltrans responsible for review and approval of all plans and specifications to ensure that the projects are constructed to Caltrans requirements. For projects in which Caltrans is the Construction Lead, Caltrans would utilize the take authorization provided by CDFW and USFWS to OCTA as a third-party participant for Covered Species. OCTA would work closely with Caltrans during the construction phase to ensure that projects conform to the avoidance and minimization requirements of the Plan. Caltrans would also participate in simplified regional permit programs for aquatic resources under Section 1602 of the California Fish and Game Code related to Streambed Alteration Agreements, Porter-Cologne, and CWA Sections 401 and 404.

1.4.5 State and Federal Regulatory Permitting

As noted above, the Proposed Plan also is intended to serve as the basis for subsequent regional regulatory permitting applications to develop and operate streamlined regional permit programs for aquatic resources under Section 1602 of the California Fish and Game Code relating to Streambed Alteration Agreements, Porter-Cologne, and CWA Sections 401 and 404. A brief summary of state and federal regulatory permitting as it relates to the Draft EIR/EIS is provided below; more details about the regulatory process for Covered Activities is included in Section 3.4, "Biological Resources."

1.4.5.1 Lake or Streambed Alteration Agreement

Many of the concerns raised by CDFW during streambed alteration agreement negotiations are related to special-status species. Activities covered by the NCCP/HCP that need a streambed alteration agreement are expected to partially or fully meet the standards of the streambed alteration agreement through compliance with the Proposed Plan.

An appendix to the Proposed Plan (Appendix E - Streambed Program Guidelines) outlines the process for project-level Lake or Streambed Alteration Agreement (LSAA) notifications for the Covered Activities pursuant to Fish and Game Code Sections 1600–1616. The Streambed Program will guide streambed permitting within the Plan Area through individual project review and the associated CEQA process. For unavoidable permanent impacts on streambeds and associated riparian habitat, compensatory mitigation will be provided at the mitigation sites identified in Plan Appendix E to achieve no-net-loss standards. Additionally, for temporary impacts on streambed and associated riparian habitat, compensation will occur on site, when appropriate, to achieve no-net-loss standards. Restoration plans, as approved by the Wildlife Agencies and USACE (if warranted), will be implemented at the sites.

1.4.5.2 Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act

The NCCP/HCP does not include certifications under Section 401 or Waste Discharge Requirements (WDRs) under Porter-Cologne. A Section 401 Water Quality Certification is being obtained separately for the proposed Covered Activities. However, project proponents implementing Covered Activities that comply with the terms of the Proposed Plan should find their permit process streamlined with the RWQCB or State Water Board because the Proposed Plan provides a comprehensive means to address the needs of threatened and endangered species in the Plan Area.

1.4.5.3 Clean Water Act Section 404

The NCCP/HCP will not provide permits under Section 404 of the CWA for impacts on wetlands or other waters from Covered Activities. However, the 404 permitting process is expected to be streamlined substantially as a result of the Proposed Plan. Issuance of a Section 404 permit often requires the USACE to consult with USFWS to comply with Section 7 of the ESA. This consultation would address the federally listed species covered by the Proposed Plan. Accordingly, it is expected that USFWS will not require any mitigation beyond that already required by the Proposed Plan. The Section 7 BOs issued for the Proposed Plan also can serve as the basis for any future BOs in the Study Area for Covered Activities. In addition, the conservation actions for impacts on wetlands and other waters in the Proposed Plan may fully satisfy USACE requirements for wetland and other waters mitigation.

1.4.5.4 Use of Draft EIR/EIS for State and Federal Permitting

This Draft EIR/EIS includes analysis of the potential biological resources and hydrology/water quality impacts that may support CDFW and the State Water Board with regulatory permits for Covered Projects pursuant to their respective regulations. Specifically, the Draft EIR/EIS includes an analysis of impacts on jurisdictional wetlands, other waters, and streambeds (Section 4.4, "Biological Resources," Impact BIO-7 and BIO-8) and impacts on the beneficial uses of the watersheds (Section 4.8, "Hydrology and Water Quality," Impact WTR-4) associated with Covered Projects.

Federal permitting under CWA 404 will rely on NEPA analysis completed by the USACE as part of the Individual Permit process.

1.5 Public Involvement

1.5.1 EIR/EIS Public Outreach

1.5.1.1 Notice of Intent/Notice of Preparation

OCTA released a Notice of Preparation (NOP) on December 3, 2010, initiating the scoping period for the Draft EIR/EIS. A Notice of Intent (NOI) to prepare an EIS was noticed in the *Federal Register* on December 1, 2010. Written comments were received by OCTA during the scoping period (December 1, 2010, to January 13, 2011). These comments are included as Appendix B to this document.

1.5.1.2 EIR/EIS Scoping

A scoping meeting was held on Wednesday, December 15, 2010, from 5 p.m. to 7 p.m. at OCTA offices (550 South Main Street, Orange, CA 92863). There were 11 attendees at the scoping meeting. Also in attendance were staff members representing CDFW and USFWS. Attendees represented a variety of community groups, including residents, environmental groups, and the Orange County Planning Department.

At the scoping meeting, team members were present to provide information to the public on the details of the Proposed Plan, including: the background of the environmental mitigation program, program benefits to the county, components of an NCCP/HCP, descriptions of Covered Species, location of the Plan Area, and the program's next steps. The meeting also informed the public about the details of the environmental process and served as an opportunity for the community to provide feedback to help guide the Plan's development.

To notify the public, a scoping meeting notice was mailed to more than 1,100 stakeholders with an interest in the Proposed Plan. The meeting was also listed on OCTA's web site. In addition, scoping meeting notices were published in three Orange County newspapers: the *Excelsior* (publication date: December 10, 2010), the *Nguoi -Viet Daily News* (publication date: December 9, 2010) and the *Orange County Register* (publication date: December 7, 2010).

1.5.1.3 Draft EIR/EIS Public Review

In accordance with CEQA and NEPA, the Draft EIR/EIS is being circulated for public review and comment. The public review period was initiated with the publication of a CEQA Notice of Completion (NOC) and NEPA Notice of Availability (NOA). The CEQA NOC was submitted to the California State Clearinghouse and was distributed to interested agencies, organizations, and members of the public on _____, 2014. The NEPA NOA was published in the Federal Register on _____, 2014. Concurrent with the NOC/NOA and as part of the same published notices, OCTA and USFWS indicated the availability of the Draft Proposed Plan and Draft IA for public review. USFWS's notice was in compliance with the public review requirements for ITPs and their HCP components. OCTA's notice was in compliance with CEQA and OCTA policies; it also served the

public notification purposes of the NCCPA. The NOC/NOA and distribution list are provided in Appendix C.

The public comment period for the Draft EIR/EIS and Draft Proposed Plan will occur for 90 days, with written comments to OCTA and USFWS due by ______, 2014. Comments may be directed to OCTA and/or USFWS. The OCTA contact is: Dan Phu, Orange County Transportation Authority, 550 South Main Street, P.O. Box 14184, Orange, CA 92863-1584. The USFWS contact is: Jonathan Snyder, U.S. Fish and Wildlife Service, Carlsbad Field Office, 6010 Hidden Valley Road, Carlsbad, CA 92011.

Two public meetings will be conducted by OCTA during the public review period. The date, time, and location will be noticed separately.

1.6 Issues Raised during the Scoping Process

Below is a summary of the comments received at the scoping meetings and written comments received from regulatory agencies and the public during the scoping comment period. A total of three comment cards were submitted for the Proposed Plan at the scoping meeting from Carl Reinhart, Jennifer Choi, and Ed Amador. In addition, a total of six letters were received during the public scoping period from Rancho Mission Viejo, the Puente Hills Landfill Native Habitat Preservation Authority, the Native American Heritage Commission (NAHC), CDFW, Caltrans, and the Environmental Coalition. The scoping comments in their entirety are attached in Appendix B. This summary is not intended as a verbatim or comprehensive list of issues raised in the scoping comments but, rather, is intended to summarize concerns related to implementation of the Proposed Plan. The comments and issues included in this section are addressed and resolved in the NCCP/HCP and this Draft EIR/EIS.

Biological Resources

- Wildlife and endangered species protection must be a priority.
- The January 2011 Department of Interior USFWS Final Critical Habitat for the Arroyo Toad Unit #8 Santa Ana River Basin should be incorporated. (Ed Amador)
- Continued acquisition and management of lands within the Puente-Chino Hills Wildlife Corridor would further connectivity between this area and Orange County extending to the Santa Ana Mountains. (Puente Hills Landfill)
- Measures should be incorporated into the NCCP/HCP that promote wildlife movement and habitat connectivity within the Puente Chino Hills Wildlife Corridor. (Puente Hills Landfill)
- The Draft EIR/EIS should include a complete assessment of sensitive biological resources and a discussion of direct, indirect, and cumulative impacts on biological resources within and adjacent to the project area. (CDFW)
- Development within wetlands is discouraged. (CDFW)
- Conservation easements should be placed on all acquisition and restoration properties to ensure proper protection. (Environmental Coalition)
- The NCCP/HCP should clearly define compatible uses. (Environmental Coalition)

Cultural Resources

- Native American Cultural Resources were identified in the Plan Area vicinity as a part of the NAHC Sacred Land File. (NAHC)
- Avoidance of cultural resources in accordance with CEQA should be considered. (NAHC)
- Consultation with Native American tribes regarding the Plan should be conducted in compliance with federal requirements. (NAHC)

Funding

• There is potential lack of funding for execution and maintenance of the Plan. (Jennifer Choi)

Land Use

• Certain areas identified for conservation in the Conservation Assessment completed by Conservation Biology Institute are identified as Planning Areas for future development by Rancho Mission Viejo. (Rancho Mission Viejo)

Water Quality

• Runoff from the NCCP/HCP must conform to Regional Water Quality Control Board discharge requirements. (Caltrans)

CEQA Process

- Each project proposed associated with the NCCP/HCP must have subsequent environmental documentation, and associated technical studies must adhere to Caltrans protocol. (Caltrans)
- The Draft EIR/EIS should cover mitigation for losses of habitat associated with highway project, long-term management of the Preserve Areas and funding mechanisms. (CDFW)

1.7 Acronyms and Terminology

A list of acronyms and glossary of terms used in the Draft EIR/EIS is provided in Appendix A.

1.8 Document Organization

This Draft EIR/EIS consists of the chapters and appendices listed below.

- Executive Summary—summarizes the Plan description, purpose, and need as well as areas of
 controversy, issues to be resolved, significant impacts, and mitigation measures.
- Chapter 1, Introduction/Purpose and Need—presents a brief overview of the proposed NCCP/HCP and the Draft EIR/EIS; provides background for the proposed NCCP/HCP; presents the purpose, need, and objectives of the proposed NCCP/HCP; and summarizes the organization of this document. In addition, Tables 1-1 and 1-2 below illustrate where the different CEQA- and NEPA-required sections are presented in this document.
- Chapter 2, Proposed Plan and Alternatives—summarizes the proposed action and alternatives considered, as well as the alternatives screening approach and alternatives considered but eliminated from further consideration.

- **Chapter 3, Affected Environment**—describes the existing environmental and regulatory setting of the project.
- Chapter 4, Environmental Consequences—describes the analysis of effects relating to each resource topic for the baseline conditions to be analyzed for each alternative consistent with State CEQA Guidelines Sections 15126, 15126.2 and 15143 and CEQ's NEPA regulations (40 CFR 1502.14, 1502.16).
- Chapter 5, Other Required CEQA and NEPA Analyses—addresses potential growth-inducing aspects of the Proposed Plan; provides an assessment of any significant irreversible environmental changes that would be involved in each alternative; and identifies the Environmentally Preferable/Superior Alternative.
- Chapter 6, Consultation and Coordination—includes a summary of public agencies, federally recognized tribes, and non-governmental organizations and private individuals contacted during the development of the Draft EIR/EIS; and provides a discussion of Executive Orders and a synopsis of public scoping.
- **Chapter 7, List of Preparers**—identifies Draft EIR/EIS preparers with contact information for the Lead Agencies and the consultant team.
- **Chapter 8, References**—presents all references cited in the Draft EIR/EIS, including publications, websites, and personal communications.
- **Appendix A** includes a list of acronyms and a glossary of terms.
- Appendix B includes scoping materials, the NOP, the NOI, and a summary of scoping comments.
- **Appendix C** includes the NOC and NOA and distribution list of the Draft EIR/EIS.
- **Appendix D** includes the air quality and greenhouse gas calculations.
- **Appendix E** includes the Executive Summary from OCTA's 2006 LRTP Program EIR, including a summary table of the LRTP impacts and mitigation measures.

Table 1-1. Location of Required CEQA Components in the Draft EIR/EIS

CEQA Requirement	Where Addressed in this Draft EIR/EIS		
Table of Contents	Table of Contents		
Summary	Executive Summary		
Project Objectives	Chapter 1		
Project Description	Chapter 2		
Alternatives	Chapter 2		
Environmental Setting	Chapter 3		
Environmental Impacts and Mitigation Measures	Chapter 4		
Significant Unavoidable Impacts	Chapter 5		
Environmentally Superior Alternative	Chapter 5		
Cumulative Impacts	Chapter 5		
Significant Irreversible Changes	Chapter 5		
Growth Inducing Impacts	Chapter 5		
List of Agencies and Organizations Consulted	Chapter 6		
List of Preparers	Chapter 7		

Table 1-2. Location of Required NEPA Components in the Draft EIR/EIS

NEPA Requirement	Where Addressed in this Draft EIR/EIS
Table of Contents	Table of Contents
Summary	Executive Summary
List of Federal Permits	Chapter 1
Statement of Purpose and Need	Chapter 1
Description of Proposed Action	Chapter 2
Alternatives	Chapter 2
Affected Environment	Chapter 3
Environmental Consequences and Mitigation Measures	Chapter 4
Cumulative Effects	Chapter 4
Significant Unavoidable Impacts	Chapter 5
Short-term Uses of the Environment versus Long-term Productivity	Chapter 5
Environmentally Preferable Alternative	Chapter 5
List of Agencies and Organizations Consulted	Chapter 6
List of Preparers	Chapter 7

2.1 Introduction

This chapter describes the Proposed Plan, including the overall conservation strategy and the conservation measures that collectively are intended to provide an effective framework to protect and enhance natural resources in Orange County, while improving and streamlining the environmental permitting process with the Wildlife Agencies for impacts of Covered Projects and Covered Activities on sensitive, threatened, and endangered species and their habitats. In accordance with the requirements of CEQA and NEPA, alternatives to the proposed NCCP/HCP, the alternatives selection process, and alternatives considered but eliminated are also discussed in this chapter.

2.1.1 Plan Location

The geographic scope of the Proposed Plan includes both a Plan Area and a Permit Area. OCTA and the EOC began the planning process by defining a broad area—the *Plan Area*—in which all planning would occur for the Proposed Plan. The Plan Area includes the entirety of Orange County, totaling approximately 511,200 acres (see Figures 1-1 and 1-2 in Chapter 1, "Introduction/Purpose and Need"). The Plan Area is located south of Los Angeles County, north of San Diego County, and west of Riverside County. The western county line is the Pacific Ocean. The Plan Area was defined as the area in which impacts would be evaluated and conservation would occur.

The Permit Area is the area in which OCTA is requesting authorization from CDFW and USFWS for projects and activities that may result in take of Covered Species (i.e., Covered Projects and Covered Activities). The Permit Area includes those lands in the Plan Area that are defined by one or both of the following parameters.

- The lands along existing freeways (I-5, I-405, I-605, SR-22, SR-55, SR-57, SR-91) in which M2 freeway improvement projects will be constructed (Covered Projects).
- The boundary of any land acquired in fee title or conservation easement and managed under the Proposed Plan (i.e., the Preserve System).

2.1.2 NCCP/HCP Participating Entities

OCTA would be issued a Section 10(a)(1)(B) permit by USFWS and a Section 2835 permit by CDFW. Under the terms of the Implementation Agreement (IA), the take of Covered Species would be authorized for Covered Projects and Activities over a 40-year Permit term. OCTA is responsible for implementation of the Proposed Plan. OCTA will act as the NCCP Administrator and be responsible for filling the roles of Preserve Manager and the Monitoring Biologist, either directly with OCTA staff, or by delegation to another entity (e.g., to public entities such as Orange County Parks or State Parks, or to a contracted private entity). OCTA or Caltrans would be the Construction Lead and responsible for construction of Covered Projects in compliance with the avoidance and minimization requirements of the Plan. Caltrans, as owner/operator of the freeway system, will most often be the Construction Lead. Caltrans is not a signatory to the Proposed Plan and will participate under the

Proposed Plan as a Third Party Participant. In that capacity, Caltrans will be required to follow all applicable avoidance and minimization measures as described in the Proposed Plan.

2.2 Alternatives

CEQA and NEPA require that an EIR/EIS evaluate a reasonable range of alternatives to a proposed project, including the No Project/No Action Alternative. While there is no clear rule for determining a reasonable range, CEQA and NEPA provide guidance that can be used to define the range of alternatives for consideration in an EIR/EIS.

The range of alternatives under CEQA is governed by the rule of reason, which requires an EIR to set forth only those alternatives necessary to permit a reasoned choice. Alternatives under CEQA must meet the basic project objectives, should not result in greater impacts on the environment than those of the proposed project, and must be feasible. In determining whether alternatives are feasible, Lead Agencies are guided by the general definition of feasibility found in State CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." In accordance with State CEQA Guidelines Section 15126.6[f], the Lead Agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the Lead Agency relied upon in making the selection. It should also identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126[d][2]).

According to NEPA, the range of alternatives required in an EIS is similarly governed by the rule of reason. An EIS must consider a reasonable range of options as defined by the specific facts and circumstances of a proposed action. First, alternatives must fulfill the basic requirements of the statement of purpose and need. Second, alternatives to be analyzed should not have more significant impacts on the environment than the proposed action or result in impacts that are indistinguishable from those of the proposed action. Finally, alternatives must be able to be feasibly carried out in the context of technical, economic, environmental, and other factors. If alternatives have been eliminated from detailed study, the EIS must briefly discuss the reason for their elimination (40 CFR 1502.14[a]; Forty Questions No. 1[a]).

2.2.1 Approach to Developing Alternatives

Alternatives for analysis in the Draft EIR/EIS were considered in the context of the CEQA/NEPA screening criteria described above. For the purposes of analyzing the proposed NCCP/HCP, these criteria are articulated below.

- The feasibility of an alternative in terms of economic, environmental, legal, social, and technological factors.
- The ability of an alternative to achieve most of the objectives under CEQA and to fulfill the purpose and need under NEPA.

• The potential for an alternative to avoid or substantially reduce one or more significant impacts of the proposed NCCP/HCP.

Alternatives that were determined to be infeasible, fail to meet at least some of the Proposed Plan objectives, or ineffectively avoid or substantially lessen the significant impacts of the Proposed Plan were dismissed from further consideration. Alternatives determined to be feasible or potentially feasible, to meet objectives, and to have some potential to avoid or substantially lessen the significant impacts of the Proposed Plan were carried forward for more detailed analysis in the Draft EIR/EIS.

A No Project (CEQA)/No Action (NEPA) Alternative is also required to be considered in an EIR/EIS. The No Project/No Action alternative allows decision-makers to compare the impacts of approving a project to the impacts of not approving a project.

2.2.2 Alternatives Carried Forward for Detailed Analysis

The following alternatives were determined to be feasible or potentially feasible, to meet NCCP/HCP objectives, and to have some potential to avoid or substantially lessen the significant impacts of the proposed NCCP/HCP, and were carried forward for detailed evaluation in the Draft EIR/EIS. These are described in detail below.

- Alternative 1: No Project/No Action
- Alternative 2: Proposed NCCP/HCP (Proposed Plan)
- Alternative 3: Federal and State ESA-Listed Species Only NCCP/HCP (Reduced Plan)

Alternatives eliminated from detailed evaluation in the Draft EIR/EIS are presented at the end of this chapter.

2.2.2.1 Alternative 1: No Project/No Action

Under the No Project/No Action Alternative, the proposed NCCP/HCP, including implementation of conservation measures and creation of a Preserve System, would not be adopted, and permits pursuant to Section 10(a)(1)(B) of ESA and Section 2835 of the NCCPA would not be issued by USFWS and CDFW, respectively.

Under the No Project/No Action Alternative, compliance with ESA and CESA would continue to be addressed project-by-project for each of the M2 freeway projects. Freeway projects with a potential to affect federally listed species would be required to individually comply with ESA through either the preparation of individual HCPs and Section 10 permit application, or the Section 7 consultation process in cases in which federal authorization (e.g., Section 404 CWA permitting by USACE) or funding (e.g., Federal Highway Administration [FHWA] funding for transportation projects) are required. Section 7 compliance would focus on federally listed species and would not address statelisted or non-listed species.

Future freeway improvements with a potential to take state-listed species would be required to comply with CESA through the CEQA process. OCTA would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any applicable mitigation measures contained in the general plans for each of the participating jurisdictions. CDFW could also require mitigation for

state- or federally listed species as conditions of future Section 1602 Streambed Alteration Agreements, if required for a specific project.

No comprehensive strategies to avoid, minimize, or mitigate effects on sensitive species would be implemented under the No Project/No Action Alternative. No measures that provide for species recovery, as required under NCCPA, would be implemented. With project-by-project conservation and mitigation, listed and non-listed species would not benefit from the landscape-scale conservation actions that would otherwise be implemented through the NCCP/HCP. Furthermore, development on a piecemeal project-by-project basis is more complicated, time consuming, and inefficient. There are no regulatory assurances under the No Project/No Action Alternative if additional species are listed in the future that would be affected by M2 freeway projects.

2.2.2.2 Alternative 2: Proposed NCCP/HCP (Proposed Plan)

The proposed NCCP/HCP is a regional, comprehensive plan that establishes a framework for complying with state and federal endangered species regulations while accommodating future transportation improvements within the Plan Area. Currently, the permitting and mitigation of impacts on special-status species associated with implementation of Caltrans freeway projects in Orange County is undertaken on a project-by-project basis, which does not provide a mechanism for coordinating regional conservation and as a consequence can result in potentially less effective biological mitigation. The proposed NCCP/HCP is designed to coordinate the process for permitting and mitigating the take of Covered Species associated with implementation of freeway projects in Orange County by implementing a broad strategy for conservation of species and habitats.

The Wildlife Agencies have the authority to regulate the take of threatened and endangered or otherwise protected species. One objective of the proposed NCCP/HCP is to provide the basis for CDFW and USFWS to grant take authorization for otherwise lawful actions (e.g., construction of freeway improvement projects) that may result in the take of individuals of a protected species. The proposed NCCP/HCP would be an NCCP under the NCCPA of 2003 and an HCP pursuant to Section 10(a)(1)(B) of the ESA. Conservation and management responsibilities, as well as any implementation assurances, are identified in the IA between OCTA and the Wildlife Agencies.

The Proposed Plan identifies a number of Covered Projects and Activities (discussed below), including the specific M2 freeway improvement projects and conservation activities in the Preserve areas, that may result in take of federal- and/or state-listed species or species that may become listed during the 40-year Permit term. These projects and activities are considered in assessing the total amount of Covered Species take that would be expected in the Permit Area and in developing the overall NCCP/HCP conservation strategy. Approval of the Proposed Plan does not confer or imply authorization of any specific covered freeway improvement projects; all covered freeway improvement projects would be subject to future discretionary approval authority within the individual jurisdictions where the activity or project would occur. Approval of the Proposed Plan would authorize conservation and management activities (Covered Activities) within the NCCP/HCP Preserves.

The primary responsibility for Proposed Plan implementation rests with OCTA as the primary Permittee. However, as described in the Proposed Plan, other groups would have secondary responsibility for coordination, plan compliance, and implementation of various aspects of the Proposed Plan. Implementation of the conservation strategy, monitoring program, Covered Project

and Activity approvals, and reporting will require coordinated actions among OCTA, Caltrans, Preserve Managers, Monitoring Biologists, Restoration Project Sponsors, and Wildlife Agencies.

In order to comply with the requirements of ESA, CESA, and the NCCPA, the Proposed Plan addresses a number of required elements, including species and habitat goals and objectives; the evaluation of the effects of Covered Activities on Covered Species, including indirect and cumulative effects; a conservation strategy; a monitoring and adaptive management program; descriptions of Changed Circumstances and remedial measures; and identification of funding sources. The key elements of the Proposed Plan are summarized below.

Covered Species

Covered Species are species that would be authorized for take and conserved and protected through the Proposed Plan. The NCCP/HCP proposes 13 listed and non-listed species for coverage (Table 2-1). Covered Species were selected for inclusion in the Proposed Plan through collaborative internal review by OCTA and the Wildlife Agencies.

The Proposed Plan includes conservation measures to protect all 13 Covered Species, whether or not they are currently listed. Accordingly, the Proposed Plan provides regulatory assurances that any non-listed Covered Species would not require additional conservation measures in the Permit Area should that species be listed in the future.

Species Not Currently Covered Under the Plan

All other listed species that occur within the Plan Area would continue to be regulated under CESA and ESA. Take of non-covered listed species can be authorized separately from the Proposed Plan under Section 2081 of the Fish and Game Code or Sections 7 or 10 of the ESA. Impacts on species not covered under the Proposed Plan can also be addressed through the amendment process described in Chapter 8, "Plan Implementation" of the Proposed Plan.

Covered Projects and Activities

This section describes the projects and activities within the Plan Area for which the NCCP/HCP would provide avoidance, minimization, or compensation for impacts on Covered Species. These are the Covered Projects and Covered Activities for which incidental take authorization would be obtained. Covered Projects include all habitat or ground-disturbing impacts resulting from the M2 transportation planning and project implementation process. Covered Activities are actions that may occur repeatedly in one area or over a wide area within acquired Preserves.

Table 2-1. Species Proposed for Coverage

Common Name	non Name Scientific Name		
Plants			
Intermediate mariposa lily	Calochortus weedii var. intermedius	-/-/CNPS 1B.2	
Many-stemmed dudleya	Dudleya multicaulis	-/-/CNPS 1B.2	
Southern tarplant	Centromadia parryi ssp. australis	-/-/CNPS 1B.1	
Fish			
Arroyo chub	Gila orcutti	-/SSC	
Reptiles			
Coast horned lizard	Phrynosoma blainvillii	-/SSC	
Orangethroat whiptail	Aspidoscelis hyperythra	-/SSC	
Western pond turtle	Emys marmorata	-/SSC	
Birds			
Cactus wren	Campylorhynchus brunneicapillus	BCC/SSC	
Coastal California gnatcatcher	Polioptila californica californica	FT/SSC	
Least Bell's vireo	Vireo bellii pusillus	FE/SE	
Southwestern willow flycatcher	Empidonax traillii extimus	FE/SE	
Mammals			
Bobcat	Lynx rufus	-/-	
Mountain lion	Puma concolor	-/SPS	

¹ Listing Status Codes (Federal/State/California Native Plant Society [CNPS])

<u>Federal</u>	<u>State</u>	
FE – Federal Endangered	SE – California Endangered	SSC - California Species of Special Concern
FT – Federal Threatened	ST - California Threatened	SPM – California Specially Protected Species
BCC – Birds of Conservation Concern		

Sensitive Plants (California Native Plant Society)

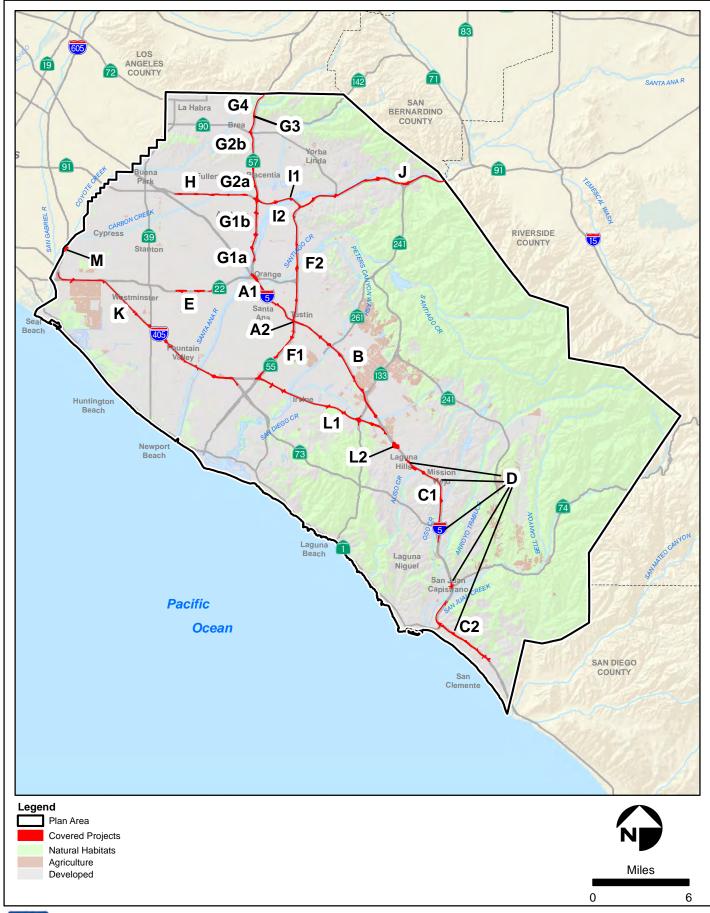
Considered rare, threatened, or endangered in California and elsewhere; the majority are endemic to California. A Threat Rank of 0.1 indicates that it is seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat). Threat Rank 0.2 indicates that it is moderately threatened in California (20%–80% of occurrences threatened/high degree and immediacy of threat).

Freeway Improvement Projects

Freeway improved projects will occur along 13 freeway segments, as defined by OCTA. These projects were included in the 2006 LRTP Program EIR, and the consequences of their implementation were considered programmatically within that program EIR. The projects include the following.

- Project A: Interstate 5 (I-5) Improvements between State Route 55 (SR-55) and the "Orange Crush" Area (State Route 57 [SR-57])
- Project B: I-5 Improvements from SR-55 to the El Toro "Y" Area
- Project C: North and South Portions of I-5 Improvements between the El Toro Interchange and Avenida Pico
- Project D: I-5 Local Interchange Improvements
- Project E: State Route 22 (SR-22) Access Improvements
- Project F: SR-55 Improvements between Interstate 405 (I-405) and SR-22
- Project G: State Route-57 (SR-57) between Orangewood Avenue and Lambert Road northbound—General Purpose Lane Improvements
- Project H: State Route 91 (SR-91) from SR-57 to I-5 Westbound—General Purpose Lane Improvements
- Project I: SR-91 Improvements from SR-57 to SR-55 Interchange
- Project J: SR-91 Improvements from SR-55 to the Orange/Riverside County Line
- Project K: I-405 Widening Project from SR-55 to Interstate 605 (I-605)
- Project L: I-405 Improvements between SR-55 and I-5 and Improvements at Lake Forest Interchange on I-5
- Project M: I-605 Freeway Access Improvements

These 13 freeway segments are described in further detail in Chapter 3, "Covered Projects and Activities," of the Plan, and their locations are illustrated in Figure 2-1. The current status and phasing of each of the covered freeway projects are shown in Table 2-2. A number of the Covered Projects have already been initiated and, in some cases, already constructed. These projects have addressed biological mitigation at a level specific to each project. To date, these projects have been in primarily urban environments, and none of the projects have required compensatory mitigation for endangered species impacts. Avoidance and minimization measures have been identified and implemented based on project-specific environmental review.





Covered Projects

Figure 2-1

Table 2-2. Covered Freeway Capital Projects Status and Phasing

Project	Segment/Limits	Estimated Construction Start Date	Estimated Construction Completed Date	Permitting Approach ¹	Permitting Project/ Segment ²
A (I-5)	1 (SR-55 to SR-57)	Mid-2016	Mid-2018	OCTA	A
	2 (I-5/SR-55 Interchange)	TBD	TBD	OCTA	A
B (I-5)	1 (I-405 to SR-55)	TBD	TBD	OCTA	В
C (I-5)	1 (El Toro Interchange to SR-73)	Late-2018	Late-2022	OCTA	С
	2 (Pacific Coast Highway to Pico)	Late-2013	Late-2017	N/A	-
D (I-5)	I-5/Avenida Pico Interchange ³	Mid-2014	Late-2017	N/A	-
	I-5/Ortega Highway Interchange	Late-2012	Late-2015	Separate	-
	I-5/Avery Parkway Interchange ⁴	Late-2018	Late-2022	OCTA	С
	I-5/La Paz Road Interchange4	Late-2018	Late-2022	OCTA	С
	I-5/El Toro Interchange	TBD	TBD	OCTA	D
E (SR-22)	Interchange improvements at Euclid St, Brookhurst St, and Harbor Blvd	TBD	TBD	OCTA	Е
F (SR-55)	1 (I-405 to I-5)	Late-2017	Late-2020	OCTA	F-South
	2 (I-5 to SR-22)	TBD	TBD	OCTA	F-North
G (SR-57)	1a (Orangewood to Katella)	TBD	TBD	OCTA	G-South
	1b (Katella to Lincoln)	Late-2011	Late-2014	Separate	-
	2a (Orangethorpe to Yorba Linda)	Late-2010	Early-2014	Separate	-
	2b (Yorba Linda to Lambert Road)	Late-2010	Late-2013	Separate	-
	3 (Lambert Interchange)	TBD	TBD	OCTA	G-North
	4 (Lambert Road to Tonner Canyon Road)	TBD	TBD	OCTA	G-North
H (SR-91)	1 (I-5 to SR-57)	Early-2013	Mid-2016	Separate	-
I (SR-91)	1 (SR-91/Tustin Avenue Interchange)	Late-2013	Mid-2015	Separate	-
	2 (SR-57 to SR-55)	TBD	TBD	OCTA	I
J (SR-91)	1 (SR-55 to SR-241 (Weir Canyon))	Mid-2011	Early-2013	Separate	-
K (I-405)	1 (SR-55 to I-605)	Mid-2015	Mid-2019	OCTA	K
L (I-405)	1 (I-5 to SR-55)	TBD	TBD	OCTA	L
	2 (I-5/Lake Forest Interchange)	TBD	TBD	OCTA	L
M (I-605)	1 (I-605/Katella Ave Interchange) ⁵	TBD	TBD	OCTA	K

¹ Regulatory permitting by OCTA will be completed as part of a comprehensive permitting strategy. Separate means project has been/is being permitted separately on an individual project basis. N/A means no impacts on jurisdictional resources/no permit required.

TBD = to be determined

² Regulatory permitting used different project/segment references in some instances.

³ Integrated into Project C2 (Pacific Coast Highway to Pico)

⁴ Integrated into Project C1 (El Toro Interchange to SR-73)

⁵ Integrated into Project K

Covered Activities within Preserves

Covered Activities, as described below, within the Preserve System may adversely affect Covered Species. These impacts are expected to be of limited severity and generally temporary. The Proposed Plan establishes a cap of no more than 11 acres (approximately 1% of the natural habitat) within the combined Preserve system can be permanently impacted through the construction of new trails, access roads, kiosk, maintenance facilities, or other features. Although the amount of impact is limited, the potential exists for a small amount of Covered Species take within Preserves as a result permanent impacts and other ongoing habitat management, restoration, and monitoring activities by Preserve Managers and Monitoring Biologist personnel and their contractors. Because such Covered Activities may result in take, they require coverage under the Proposed Plan. All activities within the Preserve System would be designed to avoid or minimize take of Covered Species, and the NCCPA and ESA permits would cover the activities of OCTA in its NCCP/HCP implementation role, their contractors, and lessees consistent with this Proposed Plan.

Recreational Facilities and Maintenance

This category includes the construction and maintenance of recreational facilities such as trails, parking lots, restrooms, wildlife observation platforms, and educational kiosks that are built and/or used in accordance with the Proposed Plan guidelines. This category also includes construction and maintenance of facilities needed to manage the Preserves, including but not limited to field offices, maintenance sheds, carports, roads, bridges, fences, gates, and wells. All Preserve management structures would be constructed to minimize impacts on Covered Species and vegetation communities. Facilities existing at the time of land acquisition would be used whenever possible. All new facilities would be sited and constructed consistent with site-specific Resource Management Plans as described in Chapter 7 ("Management and Monitoring") of the Proposed Plan.

Management Activities

This category includes all management actions required by the Proposed Plan or other actions that might be necessary to achieve the Proposed Plan's biological goals and objectives. Management actions that would be used within the Preserve System are described in detail in Chapter 7 of the Proposed Plan. These actions may include, but are not limited to, the activities listed below.

- Vegetation Management. Pesticide/herbicide use is allowed under the Proposed Plan only to achieve biological goals and objectives (e.g., exotic plant control), in accordance with label instructions and in compliance with state and local laws. Pesticide use is proposed for coverage only under the NCCPA, not the ESA. Grazing and prescribed burning are not anticipated to be used for large-scale vegetation management but may be used selectively to target specific locations or vegetation management issues within the preserves, provided they are used consistent with the Proposed Plan biological goals and objectives.
- **Fire Management.** This includes mowing, selective thinning of vegetation, and fuel-break establishment.
- **On-site Vehicle Use**. Preserve management staff may travel through the preserves on foot or by mountain bicycle, truck, all-terrain vehicle (ATV), or other off-road vehicle on designated pathways to inspect or maintain facilities, move or manage livestock, and patrol trails.
- Relocation of Covered Species. Relocation may be undertaken within preserves where impacts
 are unavoidable and relocation has a high likelihood of success (e.g., translocation of western
 pond turtle). Relocation is expected to occur in very limited circumstances.

- **Demolition or Removal of Structures or Roads.** May be used to increase public safety or to restore habitat.
- **Control of Introduced Predators.** Such predators may include feral cats and dogs, pigs, red fox, nonnative fish, and bullfrogs, among others.
- **Control of Rodents.** Such rodents may include nonnative squirrels, gophers, rabbits, rats, and mice. Control methods are limited to mechanical control methods only. Rodenticides are not authorized without the prior written consent from the Wildlife Agencies. Brodifacoum, bromodiaolone, diphacinone, and difethialone chemical products will not be authorized (no exceptions).

Habitat Enhancement, Restoration, and Creation

The Proposed Plan conservation strategy sets forth requirements for habitat enhancement, restoration, and creation. Enhancement activities generally fall under the preserve management category. Habitat restoration and creation would generally be disruptive only in the short term because these activities might involve soil disturbance, removal of undesirable plants, and limited grading. All habitat restoration and creation is expected to result in a net long-term benefit for Covered Species and vegetation communities. However, these activities might have temporary or short-term adverse effects and result in limited take of Covered Species. All habitat enhancement, restoration, and creation activities conducted within Plan Preserves that are consistent with Plan requirements will be covered by the ESA and NCCPA permits. Habitat restoration activities funded by OCTA as part of the Plan conservation strategy and conducted outside the OCTA acquired Preserves (see Chapter 5, "Conservation Strategy and Analysis," of the Plan) are not covered by the Plan because, with the incorporation of appropriate avoidance and minimization measures, the restoration projects will not result in take of species listed under the ESA or CESA. It will be the responsibility of the entity implementing the restoration project to conduct appropriate environmental review and permitting (see Section 3.3.6, "Funded Restoration Projects" of the Plan).

Species Surveys, Monitoring, and Research

OCTA Preserve Manager and Monitoring Biologist will conduct surveys for Covered Species, vegetation communities, and other resources within the Preserves on a regular basis for monitoring, research, and adaptive management purposes. These surveys might require physical capture and inspection of specimens to determine identity, mark individuals, or measure physical features, all of which are considered take under the CESA and ESA. Although these surveys are not expected to require as much handling of individuals, take might still occur. Surveys for all Covered Species would be conducted by qualified biologists. All such survey activity consistent with the Proposed Plan would be covered by the NCCPA and ESA permits.

Research conducted by the Preserve Manager and/or Monitoring Biologist personnel, or their contractors, on the Preserves would be covered by the NCCPA and ESA permits as long as the research projects have negligible effects on populations of Covered Species. Research resulting in take of Covered Species that is conducted by other individuals (e.g., academic scientists) would not be covered by the permits because the nature and impacts of these future research projects cannot be predicted at this time, and these researchers would not be bound by the terms of the Permit.

Responses to Changed Circumstances

Changed Circumstances are defined under the USFWS's "No Surprises" rule as "changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for." Responses to Changed Circumstances within the Preserve System that might affect populations of covered species would be covered under the Proposed Plan, and include the following reasonably foreseeable events: flood; fire; extended period of reduced precipitation; invasion by exotic species or disease; toxic spills, vandalism, encroachment, and other illegal human activity; and listing of non-covered species. The effects of climate change as they relate to Changed Circumstances are discussed in Chapter 8, "Plan Implementation," of the M2 NCCP/HCP. Potential management actions following Changed Circumstances are described in more detail in Chapter 8 of the Proposed Plan and could include actions such as temporary erosion control features and more intensive weed control and reseeding with native species following a fire, recontouring and replanting areas affected by flooding, and cleanup and restoration of an area affected by illegal dumping or a small toxic spill.

Compatible Uses within Preserves

Recreation

Low-intensity recreational use of Proposed Plan Preserves is allowed on a case-by-case basis under the Plan guidelines (see Chapter 7, "Management and Monitoring," of the Plan). Plan guidelines and site-specific Resource Management Plans will be developed with the goal of minimizing disturbance to Covered Species from low-intensity recreational activities, include hiking, wildlife observation, equestrian use, and non-motorized bicycling. Take of Covered Species by recreational activities and any type of activity prohibited by the Plan are not covered by the permits.

Proposed Plan Effects on Biological Resources

Proposed Plan effects on biological resources are summarized below. A detailed description of Proposed Plan effects can be found in Chapter 4, "Impact Assessment and Level of Take," of the Proposed Plan.

Effects on Natural Communities

Potential effects of Covered Projects and Activities on natural community cover types in the Plan Area and Preserve System are summarized in Table 2-3.

Table 2-3. Potential Effects of Covered Projects and Activities on Natural Communities (acres)

		Covered Freeway Improvement Projects			Covered Activities in Preserves
Land Cover Type	Total in Plan Area	Direct (calculated) ¹	Direct (adjusted) ²	Indirect ³	Direct (estimated) ⁴
Chaparral	82,947	0.3	5.0	41.9	3.4
Coniferous Forest	1,930		0.0		
Grassland	41,631	108.1	108.1	280.9	0.9
Riparian	4,446	2.0	5.0	57.0	0.1
Scrub	59,477	5.2	10.0	85.2	2.7
Water	2,696		0.4	0.1	
Wet Meadows/Marsh	2,236		2.5		
Woodland	13,993	0.1	10.0	19.3	3.9
Totals	209,356	115.7	141.0	484.4	11.0

- ¹ Direct effects resulting from freeway improvement projects include both permanent and temporary effects.
- ² The amount of direct effect for individual habitat types has been adjusted to address the low precision and accuracy of the regional habitat data and allow for habitat types with a small level of impact to serve as a reasonable cap to direct effects under the Plan.
- ³ Indirect effects have been estimated using a 300-foot buffer around direct effect areas.
- ⁴ Direct effects associated with Preserve implementation activities will be capped to be no more than 11 acres of the natural habitat within the Preserves. The estimated amount of the effect on each individual natural community type is proportional to the overall distribution of habitat types within the Preserves.

A conservative estimate of the project footprints was developed by using a generalized bubble mapped around each anticipated project area, and therefore represents a worst-case assumption of future project effects. The actual effects of specific projects over the 40-year Permit term may vary from those presented in Table 2-3; they would likely be less than the estimated effects. Grasslands are the most heavily affected natural land cover type because this cover type is especially common in previously disturbed areas, including areas surrounding existing freeway infrastructure.

Estimated effects on sensitive land cover types do not account for project-by-project avoidance and minimization measures that would be applied as part of the conservation strategy. Judicious siting may reduce the effects on sensitive land cover types.

Effects on Covered Species

For all Covered Species, effects associated with covered freeway improvement projects were assessed based on the intersection of the direct and indirect footprints with the predicted species habitat models, known species occurrences, and designated critical habitat. Effects of covered freeway projects on Covered Species in the Plan Area and Preserve System are summarized in Table 2-4.

Table 2-4. Potential Effects of Covered Projects and Activities on Covered Species

	Predicted Species Habitat or Critical Habitat Impacts (acres)			Current Known Occurrences ¹	
	Freeway Improvement Projects		Preserve Management	Freeway Improvement Projects	
Species	Direct ²	Indirect	Direct	Direct	Indirect ³
Plants					
Intermediate mariposa lily	3.9	28.1	1.5	0	0
Many-stemmed dudleya	11.1	83.7	5.9	0	0
Southern tarplant	9.2	35.3	0.1	0	0
Fish					
Arroyo chub	0.1	0.9	0.0	0	1/1
Reptiles					
Coast horned lizard	63.4	184.2	3.0	0	0
Orangethroat whiptail	45.1	110.7	0.6	0	2/2
Western pond turtle				1/2	1/7
Aquatic	3.1	16.5	0.1		
Upland	45.8	283.8	6.4		
Birds					
Cactus wren	9.7	85.2	2.3	0	2/3
Coastal California gnatcatcher				2/6	5/9
Very High	2.4	13.9	0.0		
High	3.5	53.1	0.4		
Moderate	2.7	24.2	1.4		
Low	1.7	4.8	1.1		
Total	10.3	96.0	2.9		
Critical Habitat	11.9	123.9	7.4		
Least Bell's vireo	2.0	55.2	0.1	4/21	10/14
Southwestern willow flycatcher	2.0	60.5	0.1	0	0
Mammals					
Bobcat	45.9	246.0	11.0		
Mountain lion	26.4	123.0	10.3		

 $^{^{\, 1} \,}$ Includes only current known occurrences (since 1990).

² The calculation of direct effects on predicted species habitat models has been modified to account for the adjustments to the direct effects to vegetation communities (see example in Table 4-6 of the Plan).

³ If a known occurrence polygon touches both the direct and indirect footprints, it is counted as being only directly affected. If a known occurrence polygon touches only the indirect footprint area, then it is counted as being indirectly affected.

Effects on Covered Species associated with the Preserve management activities are expected to be minor. Prior to any direct effects within the Preserve lands occur, comprehensive surveys will have been completed to identify and document the location of known occurrences and occupied habitat within the Preserves. The types of new facilities that may be constructed within Preserves (kiosks, new trails, trail heads, maintenance facilities, etc.) would generally have the flexibility to be sited away from sensitive resources.

Covered Preserve management, monitoring, and restoration activities may also indirectly affect Covered Species. Overall, these Covered Activities and compatible recreation uses would increase exposure of Covered Species to humans throughout the Preserves. Increased exposure may result in human harassment of covered wildlife species and trampling of covered plant species. Harassment of wildlife may alter breeding, foraging, and movement behavior. Additionally, increased human presence on Preserves may facilitate the spread of invasive nonnative plant and wildlife species and disease. Finally, Covered Activities that require the use of off-road vehicles may result in vehicular strikes within Preserves.

Proposed Conservation Strategy

OCTA is not a general land use agency with the jurisdictional authority to establish a "stand-alone" preserve system for the entire Plan Area, nor does OCTA affect development and conservation decisions subject to jurisdictions (various cities, Orange County, etc.) having such land use authority. The Plan authorizes only habitat losses attributable to the Covered Projects. The Covered Projects extend across Orange County and across the plan areas of other conservation planning efforts in Orange County. Therefore, the Plan's overarching conservation strategy is to make an important contribution to regional habitat conservation, achieved through existing protected public lands and habitat conservation plans, by increasing the size and habitat quality of core habitat areas and protecting the connectivity of core areas to other protected areas throughout the Plan Area.

The primary elements and actions of the Plan conservation strategy are:

- 1. **Preserve Acquisitions (Plan Chapter 5, Section 5.4)**. Prior to October 2013, OCTA acquired five properties, resulting in the protection of nearly 900 acres of natural habitat (note that the total acreage of the five properties is approximately 940 acres, but the amount of protected natural habitat credited to OCTA is less because portions of the properties are developed or trails, and the Saddle Creek South property was acquired, in part, with funding from the National Fish and Wildlife Foundation and credits were adjusted accordingly). Additional Preserve acquisitions, resulting in a minimum of 250 additional acres, are planned for the near future. Each property will be protected in perpetuity with a conservation easement, and sufficient funding will be set aside to ensure that the properties are properly monitored and managed in perpetuity. Public access will be provided on some of these properties if that access is consistent with the Plan's biological goals and objectives.
- 2. **Restoration Projects (Plan Chapter 5, Section 5.5).** OCTA has approved funding for 11 restoration projects, totaling approximately 400 acres of restored habitats. The restoration projects occur throughout the Plan Area in core habitat areas and within key habitat linkages and riparian corridors. The restoration projects, which are on currently protected lands, will

¹ OCTA acquired a sixth Preserve in December 2013, the 204-acre MacPherson property located northwest of Rancho Santa Margarita in the Silverado-Modjeska area. OCTA is pursuing the acquisition of a seventh Preserve in 2014. This EIR/EIS describes and analyzes Preserves purchased before October 2013. Preserves purchased after this date will be incorporated and integrated into the EIR/EIS by way of errata sheets and supplemental biological information before the EIR/EIS is finalized.

- enhance habitat for Covered Species. OCTA has committed to funding additional restoration projects with the remaining restoration funds (approximately \$400,000 remaining from the previous round of restoration project selection and through future restoration project selections). The Plan identifies requirements for future restoration to ensure that the Plan provides conservation for all Covered Species.
- 3. Avoidance and Minimization (Plan Chapter 5, Section 5.6). The Plan includes measures to avoid and minimize take of Covered Species. These avoidance and minimization measures will be implemented through a process that will verify project design compliance and construction of Covered Projects and Activities. Covered Projects and Activities will comply through avoidance and minimization of sensitive biological areas, adherence to species-specific protection measures and policies, compliance with procedures for protection of nesting birds, stormwater and water quality best management practices (BMPs), and wildfire protection techniques. Any costs associated with implementing these measures, as described in the Plan, will be funded through the individual construction budgets and will not rely on funding under the M2 Environmental Mitigation Program. OCTA will have a Project Manager overseeing the activities undertaken by the Construction Lead (either Caltrans or OCTA). The OCTA Project Manager will be responsible for ensuring that all avoidance and minimization measures are completed and documented by the Construction Lead and its contractors following the requirements, as set forth by the Plan.
- 4. **Streambed Program (Plan Chapter 5, Section 5.7).** The Plan includes the Streambed Protection Mitigation Program (Streambed Program), which outlines the process for submittal of project-level Notification of Lake or Streambed Alteration (NLSA) and the issuance of individual Lake or Streambed Alteration Agreements (LSAAs) for the Covered Projects pursuant to California Fish and Game Code sections 1600–1616. The Streambed Program requires the evaluation of specific streambed avoidance and minimization measures prior to compensatory mitigation. The Streambed Program will ensure that adequate mitigation is completed and that this mitigation is based on habitat and type of aquatic resources necessary to address state regulatory obligations. For unavoidable permanent impacts on streambed and associated riparian habitat, OCTA will compensate at the pre-approved mitigation sites identified in Appendix E of the Plan, "Streambed Program Guidelines," which are sites within the acquired Preserves and the restoration projects approved for funding, to achieve no-net-loss standards. Additionally, for temporary impacts on streambeds and associated riparian habitat, OCTA will ensure the impact site will be restored to its pre-project condition, when appropriate, to achieve no-net-loss standards. Restoration plans, as approved by CDFW, USFWS, and if warranted USACE and State Water Resources Control Board, will be implemented at the sites.
- 5. **Mitigation Approach (Plan Chapter 5, Section 5.8).** The conservation actions taken as part of this Plan provide upfront mitigation only for the Covered Projects and Activities. Once the Covered Projects and Activities are completed, there will be no remaining credits that can be used by OCTA as mitigation for non-M2 projects. As the Plan is implemented, OCTA will be responsible for tracking impacts on natural resources resulting from Covered Projects and Activities to ensure that the level of impact that ultimately occurs under the Plan stays below the level estimated as part of this Plan.

Plan Targets and Biological Goals and Objectives (Plan Chapter 5, Sections 5.2 and 5.3)

Quantifiable targets were developed based on the type and level of take estimated to occur from the Covered Projects to guide development of the conservation strategy and serve as a benchmark for

the Plan conservation analysis. Based on these estimates, the Proposed Plan will conserve a minimum target of 546.4 acres of natural habitat, including specific targets for individual habitat types as well as additional species-specific biological metrics. The targets represent an estimate of the amount of conservation needed to offset direct and indirect effects from Covered Projects and Activities. The targets are listed in Table 2-5.

Table 2-5. Biological Targets for the Proposed Plan

	Freeway Im Proj			
Biometric	Direct Effects ¹	Indirect Effects ²	Preserve Implementation ³	Plan Target ⁴
Multiplier:	2.0	0.5	2.0	
Natural Communities (acres)				
Chaparral	5.0	41.9	3.4	37.8
Coniferous Forest	0.0	0.0	0.0	0.0
Grassland	108.1	280.9	0.9	358.5
Riparian	5.0	57.0	0.1	38.7
Scrub	10.0	85.2	2.7	68.0
Water	0.4	0.1	0.0	0.9
Wet Meadows/Marsh	2.5	0.0	0.0	5.0
Woodland	10.0	19.3	3.9	37.5
Totals	141.0	484.4	11.0	546.4
Predicted Species Habitat Models and	Critical Habit	at (acres)		
Plants				
Intermediate Mariposa Lily	3.9	28.1	1.5	24.8
Many-Stemmed Dudleya	11.1	83.7	5.9	75.8
Southern Tarplant	9.2	35.3	0.1	36.3
Fish				
Arroyo Chub	0.1	0.9	0.0	0.6
Reptiles				
Coast Horned Lizard	63.4	184.2	3.0	225.1
Orangethroat Whiptail	45.1	110.7	0.6	146.9
Western Pond Turtle				
Aquatic	3.1	16.5	0.1	14.7
Upland	45.8	283.8	6.4	246.2
Birds				
Cactus Wren	9.7	85.2	2.3	66.8

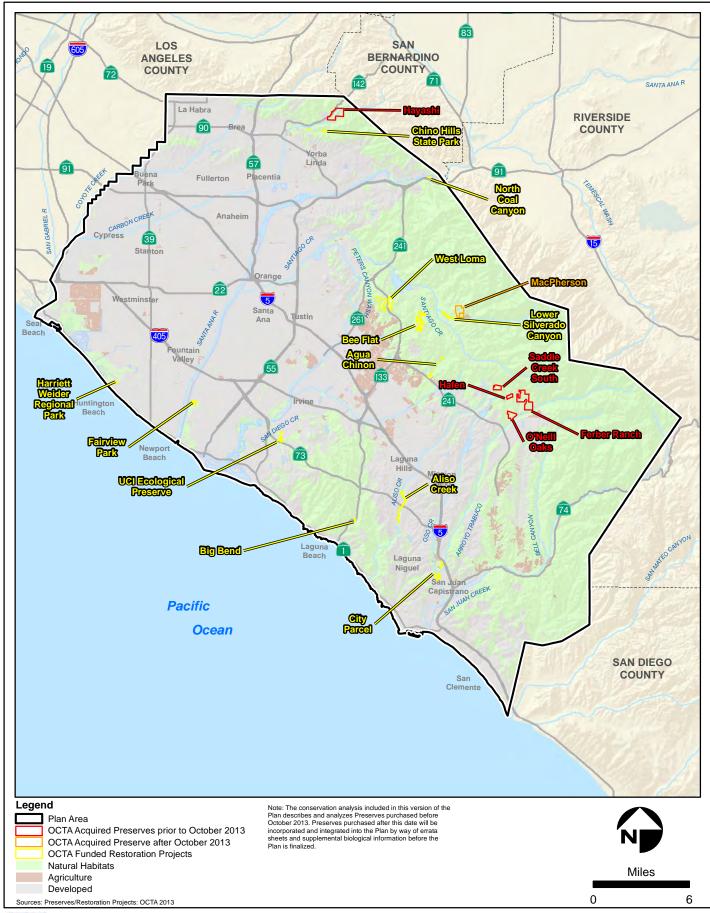
	Freeway Improvement Projects			
Biometric	Direct Effects ¹	Indirect Effects ²	Preserve Implementation ³	Plan Target ⁴
Coastal California Gnatcatcher				
Very High	2.4	13.9	0.0	11.8
High	3.5	53.1	0.4	34.4
Moderate	2.7	24.2	1.4	20.2
Low	1.7	4.8	1.1	8.1
Total	10.3	96.0	3.0	74.5
Critical Habitat	11.9	123.9	7.4	100.7
Least Bell's Vireo	4.9	55.2	0.1	37.6
Southwestern Willow Flycatcher	5.1	60.5	0.1	40.7
Mammals				
Bobcat	45.9	246.0	11.0	236.7
Mountain Lion	26.4	123.0	10.3	134.8

- Estimated direct effects are based on a "planning-level" footprint. Actual effects are expected to be less through the implementation of avoidance and minimization measures. The amount of direct effects for individual habitat types and predicted species habitat models have been adjusted to address the low precision and accuracy of the regional habitat data and allow for habitat types with a small level of impact to serve as a reasonable cap to direct effects under the Plan.
- ² Indirect effects have been estimated using a 300-foot buffer around direct effect areas.
- Direct effects associated with Preserve implementation activities (new trails, kiosks, maintenance facilities, etc.) have been estimated to be no more than 1% of natural habitat within Preserves. Because the location of the Preserve activity effects is not known at this time, a conservative estimate has been taken based on the proportion of the biometric within the Preserves. Actual effects are expected to be less through the implementation of avoidance and minimization measures.
- ⁴ Plan targets were calculated using the following formula: (direct effects * 2) + (indirect effects * 0.5).

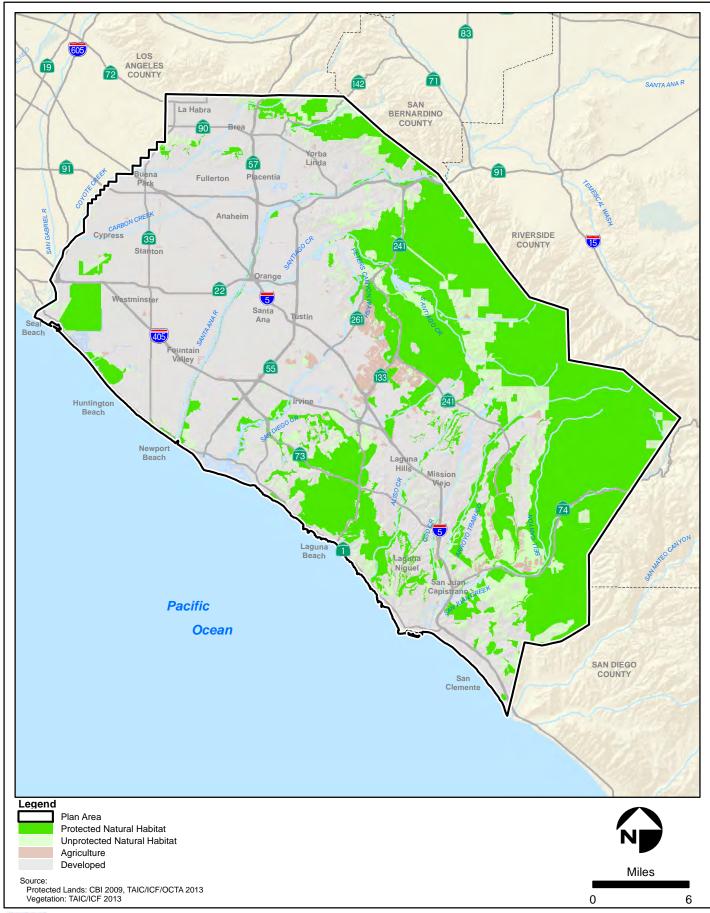
The Plan also contains a broader set of biological goals and objectives at the landscape, natural community, and species level that describe how the conservation actions would occur within areas important for regional conservation purposes. Goals are broad and based on the conservation needs of the resources. Biological objectives describe in more detail the conservation or desired conditions to be achieved and have been designed to achieve the biological goals collectively. The biological goals and objectives indicate how the additional conservation of large blocks of habitat will benefit biodiversity, natural communities, and habitat connectivity throughout key portions of the Plan Area and provide for the conservation and management of Covered Species. The Orange County Conservation Assessment prepared by the Conservation Biology Institute (CBI 2009) for the EOC has identified priority conservation areas within Orange County and has been used to as a tool to guide and evaluate the conservation actions. The biological goals and objectives are presented in Chapter 5.3, "Biological Goals and Objectives," of the Plan.

Preserves

Prior to October 2013, OCTA acquired five Preserve properties containing nearly 900 acres of natural habitat (see Table 2-6). The locations of the Preserves across the Plan Area are shown on Figure 2-2, and the locations of the Preserves relative to adjoining open space are shown on Figure 2-3. The collection of Preserves in the Trabuco Canyon has created a substantial block of conservation in an area that did not previously exist as protected open space. The Hayashi Preserve adds to the block of protected open space in the Chino Hills that supports the preservation efforts of









various entities that have long sought the conservation of open space resources in the Chino Hills. These Preserves provide for the protection of diverse habitats across the Plan Area.

Table 2-6. Natural Habitat within Preserve Acquisitions

Preserves Acquired Prior to October		
2013	Total Acres ¹	Acres of Natural Habitat
Ferber Ranch	398.6	384.6
Hafen	48.0	47.9
Hayashi	293.7	291.2
O'Neill Oaks	117.5	113.8
Saddle Creek South ²	82.1	51.3
Total	939.9	888.8

These acreages are approximate, based on the best currently available survey data. Final acreages are not expected to vary significantly but may be adjusted slightly in the future when more accurate data are available.

In addition to these five Preserves, OCTA is actively pursuing the acquisition of additional Preserve(s) that are expected to result in a minimum of 250 acres of additional natural habitat. The identification, selection, and acquisition of the additional Preserve(s) will be completed following the EOC Preserve selection process. The Wildlife Agencies will have the opportunity to review and approve the final selection. The Proposed Plan establishes practices, requirements, and funding mechanisms for the long-term management and monitoring of each Preserve (see Proposed Plan, Chapter 7, "Management and Monitoring").

In December 2013, OCTA purchased a sixth Preserve, the 204-acre MacPherson property located northwest of Rancho Santa Margarita in the Silverado-Modjeska area. The MacPherson Preserve was identified as a priority conservation area because of the diversity of habitat types found on the property, including chaparral, coastal sage scrub, oak woodland, and native grassland. This Preserve is adjacent to Orange County Parks' Irvine Ranch Open Space – Baker Canyon/Black Star Canyon region. This region also includes conservation easements held by The Nature Conservancy as the legal protection documents. The Preserve is a key component in managing the larger ecological functions of the area and enables linkage to other key protected wildlands. OCTA is currently pursuing the acquisition of a seventh Preserve. This EIR/EIS describes and analyzes Preserves purchased prior to October 2013. Preserves purchased after this date will be incorporated and integrated into the EIR/EIS by way of errata sheets and supplemental information and analysis before the EIR/EIS is finalized.

Restoration Projects

M2 restoration efforts approved to date by the OCTA Board were divided into two rounds of activities. In September 2010, the OCTA Board authorized contracts with five restoration project sponsors for Round 1. In May 2012, the OCTA Board approved funding for six additional restoration projects for Round 2. The projects are summarized below in Table 2-7.

Saddle Creek South Preserve was purchased, in part, with funding provided by the National Fish and Wildlife Foundation. OCTA receives a percentage of the available credits based on the percentage of the total cost of acquiring and managing the Preserve contributed by OCTA (75.36%).

Table 2-7. Round 1 and Round 2 Restoration Projects

Project	Sponsor	Description (approximate acreage1)
Round 1		
Agua Chinon/ Bee Flat	Irvine Ranch Conservancy	91.0 acres of restoration consisting of chaparral, grassland, coastal sage scrub, elderberry scrub, oak woodland, and riparian (mulefat scrub/elderberry shrubland)
Big Bend	Laguna Canyon Foundation	3.7 acres of restoration consisting of coastal sage scrub and riparian woodland to enhance wildlife connectivity
City Parcel	City of San Juan Capistrano	53 acres of restoration consisting of riparian and coastal sage scrub within Trabuco Creek Wildlife Linkage
Fairview Park	City of Costa Mesa	23 acres of restoration consisting of wetlands, grasslands, coastal sage scrub, and riparian
UC Irvine Ecological Preserve	Nature Reserve of Orange County	8.5 acres of restoration consisting of cactus scrub
Round 2		
Aliso Creek	Laguna Canyon Foundation	55 acres of restoration consisting of riparian and transitional habitat
Chino Hills State Park	Chino Hills State Park	13.5 acres of riparian restoration and 6 acres of cactus scrub restoration
Harriett Weider Regional Park	Bolsa Chica Conservancy	8.2 acres of restoration consisting of grassland, coastal sage scrub, and riparian habitat
Lower Silverado Canyon	Irvine Ranch Conservancy	44.8 acres of restoration consisting of riparian and coastal sage scrub habitat
North Coal Canyon	California Department of Parks and Recreation	5.5 acres of restoration consisting of coastal sage scrub habitat within a key wildlife connectivity linkage area
West Loma	Irvine Ranch Conservancy	76.7 acres of restoration consisting of grassland, coastal sage scrub, and riparian habitat

Conservation actions involving restoration projects include an estimate of conserved habitats based on conceptual restoration design plans. The final acreage of restored habitat may be refined during final restoration design and during implementation. Attainment of objectives dependent on restoration actions will be achieved once the restoration project meets the restoration design success criteria.

The five funded restoration projects from the first round total approximately \$5.5 million and restore approximately 179.2 acres of open space lands throughout Orange County. The six projects in the second round will restore another approximately 209.7 acres and were funded for approximately \$4.7 million.

Avoidance and Minimization Measures

Avoidance and minimization of effects on Covered Species and their habitats would be implemented through a set of protection measures to be undertaken as part of Covered Projects. These measures include avoidance and minimization of sensitive biological areas, species-specific protection measures and policies, procedures for complying with nesting bird protections, stormwater and

water quality BMPs, and wildfire protection techniques (see the Proposed Plan for specific details: Section 5.6.1, "Avoidance and Minimization of Sensitive Biological Resources"; Section 5.6.2, "Species Specific Protection Measures and Policies"; Section 5.6.3, "Nesting Birds Policy"; Section 5.6.4, "Stormwater and Water Quality BMPs"; Section 5.6.5, "Wildfire Protection Techniques").

The avoidance and minimization measures are requirements that would be evaluated and implemented on a project-by-project basis for each Covered Project. For each individual covered freeway improvement project, OCTA and Caltrans will establish cooperative agreements that define the responsibilities and oversight of each organization. OCTA will be responsible for preparing planning-level environmental documents meeting Caltrans' standard CEQA/NEPA requirements. Caltrans, as owner and operator of the freeway system, is responsible for approval of the project-level environmental documents. Either Caltrans or OCTA will function as the Construction Lead, although it is anticipated that Caltrans will be the Construction Lead for most M2 freeway improvement projects. The Construction Lead is responsible for implementing the projects in conformance with avoidance and minimization measures set forth in the Proposed Plan. Any costs associated with implementing avoidance and minimization measures would be funded through the individual construction budgets and would not rely on funding under the M2 Environmental Mitigation Program.

Conservation Analysis

The conservation analysis included in the Proposed Plan demonstrates how the conservation achieved through the conservation strategy (preserve acquisitions, restoration projects, and avoidance and minimization measures) results in a level of conservation that meets or exceeds the Proposed Plan's biological goals, objectives, and targets. A quantitative summary of how the Proposed Plan meets the Plan targets is included in Proposed Plan Chapter 6, "Conservation Analysis." A summary of the analysis of how the Proposed Plan also achieves the broader biological goals and objectives is also included in Proposed Plan Chapter 6. In some instances, the Proposed Plan identifies requirements for the future restoration projects to enhance and expand on the level of conservation needed to meet the Plan's biological goals and objectives. The specific Covered Species highlighted for additional conservation include arroyo chub and many-stemmed dudleya.

Preserve Management and Monitoring Program

Each Preserve would be established with an endowment to ensure adequate funding for its long-term management and monitoring. As part of the Preserve Management and Monitoring Program (PMMP), OCTA would assess the status of Covered Species, natural communities, and ecosystem processes on the Preserves and to evaluate the effects of management actions with adaptive management such that the Proposed Plan's conservation strategy is successful. The PMMP establishes practices for the management and monitoring of the Preserve properties to ensure the long-term health and viability of species and ecological values throughout the Preserves.

The PMMP establishes two distinct roles for on-the-ground management of acquired Preserves: Preserve Manager and Monitoring Biologist (described in detail in M2 NCCP/HCP, Chapter 7, "Management and Monitoring"). Preserve Managers would be responsible for basic property management and Preserve management tasks, addressing the stewardship of the ecological values and recreational uses in each Preserve Area. The Preserve Manager would be a continuous role, starting with the establishment of the first Preserve Areas under the Proposed Plan, and may be fulfilled by one or multiple entities. The Preserve Manager(s) report(s) periodically to OCTA

regarding the status of the Preserve System, progress of active management actions, and issues that need addressing.

The Monitoring Biologist would be responsible for periodic monitoring of the status of natural communities and Covered Species within the Preserve System. The Monitoring Biologist role would be periodic based on the schedule for species and natural community monitoring established in the Proposed Plan. Monitoring data would be collected based on accepted species and natural community monitoring methods. The Monitoring Biologist would provide OCTA and the Preserve Manager with monitoring reports and would provide biological expertise in interpreting results and making recommendations for future Preserve management actions. The Monitoring Biologist may be one or multiple entities.

Levels of Preserve Management and Monitoring

Four levels of management have been identified to guide the expected level of management for Preserve lands.

Level 1—Property Management. Level 1 management is the most basic level and includes establishing and maintaining property boundaries with fencing and gates; posting signs that indicate Preserve rules, restrictions, and regulations; and controlling public access, trash collection, and enforcement as-needed.

Level 2—Preserve Management. Level 2 management focuses on management activities that protect Covered Species and natural communities, and provide compatible recreational opportunities for the public. The Preserve Management level includes all Level 1 management actions, as well as monitoring and management of the overall condition of the Preserve, invasive species, erosion, sedimentation, trails and public use facilities, and occasionally restoration.

Level 3—Species Management and Monitoring. Level 3 monitoring consists of all Level 1 and 2 management activities as well as species-specific and habitat-specific monitoring and management. Examples of Level 3 activities include focused species surveys, species/habitat-specific protection measures (e.g., fencing and manual weed removal in a rare plant area), and habitat enhancement projects (e.g., post-fire restoration of coastal sage scrub as coastal California gnatcatcher habitat).

Level 4—Regional Monitoring. Regional monitoring consists of monitoring vegetation communities, wildlife movement, and species population trends across the Plan Area. OCTA will contribute to regional monitoring by using standardized methods and coordinated scheduling of the collection of data in coordination with other regional entities and the Wildlife Agencies to facilitate the integration and evaluation of data for the region.

Phases of Preserve Management

Start-Up Management Phase

The first phase (start-up) is intended to establish the baseline for Covered Species status, habitat condition, and overall property condition of the Preserve Areas. The start-up phase would occur within the first year after a property is acquired. Active property management (Level 1) would occur during this phase to protect the biological values from trespass or other activities that may cause negative impacts. OCTA has either contracted with or is currently negotiating with potential interim land managers during the development of the M2 NCCP/HCP for all five of the current acquired properties.

Interim Management Phase

The second (interim) management phase includes the development of site-specific resource management objectives, and initiation of regular, ongoing management of the acquired Preserves to address issues identified during the start-up phase. The interim management phase would occur prior to finalization of the proposed NCCP/HCP, and/or prior to recording of the conservation easements for the acquired properties. The interim management phase includes preserve management (Level 2) as well as property management (Level 1).

During the interim phase, from the time a Preserve is acquired (including acquisitions occurring prior to permit issuance), Preserves would be managed to maintain their biological value and integrity by implementing the following measures.

Preserve Maintenance

- Removal of trash, trimmings, debris, and other solid waste.
- Maintenance of trails and fences. Erect fencing and signage as necessary to control unauthorized public access.
- Implementation of security programs to enforce "no trespassing" rules and curtail activities that degrade resources, such as grazing, shooting, illegal planting, illegal dumping, off-road traffic, and walking dogs in the Preserves.

Preserve Management

- Implementation of activities to maintain and/or improve, operate, and manage the Preserves.
- Maintenance of habitat values through removal and control of exotic species (weed abatement).

Preserve Monitorina

Preserve monitoring would also be conducted during the interim period between permit issuance and the development of the Resource Management Plans (RMPs). The primary emphasis on the initial Preserve monitoring effort would be to establish a baseline for Preserve status and condition, as well as for the presence and distribution of Covered Species and natural communities. The following monitoring activities would be implemented during the first 1–2 years after permit issuance, or Preserve acquisition:

- Conduct overall Preserve assessment (invasive species, erosion, problems from unauthorized public access, fencing that may hinder wildlife movement, areas that need fencing to control public access, trail condition, etc.) to determine areas of highest management priority.
- Identify the greatest ongoing threats to the Preserves to be remedied by management actions that will be identified in the focused Preserve RMPs.
- Identify gaps in current baseline data associated with natural communities mapping and plant and animal surveys within the Preserves. Conduct baseline surveys.

Long-Term Management Phase

The final phase is management of the Preserve in perpetuity, and starts after the baseline conditions have been established, an easement has been recorded, and an RMP has been created. Following the issuance of permits for the M2 NCCP/HCP, an RMP would be developed for each Preserve that includes site-specific habitat management directives, specific conservation actions for Covered Species, and guidelines for managing public access and education. The long-term management phase would include species management (Level 3) as well as Level 1 and Level 2 management. In addition, Preserve-level monitoring and management may be coordinated among Preserves in the M2 NCCP/HCP and other regional conservation programs to contribute to regional monitoring (Level 4).

Monitoring and Adaptive Management

Monitoring and adaptive management of the Preserves would be implemented to ensure that OCTA is in compliance with Proposed Plan requirements, to measure the effectiveness of conservation actions, to provide additional information that will help direct or redirect management actions to benefit the Covered Species, and to improve the health and stewardship of acquired Preserves. The progress on, and status of, all Preserve properties and RMPs would be reported in the Proposed Plan's annual report summary (see Section 8.4, "Annual Reporting Requirements" of the Plan).

Adaptive management, a key component in conservation plans, provides a strategy to improve the effectiveness of future management actions through monitoring and understanding the effectiveness of past management actions. The Proposed Plan requires that the RMP for each of the Preserves include an adaptive management component.

The monitoring and adaptive management of the Preserves would be a cooperative effort between the Preserve Managers and the Monitoring Biologists. Monitoring of the status of species and natural communities, including the effectiveness of specific conservation actions to benefit Covered Species and natural communities, would be accomplished by the Monitoring Biologist. Monitoring of the effectiveness of Preserve management actions such as BMPs for erosion control or fuel modification would be accomplished by the Preserve Manager.

Implementation

The primary responsibility for Proposed Plan implementation would rest with OCTA as the Permittee; however, other groups would have secondary responsibility for coordination, Proposed Plan compliance, and implementation of various aspects of the Proposed Plan. Implementation of the conservation strategy, monitoring program, Covered Activity approvals, and reporting would require coordinated actions among OCTA, Caltrans, Preserve Managers, Monitoring Biologists, Restoration Project Sponsors, and the Wildlife Agencies.

Funding

The primary source of funding for the Proposed Plan will derive from the M2 transportation sales tax, which was designed to raise money to improve Orange County's transportation system. As part of the M2 sales tax initiative, a minimum of 5% of the revenues from the freeway program will be set aside for the M2 Environmental Mitigation Program (EMP) revenues. These funds will be used for "programmatic mitigation." Development and implementation of the M2 NCCP/HCP will utilize a portion of this funding source to achieve higher-value environmental benefits such as habitat protection, connectivity, and resource preservation/enhancement in exchange for streamlined

project approvals for the M2 freeway projects. The expenditures for key components of the Plan's conservation strategy that achieve upfront and comprehensive mitigation (e.g., Preserve acquisitions and funding of restoration projects) will be paid for through the M2 EMP revenues. Any costs associated with implementing avoidance and minimization measures, as described in Section 5.6, "Avoidance and Minimization," of the Proposed Plan, will be funded through the individual construction budgets and will not rely on funding under the M2 EMP.

There are sufficient funds available through the M2 EMP to cover development and implementation of the Plan. OCTA has projected that EMP revenue will total \$317.4 million (based on 2011 projections) over a 30-year period. The estimated expenditures for development and implementation of the Plan (including Preserve acquisitions, near- and long-term Preserve management and monitoring, funding of restoration projects, program management, and debt service) totals approximately \$160 million.

To date, OCTA has not made any other obligations for spending of the M2 EMP revenues beyond the commitment to implement the Plan. It is anticipated that OCTA will apply a portion of the remaining M2 EMP revenues for mitigation of wetland impacts from M2 freeway improvements, which are addressed separately from the Plan. OCTA is not yet able to provide an accurate estimate of the funding requirements to address wetlands mitigation because this process is very fluid and currently in negotiation. However, it is anticipated that there are sufficient funds to cover both wetland impact mitigation as well as Plan implementation. OCTA is committed to prioritizing the funding of Plan implementation and mitigation of wetlands impacts before allocating M2 EMP revenues to other actions or activities. OCTA will coordinate with the EOC and Wildlife Agencies to determine an appropriate approach for allocating the M2 EMP revenues until the long-term funding commitments for Plan implementation are determined, and a permanent, non-wasting endowment is fully funded .

Administration of Funding for Long-Term Commitments

It is anticipated that OCTA will establish and manage a permanent, non-wasting endowment to provide funding for long-term commitments of Preserve management and monitoring as well as program management. OCTA has a track record of managing endowment funds, including those for transit and commuter rail operations, and has a fully functioning treasury with appropriate investment policies and fund management experience. There will be a single endowment that will cover the annual expenses for all Preserve management and monitoring as well as program management. OCTA will, most likely, contract with local management entities and biological firms for Preserve management and biological monitoring services.

OCTA will accumulate funding for the endowment using the ongoing revenue generated for the M2 EMP. OCTA estimates it will take approximately 10 years, but no longer than 15 years, to accumulate sufficient funding for the endowment using unappropriated funds from the annual revenue stream. Except for the mitigation of wetland impacts from M2 freeway improvements, OCTA will prioritize the funding of endowment before allocating M2 EMP revenue to other environmental or mitigation actions or activities.

The endowment will cover:

Preserve Management – This includes all general Preserve management activities such as access
control, enforcement, fencing, maintenance, signage, public outreach, vegetation management,
invasive species control, erosion control, and fire management. In addition, this includes
periodic and ongoing biological assessments, a comprehensive annual assessment to identify

major threats, Preserve-specific biological monitoring above and beyond effectiveness monitoring, ongoing adaptive management, Preserve level data management, and Preserve level annual reporting.

- Adaptive Management Preserve Managers will be expected and responsible for managing their Preserves following the principles and procedures of Adaptive Management, as outlined in Section 7.2.7 of the Plan. A separate budget line-item will set aside to fund additional and specific adaptive management actions (e.g. monitoring and evaluation of different weed control methods to protect covered plant species populations on a Preserve) that are above and beyond the general adaptive management steps undertaken by the Preserve Manager. The adaptive management funding will be 5% of the Preserve Management budget.
- Effectiveness Biological Monitoring Comprehensive biological monitoring (following established protocols) will occur annually for invasive species, every 4 years for Covered Species and vegetation statistical sampling, and every 10 years for comprehensive vegetation mapping.
- Program Management OCTA will provide staffing for program oversight, coordination, and management of Preserve Managers; program-level data management; participation on regional planning and monitoring; and preparation of the annual report.
- Changed Circumstances A separate, but affiliated, endowment will be established and managed to provide funding to respond to events that meet the triggers of a Changed Circumstance.

Once OCTA has established a permanent, non-wasting endowment and the endowment has been reviewed and approved by the Wildlife Agencies, the endowment is deemed to be adequate funding to carry out the obligations under the Plan, and the Wildlife Agencies shall not require additional funding from OCTA.

Changed and Unforeseen Circumstances

Natural habitats are inherently subject to fluctuations, and many vegetation communities in Southern California are adapted to cyclical events such as wildfires, floods, droughts, and species' population eruptions. Many of these fluctuations would be monitored and addressed through the adaptive management plans developed for the Preserves. However, some events or the scale of events may exceed the level of change that can be expected to be addressed through adaptive management responses. Changes greater than those that would be addressed through adaptive management are defined as "Changed Circumstances" and "Unforeseen Circumstances."

Changed Circumstances refer to changes in circumstances affecting a species or geographic area that can reasonably be anticipated by OCTA and the Wildlife Agencies, and that can be accounted for in the Proposed Plan (e.g., fires or other habitat altering events that can reasonably be expected to occur and for which contingency actions can be planned to address adverse effects on Covered Species). Changed Circumstances for the Proposed Plan include the following reasonably foreseeable events: flood; fire; extended period of reduced precipitation; invasion by exotic species or disease; toxic spills, vandalism, encroachment, and other illegal human activity; and listing of non-covered species. OCTA will assess the conditions for which Changed Circumstances are being invoked. If necessary, funding for addressing Changed Circumstances will be allocated from a separate Changed Circumstance endowment, as described above.

Unforeseen Circumstances refer to changes in circumstances affecting a species or geographic area that could not reasonably have been anticipated by OCTA and the Wildlife Agencies at the time of the Proposed Plan's negotiation and development, and that result in a substantial and adverse change in the status of the Covered Species. Unforeseen Circumstances include future unanticipated conditions, which are either not defined as Changed Circumstances or which exceed the definitions developed for Changed Circumstances—particularly in terms or severity or extent (e.g., flood or fire affecting a species' continued existence).

Projects and Activities Not Covered by the Proposed Plan

During development of the Proposed Plan, several projects and activities were considered but rejected for coverage; these are discussed below. *Take* coverage for these activities would require direct consultation with CDFW and USFWS.

Flood Protection Projects

The Orange County Flood Control District is responsible for providing flood protection within formally designated drainage areas (formed drainages) within Orange County. Construction of flood protection facilities, including detention basins, reservoirs, creeks, and canals, is funded by assessing taxes on real property in Orange County. The district and its property are administered, maintained, and operated by Orange County Public Works' staff (Orange County Public Works 2010), which meets flood control program goals through an integrated process that involves feasibility, hydraulic, deficiency, floodplain, and value-engineering studies; the collection and analysis of data; and the design and construction of projects (Orange County Public Works 2010). To the extent flood protection projects are required within the Permit Area and implemented as standalone projects by the Orange County Flood Control District, these projects are not covered under the Proposed Plan. If improvements to flood protection facilities are required as part of a covered freeway improvement project and included as part of the Covered Project design, those improvements are covered as part of the Covered Project.

Flood Protection Facility Operation and Maintenance

All facilities operated by the Orange County Flood Control District require both routine scheduled and periodic unscheduled maintenance that is driven by immediate needs. In addition, emergency repairs are occasionally needed following major storm events or other natural disasters. Maintenance of existing flood protection facilities within the inventory area that are subject to existing Memoranda of Understanding (MOUs) or Streambed/Lakebed Alteration Agreements with CDFW are subject to the requirements of those existing MOUs or Agreements. If maintenance of a flood protection facility is required within the Permit Area, routine, periodic, and emergency operation and maintenance activities are not covered by the Proposed Plan. Such activities might include the following:

- Cleaning concrete channels
- Dam maintenance
- Ditch cleaning
- Flapgate servicing
- Grading access roads as needed to maintain access and safety
- Maintaining and cleaning hydraugers

- Mowing, herbicide use, or tree trimming for vegetation control as needed to maintain design flood capacity, fire hazard reduction, or safety of the following.
 - Channels and reservoirs
 - Uplands in reservoir basins
 - Access roads
 - Levees
 - o Rights-of-way
- Maintaining landscaping along flood control channels and other facilities
- Removing debris or log jams from channels, reservoirs, or trash racks
- Rodent control on levees, dams, and other structures to ensure structural integrity
- Repair or replacement of drainage structures, fences, or retaining walls
- Repair of channel banks damaged by erosion or slope failure
- Silt removal within non-tidal areas of natural channels or reservoirs to maintain design flood capacity
- Sub-drain servicing
- Emergency cleanup of material spills into channels, creeks, or reservoirs

Utility Construction and Maintenance

Public and private utility infrastructure such as electric transmission lines, gas pipelines, petroleum pipelines, telecommunications lines, or cellular telephone stations might cross or need to cross M2 NCCP/HCP Preserves. However, construction of new utility infrastructure, including associated permanent and temporary access roads, in Preserves is not a Covered Activity. Additionally, routine and emergency maintenance and repair of existing utilities within M2 NCCP/HCP Preserves are not covered by the Plan. If improvements to utilities is required as part of a covered freeway improvement project and included as part of the Covered Project design, those improvements are covered as part of the Covered Project.

Highway Operation and Maintenance

Routine highway operation and maintenance activities that occur within the Plan Area would not be covered by the Proposed Plan. Highway operation and maintenance activities not covered by the Proposed Plan include, but are not limited to, the following routine and emergency activities.

- Signage maintenance or replacement
- Traffic-control device maintenance or replacement
- Guardrail, fence or crash cushion inspection, maintenance, or replacement (median or shoulder barriers should be replaced with structures that are both safe for vehicles and compatible with wildlife movement whenever possible; at a minimum, replacement should not make wildlife movement more difficult)
- Pavement maintenance or resurfacing
- Pavement striping or markers replacement
- Tree trimming or removal for safety
- Debris collection and removal on roads, trash racks, and shoulders

- Natural disaster damage repair
- Storm damage repair
- Vehicle accident repair and cleanup

Emergency Activities

An emergency is a situation involving disasters, casualties, national defense, or security emergencies and includes response activities that must be taken to prevent imminent loss of human life or property (USFWS and NMFS 1998). The Wildlife Agencies would not obstruct an emergency response decision made by OCTA or the Preserve Manager, where human life is at stake. Emergency activities are not inherently covered under the Proposed Plan, but many of the actions taken during or after an emergency, such as firefighting, rescue of injured persons, and habitat restoration following fires or floods are Covered Activities under the Proposed Plan.

Funded Restoration Projects

Restoration projects funded by OCTA as part of the Proposed Plan's conservation strategy could result in various types of temporary and possibly permanent effects on Covered Species and their habitats. While the net conservation value of these restoration projects is expected to have an overall positive balance, it is possible that these projects will have effects on individual Covered Species and their habitats that would require an environmental compliance review and possibly require permits for incidental take of species. It would be the responsibility of the Restoration Project Sponsors to identify and document potential effects and to obtain separate permits, as necessary and appropriate, on their own to address the effects. Effects on Covered Species and their habitats resulting from the funded restoration projects would not rely on the Proposed Plan for incidental take coverage. With the incorporation of appropriate avoidance and minimization measures, the restoration projects will not result in take of species listed under the ESA or CESA.

2.2.2.3 Alternative 3: Federal and State ESA-Listed Species Only NCCP/HCP (Reduced Plan)

Under the Reduced Plan Alternative, only those species that are federally or state-listed as threatened or endangered would be proposed for coverage under the NCCP/HCP. The following species would be covered under Alternative 3.

- Southwestern willow flycatcher
- Least Bell's vireo
- Coastal California gnatcatcher

The amount of land acquisition and Preserve Area assembled would be similar to that of the Proposed Plan. The amount and type of species-specific management activities and, potentially, habitat restoration would be less because the conservation strategy measures would be focused only on the three ESA-listed species mentioned above.

Under the Reduced Plan Alternative, no assurances would be provided by USFWS as part of the ITPs that the avoidance and mitigation measures provided in the proposed NCCP/HCP would adequately conserve currently non-listed species that may be listed during the term of the HCP/NCCP. Other sensitive species would not be covered, and take would be addressed on a project-by-project basis, similar to the No Project/No Action alternative.

2.2.3 Alternatives Eliminated from Further Consideration

The following alternatives did not specifically meet the purpose and need for OCTA and the USFWS proposed actions. These alternatives were determined to be inconsistent with CEQA and NEPA criteria; specifically, feasibility, reasonable achievement of proposed project (i.e., proposed NCCP/HCP) objectives, or likely reduction of one or more of the significant impacts of the proposed NCCP/HCP. Consequently, these alternatives were eliminated from detailed consideration in the Draft EIR/EIS. Each alternative and the reason for its elimination are briefly described below.

2.2.3.1 Alternative 4: Reduced Project Footprint

The Reduced Project Footprint Alternative would provide for a reduced level of take due to a reduced Permit Area associated with the covered highway improvement projects. Under the Reduced Project Footprint Alternative, covered highway project impact areas would be limited to reduce impacts on Covered Species, upland habitat, and wetlands. The impacts associated with the freeway improvement projects, however, are already quite small because designed improvements are limited by existing site constraints (e.g., surrounding development). It is therefore not feasible to modify the highway project designs such that habitat loss could be substantially reduced below that associated with the Proposed Plan. In addition, the general scope of the freeway projects went before Orange County voters and was subsequently approved by them; changing the construction footprint would therefore not be consistent with the M2 voters-approved sales tax measure. Therefore, this alternative was eliminated from further consideration in the Draft EIR/EIS due to its infeasibility and the fact that it would not substantially change the Proposed Plan description or resulting impacts.

2.2.3.2 Alternative 5: No Take

A No Take Alternative was considered as part of the planning process. This alternative was eliminated from further consideration because it is considered to be infeasible with respect to the Proposed Plan's purpose and objectives. With respect to the covered freeway improvement projects, the No Take Alternative would preclude OCTA and Caltrans from effectively implementing the freeway capital improvement projects identified under Measure M2 in a streamlined environmental permitting process because listed species take and avoidance would need to be considered on a project-by-project basis. In addition, the general scope of the freeway projects went before Orange County voters and was subsequently approved by them; changing the construction footprint would therefore not be consistent with the M2 voters-approved sales tax measure. The No Take Alternative also would not meet the needs of the USFWS and CDFW because it would result in a more fragmented and unmanaged landscape with no support for the recovery and/or persistence of listed species. In these fragmented landscapes, habitat would eventually degrade due to benign neglect, or become highly modified through succession of nonnative plant communities to the point where habitat would not support listed species and may well lead to the decline of many species not currently listed. Therefore, the No Take Alternative is not a reasonable or feasible alternative and does not warrant detailed analysis as part of the Draft EIR/EIS.

Chapter 3 **Environmental Setting**

Orange County Transportation Authority	Orang	e County	Transportation	Authority
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Chapter 3. Environmental Setting

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This chapter presents the affected environment of the Proposed Plan. The existing environmental and regulatory settings are described for each of the following resource topics.

- Section 3.2, Agriculture
- Section 3.3, Air Quality and Greenhouse Gases
- Section 3.4, Biological Resources
- Section 3.5, Cultural Resources
- Section 3.6, Geology, Soils, and Seismicity
- Section 3,7, Hazards and Hazardous Materials
- Section 3.8, Hydrology and Water Quality
- Section 3.9, Land Use
- Section 3.10, Noise
- Section 3.11, Socioeconomics and Environmental Justice
- Section 3.12, Transportation and Circulation

Each resource section contains the following information:

- **Affected Environment/Existing Conditions** includes two sections, "Regulatory Setting" and "Environmental Setting." These sections include the following information.
 - **Regulatory Setting.** This section lists and describes applicable laws, regulations, and policies that affect the resource or the assessment of impacts on the resource.
 - Environmental Setting. This section provides an overview of the physical environmental conditions in the area at the time of or prior to the publication of the Notice of Preparation (i.e., the baseline for determining environmental effects) that could be affected by implementation of the proposed alternatives in accordance with NEPA regulations (40 CFR 1502.15) and State CEQA Guidelines Section 15125.

Resource topics dismissed from further consideration in the Draft EIR/EIS are discussed below.

3.1.1 Resource Topics Not Considered in Detail

The environmental review process under both CEQA and NEPA requires a brief description of the environmental issues that were determined during preliminary Plan review not to be significant and were therefore not discussed in detail in this Draft EIR/EIS. For the alternatives analyzed in this Draft EIR/EIS, the following environmental effects were determined not to be potentially significant and, therefore, did not require detailed analysis: aesthetics and visual resources, energy resources, mineral resources, population and displacement, public services, and utilities and service systems. These issues are addressed individually below, in the context of the potential effects of the alternatives considered. Covered Projects and Activities, particularly freeway improvement projects,

under the Proposed Plan or alternatives will be required to undergo subsequent environmental review and approvals under CEQA, at which time a decision will be made whether there is a requirement to include a detailed analysis for any of these issues.

3.1.1.1 Aesthetics and Visual Resources

None of the alternatives would significantly degrade the existing visual character or quality of the Plan Area or have any direct effects on scenic resources including designated scenic freeways or vistas. Furthermore, none of the alternatives would result in new sources of light or glare. None of the alternatives authorize any development or other physical changes in the landscape that would affect visual resources. Land acquisition and the establishment of Preserve Areas, along with habitat restoration and management activities for the benefit of Covered Species would complement other regional open space areas within Orange County and would maintain the aesthetic values of acquired lands comparable to their current aesthetic value. Habitat restoration may have short-term effects on the visual landscape but would provide long-term visual benefits in Orange County by enhancing open space within area viewsheds. Infrastructure improvements (i.e., trailhead kiosks, access roads, and parking) would be small in scale and would not be expected to significantly alter the visual landscape or significantly affect any visual resources. Thus, aesthetics and visual resources were not considered to be an issue that warranted further detailed analysis in this Draft EIR/EIS.

Potential aesthetics and visual resources effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP process.

3.1.1.2 Energy Resources

None of the alternatives would directly impact known valuable energy resources or recovery sites. Within Orange County, these resources include both petroleum and geothermal resource areas (Orange County 2011c). Proposed Preserve Areas were not identified as having public values related to the use of energy resources. Furthermore, none of the alternatives would result in the use of large amounts of energy or use of energy in a wasteful manner. Anticipated activities conducted under the M2 NCCP/HCP, such as wildlife surveys, habitat enhancement and restoration, and construction and maintenance of minor support facilities, would require use of petroleum products and electricity. However, these activities would be of very low scale and intensity, and the corresponding demand for energy resources would be minor. The minor demand for these services would not measurably affect existing supplies. Therefore, further analysis of energy resource effects was not considered to be warranted in this Draft EIR/EIS.

Potential energy resources effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP process.

3.1.1.3 Mineral Resources

None of the alternatives would impact the potential for future extraction of mineral resources. Construction aggregate is the primary mineral resource within Orange County. Aggregate sources in the county include the Santa Ana River, Santiago Creek, San Juan Creek, and Arroyo Trabuco (Orange County 2011c). Therefore, potential mineral resources effects were not considered to be issues that warranted further analysis in this Draft EIR/EIS.

Potential mineral resources effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP planning process.

3.1.1.4 Population and Displacement

None of the alternatives authorizes any specific development that would directly affect population growth in the region, displace area housing, or interfere with the ability of the local land use agencies to provide a reasonable balance of housing for the population. Growth in population and housing is anticipated in the long-range planning for the region and is accommodated in and consistent with the general plans of the local land use agencies. Urban growth would be expected to occur in accordance with the relevant general plans for each of the local jurisdictions and the county and would therefore occur in a manner that balances the local needs for population and housing. OCTA is not a land use agency and does not make decisions regarding the timing, location, or magnitude of growth and development, the primary activities affecting population and housing within the Plan Area. However, OCTA plans and executes transportation projects and activities to meet current and future transportation demands derived from population projections and analysis conducted by local governments and the Southern California Association of Governments (SCAG). OCTA reviews and adjusts its Long-Range Transportation Plan to reflect changes in population growth projections. For these reasons, population and housing effects were not considered to be issues that warranted further analysis in this Draft EIR/EIS.

Potential population and displacement effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP process.

3.1.1.5 Public Services

None of the alternatives authorize any specific development that would require the alteration, or creation, of new public services (fire, police, schools, parks, etc.) because the focus of the proposed NCCP/HCP is on land acquisition and Preserve management. Therefore, public service effects were not considered to be issues that warranted further analysis in this Draft EIR/EIS.

Potential public services effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP process.

3.1.1.6 Utilities and Service Systems

None of the alternatives authorize any specific development that would place additional demands on the existing utilities in the NCCP/HCP Preserve Areas, nor would they require the alteration, or creation, of water, wastewater, stormwater drainage, or solid waste disposal systems because the focus of the proposed NCCP/HCP is on land acquisition and Preserve management. Preserves established under the proposed NCCP/HCP would be maintained as open space and would not place any substantial new demands on utilities. The implementing authority for the proposed NCCP/HCP may require additional office and support facilities but would not create any substantial demand on the utility infrastructure. Therefore, utilities and service systems effects were not considered to be issues that warranted further analysis in this Draft EIR/EIS.

Potential utilities and service systems effects associated with covered freeway projects would be determined and mitigation provided through separate environmental review and discretionary approvals that are independent of the NCCP/HCP process.

3.2.1 Regulatory Setting

3.2.1.1 Federal Regulations

Farmland Protection Policy Act

Congress enacted the Farmland Protection Policy Act (FPPA) to minimize the extent to which federal activities contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. It also stipulates that federal programs must be compatible with state, local, and private efforts to protect farmland. This requires federal agencies to examine the impact of their programs before they approve any activity that would convert farmland. The FPPA does not apply to private construction subject to federal permitting and licensing (American Farmland Trust 2006).

3.2.1.2 State Regulations

California Environmental Quality Act

CEQA includes a finding that the conversion of agricultural lands or farmlands to non-agricultural uses threatens the long-term health of the state's agriculture market; therefore, agricultural resource impacts are evaluated on the basis of a project's potential to affect land designated as Important Farmland. In California, the primary system used to evaluate the quality and distribution of farmland is the Department of Conservation's Farmland Mapping and Monitoring Program (FMMP). Every 2 years the FMMP charts Important Farmland maps for most of the state's agricultural areas on the basis of soil survey information and land inventory and monitoring criteria developed by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Eight mapping categories (five for agricultural lands and three for non-agricultural lands) are classified in the farmland classification system.

The following farmland information for Orange County is from the Orange County Important Farmland 2010 map, published in August 2011 (State of California 2011).

Agricultural Land

Prime Farmland: Prime Farmland is defined by the state as "irrigated land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops." Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. To be designated as Prime Farmland, the land must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date. Orange County encompasses approximately 3,243 acres of Prime Farmland, which are located mainly in the center of the county, at the foot of the Santa Ana Mountains; a cluster of Prime Farmland is also found in the northwestern portion of the county, near the coastline. Smaller areas of Prime Farmland can also be found in the southern portion of the county, near Mission Viejo.

Farmland of Statewide Importance: The state defines Farmland of Statewide Importance as "irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops." However, this land has minor shortcomings, such as greater slopes or less ability to store soil moisture than Prime Farmland. For land to be designated as Farmland of Statewide Importance, it must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date. Approximately 367 acres of county land are classified as Farmland of Statewide Importance. These occur mainly in the center of Orange County, between urban and built-out areas to the west and the Santa Ana Mountains to the east. Smaller areas of Farmland of Statewide Importance can also be found in the southern portion of the county, near Mission Viejo.

Unique Farmland: Unique Farmland, consisting of lower quality soils, is used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. To qualify for this designation, land must have been used for crops at some time during the 4 years prior to the mapping date. Orange County contains approximately 3,654 acres of Unique Farmland, which are found mainly in the center of the county, at the foot of the Santa Ana Mountains. Smaller parcels of Unique Farmland can also be found sprinkled throughout the urban and built-out portions of the county.

Farmland of Local Importance: Farmland of Local Importance is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee. The Orange County Board of Supervisors determined that there is no Farmland of Local Importance in Orange County (State of California 2008).

Grazing Land: Grazing Land is land on which the existing vegetation is suited to livestock grazing. This category, which is used only in California, was developed in cooperation with the California Cattlemen's Association, the University of California Cooperative Extension, and other groups that are interested in the extent of grazing activities in the state. Orange County has approximately 37,639 acres of Grazing Land, which occur mainly in the southern portion of the county, near Mission Viejo, but can be found throughout the county.

Non-Agricultural Lands

Urban and Built-up Lands: Urban and Built-up Lands consist of land that is occupied by structures, with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This type of land is used for residential, industrial, commercial, construction, institutional, and public administration uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment facilities; water control structures; and other developed purposes. Approximately 289,172 acres of Orange County land are currently designated as Urban and Built-up Lands. This designation occurs largely in the western portion of the county.

Other Land: Other Land is land not included in any other mapping category. Examples include low-density rural developments and brush, timber, wetland, and riparian areas that are not suitable for livestock grazing. This category also includes vacant and non-agricultural land surrounded on all sides by urban development; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. Orange County includes approximately 174,667 acres of Other Land, which are located largely in the eastern portion of the county, in the Santa Ana Mountains.

Water: Water includes perennial water bodies with an extent of at least 40 acres. Orange County includes approximately 972 acres of Water, which are found in lakes throughout the eastern portion of the county.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act, or Williamson Act, is one of California's primary mechanisms for conserving farmland. The Williamson Act enables counties and cities to designate agricultural preserves, or "Williamson Act lands," and offer preferential taxation to private agricultural landowners based on the income-producing value of their property in agricultural use rather than the property's assessed market value. In return for the preferential tax rate, the landowner is required to sign a contract with the county or city and agree not to develop the land for a minimum of 10 years. Contracts are automatically renewed annually unless a party to the contract files for non-renewal or petitions for cancellation. If the landowner chooses not to renew the contract, it expires at the end of its duration. Under certain circumstances, a county or city may approve the cancellation of a Williamson Act contract. Cancellation requires private landowners to pay back taxes and cancellation fees. Permissible land uses under Williamson Act contracts are governed by Government Code Section 51238.1. Each city and county has the discretion to determine land uses that are or are not compatible with Williamson Act contracts, provided such uses are not prohibited under this act.

The following are categories into which land can be placed under the Williamson Act.

Prime Agricultural Land

Prime Agricultural Land enrolled under a Williamson Act contract meets any of the following criteria:

- 1. Land that is Class I or Class II in the NRCS land use capability classification system.
- 2. Land that rates 80–100 in the Storie index rating system.
- 3. Land that supports livestock used for the production of food and fiber that has an annual carrying capacity equivalent to at least one animal unit per acre, as defined by USDA.
- 4. Land planted with fruit- or nut-bearing trees, vines, bushes, or crops that have a non-bearing period of less than 5 years and normally return during the commercial-bearing period on an annual basis from unprocessed agricultural plant production not less than \$200 per acre.
- 5. Land that has returned from unprocessed agricultural plant production with an annual gross value of not less than \$200 per acre for 3 of the previous 5 years.

Non-Prime Agricultural Land

Non-Prime Agricultural Land enrolled under a Williamson Act contract is agricultural land that does not meet any of the criteria for classification listed above for Prime Agricultural Land. Non-Prime Agricultural Land is defined as "Open Space Land of Statewide Significance" under the California Open Space Subvention Act and may be identified as such in other documents. Most Non-Prime Agricultural Land is used for grazing or non-irrigated crops. However, Non-Prime Agricultural Land may also include other open space uses that are compatible with agriculture and consistent with local general plans.

Land in Non-Renewal

The non-renewal period begins with a notice of non-renewal from the county, and the contract is terminated at the end of the non-renewal period. During the non-renewal process, the annual tax assessment gradually increases.

3.2.1.3 Local Regulations

County of Orange General Plan – Resources Element

The Resources Element of the County of Orange General Plan discusses the county's notable agricultural community and economy. Also discussed are future difficulties the county will face as urban areas continue to encroach on agricultural lands throughout the county, thereby creating pressure to convert farmland to urban uses. In response to these issues, the Natural Resources component of the Resources Element provides goals and objectives to encourage, to the extent feasible, the preservation and utilization of agricultural resources as a natural resource and economic asset. Specifically, this element includes a goal to "enhance the conservation of agricultural resources through sound management of local agricultural lands." In line with this goal, implementation actions are taken to evaluate the establishment of an Agricultural Preservation Program and continue ongoing agriculture preserve management. The focus of these actions is to assist with the preservation of agricultural land where infrastructure has not yet been provided for more intensive activities and continue to maintain existing agricultural preserve contracts between landowners and the county (County of Orange 2011c).

3.2.2 Environmental Setting

3.2.2.1 Agricultural Land Use Designations in Orange County

Land zoned for agricultural uses is found in the Open Space category of the Resources Element of the County of Orange General Plan. The Open Space category provides for limited land uses that do not require a commitment of significant urban infrastructure.

3.2.2.2 Existing Agricultural Uses

The majority of Orange County's agricultural land is located in the southeastern portion of the county, with urban/built-out land to the west and the Santa Ana Mountains to the east. Today, the most prominent crops include tree fruits and berry crops (mainly Valencia oranges and strawberries), nursery plants, and numerous vegetable and field crops. Livestock, which includes cattle, rabbits, and swine, is also a significant part of the county's agricultural industry.

The amount of agricultural land in the county declined significantly after the 1940s as the county experienced tremendous urban growth. However, even with significant amounts of cropland converted to urban development, agriculture, from a dollar standpoint, has done remarkably well—and on less than one-third the acreage cultivated 20 years ago. In 1997, there were 13 million-dollar crops, and the county's agricultural products ranked 25th in dollar value among California's 58 counties (Orange County Public Works 2011).

Although the agricultural industry in Orange County has done surprisingly well in recent years, future prospects for lasting agricultural success will be constrained as urban areas continue to encroach on agricultural lands. Growth projections through 2020 indicate that the urbanization of Orange County will continue to convert agricultural acreage to more intensive land uses. Other difficulties for the industry include rising costs for irrigation water, agricultural land tax rates, and labor costs.

3.2.2.3 Important Farmland

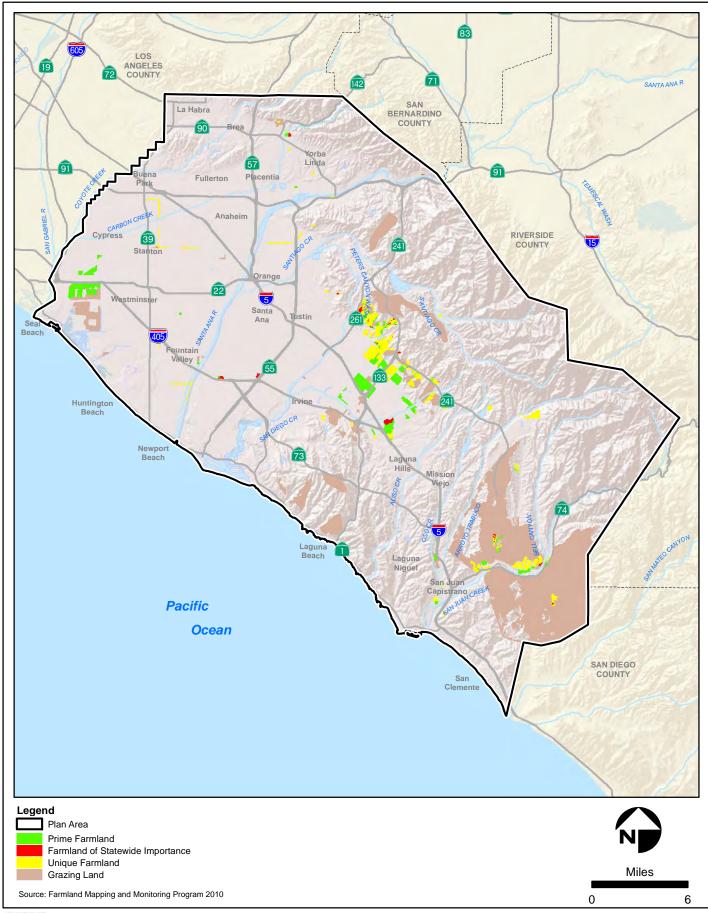
In 2010, Orange County included approximately 3,243 acres of land designated as Prime Farmland and approximately 367 acres designated as Farmland of Statewide Importance. As discussed above, Prime Farmland and Farmland of Statewide Importance are found largely in the center of the county, between urban/built-out land uses and land designated as Other Land (mainly the Santa Ana Mountains). Smaller areas of both designations can also be found in the southern portion of the county, near Mission Viejo, and there is also a large cluster of Prime Farmland located in the northwestern portion of the county, near the coastline.

Within the Plan Area, none of the land acquired to date for development of the Preserve System includes any land designated as Prime Farmland or Farmland of Statewide Importance (Figure 3.2-1, Important Farmland in the Plan Area).

3.2.2.4 Williamson Act Lands

In the early 1970s, Orange County had more than 77,000 acres of land under Williamson Act contracts; however, that number dwindled to approximately 692 acres by 2009. Most of the remaining Williamson Act parcels are located in the southern portion of the county, just north of San Clemente. Between 2001 and 2009, Orange County had the highest percentage of non-renewal for Williamson Act contracts in the state (State of California 2010).

Within the Plan Area, none of the land acquired to date for development of the Preserve System includes any land under Williamson Act contract.





3.3.1 Regulatory Setting

Air quality in the United States is governed by the federal Clean Air Act (CAA). In addition to being subject to requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the federal level, the CAA is administered by the U.S. Environmental Protection Agency (EPA). In California, the CCAA is administered by the California Air Resources Board (ARB) at the state level and by air districts at regional and local levels.

3.3.1.1 Federal Regulations

Federal Clean Air Act and Ambient Air Quality Standards

The CAA, promulgated in 1970 and amended twice thereafter (including the 1990 amendments), establishes the framework for modern air pollution control. The CAA requires EPA to designate areas within the country as either attainment or nonattainment for each criteria pollutant based on whether National Ambient Air Quality Standards (NAAQS) have been achieved (Table 3.3-1). Most standards have been set to protect public health and are known as *Primary Standards*. For some pollutants, standards known as *Secondary Standards* have been based on values such as protection of crops, protection of materials, or avoidance of nuisance conditions.

Regarding CAA designations, the four designations are defined as:

- Nonattainment—assigned to areas where monitored pollutant concentrations consistently violate the standard in question.
- Maintenance—assigned to areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard.
- Attainment—assigned to areas where pollutant concentrations meet the standard in question over a designated period of time.
- Unclassified—assigned to areas were data are insufficient to determine whether a pollutant is violating the standard in question.

Areas that do not meet the NAAQS are required to develop and adopt state implementation plans (SIPs), which are air quality plans showing how air quality standards will be attained. Failing to submit a plan or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In cases where the state submits a SIP that fails to demonstrate achievement of the standards, EPA is directed to prepare a federal implementation plan.

Table 3.3-1. National and State Air Quality Standards Applicable in California

			Standard	d (ppm)	Standard	(μg/m ³)	Violation Crite	eria
Pollutant	Symbol	Average Time	California	National	California	National	California	National
Ozone*	03	1 hour	0.09		180		If exceeded	
		8 hours	0.070	0.075	137	147	If exceeded	If fourth-highest 8-hour concentration in a year, averaged over 3 years, is exceeded at each monitor in an area
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
(Lake Tahoe only))	8 hours	6		7,000		If equaled or exceeded	
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded on more than 1 day per year
		1 hour	0.18	0.100	339	188	If exceeded	
Sulfur dioxide	SO_2	24 hours	0.04	0.14^{1}	105	365^{1}	If exceeded	
		1 hour	0.25	0.075	655	196	If exceeded	If exceeded on more than 1 day per year
		3 hours		0.52		1,3002		
		Annual arithmetic mean		0.030				If exceeded on more than 1 day per year
Hydrogen sulfide	H ₂ S	1 hour	0.03		42		If equaled or exceeded	
Vinyl chloride	C_2H_3Cl	24 hours	0.01		26		If equaled or exceeded	
Inhalable	PM10	Annual arithmetic mean			20			
particulate		24 hours			50	150	If exceeded	If exceeded on more than 1 day per year
matter	PM2.5	Annual arithmetic mean			12	12.03		If 3-year average from single or multiple community-oriented monitors is exceeded
		24 hours				35		If 3-year average of 98th percentile at each population-oriented monitor in an area is exceeded
Sulfate particles	SO ₄	24 hours			25		If equaled or exceeded	
Lead particles	Pb	Calendar quarter				1.5		If exceeded no more than 1 day per year
		30-day average			1.5		If equaled or exceeded	
		Rolling 3-month average				0.15	If equaled or exceeded	Averaged over a rolling 3-month period

¹ The final 1-hour SO₂ rule was signed June 2, 2010. The annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

Source: ARB 2013a.

² secondary standard

 $^{^3}$ The EPA finalized the new PM2.5 annual arithmetic mean standard of 12.0 $\mu g/m^3$ on December 14, 2012, which went into effect March 18, 2013. The previous 15 $\mu g/m^3$ standard remains in effect as a secondary standard.

With respect to NAAQS, the Proposed Plan is located in an area designated as extreme nonattainment for ozone (O_3), serious nonattainment for particulate matter less than or equal to 10 microns in diameter (PM10), nonattainment for particulate matter less than or equal to 2.5 microns in diameters (PM2.5), serious maintenance for carbon monoxide (CO), and attainment for nitrogen dioxide (CO_2), sulfur dioxide (CO_2), and lead (CO_2) (see Table 3.3-2).

Table 3.3-2. Federal and State Attainment Status for the Orange County Portion of the South Coast Air Basin

Pollutants	Federal Classification	State Classification
O ₃ (1-hour standard)		Nonattainment
O_3 (8-hour standard)	Extreme Nonattainment	
PM10	Serious Maintenance	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Serious Maintenance	Attainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Attainment	Attainment
Pb	$Attainment^1$	Attainment

Source: ARB 2013b, EPA 2013a, EPA 2013b.

General Conformity Regulation

EPA enacted the federal General Conformity regulation (40 CFR Parts 5, 51, and 93) in 1993. The purpose of the General Conformity rule is to ensure that federal actions do not generate emissions that interfere with state and local agencies' SIPs and emission-reduction strategies to ensure attainment of the NAAQS.

The General Conformity rule applies to all federal actions located in nonattainment and maintenance areas that are not exempt from General Conformity (i.e., are either covered by Transportation Conformity¹ or listed in the rule), are not covered by a Presumed-to-Conform approved list², or do not have clearly de minimis emissions. In addition, the General Conformity rule applies only to direct and indirect emissions associated with the portions of any federal action that are subject to New Source Review (i.e., do not include stationary industrial sources requiring air quality permits from local air pollution control agencies) for which a federal permitting agency has directly caused or initiated, has continued program responsibility for, or can practically control. Because of the involvement of the USFWS, all direct and indirect emissions generated by the construction and operation activities are subject to General Conformity.

As shown in Table 3.3-2, the Orange County portion of the South Coast Air Basin (SCAB) is classified as a federal nonattainment area with respect to ozone (extreme) and PM2.5 (nonattainment) and as a maintenance area for CO (serious) and PM10 (serious). Consequently, a conformity evaluation

 $^{^{1}}$ Note that while the Los Angeles portion of the South Coast Air Basin (SCAB) is considered nonattainment with respect to federal Pb, the Orange County portion of the SCAB is considered attainment.

¹ The Transportation Conformity Rule (40 CFR 51[T]) applies to federal highway or transit projects, and requires projects be included in a currently conforming RTP and transportation improvement program at the time of project approval.

² Category of activities designated by a federal agency as having emissions below de minimis levels or that otherwise do not interfere with the applicable SIP or the attainment and maintenance of the NAAQS.

must be undertaken to determine whether all emission sources (e.g., haul trucks, off-road equipment) are subject to the General Conformity rule. Because the Proposed Plan alternatives are neither exempt nor presumed to conform and are not subject to transportation conformity, the evaluation of whether the alternatives are subject to the General Conformity rule is made by comparing all annual emissions to the applicable General Conformity de minimis thresholds (Tables 3.3-3 and 3.3-4). If the conformity evaluation indicates that emissions are in excess of any of the General Conformity de minimis thresholds, the applicant must perform a conformity determination. A conformity determination is made by satisfying any of the following requirements.

- Showing that the emission increases caused by the federal action are included in the SIP.
- Demonstrating that the state agrees to include the emission increases in the SIP.
- Offsetting the action's emissions in the same or nearby area.
- Mitigating to reduce the emission increase.
- Utilizing a combination of the above strategies.

Table 3.3-3. Federal de minimis Threshold Levels for Criteria Pollutants in Nonattainment Areas

Pollutant	Emission Rate (tons per year)
Ozone (ROG/VOC or NO _X)	
Serious nonattainment areas	50
Severe nonattainment areas	25
Extreme nonattainment areas	<u>10</u>
Other ozone nonattainment areas outside an ozone transport region ¹	100
Other ozone nonattainment areas inside an ozone transport region ¹	
ROG/VOC	50
NO_X	100
CO: All nonattainment areas	100
SO ₂ or NO ₂ : All nonattainment areas	100
PM10	
Moderate nonattainment areas	100
Serious nonattainment areas	70
PM2.5	
<u>Direct emissions</u>	<u>100</u>
<u>SO₂</u>	<u>100</u>
NO _X (unless determined not to be a significant precursor)	<u>100</u>
ROG/VOC or ammonia (if determined to be significant precursors)	<u>100</u>
Pb: All nonattainment areas	25

Source: 40 CFR 93.153 (7-1-11 edition).

ROG = reactive organic gas; VOC = volatile organic compound; NO_X = nitrous oxide

Note: de minimis threshold levels for conformity applicability analysis.

<u>Underlined</u> text indicates pollutants for which the region is in nonattainment, and a conformity evaluation must be made.

¹ The Ozone Transport Region consists of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, the Consolidated Metropolitan Statistical Area that includes the District of Columbia and northern Virginia (Section 184 of the Clean Air Act).

Table 3.3-4. Federal de minimis Threshold Levels for Criteria Pollutants in Maintenance Areas

Pollutant	Emission Rate (tons per year)
Ozone (NO _x , SO ₂ , or NO ₂)	
All maintenance areas	100
Ozone (ROG/VOC)	
Maintenance areas inside an ozone transport region ¹	50
Maintenance areas outside an ozone transport region ¹	100
CO: All maintenance areas	<u>100</u>
PM10: All maintenance areas	<u>100</u>
PM2.5	
Direct emissions	100
SO_2	100
NO _x (unless determined not to be a significant precursor)	100
ROG/VOC or ammonia (if determined to be significant precursors)	100
Pb: All maintenance areas	25

Source: 40 CFR 93.153 (7-1-11 edition).

Note: de minimis threshold levels for conformity applicability analysis.

<u>Underlined</u> text indicates pollutants for which the region is in maintenance, and a conformity determination must be made.

In the event that emissions associated with the Plan alternatives exceed the General Conformity de minimis thresholds, OCTA would consult with the local applicable air quality management or pollution control district to ensure conformity determination is made.

Hazardous Air Pollutants

The CAA identified 188 pollutants as being air toxics, which are also known as hazardous air pollutants (HAP). Note that the CAA definition of HAPs and the CCAA definition of toxic air contaminants (TACs) are assumed to be the same for purposes of analysis. From this list, EPA identified a group of 21 as mobile source air toxics (MSAT) in its final rule, Control of Emissions of Hazardous Air Pollutants from Mobile Sources (*Federal Register* [FR], volume 66, page 17235) in March 2001. From this list of 21 MSATs, EPA has identified six MSATs (benzene, formaldehyde, acetaldehyde, diesel particulate matter [DPM]/diesel exhaust organic gases, acrolein, and 1,3-butadiene) as being priority MSATs. To address emissions of MSATs, EPA has issued a number of regulations that have dramatically decreased, and will continue to dramatically decrease, MSATs through cleaner fuels and cleaner engines. The TAC most relevant to the Proposed Plan is DPM, which would be emitted from diesel equipment and vehicles.

Greenhouse Gas Emissions and Climate Change

Although there is currently no federal law specifically related to climate change or the reduction of greenhouse gases (GHGs), EPA is developing proposed regulations under the CAA that may be adopted pursuant to EPA's authority under the CAA in the next two years. Foremost among recent developments has been the settlement agreements between EPA, several states, and

¹ Ozone Transport Region consists of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, the Consolidated Metropolitan Statistical Area that includes the District of Columbia and northern Virginia (Section 184 of the Clean Air Act).

nongovernmental organizations (NGOs) to address GHG emissions from electric generating units and refineries, the U.S. Supreme Court's decision in *Massachusetts v. EPA*, and EPA's "Endangerment Finding," "Cause or Contribute Finding," and Mandatory Reporting Rule. Although periodically debated in Congress, no federal legislation concerning greenhouse gas limitations is likely until at least 2013, if then. In *Coalition for Responsible Regulation, Inc., et al. v. EPA*, the United States Court of Appeals upheld EPA's authority to regulate GHG emissions under the CAA.

Recent developments at the federal level include EPA's Mandatory Reporting Rule (2009), which requires large industrial categories to submit annual GHG emissions reports with detailed calculations of facility GHG emissions, starting in 2010. Further, under the authority of the CAA, EPA has initiated the regulation of GHG emissions starting with large stationary sources, including setting GHG thresholds to define when permits under the New Source Review Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new and existing industrial facilities. In 2012, EPA proposed a carbon pollution standard for new power plants. The Corporate Average Fuel Economy Standards (2009 and 2012) require automakers to cut GHG emissions in new vehicles by roughly 25% by model year 2016 and requires further reductions by model year 2025.

Council on Environmental Quality Draft NEPA Guidance (2010)

On February 19, 2010, the CEO issued draft NEPA guidance on the consideration of the effects of climate change and GHG emissions. This guidance advises federal agencies that they should consider opportunities to reduce GHG emissions caused by federal actions, adapt their actions to climate change effects throughout the NEPA process, and address these issues in their agency NEPA procedures. Where applicable, the scope of the NEPA analysis should cover the GHG emissions effects of a proposed action and alternative actions, as well as the relationship of climate change effects on a proposed action or alternatives. The guidance identified a reference point of 25,000 metric tons per year (mty) for direct carbon dioxide (CO₂) equivalent (CO₂e)³ GHG emissions as an indicator that further NEPA review may be warranted. This reference point, however, is not intended to be used as a threshold for determining a significant impact or effect on the environment due to GHG emissions, but rather as a trigger point for when an analysis of GHG emissions and disclosure of that analysis should be included in the NEPA document. CEQ guidance directs the quantification of the cumulative emissions over the lifetime of the action. In assessing the potential effects of climate change on the proposed action, CEQ recommends that agencies allow the sensitivity, location, and timeframe of the proposed action to guide the extent to which these effects are analyzed under NEPA. The guidance also does not propose a reference point for indirect GHG emissions. The CEO guidance is still considered draft as of the writing of this document (Sutley 2010).

 $^{^3}$ To simplify reporting and analysis, GHGs are commonly defined in terms of a global warming potential (GWP). The International Panel on Climate Change (IPCC) and ARB define the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide (CO₂) equivalent (CO₂e). The GWP of CO2 is, by definition, 1.

3.3.1.2 State Regulations

California Clean Air Act and Ambient Air Quality Standards

Similar to the federal CAA, the CCAA of 1988 requires ARB to designate areas within the state as either attainment or nonattainment for each criteria pollutant based on whether the California Ambient Air Quality Standards (CAAQS) have been achieved (Table 3.3-1). Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment.

Responsibility for achieving the CAAQS, which are more stringent than federal standards for certain pollutants and averaging periods, is placed on ARB and local air pollution control districts. State standards are achieved through district-level air quality management plans that are incorporated into the SIP, for which ARB is the lead agency.

The CCAA also requires that local and regional air districts expeditiously adopt and prepare an air quality attainment plan if the district violates state air quality standards for O_3 , CO, SO_2 , or NO_2 . These plans are specifically designed to attain state standards and must be designed to achieve an annual 5% reduction in district-wide emissions of each nonattainment pollutant or its precursors.⁴ No locally prepared attainment plans are required for areas that violate the state PM10 standards; ARB is responsible for developing plans and projects that achieve compliance with the state PM10 standards.

Toxic Air Contaminants

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill (AB) 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). In the early 1980s, ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. The Toxic Air Contaminant Identification and Control Act (AB 1807) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

In August 1998, ARB identified particulate emissions from diesel-fueled engines as TACs. ARB has adopted several regulations that will reduce diesel emissions from in-use vehicles and engines throughout California. In September 2000, ARB approved a comprehensive diesel risk reduction plan to reduce emissions from both new and existing diesel-fueled engines and vehicles (ARB 2000). ARB adopted an idling regulation for onroad diesel-fueled commercial vehicles in July 2004, which was updated in October 2005. The regulation applies to public and privately owned trucks with a Gross Vehicle Weight Rating (GVWR) greater than 10,000 pounds. Vehicles subject to the regulation are prohibited from idling for more than five minutes in any one location. ARB also adopted a regulation for diesel-powered construction and mining vehicles. Fleet owners are subject to retrofit or accelerated replacement/repower requirements for which ARB must obtain authorization from

⁴ In photochemistry, a compound antecedent to a pollutant. For example, VOCs and oxides of nitrogen react in sunlight to form ozone or other photochemical oxidants. As such, VOCs and oxides of nitrogen are precursors to ozone.

EPA prior to enforcement. The regulation also imposes a five-minute idling limitation on owners, operators, and renters or lessees of off-road diesel vehicles. In some cases, the particulate matter reduction strategies also reduce smog-forming emissions such as NO_X. As an ongoing process, ARB reviews air contaminants and identifies those that are classified as TACs. ARB also continues to establish new programs and regulations for the control of TACs, including DPMs, as appropriate.

Greenhouse Gas Emissions and Climate Change

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. Former Governor Arnold Schwarzenegger also issued several executive orders related to the state's evolving climate change policy. Of particular importance to local governments is the direction provided by the AB 32 Scoping Plan, which recommends local governments reduce their GHG emissions by a level consistent with state goals (i.e., 15% below current levels).

In the absence of federal regulations, control of GHG is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHG, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans. Summaries of key policies, legal cases, regulations, and legislation at the state levels that are relevant to the Plan are provided below.

Executive Order S-03-05 (2005) and Executive Order B-16-2012 (2012)

Executive Order (EO) S-03-05 is designed to reduce California's GHG emissions to (1) 2000 levels by 2010, (2) 1990 levels by 2020, and (3) 80% below the 1990 levels by the year 2050.

Executive orders are binding only on state agencies. Accordingly, EO S-03-05 will guide state agencies' efforts to control and regulate GHG emissions but will have no direct binding effect on local government or private actions. The Secretary of the California Environmental Protection Agency (CalEPA) is required to report to the Governor and state legislature biannually on the impacts of global warming on California, mitigation and adaptation plans, and progress made toward reducing GHG emissions to meet the targets established in this executive order. EO B-16-2012 establishes benchmarks for reducing transportation-related GHG emissions. It requires agencies to implement the Plug-in Electric Vehicle Collaborative and California Fuel Cell Partnership by 2015 and sets forth targets specific to the transportation section, including the goal of reducing transportation-related GHG emissions to 80% less than 1990 levels.

Assembly Bill 1493—Pavley Rules (2002, Amendments 2009)/Advanced Clean Cars (2011)

Known as "Pavley I," AB 1493 standards are the nation's first GHG standards for automobiles. AB 1493 required ARB to adopt vehicle standards that will lower GHG emissions from new light duty autos to the maximum extent feasible beginning in 2009. Additional strengthening of the Pavley standards (referred to previously as "Pavley II," now referred to as the "Advanced Clear Cars" measure) has been proposed for vehicle model years 2017–2020. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon (mpg) by 2020 and reduce GHG emissions from the transportation sector in California by approximately 14%. In June 2009, EPA granted California's waiver request enabling the state to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

EPA and ARB are currently working together on a joint rulemaking to establish GHG emissions standards for 2017 to 2025 model year passenger vehicles. The Interim Joint Technical Assessment Report for the standards evaluated four potential future standards ranging from 47 and 62 mpg in 2025 (EPA et al. 2010). The official proposal was released by both EPA and ARB on December 7, 2011, and was unanimously approved by ARB on January 26, 2012 (ARB 2012c).

Assembly Bill 32—California Global Warming Solutions Act (2006)

AB 32 codified the state's GHG emissions target by requiring that the state's global warming emissions be reduced to 1990 levels by 2020. Since being adopted, ARB, the California Energy Commission (CEC), the California Public Utilities Commission (CPUC), and the Building Standards Commission have been developing regulations that will help meet the goals of AB 32 and EO S-03-05. The Scoping Plan for AB 32 identifies specific measures to reduce GHG emissions to 1990 levels by 2020, and requires ARB and other state agencies to develop and enforce regulations and other initiatives for reducing GHGs. Specifically, the Scoping Plan articulates a key role for local governments, recommending they establish GHG reduction goals for both their municipal operations and the community consistent with those of the state (i.e., approximately 15% below current levels).

In March 2011, a San Francisco Superior Court enjoined the implementation of ARB's Scoping Plan, finding the alternatives analysis and public review process violated both CEQA and ARB's certified regulatory program (*Association of Irritated Residents, et al. v. California Air Resources Board,* Case No. CPF-09-509562, March 18, 2011). In response to this litigation, ARB adopted the new CEQA document (*Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*) on August 24, 2011. ARB staff re-evaluated the baseline in light of the economic downturn and updated the projected 2020 emissions to 545 million metric tons (MMT) CO₂e. Two reduction measures (Pavley I and the Renewables Portfolio Standard [12–20%]) not previously included in the 2008 Scoping Plan baseline were incorporated into the updated baseline, further reducing the 2020 statewide emissions projection to 507 MMTCO₂e. The updated forecast of 507 MMTCO₂e is referred to as the AB 32 2020 baseline. Reduction of an estimated 80 MMTCO₂e are necessary to reduce statewide emissions to the AB 32 target of 427 MMTCO₂e by 2020, which is approximately 11% below existing business as usual (BAU) (2006–2008 average) and 21% below 2020 BAU (ARB 2011).

ARB is currently updating the Scoping Plan to include both a 2020 element and a post-2020 element. The 2020 element will focus on state, regional, and local initiatives that are being implemented now to help meet the 2020 goal. The post-2020 element will provide a high-level view of a long-term strategy for meeting the 2050 GHG goals, consistent with the goals set forth in EO S-03-05 and EO B-16-2012. ARB released revised Scoping Plan estimates in October 2013 (ARB 2013c).

Executive Order S-01-07—Low Carbon Fuel Standard (2007)

Executive Order S-01-07 mandates: (1) that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020, and (2) that a low carbon fuel standard (LCFS) for transportation fuels be established in California. The executive order initiates a research and regulatory process at ARB. Based on an implementation plan developed by CEC, ARB will be responsible for implementing the LCFS. On December 29, 2011, a federal judge issued a preliminary injunction blocking enforcement of the LCFS, ruling that the LCFS violates the interstate commerce clause (Georgetown Climate Center 2012).

On July 15, 2013, the Fifth District Court of Appeals ruled to allow LCFS regulations to remain operative while ARB analyzes the smog-related impacts of LCFS implementation, including formulation of appropriate enforceable mitigation measures, and subsequently completes a full CEQA review, provided ARB attempts to meet its statutory requirements in good faith (see *Poet, LLC et al. v. California Air Resources Board* et al.).

Senate Bill 375—Sustainable Communities Strategy (2008)

Senate Bill (SB) 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations (MPOs) to incorporate a "sustainable communities strategy" (SCS) in their Regional Transportation Plans (RTPs). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transitoriented development.

The final targets require SCAG to identify strategies that will reduce per capita GHG emissions from passenger vehicles by approximately 8% by 2020 and 13% by 2035 over base year 2005. SCAG adopted the Final 2012 RTP, which incorporates the SCS, on April 4, 2012 (SCAG 2012).

Orange County Subregional Sustainable Communities Strategy

In 2011, OCTA and the Orange County Council of Governments (OCCOG) prepared the Orange County SCS, which was submitted to SCAG for inclusion in the SCAG Regional SCS. The Orange County SCS includes 15 sustainability strategies to reduce GHG emissions that are focused on both land use-related strategies and transportation system improvements (OCTA and OCCOG 2011).

The scope of current and planned strategies is broad and encompasses significant investment by both the public and private sectors to implement them. The strategies include the following:

- Promoting a land use pattern that accommodates future employment and housing needs.
- Using land in ways that make developments more compact and improve linkages among jobs, housing and major activity centers.
- Protecting natural habitats and resource areas.
- Implementing a transportation network of public transit, managed lanes and highways, local streets, bikeways, and walkways built and maintained with available funds.
- Managing demands on the transportation system (i.e., Transportation Demand Management [TDM]) in ways that reduce or eliminate traffic congestion during peak periods of demand.
- Managing the transportation system (i.e., Transportation System Management [TSM]) through measures that maximize the efficiency of the transportation network.
- Utilizing innovative pricing policies to reduce vehicle miles traveled and traffic congestion during peak periods of demand.

These strategies and actions are Orange County's contribution to the region's efforts to achieve both 2020 and 2035 GHG thresholds established by ARB.

CEQA Guidelines (2010)

SB 97 required that the Office of Planning and Research (OPR) prepare guidelines to submit to the California Resources Agency regarding feasible mitigation of GHG emissions or the effects of GHG emissions as required by CEQA. The updated State CEQA Guidelines require lead agencies to describe, calculate, or estimate the amount of GHG emissions that would result from a project. Moreover, the State CEQA Guidelines emphasize the necessity to determine potential climate change effects of the project and propose mitigation as necessary. The State CEQA Guidelines confirm the discretion of lead agencies to determine appropriate significance thresholds but require the preparation of an EIR if "there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with adopted regulations or requirements" (Section 15064.4).

State CEQA Guidelines Section 15126.4 includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, which may include, among others, measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision; implementation of project features, project design, or other measures that are incorporated into the project to substantially reduce energy consumption or GHG emissions; offsite measures, including offsets that are not otherwise required, to mitigate a project's emissions; and measures that sequester carbon or carbon-equivalent emissions.

Other Vehicle Efficiency Measures from ARB

ARB has adopted or is pursuing additional measures to promote vehicle efficiency in order to reduce GHG emissions. In 2008, ARB adopted a measure concerning heavy-duty vehicle aerodynamics. In 2009, ARB adopted regulations for tire pressure. ARB is also evaluating hybridization of medium-heavy vehicles and cool car design.

3.3.1.3 Local Regulations

At the local level, responsibilities of air quality districts include overseeing stationary-source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. The air quality districts are also responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws and for ensuring that NAAQS and CAAQS are met.

ARB's Climate Change Scoping Plan also states that local governments are "essential partners" in the effort to reduce GHG emissions. The Climate Change Scoping Plan also acknowledges that local governments have "broad influence and, in some cases, exclusive jurisdiction" over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce GHG emissions rely on local government actions. The Climate Change Scoping Plan encourages local governments to reduce GHG emissions by approximately 15% from current levels by 2020.

The Plan Area falls under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The following local policies related to air quality may apply to implementation to the Proposed Plan.

SCAQMD has jurisdiction over an area of approximately 10,743 square miles, including all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The South Coast Air Basin (SCAB) is a subregion of the SCAQMD jurisdiction. While air quality in this area has improved, the SCAB requires continued diligence to meet air quality standards (SCAQMD 2007).

SCAQMD Air Quality Management Plans

SCAQMD has adopted a series of air quality management plans (AQMPs) to meet the CAAQS and NAAQS. To ensure continued progress toward clean air and to comply with state and federal requirements, SCAQMD, in conjunction with ARB, SCAG, and EPA, updates its AQMP every three years. These plans require, among other emissions-reducing activities, control technology for existing sources, control programs for area sources and indirect sources, a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified (i.e., previously permitted) emission sources, and transportation control measures.

The most recent AQMP is the 2012 update, The 2012 AQMP demonstrates attainment of the federal 24-hour PM2.5 standard by 2014 in through adoption of all feasible measures and also updates the U.S. EPA approved 8-hour ozone control plan with new measures designed to reduce reliance on the CAA Section 182 (e)(5) long-term measures for NO_X and VOC reductions. The 2012 Plan also includes specific measures to further implement the ozone strategy in the 2007 AQMP to assist attaining the 8-hour ozone standard by 2023. The 2012 AQMP includes specific measures to further implement the ozone strategy in the 2007 AQMP to assist attaining the 8-hour ozone standard by 2023.

The 2012 AQMP also addresses several state and federal planning requirements, incorporating new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and new meteorological air quality models. The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the South Coast Air Basin for the attainment of federal PM and ozone standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under federal Clean Air Act. The 2012 AQMP also includes new demonstrations of 1-hour ozone attainment and vehicle miles travelled (VMT) emissions offsets, as per recent U.S. EPA requirements (SCAQMD 2012). SCAQMD has initiated development of the 2015 AQMP, which will focus on attainment of the federal 8-hour ozone standard (0.075 ppm).

On June 12, 2013, EPA approved SCAQMD's PM10 Redesignation Request and Maintenance Plan, which shows how SCAQMD will maintain the PM10 standard for the next 10 years (EPA 2013b).

SCAQMD Rules and Regulations

Through the attainment planning process, SCAQMD develops the SCAQMD Rules and Regulations to regulate sources of air pollution in the SCAB (SCAQMD 2011a). The SCAQMD rules most pertinent to the Proposed Plan are listed below. The emission sources associated with the Proposed Plan are considered area sources (site disturbance and burns) and mobile sources (construction equipment and vehicles). Therefore, they are not subject to the SCAQMD rules that apply to stationary sources, such as Regulation XIII (New Source Review), Rule 1401 (New Source Review of Toxic Air Contaminants), or Rule 431.2 (Sulfur Content of Liquid Fuels).

SCAQMD Rule 208—Permit and Burn Authorization for Open Burning. This rule requires a burn permit for any outdoor fire, pursuant to the requirement set forth in Rule 444 (Open Burning).

SCAQMD Rule 402—Nuisance. This rule prohibits discharge of air contaminants or other material that result in any of the following

- Causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public.
- Endangers the comfort, repose, health, or safety of any such persons or the public.
- Causes, or has a natural tendency to cause, injury, or damage to business or property.

SCAQMD Rule 403—Fugitive Dust. This rule prohibits emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. During construction activities related to the Proposed Plan, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities. These measures would include site prewatering and rewatering as necessary to maintain sufficient soil moisture content. Additional requirements apply to construction projects on property with 50 or more acres of disturbed surface area, or for any earthmoving operation with a daily earthmoving or throughput volume of 5,000 cubic yards or more three times during the most recent 365-day period. These requirements include submittal of a dust control plan, maintaining dust control records, and designating a SCAQMD-certified dust control supervisor.

SCAQMD Rule 444—Open Burning. This rule describes the process for obtaining a permit and sets standards to minimize the emissions and impacts of permitted burns. This rule states that no open burns shall be conducted until certain conditions are met, including the day is declared as a permissive burn day, a written permit to burn and authorization number has been issued, and all site-specific permit conditions have been met. There are additional requirements for prescribed burning, such as obtaining approval of a Smoke Management Plan for any burn great than 10 acres or that produces one ton of PM emissions.

SCAQMD Rule 1403—Asbestos Emissions from Demolition/Renovation Activities. The purpose of this rule is to limit emissions of asbestos, a TAC, from structural demolition/renovation activities. The rule requires people to notify SCAQMD of proposed demolition/renovation activities and to survey these structures for the presence of asbestos-containing materials (ACMs). The rule also includes notification requirements for any intent to disturb ACM; emission control measures; and ACM removal, handling, and disposal techniques. All proposed structural demolition activities associated with Proposed Plan construction would need to comply with the requirements of Rule 1403.

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties. It addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the Southern California region and is the largest MPO in the nation. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the SCAG region, which includes Growth Management and Regional Mobility chapters. These chapters form the basis for the land use and transportation components of the AQMP, and are utilized in the preparation of air quality forecasts and the consistency analysis that is included

in the AQMP. SCAG also addresses regional issues relating to transportation, economy, community development, and the environment. With respect to air quality planning, SCAG prepares the RTP for the SCAG region every three years, which, along with the RCPG, forms the basis for the land use and transportation components of the AQMP, and is used to prepare the air quality forecasts and the consistency analysis that are included in the AQMP. The most recent RTP is the 2012 RTP, which also incorporates the SCS consistent with SB 375. The 2012 RTP was approved by SCAG on April 4, 2012.

3.3.2 Environmental Setting

3.3.2.1 Greenhouse Gases

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, the SCAQMD staff is convening an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff on developing GHG CEQA significance thresholds. To date, SCAQMD has only formally adopted a 10,000-metric ton (MT) CO₂e (MTCO₂e) threshold for industrial facilities. Previously, in October 2008, SCAQMD identified a tiered approach for determining the significance of GHG impacts within its Draft Guidance Document – Interim CEQA Greenhouse Gas Significance Threshold (SCAQMD 2008a). Note that SCAQMD has also drafted a 3,000 MT screening significance threshold level for commercial/residential projects, but this threshold level has not been formally adopted by the SCAQMD Governing Board.

3.3.2.2 Air Quality Pollutants

As shown in Table 3.3-1, the federal and state governments have established ambient air quality standards for ozone, CO, NO_2 , SO_2 , PM10, PM2.5, and lead. Ozone and NO_2 are regional pollutants because these pollutants and their precursors affect air quality on a regional scale: NO_2 reacts photochemically with ROG to form ozone, and this reaction occurs downwind of the source of pollutants. Pollutants such as CO, PM10, and PM2.5 are considered local pollutants because they tend to disperse rapidly with distance from the source. Particulate matter is considered to be a local as well as a regional pollutant.

Ozone

 O_3 , a colorless toxic gas, is the chief component of urban smog. O_3 enters the bloodstream and interferes with the transfer of oxygen, depriving sensitive tissues in the heart and brain of oxygen. O_3 also damages vegetation by inhibiting growth. Although O_3 is not directly emitted, it forms in the atmosphere through a chemical reaction between ROG and NO_X under sunlight. O_3 is present in relatively high concentrations within the SCAB, and the damaging effects of photochemical smog generally are related to the concentration of O_3 . Meteorology and terrain play major roles in O_3 formation. Ideal conditions occur during summer and early autumn, on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 is considered a regional pollutant; high levels often occur downwind of the emission source because of the length of time between when the ROGs form and when they react with light to change to ozone.

Reactive Organic Gases and Volatile Organic Compounds

Hydrocarbons are organic gases that are made up of hydrogen and carbon atoms. There are several subsets of organic gases, including ROGs and VOCs. ROGs are defined by state rules and regulations; VOCs are defined by federal rules and regulations. For the purposes of this assessment, hydrocarbons are classified and referred to as ROGs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels, or as a product of chemical processes. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry-cleaning solutions, and paint (through evaporation).

Hydrocarbon effects on human health are primarily related to ozone formation and associated human health effects. High levels of hydrocarbons in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons are considered TACs, or air toxics. There are no specific state or federal air quality standards for ROGs or VOCs.

Nitrogen Oxides

 NO_X is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_X is emitted from the use of solvents and combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers, with heavy diesel representing the largest source of NO_X emissions in the SCAB. NO_2 is a strong oxidizing agent that reacts in the air to form corrosive nitric acid as well as toxic organic nitrates.

 NO_X can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. The effects of short-term exposure are still unclear, but continued or frequent exposure to concentrations that are typically much higher than those normally found in the ambient air may cause increased incidence of acute respiratory illness, especially in children. Health effects associated with NO_X include an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_X may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NO_X can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NO_X can also impair visibility. NO_X may affect both terrestrial and aquatic ecosystems and is a potentially significant contributor to a number of environmental effects such as acid rain.

Carbon Monoxide

CO, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains emit CO. Automobile exhaust releases most of the CO in urban areas. CO is a nonreactive air pollutant that dissipates relatively quickly, so ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor-vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. Because

motor vehicles are the dominant source of CO emissions, CO hot spots are normally located near roads and freeways with high traffic volume. The highest CO concentrations measured in the SCAB typically are recorded during the winter.

Inhalable Particulates

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Particulate matter less than 10 microns in diameter, about 1/7th the thickness of a human hair, is referred to as PM10. Particulate matter that is 2.5 microns or less in diameter, roughly 1/28th the diameter of a human hair, is referred to as PM2.5. Major sources of PM10 include motor vehicles; wood burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM2.5 results from fuel combustion (from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, PM10 and PM2.5 can be formed in the atmosphere from gases such as SO_2 , NO_X , and VOCs.

PM10 and PM2.5 pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. PM10 and PM2.5 can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances, such as lead, sulfates, and nitrates, can cause lung damage directly. These substances can be absorbed into the blood stream and cause damage elsewhere in the body; they can also transport absorbed gases such as chlorides or ammonium into the lungs and cause injury. Whereas particles 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system, particles 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. Suspended particulates also damage and discolor surfaces on which they settle, and contribute to haze and reduce regional visibility.

Toxic Air Contaminants

Although ambient air quality standards exist for criteria pollutants, none exist for TACs. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, ARB has consistently found that there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). TACs are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants.

Air toxics are generated by a number of sources, including: stationary sources, such as dry cleaners, gas stations, auto body shops, and combustion sources; mobile sources, such as diesel trucks, ships, and trains; and area sources, such as farms, landfills, and construction sites. To date, ARB has identified 21 TACs, and has also adopted the EPA's list of HAPs as TACs. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic. Direct exposure to these pollutants has been shown to cause cancer, birth

defects, damage to the brain and nervous system, and respiratory disorders. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor, called a Hazard Index, is used to evaluate risk.

3.3.2.3 Greenhouse Gas/Climate Change

The principle anthropogenic GHGs contributing to global warming are CO_2 , methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, including sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), as defined by California law; the State CEQA Guidelines contain a similar definition of GHGs (Health and Safety Code 38505(g); CCR, title 14, section 15364.5). Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic (human-made) sources. Because construction and operation of transportation projects primarily generate CO_2 , CH_4 , N_2O , the following discussion focuses on these pollutants.

 CO_2 is the most plentiful anthropogenic GHG, followed by CH₄ and N₂O. The Intergovernmental Panel on Climate Change (IPCC) estimates that CO_2 accounts for more than 75% of all anthropogenic GHG emissions. Three-quarters of anthropogenic CO_2 emissions are the result of fossil fuel burning (and to a very small extent, cement production), and approximately one-quarter of emissions are the result of land-use change (IPCC 2007). CH₄ is the second largest contributor of anthropogenic GHG emissions and is the result of growing rice, raising cattle, combusting natural gas, mining coal, and vehicle emissions (National Oceanic and Atmospheric Administration [NOAA] 2005). N₂O, while not as abundant as CO_2 or CH₄, is a powerful GHG. Sources of N₂O include agricultural processes, nylon production, fuel-fired power plants, nitric acid production, and vehicle emissions.

To simplify reporting and analysis, GHGs are commonly defined in terms of a global warming potential (GWP). The IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of CO₂e. The GWP of CO₂ is, by definition, 1. The GWP values used in this report are based on the IPCC Fourth Assessment Report (AR4) and United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines, and are defined in Table 3.3-5. ARB is currently transitioning from the GWP values within the Second Assessment Report (SAR) (IPCC 1996) to the more recent AR4 GWPs (IPCC 2007) as it develops estimates of GHG emissions and potential emission reductions for the Scoping Plan Update. As is the standard practice, project-level GHG inventories are presented in MTCO₂e herein.

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⁵ Although water vapor plays a substantive role in the natural greenhouse effect, the change in GHGs in the atmosphere due to anthropogenic actions is enough to upset the radiative balance of the atmosphere and result in global warming.

Table 3.3-5 Lifetimes, Global Warming Potentials, and Abundances of Several Significant Greenhouse Gases¹

Gas	AR4 Global Warming Potential (100 years)	Lifetime (Years) ²	Atmospheric Abundance
CO2 (ppm)	1	50-200	379
CH ₄ (ppb)	25	9-15	1,774
N ₂ O (ppb)	298	120	319
HFC-23 (ppt)	14,800	264	18
HFC-134a (ppt)	1,430	14.6	35
HFC-152a (ppt)	124	1.5	3.9
CF ₄ (ppt) ³	7,390	50,000	74
C_2F_6 (ppt) ^c	12,200	10,000	2.9
SF ₆ (ppt)	22,800	3,200	5.6

Sources: IPCC 1996, 2001, 2007; ARB 2013.

ppm = parts per million.

ppb = parts per billion.

ppt = parts per trillion.

3.3.2.4 Existing Air Quality Conditions and Ambient Air Quality Standards

SCAQMD has divided the SCAB into air monitoring areas and maintains a network of air quality monitoring stations located throughout the SCAB. The Plan Area is located within the Inland Orange County (Source Receptor Areas [SRA] 17, SRA 19, and SRA 21) and Metropolitan (SRA 16) Monitoring Areas. The nearest monitoring stations to the Plan Area are the La Habra, Anaheim-Pampas Lane, Costa Mesa-Mesa Verde Drive, and Mission Viejo-26081 Via Pera monitoring stations. The La Habra station monitors O_3 , CO, and NO_2 . The Anaheim-Pampas Lane station monitors O_3 , CO, NO_2 , PM10, and PM2.5. The Costa Mesa-Mesa Verde Drive station monitors O_3 , CO, NO_2 , and SO_2 . The Mission Viejo-26081 Via Pera station monitors O_3 , CO, PM10, and PM2.5.

Concentrations of pollutants from the four stations over the last 3 years (2009–2011) were compiled and are presented in Table 3.3-6. As shown in Table 3.3-6, monitored pollutant concentrations during the 3-year period exceeded O_3 NAAQS and CAAQS, PM10 CAAQS, and PM2.5 CAAQS at some point during the 3-year period. Monitored concentrations of SO_2 , CO and NO_2 are low, and recorded no exceedances during the three-year reporting period.

¹The GWP values presented are based on the IPCC AR4 and UNFCCC reporting guidelines (IPCC 2007), which ARB recently incorporated into its revised Scoping Plan estimates.

² Defined as the half-life of the gas.

³ CF₄ and C₂F₆ are PFCs.

Table 3.3-6. Ambient Background Concentrations from the La Habra, Anaheim-Pampas Lane, Costa Mesa-Mesa Verde Drive, and Mission Viejo-26081 Via Pera Monitoring Stations

								osta Mes			ssion Vie	•
	La Habra		Anaheim-Pampas Lane			Mesa Verde Drive			26081 Via Pera			
Pollutant Standards	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
Ozone (0 ₃)												
Maximum 1-hour concentration (ppm)	0.115	0.118	0.095	0.093	0.104	0.088	0.087	0.097	0.093	0.121	0.117	0.094
Maximum 8-hour concentration (ppm)	0.082	0.096	0.074	0.077	0.088	0.073	0.072	0.076	0.077	0.095	0.083	0.083
Number of days standard exceeded ¹												
CAAQS 1-hour (>0.09 ppm)	4	2	1	0	1	0	0	1	0	7	2	0
CAAQS 8-hour (>0.070 ppm)	9	4	3	1	1	0	3	2	2	14	2	5
NAAQS 8-hour (>0.075 ppm)	3	1	0	2	1	1	0	1	1	10	2	2
Carbon Monoxide (CO)												
Maximum 8-hour concentration (ppm)	2.54	1.83	2.16	2.73	1.98	2.08	2.16	2.09	2.22	1.00	0.90	1.03
Maximum 1-hour concentration (ppm)	4.3	3.4	7.2	3.2	2.7	2.7	2.7	2.4	2.9	1.5	1.2	1.2
Number of days standard exceeded ¹												
NAAQS 8-hour (<u>></u> 9 ppm)	0	0	0	0	0	0	0	0	0	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0	0	0	0	0	0	0	0	0	0
NAAQS 1-hour (≥35 ppm)	0	0	0	0	0	0	0	0	0	0	0	0
CAAQS 1-hour (<u>></u> 20 ppm)	0	0	0	0	0	0	0	0	0	0	0	0
Nitrogen Dioxide (NO ₂)												
State maximum 1-hour concentration (ppm)	0.080	0.083	0.070	0.068	0.073	0.074	0.065	0.070	0.061			
State second-highest 1-hour concentration (ppm)	0.071	0.071	0.069	0.067	0.069	0.065	0.062	0.068	0.060		-	
Annual average concentration (ppm)	0.021		0.017	0.018	0.018	0.017	0.013	0.011			-	
Number of days standard exceeded												
CAAQS 1-hour (0.18 ppm)	0	0	0	0	0	0	0	0	0			

		La Habra	l	Anahei	im-Pamp	as Lane		osta Mes a Verde I			ssion Vie 081 Via P	,
Pollutant Standards	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
Particulate Matter (PM10) ²												
National ³ maximum 24-hour concentration ($\mu g/m^3$)				97.4	43.0	53.0				56.0	34.0	48.0
National ³ second-highest 24-hour concentration (μ g/m ³)				75.4	42.0	51.0				55.0	34.0	47.0
State ⁴ maximum 24-hour concentration $(\mu g/m^3)$				62.0	43.0	53.0				55.0	34.0	47.0
State ⁴ second-highest 24-hour concentration (μ g/m ³)				49.0	42.0	51.0				40.0	31.0	39.0
National annual average concentration $(\mu g/m^3)$				25.1	22.5	24.9				23.6	18.1	19.2
State annual average concentration $(\mu g/m^3)^5$						24.7				23.2		18.8
Number of days standard exceeded ¹												
NAAQS 24-hour (>150 μg/m³) ⁶				0.0	0.0	0.0				0.0	0.0	0.0
CAAQS 24-hour (>50 μg/m ³) ⁶						12.2				6.1		0.0
Particulate Matter (PM2.5)												
National ³ maximum 24-hour concentration ($\mu g/m^3$)				64.5	31.7	39.2				39.2	19.9	33.4
National ³ second-highest 24-hour concentration ($\mu g/m^3$)				43.0	31.3	38.8				25.2	17.7	31.5
State ⁴ maximum 24-hour concentration $(\mu g/m^3)$				64.5	31.7	39.2				39.2	19.9	33.4
State ⁴ second-highest 24-hour concentration (μ g/m ³)				43.0	31.3	38.8				25.3	17.7	31.5
National annual average concentration $(\mu g/m^3)$				12.0	10.5	11.0				9.4	7.9	8.5
State annual average concentration $(\mu g/m^3)^5$						11.0				9.5		
Number of days standard exceeded ¹												
NAAQS 24-hour (>35 μ g/m ³)				5.0	0.0	2.0				3.5	0.0	0.0

		La Habra	l	Anahei	m-Pampa	as Lane	_	osta Mes a Verde I			ssion Vie 081 Via P	,
Pollutant Standards	2009	2010	2011	2009	2010	2011	2009	2010	2011	2009	2010	2011
Sulfur Dioxide (SO ₂)												
State ⁴ maximum 24-hour concentration (µg/m³)							0.004	0.002	0.002			

Source: ARB 2012e and EPA 2012b: Data compiled by ICF.

- ¹ An exceedance is not necessarily a violation.
- ² National statistics are based on standard conditions data. In addition, national statistics are based on samplers using federal reference or equivalent methods.
- ³ State statistics are based on local conditions data, except in the South Coast Air Basin, for which statistics are based on standard conditions data. In addition, state statistics are based on California approved samplers.
- ⁴ Measurements usually are collected every 6 days.
- ⁵ State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
- ⁶ Mathematical estimate of how many days concentrations would have been measured as higher than the level of the standard had each day been monitored. Values have been rounded.
- This value was not available.

Notes:

ppm = parts per million

NAAQS = National Ambient Air Quality Standards CAAQS = California Ambient Air Quality Standards

 $\mu g/m^3$ = micrograms per cubic meter mg/m^3 = milligrams per cubic meter

> = greater than NA = not applicable

3.3.2.5 Health Risks in the Vicinity

Ambient levels of selected TACs are measured by both ARB and SCAQMD at several locations throughout the SCAB. Note that the Plan Area is large and encompasses the entirety of Orange County. According to the most current SCAQMD inhalation cancer risk data (MATES III), the Project area cancer risk zones range from approximately 248 cases per million near SR-73 and Crystal Cove State Park to approximately 1,727 cases per million near the I-405 and I-605 connectors near Seal Beach (SCAQMD 2008b). Cancer risk within the Plan Area is largely driven by the Plan Area's proximity to freeways and interchanges, with the highest risks near the congested freeway and port activities to the west, near Seal Beach. For comparison, the average cancer risk in the SCAB is 1,194 per million.

The results of MATES III indicate that diesel exhaust is the major contributor to air toxics risk, accounting for about 84% of the total cancer risks in the SCAQMD area. Further, MATES III showed pronounced exposures along freeways and near intermodal facilities, with the highest cancer risks near port areas and major transportation corridors (SCAQMD 2008b). This is consistent with the risks from within the Plan Area.

SCAQMD initiated the MATES IV study in Summer 2012, and is currently holding periodic Technical Advisory Group meetings.

3.3.2.6 Sensitive Receptors

Some people are particularly sensitive to air pollution, including persons with respiratory illnesses or impaired lung function because of other illnesses, the elderly, and children. Facilities and structures where these people live or spend considerable amounts of time are known as sensitive receptors. Chapter 4 of the SCAQMD's Air Quality Analysis Guidance Handbook defines land uses considered to be sensitive receptors as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, childcare centers, and athletic facilities. The Proposed Plan Area encompasses 900+ acres of acquired Preserve Areas as well as additional lands for restoration efforts. As discussed in Section 3.9, "Land Use," the majority of the Plan Area is undeveloped natural habitat and open space, with sporadic rural residential uses and designations. Residential developments occur within a one-quarter mile distance of currently acquired Preserve Areas and known restoration project sites.

3.4.1 Regulatory Setting

3.4.1.1 Federal Regulations

Federal Endangered Species Act

USFWS and the NMFS administer the ESA. The ESA requires USFWS and NMFS to maintain lists of threatened and endangered species and affords substantial protection to listed species. As described in Chapter 1, Section 1.4.2, no species under NMFS jurisdiction are included in the Proposed Plan. A detailed description of the federal ESA can be found in Section 1.4.2.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful as is taking of any parts, nests, or eggs of such birds (USC, Title 16, Section 703). The definition of taking is different under the MBTA than under the ESA and includes only the death or injury of individuals of a migratory bird species or its eggs. Take under the MBTA does not include the concepts of harm and harassment as defined by the ESA. The MBTA defines migratory birds broadly; all covered bird species in the Proposed Plan are considered migratory birds under the MBTA.

USFWS provides guidance regarding the incidental take of ESA-listed migratory birds (Appendix 5 in the HCP Handbook). According to these guidelines, an incidental take permit can function as a Special Purpose Permit under the MBTA (50 CFR 21.27) for the take of all ESA-listed covered species in the amount and/or number and subject to the terms and conditions specified in an HCP. Any such take will not be in violation of the MBTA of 1918, as amended (16 USC 703-12).

Bald Eagle and Golden Eagle Protection Act

The Eagle Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions. Under the Eagle Act, it is a violation to "...take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof...." Here, take is defined as to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, and disturb. Disturb is further defined in 50 CFR 22.3 as follows:

"to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Recent revisions to regulations implementing the Eagle Act authorize take of bald eagles and golden eagles under the following conditions: (1) where the take is compatible with the preservation of the bald eagle and golden eagle, (2) is necessary to protect an interest in a particular locality, (3) is associated with but not the purpose of an otherwise lawful activity, (4) for individual instances of take where the take cannot be avoided, or (5) for programmatic take where the take is unavoidable even though advanced conservation practices are being implemented (50 CFR 22.26). Permits issued under this regulation usually authorize disturbance only; however, in limited cases a permit may authorize lethal take that results from but is not the purpose of an otherwise lawful activity.

Clean Water Act Section 404

Pursuant to Section 404 of the CWA, the USACE regulates the discharge (temporary or permanent) of dredged or fill material into waters of the United States (WoUS), including wetlands. A discharge of fill material includes activities such as grading, placing riprap for erosion control, pouring concrete, laying sod, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

USACE issues two types of permits under Section 404: general permits (either nationwide permits [NWPs] or regional permits) and standard permits (either letters of permission or individual permits). General permits are issued by USACE to streamline the Section 404 process for nationwide, statewide, or regional activities that have minimal direct or cumulative environmental impacts on the aquatic environment. Standard permits are issued for activities that do not qualify for a general permit (i.e., that may have more than a minimal adverse environmental impact). The Los Angeles District of the USACE will review and consider issuing permits for projects in the NCCP/HCP Plan Area that propose to fill WoUS at the project-level. However, OCTA has begun coordination with USACE independent of the Proposed Plan to obtain a standard individual permit to provide the permitting framework for obtaining letters of permission at the project-level and to approve the mitigation in advance.

The Proposed Plan will not provide permits that authorize fill activities under Section 404 of the CWA for impacts on wetlands or other waters from Covered Activities; however, the 404 permitting process is expected to be streamlined substantially as a result of the Proposed Plan. Issuance of a Section 404 permit often requires the USACE to consult with USFWS to comply with Section 7 of the ESA. This consultation would address the federally listed species covered by the Proposed Plan. Accordingly, it is expected that USFWS will not require any mitigation beyond that already required by the Proposed Plan. The Section 7 BO issued for the Proposed Plan also can serve as the basis for any future BOs in the Plan Area for Covered Activities. In addition, the conservation actions for impacts on wetlands in the Proposed Plan may fully satisfy USACE requirements for wetland mitigation.

Clean Water Act Section 401 and the Porter-Cologne Water Quality Control Act

Under CWA Section 401, states have the authority to certify federal permits for discharges to waters under state jurisdiction. States may review proposed federal permits (e.g., CWA Section 404 permits) for compliance with state water quality standards. A permit cannot be issued if the state denies certification. In California, the State Water Board and the RWQCBs are responsible for the

issuance of CWA Section 401 certifications. Orange County is overlapped by both the San Diego and Santa Ana RWQCBs. Therefore, the State Water Board likely will review any CWA Section 404 permit applications for individual projects that overlap multiple RWQCBs in the NCCP/HCP Plan Area. Individual projects that do not overlap RWQCBs will most likely be reviewed by the RWQCB district in which the project occurs.

Porter-Cologne is the primary state law concerning water quality. It authorizes the State Water Board and RWQCBs to prepare management plans such as Regional Water Quality Plans (or Basin Plans) to address the quality of groundwater and surface water. Porter-Cologne also authorizes the RWQCBs to issue Waste Discharge Requirements (WDRs) defining limitations on allowable discharge to waters of the state. In addition to issuing CWA Section 401 certifications on CWA Section 404 applications to fill waters, the RWQCBs may issue WDRs for such activities. Because the authority for WDRs is derived from Porter-Cologne and not the CWA, WDRs may apply to a somewhat different range of aquatic resources than do CWA Section 404 permits and CWA Section 401 Water Quality Certifications. Applicants that obtain a permit from the USACE under Section 404 also must obtain certification of that permit from the RWQCB.

The Proposed Plan does not include certifications under Section 401 or WDRs under Porter-Cologne. However, OCTA has begun coordination with SWRCB independent of the Proposed Plan to obtain the Section 401 approval necessary to authorize the Section 404 standard individual permit. The Section 401 approval is expected to provide the permitting framework for obtaining project-level Water Quality Certifications and approve the mitigation in advance for the Covered Activities. Proponents implementing Covered Projects that comply with the terms of the Proposed Plan should find their permit process streamlined with the RWQCB or State Water Board because the Proposed Plan provides a comprehensive means to address the needs of threatened and endangered species in the Plan Area.

Section 408 of the Rivers and Harbors Act

Pursuant to Section 408 of the Rivers and Harbors Act (RHA), the USACE regulates modifications to existing federal flood control facilities. If an M2 project proposes to modify a federal flood control facility, information detailing the proposed modification would be included in the request submitted by the applicant, OCTA, or Caltrans. Requests for activities to be authorized would be reviewed individually for compliance. The USACE Regulatory Division or Caltrans pursuant to SAFETEA-LU would coordinate with the USACE Section 408 Division to determine the need for a minor or major modification, and the appropriate notification would then be submitted by OCTA or Caltrans, as applicable. A preliminary inventory of federal flood control projects occurring within the M2 Freeway program area is provided below but will be verified at the project level during the permit process. No federal flood control projects were identified within the OCTA Preserves or restoration project locations.

Projects A, B, C (and D), E, F, and L: No USACE federal flood control projects were identified during preliminary analysis.

Project G: Santa Ana River (Feature G-1) occurs within the M2 Project G footprint and has been verified as a federal flood control project at that location. Carbon Canyon Creek (Feature G-6) occurs within the Project G footprint, and although a portion of Carbon Canyon Creek has been identified as a federal flood control project, the location of the 408 facility and whether it will be modified as a result of Project G will be determined during the design phase.

Project I: Santa Ana River (Feature I-10) occurs within the M2 Project I footprint and has been verified as a federal flood control project at that location. Carbon Canyon Diversion Channel (Feature I-6) occurs within the Project I footprint and may be a 408 facility, which will be determined during the design phase.

Project K (and M): Santa Ana River occurs within the M2 Project K footprint and has been verified as a federal flood control project at that location. Greenville Banning Channel is located within the M2 Project K footprint, and a portion that has been verified as a 408 facility occurs downstream of the project. San Gabriel River occurs with the M2 Project M footprint and has been verified as a federal flood control project at that location.

3.4.1.2 State Regulations

California Endangered Species Act

CESA prohibits take of wildlife and plants listed as threatened or endangered by the California Fish and Game Commission. Take is defined under the California Fish and Game Code as any action or attempt to "hunt, pursue, catch, capture, or kill." Therefore, take under CESA does not include "the taking of habitat alone or the impacts of the taking." Rather, the courts have affirmed that under CESA, "taking involves mortality."

CESA allows exceptions to the take prohibition for take that occurs during otherwise lawful activities. The requirements of an application for incidental take under CESA are described in Section 2081 of the Fish and Game Code. Incidental take of state-listed species may be authorized if an applicant submits an approved plan that minimizes and "fully mitigates" the impacts of this take.

California Fully Protected Species

In the 1960s, before CESA was enacted, the California Legislature identified species for specific protection under the Fish and Game Code. These fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Fully protected species are described in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the Fish and Game Code. These protections state that "...no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected [bird], [mammal], [reptile or amphibian], [fish]." On October 8, 2011, Senate Bill (SB) 618 was signed into law. The bill revises the definition of "covered species" under the NCCPA to include fully protected species. As a result of SB 618, the taking of fully protected species can now be authorized in cases where the take is incidental and the fully protected species is being conserved and managed under an NCCP approved by CDFW. No fully protected species are covered by the Proposed Plan. Fully protected species expected to occur in the Plan Area include, but are not restricted to, those listed below.

- Light-footed clapper rail (Rallus longirostris levipes)
- White-tailed kite (Elanus leucurus)
- California black rail (*Laterallus jamaicensis coturniculus*)
- Golden eagle (*Aquila chrysaetos*)
- Bald eagle (Haliaeetus leucocephalus)

- California least tern (Sternula antillarum)
- Brown pelican (Pelecanus occidentalis)

California Fish and Game Code 3503

Section 3503 of the Fish and Game Code makes it "unlawful to take, possess or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Therefore, CDFW may issue permits authorizing take pursuant to CESA or NCCPA. The Proposed Plan contains conservation measures to avoid such take to the maximum extent practicable in order to comply with Section 3503. However, some take of covered birds still may occur; the NCCP permit will serve as the authorization for take of nests or eggs of covered birds pursuant to Section 3503.

California Fish and Game Code 3503.5 (Birds of Prey)

Section 3503.5 of the Fish and Game Code prohibits the take, possession, or destruction of any birds of prey or their nests or eggs "except as otherwise provided by this code or any regulation adopted pursuant thereto." CDFW may issue permits authorizing take pursuant to the CESA or NCCPA. There are no birds of prey covered by the Proposed Plan. However, the Proposed Plan contains conservation measures to avoid such take in order to comply with Section 3503.5.

California Fish and Game Lake or Streambed Alteration Agreement

CDFW has jurisdictional authority over streams and lakes and wetland resources associated with these aquatic systems under Fish and Game Code Sections 1600 et seq., which was repealed and replaced in October 2003 with the new Section 1600–1616 that took effect on January 1, 2004 (Senate Bill 418 Sher). CDFW has the authority to regulate work that will substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

Activities of any person, state or local governmental agency, or public utility are regulated by CDFW under Section 1602 of the Fish and Game Code. CDFW enters into a streambed or lakebed alteration agreement with the project proponent and can impose conditions on the agreement to ensure no net loss of values or acreage of the stream, lake, associated wetlands, and associated riparian habitat.

The lake or streambed alteration agreement is not a permit, but rather a mutual agreement between CDFW and the project proponent. Because CDFW includes under its jurisdiction streamside habitats that may not qualify as wetlands under the federal CWA definition, as well as a broader definition of the lateral jurisdiction, CDFW jurisdiction may be broader than USACE jurisdiction.

Concurrent with the development of the proposed NCCP/HCP, OCTA is working with CDFW to adopt Streambed Program Guidelines that approve compensatory mitigation sites for impacts on CDFW jurisdictional streambeds and outline the process for submittal of project-level Notifications of Lake or Streambed Alteration and the issuance of individual Lake or Streambed Alteration Agreements (LSAAs) to expedite processing for covered freeway improvement projects (see Proposed Plan, Appendix E).

3.4.1.3 Local Regulations

The County and the following cities have local tree ordinances requiring approval of tree removal and pruning within their jurisdiction: Anaheim, Brea, Costa Mesa, Dana Point, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, Laguna Hills, Laguna Niguel, Lake Forest, Los Alamitos, Mission Viejo, Orange, Placentia, San Clemente, San Juan Capistrano, Santa Ana, and Seal Beach.

3.4.2 Environmental Setting

3.4.2.1 Data Sources

Natural Community Mapping

The vegetation mapping data used for the M2 NCCP/HCP is the Existing Vegetation (EVeg) dataset (2.5-acre minimum mapping unit), which initially was selected by the Conservation Biology Institute (CBI) for the Conservation Assessment. The vegetation data were updated using 2008 aerial photography to reflect newly developed areas not captured in the EVeg source data. Updates to the vegetation dataset were limited in scope and focused primarily on relatively large blocks of habitat that had been recently developed or cleared so that they no longer supported native vegetation. The purpose of the vegetation data update process was to identify and update significant changes that could affect the landscape-scale conservation planning and analysis for the NCCP/HCP, and was not comprehensive at a fine scale. Therefore, smaller areas of new development would not have been detected and updated. Preserve-level vegetation mapping was conducted on the Preserve Areas and incorporated into the vegetation database. This more detailed mapping will serve as the baseline for management and monitoring under the Proposed Plan, replacing the landscape-scale vegetation data source.

Species Accounts

Detailed species accounts of each of the 18 Covered Species (Table 2-1) are provided in Appendix C.2 of the Proposed Plan. These accounts summarize ecological information, distribution, status, threats, population trends, and conservation and management activities in the Plan Area. The accounts represent the best available scientific data for each species on which to base the Proposed Plan. The species accounts are not intended to summarize all biological information known about a species. Rather, each account summarizes scientific information that is relevant to the Proposed Plan. Each account is designed for easy reference; all literature cited in the account is provided within it. The biological data in these accounts form the basis for the impact assessment (Chapter 4 of the Proposed Plan) and conservation analysis (Chapter 6 of the Proposed Plan).

Species Distribution Models

Regional conservation planning relies on landscape-scale data because it is time-consuming and often infeasible to collect detailed, site-specific information on the large scale typical of multiple habitat and species plans. Therefore, species habitat distribution modeling has been a major component of many NCCP/HCP planning efforts in California. The role of species and habitat modeling in the conservation planning process is to provide an objective way of analyzing and

evaluating biological information across a large study area. Although species habitat modeling is not a replacement for field data, this approach is an important part of the conservation planning process because of the following:

- Lack of comprehensive species data in the Plan Area.
- Difficulty of conducting supplemental surveys on private land.
- Need for prediction and extrapolation in areas lacking adequate data.
- Need for synthesis and analysis of multiple data sources across the entire Plan Area.

Species distribution modeling and analysis are used to extrapolate biological data in a consistent and comprehensive manner across a study area. For each of the Covered Species, species distribution models are developed using information from the species accounts, and are based on models developed for the same species for other conservation programs in or near the Plan Area, when they were available. The species distribution models were primary based on land-cover types that were identified as suitable habitat based on the known or presumed habitat requirements and use patterns of each species. When supported by appropriate data, the models also incorporate physical parameters, including but not limited to the following: elevation ranges, soil types, slope, landforms, tree density, and ecoregions. Appendix C.3 of the M2 NCCP/HCP summarizes the methods and modeling parameters used to develop the species distribution models.

Known Occurrences

Various occurrence data sources were used to provide documentation of known locations for individual species. While not comprehensive across the Plan Area or even within the Covered Project footprints, Preserves, and restoration locations, the occurrence information does provide the locations of confirmed sightings of a species in a specific area. The occurrence information was used in combination with predicted species models to evaluate and refine the Covered Species list, characterize potential impacts and take, and evaluate the conservation strategy to determine if the Proposed Plan conservation actions meet the criteria for species coverage. Occurrence data sources included the following.

- California Natural Diversity Database (CNDDB): A database maintained by CDFW that contains confirmed locations for both plant and wildlife species.
- **USFWS:** A database containing confirmed species points for both plant and wildlife species.
- **Supplemental species locality database.** Additional occurrence information pertinent to the Proposed Plan was collected from other hard copy and personal communication data sources and input to the GIS database.
- **Preserve Baseline Surveys (2012).** Baseline biological surveys of five preserves were completed in 2012 (Bonterra 2012). Biological resources technical reports summarizing the results of the baseline surveys are included as Appendix C.6 of the Proposed Plan.

In several instances there was duplication, overlap, and redundancy of occurrence information between the different data sources. To complete the assessment of Proposed Plan impacts and conservation analysis, the occurrence information was filtered to remove overlap along the Covered Project impact footprints and within the Preserves and restoration project locations. A systematic approach was taken to utilize the most current and detailed occurrences. If there was overlap, the occurrences that were older and/or more general were ignored until no more overlap existed.

In some instances, additional occurrence information was available in hard copy format only and could not be provided in electronic format to be included in the occurrence database due to proprietary data limitations. Hardcopy maps of occurrence information that was particularly relevant and useful for the Proposed Plan are included in Appendix C.7 of the Plan, "Additional Species Occurrence Maps from Other Sources". Other incidental occurrence information has been provided through personal communication or camera monitoring. These occurrences are referenced in the Proposed Plan as appropriate.

Landscape Level Conservation Assessment

OCTA contracted with CBI to complete a formal conservation assessment for the purposes of identifying key areas of natural habitat in the Plan Area (CBI 2009). The objectives of CBI's effort were as follows:

- Develop an objective, science-based process for focusing decision-making on regional conservation priorities.
- Using existing data and applying NCCP tenets of conservation planning, map the distribution of
 conservation values of undeveloped lands in Orange County, including both protected and
 unprotected lands.
- Identify components of a regional preserve network, focusing on adding to existing preserve
 areas to build large core habitat areas with habitat linkages between them to enhance their
 persistence.
- Develop specific conservation objectives to maximize conservation values for each core and linkage area.
- Based on these objectives, identify areas where conservation of biological resources should be
 prioritized to improve landscape integrity and connectivity, protect rare species and their
 habitats, and ensure long-term persistence of natural processes.

As a result of this process, 11 Core Habitat Areas and 4 existing or potentially viable linkages that include both protected and unprotected natural lands were identified in the Plan Area. CBI completed additional analyses to further refine and identify individual parcels within unprotected natural lands, designated as "priority conservation areas," based on their (a) position on the interior or edge of the core area and (b) proximity to protected open space. The priority conservation areas are defined as those currently unprotected lands for which acquisition would be a "no regrets" decision, based on their contribution to the regional reserve system. A more detailed discussion of the CBI Conservation Assessment is included in Appendix C.5 of the Proposed Plan.

3.4.2.2 Vegetation and Land-Cover Type

Orange County generally experiences a Mediterranean type of climate, with moist, cool winters and warm, dry summers. The varied landscape in Orange County supports a wide variety of native habitats. Urban areas are focused in the coastal plain areas and along the coast. Rapid urbanization of the County has reduced native habitat areas and confined them to higher elevations and isolated patches scattered throughout the County. The dominant natural vegetation type in the County is coastal scrub, located along the coast and in the foothills of Santa Ana Mountains. The County also supports areas of chaparral, primarily in the Cleveland National Forest. The coastal plain is dominated by annual grasslands and agricultural uses. Ecological reserves along the coast protect

remnant coastal marshes such as Anaheim Bay, Bolsa Chica, and Upper Newport Bay. These varied habitats support high diversity and abundance of species, including several endemic plant and animal species.

The Proposed Plan addresses seven major natural community types. Each natural community is composed of several land-cover types, each with distinctly different plant species compositions as depicted in Table 3.4-1. The vegetation types were classified in the original USFS (2004) EVeg data according to the CDFW Wildlife Habitat Relationships (WHR) classification scheme, which is based on the vegetation classification system developed for the *Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995).

Table 3.4-1 presents total acreages for each of the natural communities/land cover types within the Proposed Plan Area. Detailed descriptions for each of the following natural communities are provided in Appendix C.1 of the Proposed Plan.

Table 3.4-1. Natural Communities and Land-Cover Types in the Plan Area (Wildlife Habitat Relationships Classification Scheme)

<u> </u>	<u> </u>	
Natural Community	Land-Cover Type	Total Acres in Plan Are
Coniferous forest		1,930
	Bigcone Douglas-fir (Pseudotsuga macrocarpa)	1,480
	Coulter pine (Pinus coulteri)	73
	Knobcone pine (Pinus attenuata)	63
	Tecate cypress (Cupressus forbesii)	314
Woodland		13,993
	California walnut (Juglans californica)	843
	Canyon live oak (Quercus chrysolepis)	2,049
	Coast live oak (Quercus agrifolia)	10,588
	Coastal mixed hardwood	512
	Interior mixed hardwood	1
Chaparral		82,947
	Ceanothus mixed chaparral	2,451
	Chamise (Adenostoma fasciculatum)	7,945
	Lower montane mixed chaparral	57,149
	Scrub oak	3,475
	Soft scrub mixed chaparral	6,275
	Southern mixed chaparral	3
	Sumac shrub	5,614
	Upper montane mixed chaparral	35
Scrub		59,477
	Buckwheat	1,540
	California sagebrush (Artemisia californica)	53,814
	Coastal bluff scrub	374
	Coastal cactus	2,737
	Coyote brush (Baccharis pitularis)	179
	Riversidean alluvial scrub	731

Natural Community	Land-Cover Type	Total Acres in Plan Area
	Scalebroom (Lepidospartum squamatum)	102
Grassland		41,631
	Annual grasses and forbs	39,667
	Perennial grasses and forbs	1,964
Riparian		4,446
	Baccharis (riparian)	322
	California sycamore (Platanus racemosa)	935
	Fremont cottonwood (Populus fremontii)	119
	Riparian mixed hardwood	1,052
	Riparian mixed shrub	488
	Willow	740
	Willow (shrub)	790
Wet meadows/marsh		2,236
	Pickleweed-cordgrass	1,882
	Tule-cattail	319
	Wet meadows	35
Water		2,696
	NATURAL COMMUNITIES SUBTOTAL	209,356
Agriculture		12,871
Barren		1,657
Developed/Disturbed		287,592
	TOTAL	511,476
Source: See Appendix C.1	"Natural Communities Profiles", of the Proposed Plan	

3.4.2.3 Covered Species

The Proposed Plan addresses 13 listed and non-listed species (Table 2-1), composed of 10 wildlife species and 3 plant species. These species were identified on the basis of an initial assessment of the potential occurrence of listed and non-listed but sensitive species and their habitat in the Plan Area, and the potential effect of proposed Covered Projects and Activities and conservation measures on listed species or species that could become listed during the term of the Proposed Plan. A total of 38 special-status species with the potential to occur in the Plan Area were evaluated for coverage in the Proposed Plan and screened according to specific criteria. From this list, 13 species were selected for coverage based on species current listing status and potential for future listing, species range and occurrences within the Plan and Permit Areas, chance of being impacted by Covered Projects and Activities, and feasibility for providing conservation. See Appendix C.4 of the Proposed Plan for a detailed description of the species, selection criteria and methods, and evaluation results.

3.5.1 Regulatory Setting

3.5.1.1 Federal Agencies and Regulations

NEPA requires that federal agencies assess whether federal actions would result in significant effects on the human environment. The CEQ NEPA regulations further stipulate that identification of significant effects should incorporate "the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources" (40 CFR 1508.27[b][8]).

Section 106 of the National Historic Preservation Act (NHPA)

The federal government has developed laws and regulations designed to protect cultural resources that may be affected by actions undertaken, regulated, or funded by federal agencies. NEPA mandates that federal agencies conduct their regulations, policies, and programs in accordance with NEPA's policies of environmental protection. NEPA addresses compliance with the National Historic Preservation Act (NHPA) of 1966. The NHPA established the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Officers (SHPO) to assist federal and state officials regarding matters related to historic preservation.

Section 106 of the NHPA requires federal agencies to consider the effects of an action on cultural resources in or eligible for listing in the National Register of Historic Places (NRHP). As the administering agency, the ACHP has authored regulations implementing Section 106, located in 36 CFR Part 800, Protection of Historic Properties (revised effective January 11, 2001). Actions that are considered federal undertakings must comply with the NHPA (36 CFR Part 800), which provides detailed procedures by which the assessment of impacts on archaeological and historical resources are implemented.

According to the NHPA (36 CFR Part 800), three steps are required for compliance: (1) identification of significant resources that may be affected by an undertaking; (2) assessment of project impacts on those resources; and (3) development and implementation of mitigation measures to offset or eliminate adverse impacts. All three steps require consultation with interested Native American Indian tribes, local governments, and other interested parties.

Native American Graves Protection and Repatriation Act of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) is a federal law passed in 1990. NAGPRA provides a process for museums and federal agencies to return certain Native American cultural items that include human remains, funerary objects, sacred objects, and objects of cultural patrimony to lineal descendants, culturally affiliated Indian tribes, and Native Hawaiian organizations.

3.5.1.2 State Agencies and Regulations

California Environmental Quality Act

CEQA requires that public or private projects financed or approved by state or local public agencies be assessed to determine their potential to affect historical resources. CEQA uses the term *historical resources* to include buildings, sites, structures, objects, or districts, each of which may have historical, prehistorical, architectural, archaeological, cultural, or scientific importance. CEQA states that if implementation of a project would result in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (14 CCR 15064.5, 15126.4). Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined.

The State CEQA Guidelines define three ways that a property may qualify as a historical resource for the purposes of CEQA review.

- The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
- The resource is included in a local register of historical resources, as defined in Public Resources Code (PRC), Section 5020.1[k] or identified as significant in a historical resource survey meeting the requirements of PRC, Section 5024.1[g], unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (14 CCR 15064.5[a]).

Archaeological human remains are also protected under CEQA and California Health and Safety Code Section 7050.5, which states that no further disturbance can occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98.

SB 18 of 2004 requires cities and counties to notify and consult with California Native American Tribes about proposed local land use planning decisions for the purpose of protecting Traditional Cultural Places. California Historic Landmarks (CHLs) are buildings, structures, sites, or places that have been determined to have statewide historical significance. To be eligible for designation as a landmark, a resource must meet at least one of the following criteria: (1) be the first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California); (2) be associated with an individual or group having a profound influence on the history of California; or (3) be a prototype of, or an outstanding example of, a period, style, architectural movement, or construction or be one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder. CHLs No. 770 and above are automatically listed in the CRHR.

Caltrans' Programmatic Agreement

Caltrans has implemented a statewide Programmatic Agreement (PA) for the purposes of complying with Section 106 of the NHPA of 1966, as amended (36 CFR Section 800). The PA, signed on January 1, 2004, stipulates how Caltrans will satisfy its Section 106 requirements on federal undertakings overseen by the Federal Highway Administration (FHWA). The PA grants Caltrans some approval powers that previously required SHPO and FHWA approvals, including definition of the project's Area of Potential Effects (APE), methods to inventory the APE, and methods to

determine cultural resource significance. Where FHWA has been eliminated from the Section 106 process, in most cases, Caltrans' Sacramento staff now approves some documents that previously required FHWA approval. The SHPO must still concur on the eligibility of historic properties to the NRHP, the measures taken to eliminate or reduce adverse effects on eligible resources, and the adequacy of Native American consultation efforts. The SHPO must still be a signatory to any Memorandum of Agreement (MOA) developed to ameliorate adverse effects on historic properties.

3.5.2 Environmental Setting

3.5.2.1 Archaeological Resources

Archaeological resources are the physical remains of past human activity. They include prehistoric and historic archaeological sites; and extant buildings, structures, and objects that are listed in or eligible for listing in national, state, and/or local registers. Archaeological evidence shows that Southern California has been occupied by humans for thousands of years, and Orange County is rich in archaeological resources that date from early prehistoric times to the historic period. Archival records demonstrate that there are many known prehistoric and historic resources within the County. Current information obtained at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton indicates that over 2,500 archaeological resources have been identified in Orange County. However, this number is constantly growing as more are discovered due to land development and other factors.

There are generally three types of archaeological sites: prehistoric, protohistoric, and historic. Prehistoric sites in North America are considered to be the remains of human activity prior to contact with Europeans. Protohistoric sites bear evidence, either ethnographic or physical, of post-European contact with indigenous groups. Historic sites are defined as sites that are not prehistoric or protohistoric, but are the remains of human activities from peoples not indigenous to North America. Prehistoric sites date to the earliest appearance of Native Americans on the North American landmass, some 10,000–13,000 years before the present, up to the arrival of the Spanish in the late 1700s. Protohistoric sites are those localities of primarily Native American habitation, but where artifacts of EuroAmerican origin appear, generally as a result of trade. Historic sites were inhabited primarily by the succeeding waves of immigrants who moved into and ultimately took control of Southern California, beginning with Spain, then Mexico, and lastly America. Historic archaeological sites can also be representative of any culture group that is nonnative to North America.

3.5.2.2 Prehistoric Setting

Southern California researchers have divided regional prehistory into a four-stage chronology describing changing artifact assemblages and evolving ecological adaptations (Wallace 1955): The Early Man Horizon, The Milling Stone Horizon, The Intermediate Horizon, and The Late Period Horizon. The Early Man Horizon covers the period from the first presence of humans in Southern California until postglacial times (approximately 5500 B.C.). Artifacts and cultural activities from this time period represent a predominantly hunting culture (Wallace 1955). The presence of extremely large, often fluted, bifaces are hallmarks of the Early Man Horizon (Moratto 1984:81). Large bifaces are associated with use of the spear and the atlatl, or spear thrower.

The Early Man Horizon is followed in time by the Milling Stone Horizon. Sites from this time period (post-5500 B.C.) typically contain groundstone artifacts such as manos, metates, cogged stones, and soapstone objects. Wallace (1955) suggests that the cultures of the Milling Stone Horizon were primarily hunter-gatherers who spent time collecting and processing plants and shellfish. When bifaces are associated with Milling Stone Horizon sites, they are commonly large and associated with the use of the atlatl.

The Intermediate Horizon begins at approximately 3000 B.C., when coastal populations began to have greater reliance on marine resources. The remains of near-shore and deep-sea fish appear more often in site refuse. Interior California populations centered around pluvial lakes created by runoff from melting glaciers. From the Peninsular Ranges coastward there was an increased use of mortar and pestle, which marked a technological change in the manner in which seeds were processed. Smaller seeds could be better contained in the basket-like mortar, and it is possible that the mortar and pestle indicate a diversification in seed-collecting strategy, with exploitation of the acorn becoming a resource of choice. Additional artifacts found predominantly within the Intermediate Horizon include discoidals and crescentics (eccentric crescent-shaped flaked stone artifacts).

The Late Prehistoric Horizon began at approximately A.D. 500 (Bean and Smith 1978). At this time, artifacts change as new cultural practices occur. Smaller projectile points appear, which represent a change from spears and atlatls to bows and arrows in hunting. This horizon is also marked by steatite effigies, as well as by cremation as an internment practice, which replace the inhumations of earlier periods. These artifacts and practices have been linked to a proposed Shoshonean (Takic) immigration from drying interior regions to the coast. By A.D. 1000, smoking pipes and ceramic pottery occur, although ceramic smoking pipes may occur somewhat earlier. Such artifacts are recovered sporadically; therefore, site dating also depends on other factors, such as the increased frequency of Salton Sea (Obsidian Buttes) obsidian, used inconsistently until after circa A.D. 1000.

The Gabrielino Indians: Ethnographic studies show that Orange County was generally occupied by a Native American group known as the Gabrielino during the 16th–19th centuries (McCawley 1996). The term Gabrielino is derived from the association of these Indian peoples with Mission San Gabriel. Today, some of the Gabrielino prefer to call themselves Tong-va (McCawley 1996). The extreme southwestern part of Orange County was occupied by peoples who were closely related to the Luiseño of northern San Diego County, who called themselves the Juaneño. All three groups were closely affiliated, being peoples who spoke various dialects of Shoshonean.

The Gabrielino Indians practiced a hunter-gatherer lifestyle and lived in communities near the convergence of two or more environmental zones or habitats (Bean and Smith 1978). Important considerations influencing the location of habitation sites included the presence of a stable food supply and some measure of protection from flooding. Gabrielino territory included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers; the watersheds of several smaller intermittent streams in the Santa Monica and Santa Ana Mountains; the coast from Aliso Creek north to a point between Topanga and Malibu Creeks; and the islands of San Clemente, San Nicolas, and Santa Catalina (Bean and Smith 1978:538; McCawley 1996:3).

Community populations generally ranged from 50 to 150 inhabitants, although larger settlements may have existed. Gabrielino communities located in the interior regions maintained permanent geographical territories or use areas that may have averaged 30 square miles. However, it is unclear whether this pattern was similar for coastal settlements, where food resources may have been more

plentiful (White 1963:117; Oxendine 1983:44). In addition to these permanent settlements, the Gabrielino occupied temporary campsites that were used on a seasonal basis for hunting, fishing, gathering, and processing of wild plant foods and shellfish (McCawley 1996:25). One or more lineages, each of which was composed of several related nuclear families, lived in a typical Gabrielino community. Each community had a chief, the *tomyaar*, who was the head of the oldest or largest lineage. Some chiefs may have had authority over multiple communities. The chief provided insurance against environmental variability by ensuring that members of the community could obtain access to scarce resources in times of need. For example, the chief controlled ritual exchanges of shell beads; such exchanges maintained relationships with groups in other areas and thus provided access to resources in those areas. The chief also managed surpluses to provide insurance against tough times. In general, status differences among the Gabrielino were ascribed. Wealth was inherited, and Gabrielino society consisted of a number of classes including elites, commoners, and slaves.

Gabrielino culture was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies, and participation in the widespread *Chinigchinich* cult, which was observed and recorded by Franciscan Friar Gerónimo Boscana during his residences at Missions San Juan Capistrano and San Luis Rey (Boscana 1933). The Gabrielino had introduced *Chinigchinich*, their pre-Christian creator-god, to other Indian cultures of Southern California, and the worship of this supernatural being remained a prominent religion in the region long after the introduction of Christianity (McCawley 1996).

European Contact: The first recorded contact between the Gabrielino and Europeans occurred in 1542, when the Cabrillo Expedition arrived at Santa Catalina Island (Wagner 1941). On the mainland, the first documented contact between the Gabrielino and Europeans occurred in 1769, when an expedition led by Gaspar de Portolá crossed present-day Los Angeles and Orange Counties (Bean 1968:36-38; Bolton 1927).

Within 2 years Mission San Gabriel Archangel was founded (September 8, 1771) and was followed 5 years later by the Mission San Juan Capistrano (November 1, 1776). The Franciscans' goal in founding the missions was to convert the Indians to the Spanish Catholic faith and incorporate them into the lower strata of Spanish society. However, the final result of missionization was the destruction of the Gabrielino culture and society. Two important factors contributed to this decline: first, many of the youngest, healthiest, and most productive Gabrielino were removed from the Gabrielino economy when they entered the Mission System; second, the introduction of highly infectious European diseases, for which the Gabrielino had no immunities, led to epidemics and reduced birth rates, which further disrupted traditional Gabrielino political, social, and economic institutions. As a result, most of the traditional Gabrielino communities were depopulated, and the survivors became assimilated into the Mexican-American communities of Los Angeles and Orange Counties. During the 1920s, anthropologist Alfred L. Kroeber was unable to locate a group claiming Gabrielino heritage, although he did interview several individuals of Gabrielino ancestry. Currently, the Gabrielino are not a federally recognized tribe, although there are individual spokespeople of Gabrielino descent (Rosenthal et al. 1991).

3.5.2.3 Historic Context

By the early 1800s, Spanish army officers and veterans began receiving grants to establish large, private grazing areas in Southern California. This process accelerated in 1833 when the Mexican government enacted the Secularization Acts and began transferring Mission lands to wealthy and politically prominent individuals. One of these early Mexican grants was the Rancho Lomas de

Santiago. During the 1860s, Rancho Lomas de Santiago was consolidated with Rancho San Joaquin and a portion of Rancho Santiago de Santa Ana to form a 125,000-acre holding, which retained the name Rancho San Joaquin. After James Irvine I became the sole owner in 1876, the holding was generally known as the Irvine Ranch.

James Irvine immigrated to New York from Ireland in 1846 and soon became one of many young men who sought their fortunes during the 1849 California Gold Rush. After California was admitted to the Union (September 9, 1850), Irvine worked in his uncle's San Francisco produce business, eventually becoming a co-owner in 1854 (Cleland 1951:60). Over the next several years Irvine and his associate Dr. Benjamin Flint purchased real estate throughout Southern California.

As cattle ranching in California declined during the 1860s, sheep rearing grew in importance. Foremost among the pioneer woolgrowers in California was the partnership of Irvine, Bixby, Flint, and Flint, known as Flint, Bixby & Company. Llewellyn Bixby and his cousins Thomas and Benjamin Flint had driven their first flock of sheep from Illinois to California in 1853. In October 1855, they established Rancho San Justo in Monterey County as their headquarters (Smith 1931:27-29). Between 1864 and 1866, Flint, Bixby & Company added Rancho San Joaquin to its holdings; under James Irvine's management, sheep rearing on Rancho San Joaquin remained an important economic activity well into the 1880s.

Southern California's economic transition continued through the decade of the 1870s. During this period, many of the large landholdings were subdivided, and a diversified agriculture centered on citrus fruits, grapes, and grains appeared. Tenant farming on the Irvine Ranch was introduced around 1875 or 1876, and in 1882 Irvine began subdividing 1,440 acres southeast of Tustin and selling the land in 40-acre parcels. During the late 1880s, more than 5,000 acres of the Irvine Ranch were leased to farmers raising hay and grain. Between 1890 and 1934, The Irvine Company built homes for the tenant farmers on the land they farmed (Liebeck 1990:14, 16-17, 19).

James Irvine died in 1886, and for the succeeding six years the estate was managed by his brother, George Irvine. In 1892, James Irvine II (also known as James Harvey Irvine, Sr.) inherited the ranch; two years later, in 1894, he incorporated The Irvine Company and became its sole stockholder (Liebeck 1990:25, 58). Under his direction, The Irvine Ranch continued its transition from sheep ranching to a diversified economy based on cattle ranching, agriculture (including dry farming), and tenant farming. Beans and barley, as well as corn, potatoes, and wheat, were grown; by the turn of the century, celery, peanuts, and flax also had become profitable crops. Employment grew as the number of crops expanded; sugar beets became important, and vegetables such as tomatoes, lettuce, cabbage, mustard, peas, and rhubarb were harvested by both the ranch and its tenant farmers (Cleland 1951).

Orange County's modern agricultural foundation was finally established in 1906 when C.E. Utt, Sherman Stevens, and James Irvine, Sr. formed the San Joaquin Fruit and Investment Company. They planted 600 acres of walnuts and apricots and 400 acres of oranges and lemons, and they initiated irrigation and swamp draining projects. However, this new development was brought to a halt by the 1929 stock market crash (Liebeck 1990:48).

During the 1930s, The Irvine Company initiated several important projects to stabilize water supplies. Lambert Reservoir near Tomato Springs was built in 1929, followed by Santiago Dam, which created Irvine Lake, in 1932. James Irvine, Sr. died in 1947, before the post-World War II Orange County housing expansion transformed the pastoral and agricultural landscape into a suburban environment. Upon his death, ownership of 51 percent of Irvine Company stock was assigned to the James Irvine Foundation (Liebeck 1990:42, 94).

3.5.2.4 Paleontological Setting

Paleontological resources can be found throughout Orange County and are defined as the fossilized remains, both body and trace fossils, of all groups of organisms, including plants, animals, vertebrates, invertebrates, pollen, and spores. A fossil is any remain, trace, or imprint of a plant or animal that has been preserved by natural processes in the earth's crust during the geologic past. Paleontological resources are nonrenewable resources that contribute to our understanding of the geologic development of a region. Paleontological sites often include the remains of species that are now extinct. The abundance of fossils encountered in Orange County has shown that paleontological remains are present from the ground surface to hundreds of feet below it in nearly every geologic formation, which is the matrix in which most fossils are found. Some examples are included in Table 3.5-1, which provides an indication of the paleontological sensitivity within Orange County.

Table 3.5-1. Paleontological Sensitivity in Orange County

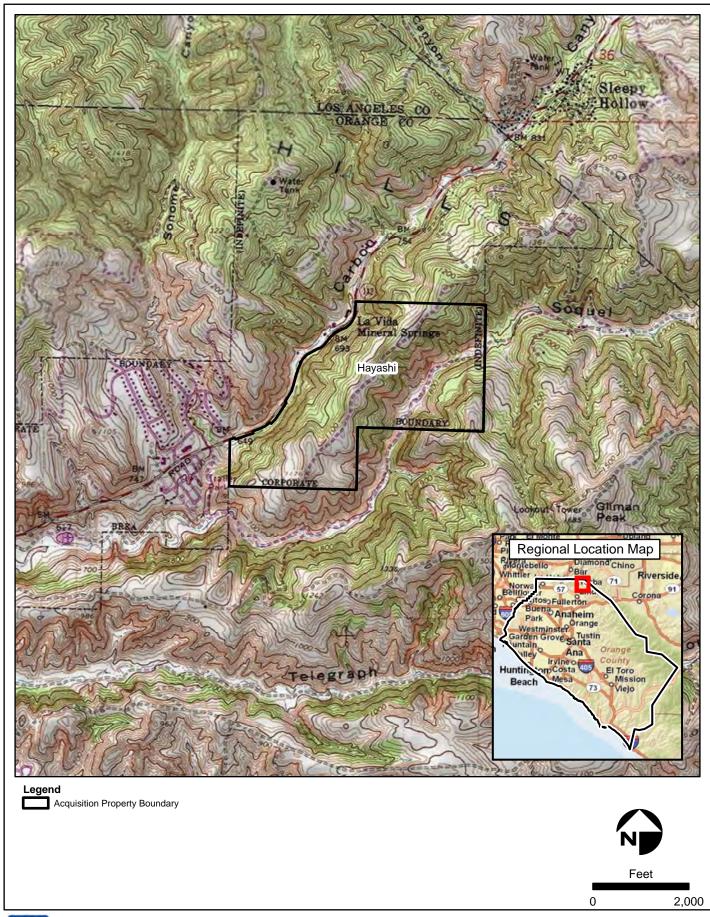
Location	Fossil Type	Formations
Puente Hills	Various species of vertebrates, invertebrates, and sea mammals	Puente
Buena Park	Ice age mammals	La Habra
Laguna Hills	Sea and terrestrial mammals	Capistrano
San Joaquin Hills	Dolphins	Monterey
Newport Bay East Bluffs	Invertebrates	Palos Verdes Sand
Santa Ana Mountains	Various species of vertebrates, invertebrates, and plants	Ladd, Sespe-Vacqueros, Topanga, Silverado, Santiago, and Puente

3.5.2.5 Records Search Results

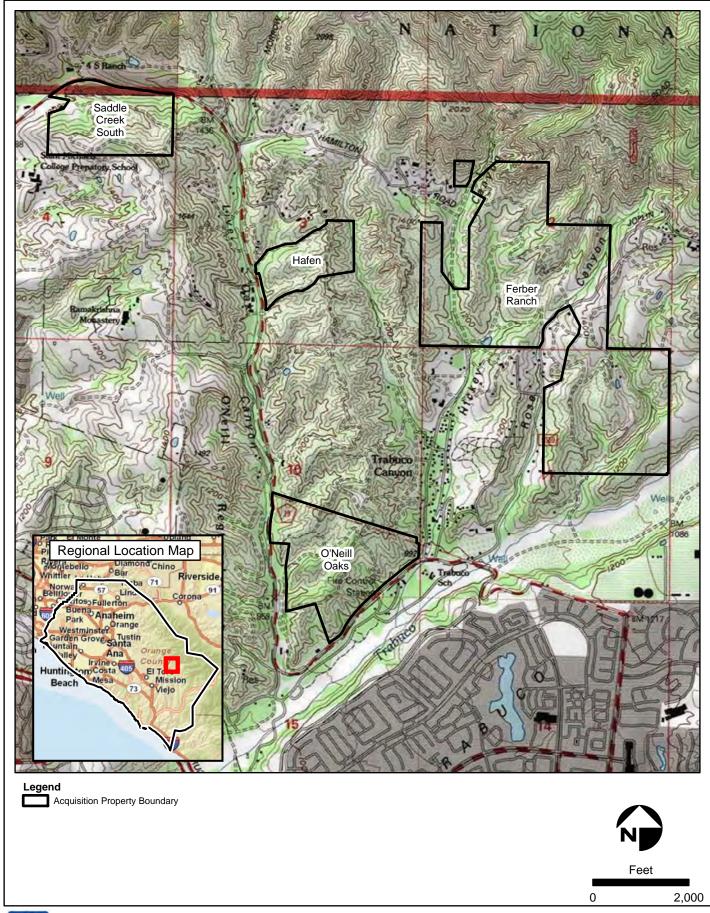
A records search was undertaken at the SCCIC at California State University, Fullerton in order to assess the number and diversity of archaeological and historical sites that might have been previously recorded within the Preserve Area parcels acquired for Proposed Plan. The SCCIC also maintains records on previous investigations, including archaeological surveys, excavations, etc. The parcels can be divided up onto two USGS topographic quadrangles. The Hayashi parcel is located on the Yorba Linda, CA 7.5' USGS quadrangle (Figure 3.5-1). The remaining parcels, known as Saddle Creek South, Hafen, Ferber Ranch, and O'Neill Oaks, are located on the Santiago Peak, CA 7.5' USGS quadrangle (Figure 3.5-2). For the purposes of the Proposed Plan, the records searches concentrated on these areas. According to SCCIC's records, the Hayashi property has been surveyed twice by archaeologists—first by Archaeological Associates (Sawyer and Van Horn 1981), and second by RMW Paleo Associates (1999). In neither instance were any archaeological sites recorded.

The history of archaeological work on the other Preserve parcels in the Trabuco Canyon area is much more complex and extensive. Archaeological sites have been recorded within or adjacent to all Preserve parcels. The earliest site was recorded by Drover (1975) and consisted of a rock ring with an associated mano and flakes (Table 3.5-2). The most recently recorded resource was recorded by Demcak (2006) and consisted of a 1947 barn.

Records search information was not collected for the covered freeway improvement projects. According to the 2006 LRTP Program EIR, 108 properties are listed in the NRHP, and 25 properties are listed as California Historical Landmarks in the county.









Ferber Ranch, Saddle Creek South, Hafen, and O'Neill Oaks Acquisition Properties - USGS Santiago Peak 7.5 Minute Quadrangle

Figure 3.5-2

Table 3.5-2. Cultural Resources Recorded within or adjacent to the Saddle Creek South, Hafen, Ferber Ranch, and O'Neill Oaks Parcels

Site No.*	Recorder/Report Author	Site Description
573/574	Drover 1975; Demcak 2006	Rock ring, lithic scatter, manos, and flake tools
631	R. Desautels 1977	Surface scatter of handstones (manos), hammerstones, and core
1437	Maxon 1995	Mano and metate fragments, flakes, debitage, and fire-affected-rock (FAR)
1518/Н	Gregory et al. 1995	Historic resources including a house, three sheds, windmill-powered water pump, and ranching and domestic refuse from c. 1915; prehistoric artifacts included manos and metates of dubious provenience
1519	Ferraro and Bonifacic 1999	Chert quarrying materials, cores, and flakes
1520	Ferraro 1999	Historic rock/concrete-lined ditch of unknown age
1645	Demcak 2006	Lithic scatter, flakes, flake tools, core, hammerstone, and mano
1646	Demcak 2006	Light lithic scatter, core, core tool, and flake
1647	Demcak 2006	Abandoned clay mine, water tank, sluiceways, holding bins, and flat slabs; c. 1930s-1948
1648	Demcak 2006	Light lithic scatter, flake, flake tool, manos, and core
P-30-100383	Evans and Brown 1990	Isolated flake and mano
P-30-176773	Demcak 2006	Barn constructed in 1947

^{*}All sites are based on a trinomial designation system that includes the state-county-site number, or a Primary-number designation that includes the county number and site number.

3.6.1 Regulatory Setting

3.6.1.1 Federal Regulations

Clean Water Act, Section 402[p]

The CWA is discussed in detail in Section 3.8, "Hydrology and Water Quality." Section 402[p] of the CWA is directly relevant to earthwork, and therefore additional information is provided here. In 1987, amendments to the CWA added Section 402[p], which establishes a framework for regulating municipal and industrial stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) program. As described in Section 3.8, the EPA has delegated authority for the NPDES program in California, which is implemented by the state's nine RWQCBs, to the State Water Board. Under the NPDES Phase II Rule, any construction activity disturbing 1 acre or more must obtain coverage under the state's General Permit for Stormwater Discharges Associated with Construction Activity (General Permit). General Permit applicants are required to prepare a NOI stating that stormwater will be discharged from a construction site as well as a Stormwater Pollution Prevention Plan (SWPPP) that describes the BMPs that will be implemented to avoid adverse effects on receiving water quality as a result of construction activities, including earthwork (EPA 2012b).

International Building Code

The International Building Code (IBC) provides standardized requirements for construction. The IBC replaced the Uniform Building Code in 2000 and established consistent construction guidelines for the nation. The 2009 IBC, which is the most recent edition of the code, was incorporated into the 2010 California Building Code (CBC) (discussed under State Regulations, below) and applies to all structures built in California. These building design and construction criteria take into consideration California's seismic conditions (International Code Council 2009).

3.6.1.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

California's Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act), originally enacted in 1972 as the Alquist-Priolo Special Studies Zones Act and renamed in 1994, is intended to reduce risks to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits most types of structures intended for human occupancy to be located across the traces of active faults and strictly regulates construction in corridors along active faults (i.e., Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones.

Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." A fault is considered "sufficiently active" if one or more of its segments or strands show evidence of surface displacement during Holocene

time (defined for purposes of the act as approximately the last 11,000 years). A fault is considered "well defined" if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface using standard professional techniques, criteria, and judgment (Department of Conservation 1999).

California Building Code

The CBC is promulgated under the California Code of Regulations, Title 24, and administered by the California Building Standards Commission (CBSC). The national model code standards adopted into Title 24 apply to all occupancies in California, except for modifications adopted by state agencies and local governing bodies. The 2010 triennial edition of Title 24 (current code), which was published by the CBSC in June 2010, incorporates the 2009 IBC (as discussed above) and became effective January 1, 2011. The CBC can be adopted wholly or with revisions by state and local municipalities. The County of Orange adopted the 2010 CBC and amended by Ordinance No. 11-001 on January 25, 2011.

Title 24, as adopted by the County of Orange, establishes general standards for the design and construction of buildings, including provisions related to seismic safety. The CBC provides standards that must be met to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within its jurisdiction. Chapter 18, "Soils and Foundations," of the CBC specifies the level of soil investigation that is required by law in California. These requirements apply to building and foundation systems and consider reductions in potential seismic hazards (CBSC 2011).

Seismic Hazards Mapping Act

The intent of the California Seismic Hazards Mapping Act of 1990 is to reduce earthquake damage. It also addresses issues associated with earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Through provisions of this act, the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards. In addition, cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development. Specifically, cities and counties are prohibited from issuing development permits for sites within Seismic Hazard Zones until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans (Department of Conservation 2007).

3.6.1.3 Local Regulations

Orange County Grading Permit

Per Orange County Public Work's Orange County Grading and Excavation Code, prior to performing any ground-disturbing activity within the county, a grading permit must be granted. The code sets forth rules and regulations to control excavation, grading, and earthwork construction, including fills and embankments. It also establishes administrative requirements for the issuance of permits and the approval of plans. In addition, a grading inspection is carried out in accordance with the requirements for grading and excavation contained in the IBC, as adopted and modified by county

ordinances. Grading permits are granted only after a qualified professional has conducted a thorough inspection, per the provisions of the Orange County Grading Manual, and approval is given by an Orange County building official (Orange County Public Works 2012c).

Cities within Orange County have similar permitting requirements.

3.6.2 Environmental Setting

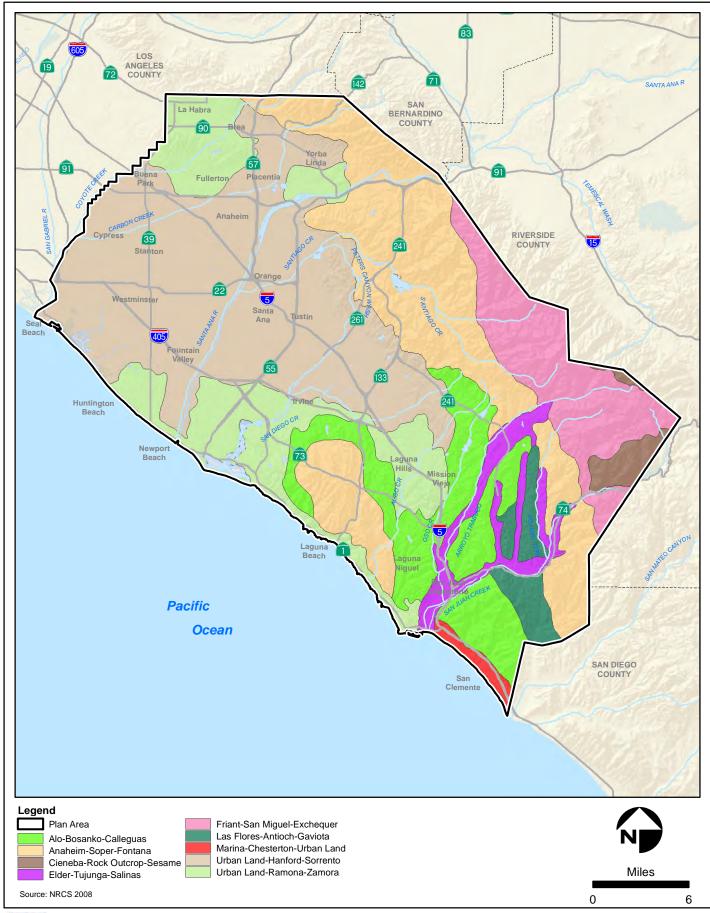
3.6.2.1 Topography

Orange County, which encompasses roughly 950 square miles, is located along the Southern California coastline, between Los Angeles and San Diego Counties, and consists of drastically varying topographical features. The topography comprises two general physiographic regions, the rolling coastal plain of the Los Angeles Basin in the northwestern part of the county and the foothills and mountainous terrain of the Santa Ana Mountains at the southeastern end. Elevations range from sea level at the coastline to 5,689 feet at Santiago Peak, which can be seen from almost anywhere in the county. The coastal plain includes two shallow coastal valleys (i.e., Santa Ana Valley and Saddleback Valley) and is thick with marine sediment. The mountain valleys are geologically young, and foothill slopes vary from steep to gentle. Other notable features include Loma Ridge, which runs parallel to the Santa Ana Mountains through the central part of the county. The ridge is separated from the taller mountains to the east by Santiago Canyon.

3.6.2.2 Soils

Orange County includes a highly variable array of soils because of the complex geology and diverse topography of the region. The county's General Soils map, provided by the Soil Conservation Service, identifies nine soil associations or distinctive patterns with defined proportions in the county (Figure 3.6-1). These soil associations vary from poorly drained and nearly level (mainly in the northwestern part of the county) to excessively drained and very steep (mainly in the mountainous terrain of the southeastern portion of the county). A majority of the soils were formed from alluvial and marine sedimentary sources. These soils have accumulated to thousands of feet thick throughout the Los Angeles Basin.

Clay soils are prone to shrinking or swelling. These "expansive soils," which are known to occur throughout the county, expand and contract with moisture and can cause building foundations and sidewalks to lift and crack. Geologists have indicated that expansive soils exist in the residential areas of the county. Because of the diversity of soil conditions in Orange County, experts agree that no residence is completely safe from some degree of cracking, slipping, or sinking, regardless of its age or location (Orange County Public Works 2011).





Soil Associations within the Plan Area

Figure 3.6-1

3.6.2.3 Geologic Hazards

Seismic Hazards

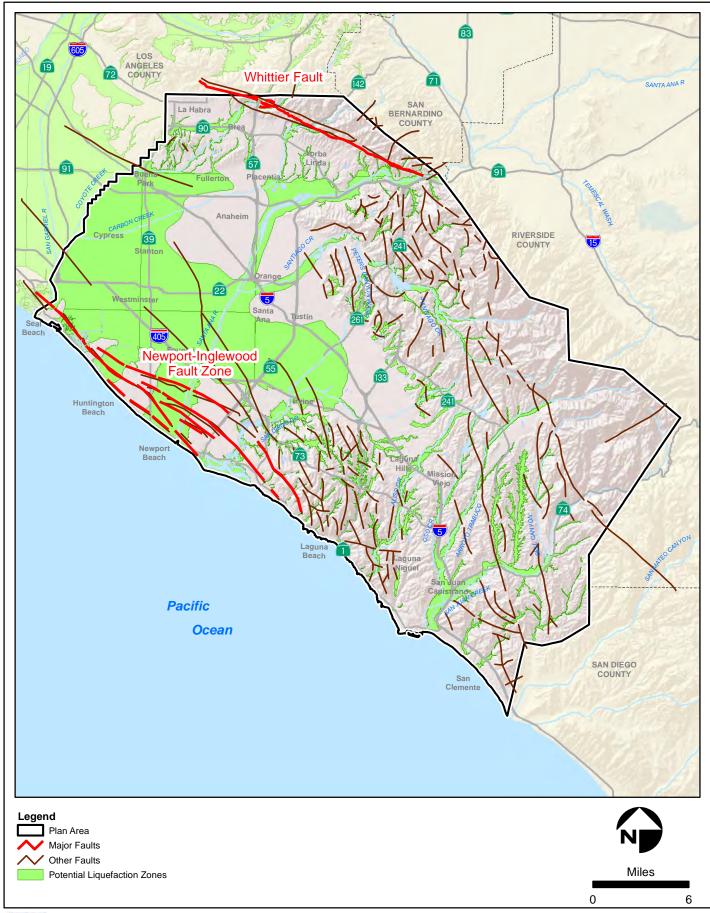
Orange County is in a highly seismically active region; however, it is more fortunate from a seismic safety standpoint than some of its surrounding counties. Two potentially active and hazardous fault zones run along the coastal and inland edges of the county (Figure 3.6-2). The first fault zone, which includes the Newport-Inglewood fault, starts offshore near Dana Point, runs through Newport Beach, and continues into Los Angeles County through the cities of Long Beach and Torrance. In 1933, a catastrophic earthquake with a Richter scale magnitude of 6.3 occurred along this fault zone near Long Beach. It is believed that this fault is capable of generating an earthquake with a magnitude of up to 7.5 (Orange County Public Works 2011). The other fault zone includes the Whittier fault, a westward continuation of the Elsinore fault, which trends along the northeast side of the Santa Ana Mountains into Mexico. Mostly moderate earthquakes (4.0 to 5.0 magnitude) have been recorded in this zone; however, a 6.0 earthquake was recorded in 1910, and it is estimated that the maximum credible earthquake from this fault zone is 7.0 magnitude (Orange County Public Works 2011).

Another seismic hazard known to occur in Orange County is soil liquefaction. Liquefaction occurs when saturated granular soil or coarse silt changes from a solid state to a liquefied state. Earthquakes can cause soil liquefaction when loosely packed, waterlogged sediments react to intense shaking. The Safety Element of the general plan provides information regarding areas in Orange County with the potential for liquefaction as well as the degree of ground shaking that could be expected in the event of a maximum credible earthquake on the Newport-Inglewood fault. Additional information regarding areas of potential liquefaction is contained in the quadrangle maps, called Seismic Hazard Zone Maps, provided by the Department of Conservation.

A seismic hazard for coastline areas is a tsunami or seismic sea wave generated by an undersea earthquake, landslide, or volcanic activity. However, the Orange County coastline is shielded to the west by the Channel Islands and to the north by Point Conception from most sources of tsunamis, thereby reducing the potential of this type of threat to a nominal level (Orange County Public Works 2011).

Non-Seismic Hazards

In addition to the safety hazards presented by seismic activity, Orange County could be subject to other types of geologic hazards. These include landslides, subsidence and uplift, natural erosive forces, and detrimental soil characteristics (i.e., expansive soils). Specific details regarding each of these hazards are provided in the Safety Element of the County of Orange General Plan.





3.7.1 Regulatory Setting

3.7.1.1 Federal Regulations

Hazardous Materials Transportation Act

The U.S. Department of Transportation (USDOT) (see 49 CFR 171–180) regulates hazardous materials shipping at the federal level. Congress passed the Hazardous Materials Transportation Act to give authority to the Secretary of Transportation "to provide adequate protection against the risks to life and property inherent in transporting hazardous materials in commerce."

The Research and Special Programs Administration (RSPA) of USDOT issues hazardous materials regulations. The regulations cover definition and classification of hazardous materials, communication of hazards to workers and the public, packaging and labeling requirements, operational rules for shippers, and training. They apply to interstate, intrastate, and foreign commerce by air, rail, ships, and motor vehicles, and also cover hazardous waste shipments. FHWA is responsible for highway routing of hazardous materials and highway safety permits. The U.S. Coast Guard regulates bulk transport by vessel.

Resource Conservation and Recovery Act

Hazardous waste generation, storage, treatment, and disposal is regulated by the EPA (see 40 CFR 238–282) pursuant to the Resource Conservation and Recovery Act (RCRA). The regulations define hazardous waste: "According to EPA estimates, of the 13 billion tons of industrial, agricultural, commercial, and household wastes generated annually, more than 27 million tons (2%) are 'hazardous,' as defined by RCRA regulations." (EPA 1997) The regulations specify requirements for generators, including waste minimization methods, as well as for transporters and for treatment, storage, and disposal (TSD) facilities. The regulations include restrictions on land disposal of wastes and used oil management standards.

The principle of RCRA is that hazardous waste be managed "from cradle to grave." To assure this, the regulations require identification for generators and transporters and permits for TSD facilities. The regulations provide mechanisms for tracking waste shipments, such as special hazardous waste manifests that must be used for shipping. The regulations also require financial assurances through closure and post-closure for facilities that accept waste for disposal. The statute and regulations provide for inspection, enforcement, and formal corrective action for facilities that do not live up to the terms of their permits and other requirements. In California, the state Department of Toxic Substances Control (DTSC) is authorized by EPA to implement most of the RCRA regulations.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

Contaminated site identification and cleanup activities at the federal level are limited to sites that have been placed on the National Priorities List (NPL, or "Superfund" list) due to the hazard they represent. Generally, these are large, extensive, or particularly high-risk sites. These sites receive funding for remediation under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Enacted by Congress on December 11, 1980, CERCLA created a tax on the chemical and petroleum industries and provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

On October 17, 1986, the Superfund Amendments and Reauthorization Act (SARA) amended CERCLA. SARA made several important changes and additions to the program that:

- stressed the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites;
- required Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations;
- provided new enforcement authorities and settlement tools;
- increased state involvement in every phase of the Superfund program;
- increased the focus on human health problems posed by hazardous waste sites;
- encouraged greater citizen participation in making decisions on how sites should be cleaned up;
 and
- increased the size of the trust fund to \$8.5 billion.

SARA also required EPA to revise the Hazard Ranking System (HRS) to ensure that it accurately assessed the relative degree of risk to human health and the environment posed by uncontrolled hazardous waste sites that may be placed on the NPL.

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)

The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is a general database used by the federal EPA to track activities conducted under its Superfund program. Sites included on this database are initially identified by the reporting requirements of RCRA hazardous waste TSD facilities, site-specific hazardous substance releases with volumes larger than regulatory reportable quantities, and/or water quality data reported by state and local health or environmental protection agencies.

The EPA sets priority for cleanup using the National Oil and Hazardous Substance Pollution Contingency Plan. The sites are rated according to a quantitative Hazard Ranking System based upon the potential health risk via any one or more of potential exposure pathways, including groundwater, air, surface water, direct contact, and fire/explosion.

3.7.1.2 State Regulations

The California Hazardous Waste Control Law

The Hazardous Waste Control Law (HWCL) is the primary hazardous waste statute in the state of California. The HWCL implements RCRA as a "cradle-to-grave" waste management system in the state of California. HWCL specifies that generators have the primary duty to determine whether their wastes are hazardous and to ensure their proper management. The HWCL also establishes criteria for the reuse and recycling of hazardous wastes used or reused as raw materials. The HWCL exceeds federal requirements for permitting facilities that treat hazardous waste. It also regulates a number of types of wastes and waste management activities that are not covered by federal law with RCRA.

California Code of Regulations

Most state and federal regulations and requirements that apply to generators of hazardous waste are disclosed in 22 CCR 4.5. Title 22 contains the detailed compliance requirements for hazardous waste generators, transporters, and TSD facilities. Because California is a fully authorized state according to RCTA, most RCRA regulations (those contained in 40 CFR 260 et seq.) have been duplicated and integrated into Title 22. However, because DTSC regulates hazardous waste more stringently than the EPA, the integration of California and federal hazardous waste regulations that make up Title 22 do not contain as many exemptions or exclusions as does 40 CFR 260. To aid in the regulated community, California compiled the hazardous materials, waste, and toxics-related regulations contained in CCR Titles 3, 8, 13, 17, 19, 22, 23, 24, and 27 into one consolidated CCR Title 26, Toxics. However, the California hazardous waste regulations are still commonly referred to as Title 22.

3.7.1.3 Local Regulations

Certified Unified Program Agency

Orange County's Environmental Health Division is responsible for implementing hazardous waste inspections throughout Orange County. It was designated as the Certified Unified Program Agency (CUPA) for Orange County in 1997 by the state Secretary for Environmental Protection. As the CUPA for Orange County, the Environmental Health Division is the local administrative agency that coordinates hazardous material and hazardous waste regulating programs. The six programs listed below all fall under the CUPA's regulation.

- Hazardous waste
- Underground storage tanks (UST)
- Aboveground storage tanks (AST)
- Hazardous materials disclosure (HMD)
- Business plan
- California Accidental Release Program (CalARP)

3.7.2 Environmental Setting

The setting description below is taken from the OCTA Long Range Transportation Plan EIR (2006) and provides an overview of hazardous materials within Orange County. There are several ways in which the transportation-related use of hazardous materials poses a risk to residents in Orange County. Actual transport of hazardous materials via truck, rail, and other modes involves a degree of risk of accident and release. Since this is not a focused component of the Covered Activities in the Proposed Plan, hazardous material transport is not considered further below. The use of hazardous materials and the generation of hazardous waste in the construction and maintenance of the transportation system are other avenues of risk or exposure. Finally, the past disposal of hazardous materials in a manner that creates residual contamination of soil or water can be a source of risk when such sites are disturbed in the course of future transportation projects or associated development. These latter two exposure risk types are described further below.

3.7.2.1 Transportation System Maintenance and Construction

Solvents, architectural coatings (paints), and other hazardous materials are used in the construction and maintenance of the transportation system. Their use and storage is regulated by the California Occupational Safety and Health Administration (OSHA) and by local fire departments. Once these materials become wastes, they are regulated by DTSC. See the Regulatory Setting above for further discussion (OCTA 2006).

3.7.2.2 Contaminated Sites from Prior Known Hazardous Material Releases

Soil and groundwater can become contaminated by hazardous material releases in a variety of ways, including permitted or illicit use and accidental or intentional disposal or spillage. Before the 1980s, most land disposal of chemicals was unregulated, with the result that numerous industrial properties and public landfills became dumping grounds for unwanted chemicals. The largest and most contaminated of these sites, in general, became federal Superfund sites in the early 1980s, so named for their eligibility to receive cleanup money from a federal fund established for that purpose under CERCLA. Sites are added to the NPL following a hazard ranking system. EPA maintains this list of federal Superfund sites, as well as a more extensive list of all sites with potential to be listed known as CERCLIS (OCTA 2006).

Numerous smaller properties also have been designated as contaminated sites. Often these are gas station sites, where leaking underground storage tanks were upgraded under a federal requirement in the late 1980s. Another category of sites, which may have some overlap with the types already mentioned, is Brownfields, which are previously used, often abandoned sites that because of actual or suspected contamination are undeveloped or underused. Both EPA and DTSC maintain lists of known Brownfields sites on a Hazardous Waste and Substances Site List (also known as the Cortese List). These sites are often difficult to inventory due to their owners' reluctance to publicly label their property as potentially contaminated. Uncertainty as to cleanup levels and ultimate cleanup cost has stalled effective reuse of Brownfields sites by existing property owners. State legislation (SB 32, Escutia) adopted in 2001 establishes a locally based program to help speed the cleanup and reuse of Brownfields sites (OCTA 2006).

Several California environmental agencies maintain lists of properties that are contaminated or are otherwise associated with the use of hazardous materials, including the following.

The current known list of hazardous waste sites in Orange County is composed of state and federal databases. The sites that pose the most significant risk are those listed on the federal National Priority List. The NPL report is the EPA's registry of the nation's worst uncontrolled or abandoned hazardous waste sites. NPL sites are targeted for possible long-term remedial action under CERCLA. EPA may delete a final NPL site if it determines that no further response is required to protect human health or the environment (OCTA 2006).

Three NPL sites exist in Orange County. El Toro Marine Corps Air Station (MCAS) covers approximately 4,700 acres and is located off I-5 between Irvine and Mission Viejo. A total of 25 potentially contaminated areas have been identified on El Toro MCAS, including four landfills suspected of containing both hazardous and solid waste, and other areas where polychlorinated biphenyls (PCBs), battery acids, leaded fuels, and other hazardous substances were suspected of being dumped or spilled. El Toro was added to the NPL in 1990 due to trichloroethene (TCE) plume in regional groundwater extending three miles off-station. The base was officially closed in 1999 as a result of the federal 1993 Base Realignment and Closure (BRAC) process (OCTA 2006).

McColl Superfund Site is an inactive refinery-waste disposal facility covering approximately 22 acres in the northwest area of Fullerton. Complaints of odors and health problems by nearby residents initiated investigations by local, state, and federal agencies and led to the site's addition to the NPL in 1983. The site is currently undergoing remediation actions by the lead agencies (OCTA 2006).

The remaining federal sites in Orange County are regulated by the RCRA, defined above in the regulatory setting. The RCRA sites in Orange County comprise two nonexclusive lists divided between "Corrective Actions" (CORRACTS) sites and TSD facilities. CORRACTS sites are registered hazardous waste generators that are subject to corrective actions imposed by the EPA for noncompliance with RCRA laws and guidelines. There are 33 CORRACTS sites in Orange County. TSD facilities are registered facilities with the EPA that are responsible for treatment storage and disposal of hazardous material. There are 36 TSD facilities in Orange County (OCTA 2006).

The state lists include the Solid Waste Landfill (SWL) list and the state Annual Work Plan (AWP) sites. The SWL list is composed of the Solid Waste Information System (SWIS) database and the Waste Management Unit Database System (WMUDS) database. As legislated under the Solid Waste Management and Resource Recovery Act of 1972, the California Integrated Waste Management Board (CIWMB) maintains the SWIS, which lists certain facilities (e.g., active solid waste disposal sites, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites). There are 218 SWIS sites in Orange County, of which 34 are active, 131 are closed, 4 are listed as clean closed, 2 are planned, 43 are to be determined, and 4 are listed as no status. The State Water Board maintains the Waste Management Unit Database System (WMUDS). This database tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Listings on this database are not necessarily indicative of sites where a release of hazardous substances has occurred. As shown in Appendix D, there are 110 WMUDS sites in Orange County, of which 30 are active, 11 are historical, and 69 are listed as no status (OCTA 2006).

The California Environmental Protection Agency (CAL-EPA) maintains a list of Annual Work Plan sites as a subset of the Calsites database. Calsites are sites where a hazardous release has been confirmed and are considered to present the greatest risk to the public and environment. Annual

Work Plan sites are sites where the DTSC is actively working to remediate in a lead or supportive role. There are 10 Work Plan sites in Orange County. Former military installations comprise most of the Calsites inventory in this area. These sites include Tustin MCAS, El Toro MCAS (4,700 acres) in Irvine, Seal Beach Naval Weapons Stations, the Helicopter Outlaying Field at Mile Square Park in Fountain Valley, and the former Trabuco Bombing Range in Rancho Santa Margarita. Other sites are the Fieldstone Property (42 acres) adjacent to the Bolsa Chica Ecological Preserve in Huntington Beach and the closed Ascon Landfill (38 acres) in Huntington Beach. Both the McColl and El Toro MCAS Superfund sites are in this database, indicating that they are undergoing some form of remedial action (OCTA 2006).

3.8.1 Regulatory Setting

3.8.1.1 Federal Regulations

Clean Water Act

In 1972, Congress amended the federal Water Pollution Control Act, making the discharge of pollutants to the waters of the United States from any point source unlawful unless the discharge is in compliance with a NPDES permit. Congress has amended this act—known today as the CWA—several times. In the 1987 amendments, Congress directed dischargers of stormwater from municipal and industrial/construction point sources to comply with the NPDES permit scheme. Important CWA sections are described below.

- Sections 303 and 304 require states to promulgate water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit for conducting any activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. (Most frequently required in tandem with a Section 404 permit request. See below.)
- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the United States. RWQCBs administer this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and municipal separate storm sewer systems (MS4s).
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the USACE.

The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 USC 1251).

The EPA has granted the State of California primacy in administering and enforcing the provisions of the CWA and NPDES. NPDES is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter–Cologne Water Quality Control Act of 1969 (described below).

Placement of clean fill materials into waters of the United States is regulated by Section 404 of the CWA, which is administered by the USACE. Under the CWA, the RWQCB must issue Section 401 Water Quality Certification for a project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States.

Section 408 of the Rivers and Harbors Act

Pursuant to Section 408 of the RHA, the USACE regulates modifications to existing federal flood control facilities. If an M2 project proposes to modify a federal flood control facility, information detailing the proposed modification would be included in the request submitted by the applicant, OCTA, or Caltrans. Requests for activities to be authorized would be reviewed individually for compliance. The USACE Regulatory Division or Caltrans pursuant to SAFETEA-LU would coordinate with the USACE Section 408 Division to determine the need for a minor or major modification, and the appropriate notification would then be submitted by OCTA or Caltrans, as applicable.

3.8.1.2 State Regulations

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (i.e., liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the state include more than just waters of the United States, such as groundwater and surface waters not considered waters of the United States. Additionally, it prohibits discharges of "waste," as defined, and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by WDRs, which may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Board and RWQCBs are responsible for establishing the water quality standards (i.e., objectives and beneficial uses) required by the CWA and for regulating discharges to ensure compliance with the water quality standards. Details regarding water quality standards in a project area are contained in the applicable RWQCB Basin Plan. States designate beneficial uses for all water body segments and then set criteria necessary to protect these uses. Consequently, the water quality standards developed for particular water segments are based on the designated use and vary depending on such use. In addition, each state identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source controls, the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs specify allowable pollutant loads from all sources (i.e., point, non-point, and natural) for a given watershed.

Affected Watersheds and Beneficial Uses in the Plan Area

Covered Projects in the Plan Area occur within the Santa Ana River, San Juan Creek, and San Gabriel River watersheds. Tables 3.8-1 and 3.8-2 identify the watershed, hydrologic unit, hydrologic area, hydrologic subarea, and beneficial uses associated with covered freeway and restoration projects, respectively. Descriptions of the beneficial uses follow the tables.

Table 3.8-1. Covered Freeway Project Affected Watersheds and Beneficial Uses

M2 Project	Location	Watershed	Hydrologic Unit	Beneficial Uses
Project A	I-5 (SR-55 to SR-57)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 1 of Santiago Creek (Santiago HSA 801.12), other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	MUN, AGR, GWR, REC-1, REC-2, WARM, WILD, RARE
Project B	I-5 (I-405 to SR-55)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	GWR (I), REC-1(I), REC-2, WARM, WILD
Project C	I-5 (El Toro Interchange to SR-73)	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13), Oso Creek (Mission Viejo HA 901.20; Oso HSA 901.21)	AGR, IND, REC-1, REC-2, WARM, COLD, WILD
Project D	I-5 (Interchanges between El Toro and Avery Parkway)	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13)	AGR, REC-1, REC-2, WARM, WILD
Project E	SR-22 (Interchanges between Euclid and Harbor)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11)	AGR, GWR, REC-1, REC-2, WARM, WILD, RARE
Project F South	SR-55 (I-405 to I-5, not including Alton Over- crossing)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	GWR (I), REC-1(I), REC-2, WARM, WILD
Project F North	SR-55 (I-5 to SR-22)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 1 of Santiago Creek (Santiago HSA 801.12), other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	MUN, AGR, GWR, REC-1, REC-2, WARM, WILD, RARE

Location	Watershed	Hydrologic Unit	Beneficial Uses
SR-57 (N/Bound Orangewood to Katella)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11)	AGR, GWR, REC-1, REC-2, WARM, WILD, RARE
SR-57 (Lambert to Tonner Canyon)	San Gabriel River	Carbon Canyon Creek (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Anaheim HSA Split 845.61; La Habra HSA Split 845.62; Yorba Linda HSA Split 845.63)	MUN, GWR, REC-1, REC-2, WARM, WILD, RARE
SR-91 (SR-57 to SR-55, not including Tustin Ave Interchange)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11; Santa Ana Narrows HSA 801.13)	AGR, GWR, REC-1, REC-2, WARM, WILD, RARE
I-405 (SR-55 to I-605)	Santa Ana & San Gabriel River	Reach 1 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11); San Gabriel River Drainage (HU 845.63)	MUN, GWR, REC-1, REC-2, WARM, WILD, RARE
I-405 (I-5 to SR-55 and interchange at Lake Forest)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	GWR (I), REC-1(I), REC-2, WARM, WILD
	(N/Bound Orangewood to Katella) SR-57 (Lambert to Tonner Canyon) SR-91 (SR-57 to SR-55, not including Tustin Ave Interchange) I-405 (SR-55 to I-605) I-405 (I-5 to SR-55 and interchange at Lake	SR-57 (N/Bound Orangewood to Katella) SR-57 (Lambert to Tonner Canyon) SR-91 (SR-57 to SR-55, not including Tustin Ave Interchange) I-405 (SR-55 to I-605) Santa Ana	SR-57 Santa Ana Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11) SR-57 San Gabriel (Lambert to Tonner Botton) Canyon) Anaheim HSA Split 845.61; La Habra HSA Split 845.61; La Habra HSA Split 845.63) SR-91 (SR-57 Santa Ana Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11) SR-91 (SR-57 Santa Ana Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11); San Gabriel River Ana River HU 801.00; Lower Santa Ana River HU 801.10; East Coastal Plain HSA 801.11); San Gabriel River Drainage (HU 845.63) I-405 (I-5 to Santa Ana Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa HU 801.0

Table 3.8-2. Covered Restoration Project Affected Watersheds and Beneficial Uses

Restoration Project Site	Watershed	Hydrologic Unit	Beneficial Uses
Agua Chinon	Santa Ana	Reach 3 of Santiago Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	MUN (I), GWR (I), REC-1 (I), REC-2 (I), WARM (I), WILD (I)
Aliso Creek	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13)	AGR, REC-1, REC-2, WARM, WILD
Lower Silverado Canyon	Santa Ana	Silverado Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	MUN, GWR, REC-1, REC-2, WARM, WILD
West Loma	Santa Ana	Santiago Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	MUN, GWR, REC-1, REC-2, WARM, WILD
Chino Hills State Park	San Gabriel	Carbon Canyon Creek (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Yorba Linda HSA Split 845.63)	MUN, AGR, GWR, REC-1, REC- 2, WARM, WILD, RARE
Harriett Weider	Santa Ana	Reach 1 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11)	REC-1, REC-2, WARM (I), WILD (I)
(I) = Intermittent I = Interstate SR = State Route			

SR = State Route

Beneficial Use Categories

The OCTA Measure M2 Plan Area is located within the jurisdiction of two Regional Water Quality Control Boards; Sana Ana (Region 8) and San Diego (Region 9). The following Beneficial Uses have been identified for the Plan Area throughout each region, as defined within the Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin (SARWQCB 1995) (please note that although the following definitions are presented as described within the Region 8 Basin Plan, these definitions are contextually equivalent to the applicable Beneficial Use definitions as presented within the Region 9 Basin Plan):

Municipal and Domestic Supply (MUN) waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.

Agricultural Supply (AGR) waters are used for farming, horticulture or ranching. These uses may include, but are not limited to, irrigation, stock watering, and support of vegetation for range grazing.

Industrial Service Supply (IND) waters are used for industrial activities that do not depend primarily on water quality. These uses may include, but are not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection and oil well repressurization.

Groundwater Recharge (GWR) waters are used for natural or artificial recharge of groundwater for purposes that may include, but are not limited to, future extraction, maintaining water quality or halting saltwater intrusion into freshwater aquifers.

Water Contact Recreation (REC-1) waters are used for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses may include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing and use of natural hot springs.

Non-contact Water Recreation (REC-2) waters are used for recreational activities involving proximity to water, but not normally involving body contact with water where ingestion of water would be reasonably possible. These uses may include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing and aesthetic enjoyment in conjunction with the above activities.

Warm Freshwater Habitat (WARM) waters support warm water ecosystems that may include, but are not limited to, preservation and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.

Cold Freshwater Habitat (COLD) waters support cold water ecosystems that may include, but are not limited to, preservations and enhancement of aquatic habitats, vegetation, fish and wildlife, including invertebrates.

Wildlife Habitat (WILD) waters support wildlife habitats that may include, but are not limited to, the preservation and enhancement of vegetation and prey species used by waterfowl and other wildlife.

Rare, Threatened or Endangered Species (RARE) waters support the habitats necessary for the survival and successful maintenance of plant or animal species designated under state or federal law as rare, threatened or endangered.

NPDES Program

Construction General Permit

The Construction General Permit (CGP) (Order No. 2009-009-DWQ), adopted on September 2, 2009, effective on July 1, 2010, was amended on February 14, 2011 (Order No. 2010-0014-DWQ), and then again on July 17, 2012 (Order 2012-0006-DWQ), and is set to expire on September 2, 2014. The permit regulates stormwater discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater and/or are smaller sites that are part of a larger common plan of development. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in soil disturbance of at least one acre must comply with the provisions of the CGP. Construction activity that results in soil disturbances of less than 1 acre is subject to this CGP if there is potential for significant water quality impairment resulting from the activity, as determined by the RWQCB. Operators of regulated construction sites are required to develop SWPPPs to implement sediment, erosion, and pollution prevention control measures and to obtain coverage under the CGP.

The 2009 CGP separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases and based on potential erosion and transport to receiving waters. Requirements apply according to the risk level determined. For example, a Risk Level 3 (highest risk) project would require compulsory stormwater runoff pH and turbidity monitoring and, before and after construction, aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants would be required to develop and implement an effective SWPPP.

Caltrans Statewide MS4 Permit

Before July 1999, discharges from Caltrans MS4s were regulated by individual NPDES permits issued by the RWQCBs. On July 15, 1999, the SWRCB issued a statewide permit (Order No. 99-06-DWQ) that regulated all discharges from Caltrans MS4s, maintenance facilities, and construction activities. On September 19, 2012, the department's permit was re-issued (Order No. 2012-0011-DWQ) and became effective on July 1, 2013. All freeway improvement projects fall under the Caltrans statewide MS4 permit, and Caltrans' Storm Water Management Plan (SWMP) describes the procedures and practices used to reduce or eliminate the discharge of pollutants to storm drainage systems and receiving waters.

Section 401 Permitting

Under Section 401 of the CWA, any project requiring a federal license or permit that may result in a discharge to a water body must obtain a 401 certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 certification are CWA Section 404 permits issued by USACE. The 401 permit certifications are obtained from the appropriate RWQCB, dependent on the project location, and are required before USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as WDRs under the State Water Code that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals, that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Dewatering Activities

Care is required for the removal of nuisance water from a construction site (known as dewatering) because of the high turbidity and other pollutants associated with this activity. Santa Ana RWQCB's Order No. R8-2009-0003 NPDES NO.CAG998001, General Waste Discharge Requirements for Discharges to Surface Water Which Pose an Insignificant (de Minimis) Threat to Water Quality, covers discharges to surface water from dewatering activities.

3.8.2 Environmental Setting

3.8.2.1 Surface Hydrology

Water resources are affected by natural conditions such as annual precipitation variability, landform and flow patterns, and human activity. In the Orange County area, all waterways west of the Santa Ana Mountains ultimately reach the Pacific Coast. All streams, tributaries, and rivers have an associated watershed. The Santa Ana River watershed is the largest in Orange County, collecting surface runoff from 153.2 square miles. The Santa Ana River originates in the San Bernardino Mountains and passes through three counties and Central Orange County before emptying into the Pacific Ocean at the tidal prism in Huntington Beach. Many natural watercourses in Orange County have been altered by flood control or water supply improvements, particularly in urban areas. The Proposed Plan Area includes the entirety of Orange County and spans all of Orange County's 11 watersheds. Many of the watersheds are delineated into smaller subwatersheds or hydrologic units (HUs) that drain to specific water bodies or features. Watershed boundaries follow the major ridgelines around river channels and meet where the water flows out of the watershed, usually the mouth of a stream or river. Most streams in the region have surface water impoundments that capture and regulate flow. Surface water originates as snow melt, rainfall runoff, and runoff from imported water supplies. Average annual precipitation in Orange County is approximately 13 inches (Municipal Water District of Orange County 2004).

3.8.2.2 Groundwater Hydrology

Extensive groundwater basins underlie much of the region and are used for water supply in combination with imported water from State Water Projects. Groundwater production and drawdown in Orange County is influenced by human consumption and natural and artificial recharge. Groundwater quality in Orange County is degraded by infiltration of chemicals and salts from agricultural operations, saltwater intrusion, and the poor quality of imported water and surface runoff used for recharge of the groundwater basins. To help account for the large amounts of water withdrawn from Orange County aquifers, the Orange County Water District (OCWD) manages groundwater recharge through various measures to provide aquifers with maximized recharge capabilities. OCWD has recharge basins along the Santa Ana River, as well as rubber dams along the river to direct water into these basins, pumping stations, pipelines, and computerized systems to maximize aquifer recharge (OCWD Groundwater Recharge Operations 2008). In addition to groundwater recharge efforts, OCWD maintains groundwater replenishment systems that pump roughly 35 million gallons of treated wastewater daily into percolation basins for reintroduction into the county's aquifers (OCWD Groundwater Replenishment System 2003).

3.8.2.3 Flooding

The Orange County Flood Control Act of 1927 created the Orange County Flood Control District (OCFCD) to provide for the control and conservation of flood and storm waters, and to protect property and lives from flood damage. Since then an infrastructure of flood control channels, dams, retarding basins and pump stations have been constructed. (Orange County Public Works 2012a)

In 1968, the US Congress created the National Flood Insurance Program (NFIP). Community participation is voluntary. However, in order to receive funding from the Federal Emergency Management Agency (FEMA), it is a requirement for all communities to participate in the program; OCFCD is a long time participant in the program and administers the floodplains within the unincorporated areas of the county. Within the incorporated areas, Orange County's cities administer their floodplains. Since the creation of NFIP, OCFCD has worked cooperatively with Orange County's cities to reduce the floodplain within the County of Orange by constructing flood control facilities that provide 100-year flood protection. Such facilities typically traverse through the cities and ultimately outlet into the Pacific Ocean. (Orange County Public Works 2012a)

As Orange County continues to become more developed and, as such, increases the area of impervious surfaces in areas that once provided natural rainfall absorption, the use of flood control systems becomes increasingly important. The Santa Ana River Mainstream Project is being designed to provide flood control improvements along 75 miles of the Santa Ana River. The USACE, in conjunction with local communities, is designing and constructing flood protection measures, including habitat restoration, dams, levees, and drains. (Orange County Public Works 2012b)

3.8.2.4 Surface Water Quality

Surface water quality is affected by development and urbanization. Any activity in a watershed can affect water quality, quantity, and/or rate of movement. Pollutants in urban runoff can result in degradation of water quality. Different geographic areas in the Proposed Plan Area have different water quality issues, depending on land use activities in the watershed. Common water quality concerns in the area include coliform bacteria, sediments, trace metals, nutrients, and pesticides. Impaired water bodies are those that do not meet required water quality standards, as identified by Section 303(d) of the CWA.

Under Section 1602 of the California Fish and Game Code, CDFW regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. DFG has jurisdiction over riparian habitats (e.g., southern willow scrub) associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. The California Fish and Game Code requires a Streambed Alteration Agreement with DFG for projects affecting riparian and wetland habitats.

3.8.2.5 Groundwater Quality

Groundwater can become contaminated by a variety of water quality constituents. These include heavy metals, salts, pesticides, and an assortment of toxins. The northern portion of OCWD's groundwater basin is contaminated with industrially sourced VOCs, which have resulted in impacts on the shallow portion of the aquifer in the area (an 11-square-mile area located in the cities of

Fullerton and Anaheim). Due to this contamination, this shallow portion of the aquifer is not suitable as a source of drinking water. Affected drinking water wells in the city of Fullerton have been decommissioned to prevent the use of this water for unsuitable purposes. Additionally, OCWD has implemented the North Basin Groundwater Protection Project to protect drinking water supplies.

3.9.1 Regulatory Setting

Both the County of Orange and the City of Brea are considered in this regulatory setting because Preserve Areas in the Proposed Plan would be located within the purview of these two local jurisdictions.

3.9.1.1 Applicable Plans and Policies

County of Orange General Plan

The County of Orange adopted its general plan in March 2011 (County of Orange 2011a). The Land Use Element of the general plan describes "objectives, policies, and land use patterns" (County of Orange 2011a, Chapter III) for all unincorporated territory, including the Foothill/Trabuco Specific Plan Area, which is where four properties (Saddle Creek South, Ferber Ranch, O'Neill Oaks, and Hafen) were acquired for the NCCP/HCP Preserve. The specific plan area is located north of the city of Rancho Santa Margarita and east of the city of Lake Forest.

The specific plan identifies *land use districts* and *land use categories* for each property in the Plan Area. The Saddle Creek South property is identified as the "Upper Aliso Residential (UAR) District," with an allowable density of 4 acres per dwelling unit (0.25 unit per acre). The other three properties are identified as the "Trabuco Canyon Residential (TCR) District," with the exception of a small site in Ferber Ranch, which is identified as a "Public/Quasi-Public Facilities (PQF) District" (County of Orange n.d., "Foothill/Trabuco Specific Plan: Land Use Districts"). The three properties are within residential land use categories that allow of 4 acres per dwelling unit (0.25 unit per acre), except for approximately 160 acres of Ferber Ranch, which are designated for 2 acres per dwelling unit (0.5 unit per acre).

According to the specific plan, both UAR and TCR districts are intended "... to provide for the development and maintenance of low-density, single-family residential development in a manner that is rural in character and compatible with areas of steep to gently sloping terrain and significant biological resources" (County of Orange 1991:III-32 and III-45).

The general plan has a Resources Element that "sets forth a comprehensive strategy for the development, management, preservation, and conservation of resources," including vegetation and wildlife habitats (County of Orange 2011a:VI-16). However, the four acquired properties are not identified under the Resources Element as Open Space/Conservation Areas (County of Orange 2011a, Figure VI-5).

City of Brea General Plan and Amendment

The City of Brea adopted its current general plan in 2003. The eastern area of the city, where one of the acquired properties (Hayashi property) for the NCCP/HCP Preserve is located, was identified in the 2003 general plan as the Carbon Canyon Specific Plan Area. This area is subject to the goals and policies of the specific plan. In 2007, however, the city repealed the specific plan and

adopted a general plan amendment, designating certain private lands in the Carbon Canyon area, including the Hayashi property, that were not already developed or designated as Open Space as Hillside Residential (City of Brea 2007a, 2007b).

The Hillside Development Policy of the City of Brea General Plan is intended to protect the open space character of the city's hillsides, particularly in the Carbon Canyon area, while preserving economic value for private owners. Allowed densities on lands designated as Hillside Residential vary from 0.05 unit per acre (i.e., one unit per 20 acres) to 2.2 units per acre, depending on slope. The environmental impact report prepared for the general plan amendment estimated that approximately 1,153 acres of private lands in Carbon Canyon would be designated as Hillside Residential and that allowable development on these lands would total 103 residential units, including 15 for the Hayashi property (City of Brea 2006, Appendix H).

Department of Transportation Act of 1966

Section 4(f)

The Department of Transportation Act (DOT Act) of 1966 included a special provision—Section 4(f)—thawhich stipulates that the FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites for transportation projects unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.

Section 4(f) applies to projects that receive funding from or require approval by an agency of the U.S. DOT. Before approving a project that uses Section 4(f) property, FHWA must determine that there is no feasible and prudent alternative that avoids the Section 4(f) properties and that the project includes all possible planning to minimize harm to the Section 4(f) properties; or FHWA makes a finding that the project has a de minimis impact on the Section 4(f) property. When appropriate, covered freeway improvement projects would be evaluated per Section 4(f) requirements.

Section 6(f)

State and local governments often obtain grants through the Land and Water Conservation Fund Act (LWCFA) to acquire or make improvements to parks and recreation areas. Section 6(f) of this act prohibits the conversion of property acquired or developed with these grants to uses other than public outdoor recreation without the approval of the Department of the Interior's (DOI) National Park Service (NPS). DOI has delegated most review, consultation, and assessment of Section 6(f) impacts and conversions to specified state recreation offices. When acquisition is required, Section 6(f) directs DOI to assure that replacement lands of at least equal fair market value and of reasonably equivalent usefulness and location are provided as a condition of such conversions. Consequently, where conversions of Section 6(f) lands are proposed for highway projects, replacement lands are required.

Because it is not uncommon for recreational properties to receive the LWCFA funding, Section 6(f) may be an integral part of Section 4(f) when recreational properties are involved. When dealing with Section 4(f) parks and recreation areas, it is critical to determine if the properties were acquired or improved with the LWCFA funds, and if so, the specifics of the improvements or property acquisition.

While Section 6(f) is similar to the recreation-related provisions of Section 4(f), there are some key differences. Whereas Section 4(f) applies only to programs and policies undertaken by the U.S. DOT, Section 6(f) applies to programs and policies of any federal agency. Moreover, mitigation opportunities are more flexible under Section 4(f) and may or may not include replacement lands. Section 6(f) directs the NPS to assure that replacement lands are of equal value, location, and usefulness as impacted lands.

3.9.2 Environmental Setting

Orange County holds the distinction of being both the smallest county in Southern California and the state's second most populous county, behind Los Angeles and ahead of San Diego. The result of this combination is reflected in the landscape; nearly 60% of Orange County is developed or otherwise altered. There is no defined urban center in the county; it is mostly suburban, with the exception of some traditionally urban areas at the centers of the older cities of Anaheim, Santa Ana, Orange, Huntington Beach, and Fullerton. The majority of Orange County's population resides in one of two shallow coastal valleys, the Santa Ana Valley and Saddleback Valley. Orange County is bordered by Los Angeles County—the nation's most populous county—to the north, San Bernardino and Riverside Counties to the northeast and east, San Diego County to the southeast, and the Pacific Ocean to the west.

Substantial portions of the County are devoted to residential housing of various types (approximately 21 percent of unincorporated areas). Commercial, industrial, and public institutional uses account for only 2.8 percent of the County's unincorporated land area total. Another approximately 77 percent of the County's unincorporated land is dedicated to open space and recreation (excluding the additional lands falling within Cleveland National Forest).

Of the approximately 511,200-acre Plan Area, roughly 211,000 acres are undeveloped, natural habitat. Of this natural habitat, approximately 147,700 acres (approximately 70%) are currently protected (Figure 2-3). These areas vary in size, ranging from urban parks to National Forest land, and are described below.

3.9.2.1 Federal

United States Department of Agriculture Forest Service

The U.S. Department of Agriculture (USDA) Forest Service administers 193 million acres of forests and grasslands. The Forest Service owns and manages the 460,000-acre Cleveland National Forest (CNF), the southernmost national forest in California. The CNF is divided into three ranger districts: Descanso (San Diego County), Palomar (San Diego County), and Trabuco (Orange County). Within the Plan Area, much of the Santa Ana Mountains is managed by the Trabuco Ranger District.

The Plan Area includes approximately 51,000 acres of the CNF, consisting of 2 of the 11 geographical units making up the forest. These geographical units are referred to as "Places" in the CNF Land Management Plan and are defined by landscape character (Forest Service 2005). The two units, Silverado Place and San Mateo Place, support a number of threatened, endangered, and sensitive species, including the arroyo toad (*Bufo californicus*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), and a number of plant species; and provides habitat linkages for several Orange County parks (U.S. Forest Service 2005).

The Forest Service also administers the San Mateo Canyon Wilderness Area, located in the southern portion of the San Mateo Place. Approximately 1,900 acres of this 38,484-acre wilderness area is found within the Plan Area. The Wilderness Act of 1964 requires wilderness areas to be managed such that they are "unimpaired for the future use and enjoyment as wilderness." To this end, motorized equipment and equipment used for mechanical transport are generally prohibited within San Mateo Canyon.

Forest Service lands are not protected by irrevocable easements; therefore, the Proposed Plan does not include USDA forestlands as part of a permanent Preserve System; however, the Proposed Plan evaluates opportunities to complement and enhance the existing CNF network of conserved lands.

U.S. Fish and Wildlife Service

The USFWS administers the Seal Beach National Wildlife Refuge (NWF) to provide quality habitat for migrant waterfowl, shorebirds, and other water birds, including the endangered California least tern (*Sterna antillarum browni*) and light-footed clapper rail (*Rallus longirostris levipes*). The refuge is located within the Seal Beach Naval Weapons Station and comprises 965 acres of saltwater marsh in the Anaheim Bay estuary. The Proposed Plan does not include the Seal Beach NWF as part of the permanent Preserve System; however, the Proposed Plan evaluates opportunities to complement and enhance the existing Seal Beach NWF network of conserved lands.

United States Marine Corps

Covering approximately 125,000 acres, Camp Pendleton is the Marine Corps' largest West Coast training facility. Camp Pendleton contains the largest undeveloped portion of coastline in Southern California. The ecosystem includes beaches, bluffs, mesas, canyons, and mountains, as well as Southern California's only free-flowing river. More than 1,000 species of plants, fish, and animals are found in Camp Pendleton, some of which are either threatened or endangered. Although the base is located within San Diego County, it serves as a natural border between Orange and San Diego Counties. The Proposed Plan does not include Camp Pendleton as part of the permanent Preserve System; however, the Proposed Plan evaluates opportunities to complement and enhance the existing Camp Pendleton network of natural lands.

Federal Bureau of Investigation

Covering approximately 1,033 acres, the former El Toro Marine Corps Air Station recently underwent a 900-acre transfer of custodianship from the Federal Aviation Administration to that of the Federal Bureau of Investigation (FBI), which needs to maintain adequate law enforcement training facilities for the bureau and its law enforcement partners in Southern California. The El Toro property has high conservation value for the gnatcatcher and other sensitive habitats and species and is an important component of habitat connectivity within the Central Subarea.

3.9.2.2 State

California Department of Fish and Wildlife

CDFW is one of three government entities (in addition to Orange County Parks and the City of Newport Beach) responsible for management of the public open space in and around the Upper Newport Bay. Specifically, CDFW is responsible for management of the 752-acre Upper Newport Bay

Ecological Reserve, which consists primarily of tidelands and certain adjacent upland areas, and is one of Southern California's few remaining estuaries in addition to being a saltwater marsh habitat. The reserve provides habitat for almost 200 species of birds and is a major flyway for migratory birds. The entire ecological reserve falls within the Plan Area.

CDFW also administers the Bolsa Chica Ecological Reserve in Huntington Beach. This ecological reserve is designated by CDFW to protect coastal wetland habitat and threatened and endangered species. The reserve's approximately 1,300 acres are bounded by Warner Avenue to the north, Seapoint Avenue to the south, Pacific Coast Freeway to the west, and residential development to the east.

Coal Canyon Ecological Reserve is located 11 miles west of Corona, just off the 91 freeway in Orange County. This ecological reserve, which encompasses 953 acres, is sandwiched between the Cleveland National Forest to the east, Chino Hills State Park to the north, and the Irvine Ranch Land Reserve to the south. Nestled in the Santa Ana Mountains, the reserve's vegetation is predominantly chaparral and chamise-chaparral. The reserve supports the last remaining stand of Tecate cypress (*Cupressus forbesii*) in Orange County, a rare and endemic species that is restricted to Southern California in several small, disjunct populations.

Laguna Laurel is a 77-acre ecological reserve that is owned and managed by CDFW. The reserve is located in the Laguna Canyon area of the city of Laguna Beach. Access is provided solely through Laguna Coast Wilderness Park, which is managed by Orange County Parks. This ecological reserve, which is part of one of the last remaining coastal canyon areas in Southern California, is composed of coastal sage scrub communities with oak and sycamore woodlands.

The CDFW-owned Hafen property, which encompasses 100 acres of conserved open space, is located in rural Trabuco Canyon in southeastern Orange County, within the foothills of the Santa Ana Mountains. This property is sandwiched between the OCTA-purchased 48-acre Hafen property and the 399-acre Ferber Ranch property. It supports extensive oak woodlands, chaparral, coastal sage scrub, grassland, and riparian areas and includes major ridgelines and riparian corridors of Arroyo Trabuco/Trabuco Creek, the headwaters of which are in the nearby Cleveland National Forest. This property provides a low-elevation habitat linkage between the Southern Subregion HCP and the Central-Coastal Subregion NCCP/HCP to the north and is expected to support gnatcatchers, cactus wrens, intermediate Mariposa lily, and Matilija poppy.

California Department of Parks and Recreation

The California Department of Parks and Recreation (State Parks) manages more than 270 park units throughout California, totaling nearly 1.4 million acres. State Parks owns seven parks that occur within the Plan Area. Four of these properties (Corona Del Mar, San Clemente, Bolsa Chica, and Doheny) are state beaches primarily used for recreation and contain little ecological value. The remaining three ecologically significant state parks in the Plan Area are discussed below.

Huntington State Beach

Stretching from Beach Boulevard in Huntington Beach south to the Santa Ana River, Huntington State Beach is an important nesting sanctuary for the California least tern and provides habitat for the federally threatened western snowy plover (*Charadrius alexandrinus nivosus*). The park is composed of approximately 100 acres of Southern California coastline. The popular park also supports extensive recreational opportunities. Huntington Beach Wetlands (118 acres of wetland

habitat), owned by the Huntington Beach Wetlands Conservancy, is located adjacent to the beach, on the east side of the PCH.

Crystal Cove State Park

Crystal Cove State Park is located off the PCH, between Corona del Mar and Laguna Beach. The park is composed of approximately 2,800 acres of coastline, wooded canyons, open bluffs, and offshore waters and supports a wide variety of sensitive, threatened, and endangered species.

Chino Hills State Park

Chino Hills State Park encompasses 14,102 acres in the hills of Santa Ana Canyon, with portions of the park found in Orange, Riverside, and San Bernardino Counties. Ranging from 430 feet to 1,781 feet in elevation, the park straddles the north end of the Santa Ana Mountains and the southeast portion of the Puente-Chino Hills, which together form the northern end of the Peninsular Ranges in Southern California. This formation interrupts the generally flat Los Angeles Basin with a variety of rolling hills, mountains, and canyons on its south and east sides. Nearly 5,200 acres of the park occur within the Plan Area. The park serves as a critical link in the Puente-Chino Hills biological corridor. Three habitat linkages—Coal Canyon, Sonome Canyon, and Prado Basin—have been identified as important to the biological survival of the park (Chino Hills General Plan 1999). The southern park boundary is less than 1 mile from the CNF boundary. The park supports 14 different vegetation series (dominated by grasslands), three known sensitive plant taxa, and 23 documented sensitive wildlife taxa (Chino Hills General Plan 1999).

3.9.2.3 Local

Orange County Central-Coastal Natural Community Conservation Plan/Habitat Conservation Plan

The Orange County Central-Coastal NCCP/HCP has a 75-year permit, which was issued on July 10, 1996. The geographic area of the NCCP/HCP encompasses 208,000 acres (Figure 1-3). The NCCP/HCP provides coverage for 39 species, including six federally listed species. The plan has a reserve system totaling 37,378 acres that consists primarily of coastal sage scrub. Other important vegetation communities found in the reserve include oak woodland, native grassland, chaparral, Tecate cypress, and riparian communities. The reserve system is broken up into two approximately equal sections. The Coastal Reserve extends from Newport Bay through Dana Point and northward to Irvine. The Central Reserve is located in the foothills of Orange County and extends north of Irvine to the Santa Ana River. A 501(c)(3) nonprofit corporation, the Nature Reserve of Orange County (NROC) was formed to manage the Orange County Central-Coastal NCCP/HCP and ensure the persistence of the reserve's natural communities.

Southern Subregion Habitat Conservation Plan

The Orange County Southern Subregion HCP has a 75-year permit, which was issued on January 10, 2007. The geographic area of the HCP encompasses 132,000 acres (see Figure 1-3). The HCP provides coverage for 32 species, including seven federally listed species. The plan creates a preservation area totaling 32,818 acres in the southern portion of the county. The preserve area includes large swaths of adjoining property owned by the family-held Rancho Mission Viejo (16,536 acres) as well as a portion of Orange County (11,950 acres). The preserve system includes

sensitive vegetation communities, including coastal sage scrub, grasslands, and oak woodlands, as well as important watersheds, including major portions of San Juan Creek and San Mateo Creek watersheds. The non-profit Rancho Mission Viejo Land Conservancy was formed to ensure long-term management and monitoring of biological resources in the preservation area through implementation of a Habitat Reserve Management Program (HRMP).

Private Conservation Areas

A variety of privately owned and/or privately managed conservation areas have been established within the Plan Area. Significant private conservation areas are listed by ownership and described below.

National Audubon Society

The National Audubon Society owns and manages the 4,000-acre Starr Ranch Sanctuary, which is located in the foothills of the Santa Ana Mountains in southeastern Orange County. The sanctuary is bordered by the CNF to the north and east, the Ronald W. Caspers Regional Park to the south, and the Dove Canyon and Coto de Caza developments to the west. The mission of the Starr Ranch Sanctuary is to offer innovative approaches to land management and environmental education that will influence the way Orange County citizens appreciate, conserve, and manage wildlands.

The Trust for Public Land

Founded in 1972, The Trust for Public Land (TPL) has completed more than 4,250 park and conservation projects totaling more than 3 million acres (TPL 2011). Within the Plan Area, TPL owns and manages the 717-acre Baker Canyon. The property supports a variety of vegetation communities, including chaparral, nonnative grasslands, and riparian habitats. The property was acquired by TPL using Proposition 12 (Parks Bond Act) funds, which allocated funds for acquisition of lands for watershed or habitat protection. Thus, the property is managed primarily for the benefit of wildlife and habitats.

The Irvine Company

The Irvine Company owned the 93,000-acre Irvine Ranch, which stretches 9 miles along the coast (north and south) and 22 miles inland to the boundary of the CNF. Approximately 50,000 acres of the ranch have been permanently protected as open space. The City of Irvine lies in the middle of Irvine Ranch and separates coastal and inland open space. The Irvine Ranch Conservancy was established in 2005 to assist in the management of the permanently protected wildlands and parks on the historic Irvine Ranch (Irvine Ranch Conservancy 2011). Recently, The Irvine Company donated more than 20,000 acres of the Irvine Ranch to Orange County Parks (see M2 NCCP/HCP Table 2-2, "Open Space Managed by Orange County Parks"). Although day-to-day management will remain the responsibility of the Irvine Ranch Conservancy, land management will be conducted under the oversight of Orange County Parks (Irvine Ranch Open Space Interim Operations Plan). Seven distinct open space units—Fremont Canyon, Black Star Canyon, Weir Canyon, Gypsum Canyon, Laguna Laurel, Limestone Canyon, and Loma Ridge East—are found within the Irvine Ranch Open Space and the Plan Area.

The Wildlands Conservancy

The Wildlands Conservancy (TWC) owns and operates California's largest non-profit preserve system, totaling more than 145,000 acres (TWC 2011). Two TWC preserves, Hidden Ranch and Big Oak Canyon, are found within the Plan Area. Hidden Ranch was acquired using Proposition 12 (Parks Bond Act) funds and is managed primarily for the benefit of wildlife and habitats. Big Oak Canyon currently has no management restrictions.

Development HCPs

The Coyote Hills East HCP was permitted by Chevron USA under Section 10(a) of the Endangered Species Act. Located in the city of Fullerton, this project included construction of a golf course and homes and maintenance of oil infrastructure while restoring 120 acres of coastal sage scrub for the resident California gnatcatcher population. Revegetation included retention of native soils, mulching, planting, seeding and regular maintenance for weed abatement, plant replacement, and pest control. Another HCP in Orange County is the Shell – Metropolitan Water District HCP in Brea.

Orange County Parks

The vision statement of Orange County Parks is to preserve Orange County's parks in perpetuity for the recreation, education, and inspiration of all visitors (County of Orange, Resources and Development Management Department 2007 [Orange County Parks Strategic Plan]). Orange County Parks manages nearly 60,000 acres of county-owned land, including roughly 32,000 acres of urban and wilderness parks, 7 miles of beaches and other coastal facilities, and 27,000 acres of open space lands.

City Parks

Orange County cities within the Plan Area support a network of parks and open space. The majority of these parks are managed for intensive recreational use and include such features as athletic facilities, community centers, turf fields, picnic areas, and trails. However, there are several city-owned parks that provide valuable habitat for sensitive and threatened and endangered species, including, but not limited to, Buck Gully (in Newport Beach), Fairview Park (Costa Mesa), Bommer Canyon (Irvine), and Salt Creek Regional Park (Laguna Niguel).

3.10.1 Terminology

Noise is defined as unwanted sound. It may be loud, unpleasant, unexpected, or undesired sound associated with human activity that interferes with or disrupts the normal noise-sensitive activities of others. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance and suitability of the noise in a particular setting, the time of day and type of activity during which the noise occurs, and the sensitivity of the individual. The response to vibration is similar. First, the vibration needs to be of sufficient magnitude to be perceived, and second, it typically needs to interfere with a desirable activity to cause annoyance.

Sound is a physical phenomenon. Minute vibrations travel through a medium such as air and are sensed by the human ear. Sound is characterized by frequency and intensity. Frequency describes the sound's pitch and is measured in hertz (Hz); intensity describes the sound's level, volume, or loudness and is measured in decibels (dB). Sound frequency is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a certain number of times per second. Vibration of the drum skin at a rate of 100 times (or cycles) per second generates a sound pressure wave that is said to be oscillating at 100 Hz, and this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the best human ear.

Sound from a tuning fork contains a single frequency and, therefore, may be referred to as a *pure tone*. However, most sounds heard in the environment do not consist of a single frequency but rather a broad band of frequencies with differing sound levels. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects human hearing (i.e., less sensitive at low frequencies and extremely high frequencies than at mid-range frequencies). This frequency-dependent modification is called A-weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source can be conveniently measured using a sound level meter that includes a filter that corresponds to the dBA curve.

For informational purposes, typical community sound levels are presented in Table 3.10-1. A sound level of 0 dBA is approximately the threshold of human hearing and barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

Table 3.10-1. Typical Community Sound Levels

COMMON OUTDOOR	NOISE LEVEL	COMMON INDOOR
COMMON OCTOOR	NOISE LEVEL	COMMON INDOOR
ACTIVITIES	dBA	ACTIVITIES
	110	Rock Band
Jet Fly-over at 300 m (1000 ft)		
	100	
Gas Lawn Mower at 1 m (3 ft)		
	90	
Diesel Truck at 15 m (50 ft),		Food Blender at 1 m (3 ft)
at 80 km/hr (50 mph)	80	Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime		
Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area		Normal Speech at 1 m (3 ft)
Heavy Traffic at 90 m (300 ft)	60	
Out to Hate a Department	50	Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Outet Linken Nighttime	40	Theaten Laga Conference
Quiet Urban Nighttime Quiet Suburban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nightunie	30	Library
Quiet Rural Nighttime	30	Bedroom at Night, Concert
Quiet Rurai rugittime	20	Hall (Background)
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human	0	Lowest Threshold of Human
Hearing		Hearing

Source: Caltrans 1998.

The minimum change in the sound level of individual events considered barely detectable in a community environment is approximately 3 dBA. A change of 5 dBA is considered readily perceptible, while a change in sound level of 10 dBA is usually perceived by the average person as a doubling (or halving) of the sound's loudness. This relation holds true for loud sounds and for quiet sounds. Because of the logarithmic scale of the decibel unit, sound levels cannot be added or subtracted arithmetically and are somewhat cumbersome to handle mathematically. However, a simple rule of thumb is useful in dealing with sound levels: If a sound's physical intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example, 60 dB plus 60 dB equals 63 dB, and 80 dB plus 80 dB equals 83 dB. As mentioned earlier, however, a perception of doubling in the sound level requires about a 10-decibel increase.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a mixture of noise from distant sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor, called the equivalent sound level (L_{eq}), is used to describe the average acoustical energy in a time-varying sound. L_{eq} is the energy-mean A-weighted sound level present or predicted to occur during a specified interval. It is the "equivalent" constant sound level that a given source would need to produce to equal the fluctuating level of measured sound. It is often desirable to also know the range of acoustic levels of the noise source being measured. This is accomplished through the L_{max} and L_{min} noise descriptors. These represent the root-mean-square maximum and minimum obtainable noise levels measured during the monitoring interval. The L_{min} value obtained for a particular monitoring location represents the quietest moment occurring during the measurement period and is often called the *acoustic floor* for that location. Likewise, the loudest momentary sound during the measurement is represented by L_{max} .

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10} , L_{50} , and L_{90} (or other percentile values) may be used. These are the noise levels equaled or exceeded 10%, 50%, and 90% of the time, respectively, during the measured interval. The percentile descriptors are most commonly used in nuisance noise ordinances to allow for different noise levels during various portions of an hour. For example, the L_{50} value would represent 30 minutes of a 1-hour period, L_{25} would represent 15 minutes of an hour, and so on.

Of particular interest in this analysis are the other descriptors of noise that are commonly used to determine noise/land use compatibility and predict the average community reaction to adverse effects of environmental noise, including traffic-generated and industrial noise. One of the universal descriptors is the day-night average sound level (DNL or L_{dn}). Because of state health department and state planning law recommendations, this descriptor is used by planning agencies. The L_{dn} noise metric represents a 24-hour period and applies a time-weighted factor to penalize noise events that occur during nighttime hours when relaxation and sleep disturbance are of more concern than they might be during daytime hours. Noise occurring during daytime hours (i.e., between 7 a.m. and 10 p.m.) receives no penalty. Noise occurring between 10 p.m. and 7 a.m. is penalized by adding 10 dB to the measured level. In California, the use of the community noise equivalent level (CNEL) descriptor is permitted (and used by the County of Orange). CNEL is similar to L_{dn} , except CNEL adds a 5 dB penalty for noise occurring during evening hours (i.e., between 7 p.m. and 10 p.m.).

3.10.2 Regulatory Setting

3.10.2.1 Federal Regulations

Federal Highway Administration

For highway projects with FHWA (and Caltrans as assigned) involvement, Title 23, Part 772 of the Code of Federal Regulations (23 CFR 772) provides procedures for conducting highway project noise studies and implementing noise abatement measures to help protect the public health and welfare, supply noise abatement criteria (NAC), and establish requirements for information to be given to local officials for use in planning and designing highways. Under this regulation, noise abatement must be considered for a Type 1 project if the project is predicted to result in a traffic noise impact. A traffic noise impact is considered to occur when the project results in a substantial noise increase or when the predicted noise levels approach or exceed the NAC specified in the regulation (OCTA 2006).

Title 23, Part 772 of the Code of Federal Regulations does not specifically define what constitutes a substantial increase or the term approach; rather, it leaves interpretation of these terms to the states. Standards and policies relating to traffic noise are discussed in detail in the Traffic Noise Analysis Protocol (Protocol), which was updated in May 2011. The Protocol addresses the following main topics.

- Type I: new construction or reconstruction projects
- Type II: retrofit noise abatement projects
- Noise documentation
- Liaison with local agencies

• CEQA and NEPA considerations

Projects that do not have a completed noise study signed and approved by Caltrans (or FHWA for non-delegated projects) by July 13, 2011, will be required to comply with this updated Protocol and the updated regulation. If a project is modified such that a NEPA reevaluation and new noise study are required, the Protocol and regulation in place at that time must be used.

Other Federal Guidance

Among other guidance, the Noise Control Act of 1972 directed EPA to develop noise-level guidelines that protect Americans from the adverse effects of environmental noise. EPA published a guideline (EPA 1974) that recommended 55 dBA Ldn and 45 dBA Ldn as outdoor and indoor goals, respectively, for residential land uses. The agency is careful to stress that the recommendation contains a factor of safety and does not consider technical or economic feasibility issues. Therefore, it should not be construed as a standard or regulation.

The Department of Housing and Urban Development (HUD) standards define Ldn levels below 65 dBA outdoors as acceptable for residential uses. Outdoor levels up to 75 dBA Ldn may be made acceptable through the use of building insulation. Additionally, the Occupational Safety and Health Administration (OSHA) regulates workers' exposure to occupational noise.

3.10.2.2 State Regulations

California Code of Regulations Title 24

The pertinent State of California regulations are contained in the California Code of Regulations. Title 24 (Noise Insulation Standards) establishes the acceptable interior environmental noise level (45 dBA L_{dn}) for multifamily dwellings. However, this may be extended by local legislative action to include single-family dwellings. Section 65302(f) of the California Code of Regulations requires local land use planning jurisdictions to prepare a general plan. A noise element is a mandatory component of a general plan and may include general community noise guidelines developed by the California Department of Health Services or specific planning guidelines for noise/land use compatibility developed by the local jurisdiction. The state guidelines also recommend that the local jurisdiction consider adopting a local nuisance noise control ordinance. The California Department of Health Services has developed guidelines (1987) for community noise acceptability for use by local agencies. Selected relevant levels are as follows (L_{dn} /DNL may be considered nearly equal to CNEL):

- CNEL below 60 dBA—normally acceptable for low-density residential use.
- CNEL of 55 to 70 dBA—conditionally acceptable for low-density residential use.
- CNEL below 65 dBA—normally acceptable for high-density residential use.
- CNEL of 60 to 70 dBA—conditionally acceptable for high-density residential, transient lodging, church, educational, or medical facility uses.
- CNEL below 70 dBA—normally acceptable for playgrounds and neighborhood parks.

Normally acceptable is defined as satisfactory for the specified land use, assuming that normal conventional construction is used in buildings. *Conditionally acceptable* may require some additional noise attenuation or special study. Under most of these land use categories, overlapping ranges of

acceptability and unacceptability are presented, leaving some ambiguity in areas where noise levels fall within the overlapping range.

The State of California regulates the noise emission levels of licensed motor vehicles traveling on public thoroughfares and sets noise emission limits for certain off-road vehicles and watercraft as well as warning signals for light-rail transit vehicles. The extensive state regulations pertaining to worker noise exposure are, for the most part, applicable only to the construction phase of a project (e.g., California Occupational Safety and Health Administration [Cal/OSHA] Occupational Noise Exposure Regulations [8 CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure, Section 5095, et seq.]) or workers in a "central plant" and/or a maintenance facility or involved in the use of landscape maintenance equipment or heavy machinery.

California Streets and Highways Code, Section 216

Section 216 of the California Streets and Highways Code relates to the noise level produced by the traffic on, or by the construction of, a State freeway measured in the classrooms, libraries, multipurpose rooms, and spaces used for pupil personnel services of a public or private elementary or secondary school. The code states that if the interior noise level produced by freeway traffic or the construction of a freeway exceeds 52 dBA Leq, Caltrans shall undertake a noise abatement program in any such classroom, library, multipurpose room, or space used for pupil personnel services to reduce the freeway traffic noise level therein to 52 dBA Leq or less by measures including but not limited to installing acoustical materials, eliminating windows, installing airconditioning, or constructing sound baffle structures (OCTA 2006).

3.10.2.3 Local Regulations

Local Jurisdictions Potentially Affected by Covered Freeway Improvement Projects, Biological Mitigations, or Conservation Activities

As discussed in the OCTA's LRTP, the County of Orange and each of the cities within the County have established Noise Elements within their General Plans that list acceptable transportation noise levels for sensitive receptor locations.

The County of Orange has adopted local guidelines that are based, in part, on the community noise compatibility guidelines established by the California Department of Health Services for use in assessing the compatibility of various land use types with a range of noise levels. These guidelines are set forth in the County's general plan Noise Element (Table 3.10-2), which shows applicable noise levels according to land use type.

The Orange County Noise Ordinance (Orange County Municipal Code, Title 4, Division 6, Article 1) sets noise limits according to zoning district and the change from the ambient level. Noise from construction activities is also regulated by Title 4, Division 6, Article 1, of the Orange County Municipal Code, which states the following noise sources are exempted from the provisions of the Municipal Code, Division 6 Noise Control, Article 1 General Provisions:

(e) Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 8 p.m. and 7 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

The Noise Elements established by each of the cities within the county are generally consistent with the County of Orange's Noise Element of the General Plan discussed above (OCTA 2006). Cities located near covered freeway improvement projects include Brea, Placentia, Fullerton, Anaheim, Peralta Cliffs, Atwood, Olive, Cerro Villa Heights, Orange, Panorama Heights, Tustin, Browning, Santa Ana, Garden Grove, Westminster, Midway City, South Santa Ana, Irvine, Laguna Hills, El Toro, Mission Viejo, Laguna Niguel, San Juan Capistrano, and San Clemente.

Table 3.10-2. County Land Use Compatibility Matrix for Land Use and Community Noise Equivalent Levels

Type of Land Use	65+ decibels CNEL	60 to 65 decibels CNEL
Residential	3a, b, e	2a. e
Commercial	2c	2c
Employment	2c	2c
Open Space		
Local	2c	2c
Community	2c	2c
Regional	2c	2c
Educational Facilities		
Schools (K-12)	2c, d, e	2c, d, e
Preschool, college, other	2c, d, e	2c, d, e
Places of worship	2c, d, e	2c, d, e
Hospitals		
General	2a, c, d, e	2a, c, d, e
Convalescent	2a, c, d, e	2a, c, d, e
Group quarters	1a, b, c, e	2a, c, e
Hotel/motels	2a, c	2a, c
Accessory Uses		
Executive apartments	1a, b, e	2a, e
Caretakers	1a, b, c, e	2a, c, e

Source: County of Orange 2005.

^{1 =} Allowed if interior and exterior community noise levels can be mitigated.

^{2 =} Allowed if interior levels can be mitigated.

^{3 =} New residential uses are prohibited in areas within the 65-decibel CNEL contour of any airport or air station; allowed in other areas if interior and exterior community noise levels can be mitigated. The prohibition against new residential development excludes limited infill development within an established neighborhood.

a = Interior standard: CNEL of less than 45 decibels (habitable rooms only).

b = Exterior standard: CNEL of less than 65 decibels in outdoor living areas.

c = Interior standard: L_{eq}(h) = 45- to 65-decibel interior nose level, depending on interior use.

 $d = Exterior standard: L_{eq}(h)$ of less than 65 decibels in outdoor living areas.

e = Interior standard: As approved by the board of supervisors for sound events of short duration, such as aircraft flyovers or passing railroad trains.

3.10.3 Environmental Setting

The existing noise environment within the NCCP/HCP Preserves would vary depending on the surrounding land uses. The locations of the Preserves and a list of activities that could occur on the Preserves are provided in Chapter 2 of this document. The Preserves are located, at least partially, in proximity to residential land uses or other developed areas. Urban noise sources, such as vehicular traffic, mechanical equipment (from heating, ventilation, and air-conditioning), periodic aircraft flyovers, and construction and landscaping activities, are the predominant noise sources in the Preserves.

All of the covered freeway improvement projects would be constructed adjacent to the existing freeway system, primarily within urban settings. The existing noise environment at the locations for the covered freeway improvement projects includes urban noise sources, particularly heavy vehicular traffic.

Section 3.10. Noise

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3.11.1 Regulatory Setting

See Chapter 3.9, Land Use, for a description of the applicable land use plans. Below are plans specific to socioeconomics and environmental justice in the Plan Area.

3.11.1.1 General Plan Housing Elements

City of Brea General Plan Housing Element

The 2008–2014 Housing Element adopted in August 2008 (City of Brea 2008) analyzes the future housing need identified by the Regional Housing Needs Assessment (RHNA) (SCAG 2007) and opportunities to provide new housing in the city. The Housing Element recognizes the importance of environmental constraints, particularly in the Carbon Canyon area (City of Brea 2008:3-83). The city plans to meet its future housing needs by using vacant and underdeveloped residential sites, mixed-use areas, and projects with existing entitlements, among others (City of Brea 2008:3-85).

County of Orange General Plan Housing Element

The county adopted its current Housing Element together with the general plan in March 2011 (County of Orange 2011b). According to this element, new housing in unincorporated areas of the county has historically been developed within planned communities. The Housing Element identifies two types of land for meeting the unincorporated county's share of future regional housing needs: (1) land in new master-planned communities and (2) vacant infill sites or underutilized sites where existing development intensity is less than what is allowed under the general plan and zoning, particularly those identified by the Housing Opportunities Overlay Zone (County of Orange 2011b, Section 4). The four properties acquired in the unincorporated county for the NCCP/HCP Preserve System are not a part of a master-planned development and are not designated as a Housing Opportunities Overlay Zone.

3.11.1.2 Regional Housing Needs Assessment

The RHNA is a program to quantify the housing need in each jurisdiction (city and county), with the information used to update the Housing Element of the jurisdiction's general plan. Housing need is identified separately for four classes of household income: very low income, low income, moderate income, and above-moderate income. SCAG prepares the RHNA for the counties and jurisdictions in the SCAG area, including Orange County and its cities. The most recent RHNA approved by the SCAG Regional Council (SCAG 2007) covers the period from January 2006 to June 2014. SCAG is currently preparing a fifth-cycle RHNA to cover the period from January 2014 to October 2021 (SCAG 2012b). The future housing need identified by the RHNA is addressed by each jurisdiction according to its capacity to support housing (e.g., through zoning), but the jurisdiction is not obligated to supply the housing need that is identified.

The 2006–2014 RHNA allocated a housing need of 2,048 units to the City of Brea and 7,978 units to the unincorporated areas of Orange County (SCAG 2007). The proposed 2014–2021 RHNA identifies additional housing needs of 1,851 units for the City of Brea and 5,272 units for unincorporated Orange County. These allocations include housing needed to accommodate population growth, anticipated demolitions, and market vacancies.

3.11.1.3 Regional Transportation Plan/Sustainable Communities Strategy

The 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2012a) prepared by SCAG complies with SB 375 (effective January 2009), which requires preparation of an SCS in conjunction with a regional transportation plan to achieve certain goals for the reduction of greenhouse gas emissions from automobiles and light trucks in the region. A key component of the SCS is to integrate land use and transportation planning so that development densities would be higher and vehicle trips per person lower than would be the case under traditional patterns of development. Although the SCS would not regulate land use, and local land use plans are not required to be consistent with the SCS, it affects implementation of strategies adopted under the Housing Element to meet regional housing needs. SB 375 also provides incentives for implementing the SCS by exempting certain transit projects from CEQA that meet specified requirements and are declared by the local jurisdiction to be sustainable communities projects. Accordingly, the 2012–2035 RTP/SCS "focuses the majority of new housing and job growth in high-quality transit areas and other opportunity areas in existing main streets, downtowns, and commercial corridors, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development" (SCAG 2012a, Executive Summary).

Utilizing a provision of SB 375, OCTA and the Orange County Council of Governments (OCCOG) prepared a separate subregional SCS (OCTA/OCCOG 2011), which was incorporated into SCAG's regional SCS. The Orange County SCS states, taking into account the substantial area occupied by the Cleveland National Forest and adjoining conserved open spaces, that a "majority of this forecast growth [from 2008 to 2035] will occur in areas with approved entitlements for large residential developments," resulting in "increased infill development in housing and demand for support services" (OCTA/OCCOG 2011, Population Conclusion, p. 15). Furthermore, "[a]pproximately three out of every four housing units projected to be built between 2008 and 2035 will be some type of attached unit" and "[h]ousing growth is projected to occur in and adjacent to areas that are forecast for increased employment growth" (OCTA/OCCOG 2011, Housing Conclusion, p. 45).

3.11.1.4 Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

In 1994, in response to growing concern that minority and/or low-income populations bear a disproportionate amount of adverse health and environmental effects, President Clinton issued Executive Order 12898 on Environmental Justice, formally focusing federal agency attention on these issues. The Executive Order contains a general directive that states, "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

The Executive Order authorized the creation of an Interagency Working Group (IWG) on Environmental Justice, overseen by EPA, to implement the Executive Order's requirements. The IWG includes representatives of a number of executive agencies and offices and has developed guidance for terms contained in the Executive Order.

EPA defines "environmental justice" as follows (EPA 1998):

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

EPA defines "fair treatment" as follows (EPA 1998):

No group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

EPA defines "meaningful involvement" as follows (EPA 1998):

- 1. Potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health;
- 2. The public's contribution can influence the regulatory agency's decision;
- 3. The concerns of all participants involved will be considered in the decision making process; and
- 4. The decision-makers seek out and facilitate the involvement of those potentially affected.

Finally, EPA defines "disproportionately high and adverse effect" (or "impact") as follows (EPA 1998):

An adverse effect or impact that: (1) is predominantly borne by any segment of the population, including, for example, a minority population and/or a low-income population; or (2) will be suffered by a minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect or impact that will be suffered by a non-minority population and/or non-low-income population.

3.11.1.5 Council on Environmental Quality: Environmental Justice—Guidance under the National Environmental Policy Act

While EPA has lead responsibility for implementation of Executive Order 12898 as chair of the IWG on Environmental Justice, CEQ has oversight of the federal government's compliance with this Executive Order and NEPA. CEQ, in consultation with EPA and other agencies, has prepared guidance to assist federal agencies in NEPA compliance in its Environmental Justice Guidance under NEPA (1997). This guidance provides an overview of Executive Order 12898, summarizes its relationship to NEPA, recommends methods for the integration of environmental justice into NEPA compliance, and incorporates as an appendix the IWG's definitions of key terms and concepts contained in the Executive Order.

Agencies are permitted to supplement CEQ's guidance with their own, more specific guidance tailored to their programs or activities or departments, insofar as is permitted by law.

CEQ states that the identification of a disproportionately high and adverse human health or environmental effect on a low-income or minority population does not preclude a proposed agency action from going forward or compel a finding that a proposed action is environmentally unacceptable (CEQ 1997). Instead, the identification of such effects is expected to encourage agency consideration of alternatives, mitigation measures, and preferences expressed by the affected community or population.

3.11.2 Environmental Setting

3.11.2.1 Population

Between 1970 and 2010, the population of Orange County more than doubled, growing from 1.4 million to more than 3 million (Table 3.11-1). However, the rate of increase has declined over time, from an average of 3.1% per year between 1970 and 1980 to an average of less than 1% (0.6%) per year between 2000 and 2010. Orange County is the second-most densely developed county in California, next to the City and County of San Francisco (population divided by total land area in the county) (U.S. Census Bureau 2012b, Table 5).

Table 3.11-1. Population and Housing in Orange County, California, 1970 to 2010

	1970	1980	1990	2000	2010		
Census							
Population	1,421,233	1,932,921	2,410,688	2,846,289	3,010,232		
Housing Units	463,199	721,570	875,105	969,484	1,048,907		
Average Annual Change (Nu	mber)						
Population		51,169	47,775	43,562	16,394		
Housing Units		25,837	15,354	9,438	7,942		
Average Annual Change (Per	Average Annual Change (Percent)						
Population		3.1%	2.2%	1.7%	0.6%		
Housing Units		4.5%	1.9%	1.0%	0.8%		

Source: U.S. Census Bureau, 2010 Census of Population and Housing, Population and Housing Unit Counts: California, Table 4, Population and Housing Units: 1970 to 2010.

For land use, housing, and transportation planning, OCTA, OCCOG, and the county's local jurisdictions use growth projections (Orange County Projections, or OCP) prepared by the Center for Demographic Research (CDR), located at California State University, Fullerton. The most recently adopted projections (OCP-2010) (CDR 2011) are used for the Orange County SCS, discussed above. OCP-2010 uses a base year of 2008 because full 2010 census results were not available during its preparation. CDR has since prepared a set of modified projections (OCP-2010 Modified) (CDR 2012) to be consistent with the 2010 census, which are shown in Table 3.11-2.

Table 3.11-2. Orange County, California, Projected Population and Housing, 2010 to 2035

	2010	2020	2035
Population	3,019,356	3,266,107	3,421,228
Cumulative Change from 2010			
Number		246,751	401,872
Percent		8.2%	13.3%
Average Annual Change			
Number		24,675	10,341
Percent		0.8%	0.3%
Housing Units	1,050,330	1,105,238	1,180,929
Cumulative Change from 2010			
Number		54,908	130,599
Percent		5.2%	12.4%
Average Annual Change			
Number		5,491	5,046
Percent		0.5%	0.4%

Source: California State University, Fullerton, Center for Demographic Research (CDR), OCP-2010 Modified with Census 2010 and State EDD 2010 Updates (Proposed).

Note: OCP-2010 modified projections are benchmarked to 2010 census; 2010 data are for July 1.

OCP-2010 modified projections anticipate that average annual population growth between 2010 and 2020 will slightly exceed that experienced between 2000 and 2010 (0.8% per year in the 2010s, compared with 0.6% per year in the 2000s). Between 2020 and 2035, the planning horizon, however, average annual growth is projected to decline to 0.3% per year (Table 3.11-2). Total population growth between 2010 and 2035 is projected to exceed 400,000, with the average growth rate of more than 25,000 persons per year during the 2010s declining to slightly more than 10,000 persons per year from 2020 to 2035.

Selected population characteristics are summarized in Table 3.11-3. More than one-third of the county's population is identified as Hispanic or Latino (33.7% in 2010); the share of the population identified as non-Hispanic white declined since 2000 to 44.1% in 2010. The non-Hispanic Asian population increased by more than 148,000 to 532,477 in 2010, representing 17.7% of the county.

Median age increased by nearly 3 years between 2000 and 2010 to 36.2 years. The male-to-female ratio declined slightly in 2010 to 97.9 males for every 100 females. For 984,056 households in 2010, median household income was \$72,832, and 10.9% of the overall population was classified as below the poverty level, as defined by the U.S. Census Bureau.

Table 3.11-3. Orange County, California, Population Characteristics, 2000 and 2010

	2000	2000		2010	
	Number	Percent	Number	Percent	
Population	2,846,289	100.0%	3,010,232	100.0%	
Hispanic or Latino ¹	875,579	30.8%	1,012,973	33.7%	
Not Hispanic or Latino ²	1,970,710	69.2%	1,997,259	66.3%	
White	1,458,978	51.3%	1,328,499	44.1%	
Black	42,639	1.5%	44,000	1.5%	
American Indian and Alaska Native	8,414	0.3%	6,216	0.2%	
Asian	383,810	13.5%	532,477	17.7%	
Native Hawaiian and Other Pacific Islander	8,086	0.3%	8,357	0.3%	
Some Other Race	4,525	0.2%	5,593	0.2%	
Two or More Races	64,258	2.3%	72,117	2.4%	
Age and Sex Characteristics					
Median Age	33.3		36.2		
Males per 100 Females	99.0		97.9		
Economic Characteristics ³					
Households	936,154		984,056		
Median Household Income	\$58,820		\$72,832		
Individuals Below Poverty Level	289,475	10.3%	4	10.9%	

Source: U.S. Census Bureau, 2000 and 2010 Census, Summary File 1 (SF 1), DP-1: Profile of General Demographic Characteristics; Summary File 3 (SF 3), DP-3: Profile of Selected Economic Characteristics; 2008–2010 American Community Survey (ACS) 3-year Estimates, DP03: Selected Economic Characteristics.

3.11.2.2 Housing

In parallel with changes in population, the number of housing units in Orange County more than doubled between 1970 and 2010, from less than 0.5 million to more than 1 million (Table 3.11-1), but the rate of increase declined over time, from an average of 4.5% per year between 1970 and 1980 to an average of less than 1% (0.8%) per year between 2000 and 2010.

The CDR projects that total housing units will increase by more than 130,000 units between 2010 and 2035 (CDR 2012, OCP-2010 Modified) (Table 3.11-2). However, the increase in housing stock (12.4% between 2010 and 2035) is anticipated to be less than that of the population (13.3%). Average growth in housing units is projected to be around 5,500 units per year from 2010 to 2020, then decline to around 5,000 units per year from 2020 to 2035.

Selected housing characteristics are summarized in Table 3.11-4. About 3.5% of the county's housing units were vacant in 2000. That number increased to 5.4% in 2010. Of the occupied housing units, approximately 60% were owner occupied (slightly lower in 2010 than in 2000), with the

¹ Of any race.

² Of single race, except for "Two or More Races."

³ Data for 2000 from decennial census; data for 2010 from 2008–2010 ACS 3-year estimates. Census data for Orange County in 2010 have not been released as of September 2012.

⁴ Not reported by ACS.

remainder being renter occupied. Average household size was 3.0 persons per unit in 2000 and 2.99 in 2010. For both years, average household size in owner-occupied units was slightly lower than that in renter-occupied units.

Table 3.11-4. Orange County, California, Housing Characteristics, 2000 and 2010

	2000		2010	
	Number	Percent	Number	Percent
Household Population ¹	2,803,924		2,970,996	
Housing Units – Total	969,484		1,048,907	
Occupied Units	935,287	100.0%	992,781	100.0%
Owner Occupied	574,456	61.4%	588,313	59.3%
Renter Occupied	360,831	38.6%	404,468	40.7%
Vacant Units	34,197		56,126	
Percentage Vacant	3.5%			
Average Household Size				
All Occupied Units	3.00		2.99	
Owner Occupied	2.96		2.98	
Renter Occupied	3.05		3.00	
Units in Structure - Total ²	969,484	100.0%	1,047,311	100.0%
One Unit, Detached	490,141	50.6%	531,521	50.8%
One Unit, Attached	124,610	12.9%	127,5575	12.2%
Two to Four Units	88,659	9.1%	93,241	8.9%
Five Units or More	233,615	24.1%	262,224	25.0%
Mobile Home, Other	32,459	3.3%	32,768	3.1%

Source: U.S. Census Bureau, 2000 and 2010 Census, Summary File 1 (SF 1), DP-1: Profile of General Demographic Characteristics; 2008–2010 American Community Survey (ACS) 3-year Estimates, DP04: Selected Housing Characteristics.

According to the 2000 census, more than one-half of total housing units in 2000 were single-unit structures (single-family detached units) (Table 3.11-4). Approximately 24% of the housing units were in structures of five units or more, with the remainder in structures of four units or less or in mobile homes and other housing. Corresponding data from the 2010 census have not been released as of September 2010. However, the 2008–2010 American Community Survey (ACS) (3-year estimate) conducted by the U.S. Census Bureau shows a similar distribution. A comparison of the figures from the ACS (U.S Census Bureau 2011b) with those from the 2000 census indicates that about 53% of the housing units built over this period were single-family detached units, about 37% in structures of five units or more, and the remainder in structures of four units or less, mobile homes, or other.

Development Pattern and Density. The decennial census includes land area data along with population and housing data for incorporated cities and Census-Designated Places (CDPs), which are "the statistical counterparts of incorporated places, and are delineated to provide data for settled concentrations of population that are identifiable by name but are not legally incorporated"

¹ Population in households; excludes population in group quarters.

 $^{^2}$ Number of units in a residential structure. Data for 2000 from decennial census; data for 2010 from 2008–2010 ACS 3-year estimates. Census data for Orange County have not been released as of September 2012.

(U.S. Census Bureau 2012a, Appendix A). Incorporated cities and CDPs together contain all of the developed areas of the county. However, because incorporated cities also contain conserved open spaces, the total area occupied by cities and CDPs is larger than the total urbanized area of the County.

There were 33 incorporated cities in Orange County in 2000 and 34 in 2010. The 2000 census identified nine CDPs, and the 2010 census identified seven CDPs. The City of Aliso Viejo, identified as a CDP in 2000, was incorporated in 2001. The cities of Lake Forest and Newport Beach each annexed two CDPs after 2000. The 2010 census identified three new CDPs, including Ladera Ranch, located north of San Juan Capistrano, and two unincorporated areas near the cities of Huntington Beach and Westminster.

Total land area in the county is approximately 790.6 square miles, or 511,200 acres, excluding offshore and inland waters (Table 3.11-5). In 2010, incorporated cities and CDPs occupied 542.3 square miles, an increase of 30 square miles since 2000. The balance of the county, that is, areas other than cities and CDPs, occupied 248.2 square miles in 2010. Average population and housing densities of cities and CDPs together are 5,490 persons per square mile and 1,916 housing units per square mile, respectively. Between 2000 and 2010, population density increased by 0.7% and housing density by 3.1% (Table 3.11-5).

The county's population and housing growth has been accommodated through a combination of land conversion (from undeveloped to developed) and an increase in average density, with an emphasis on the former. Although a new master-planned community has been approved in the southeastern part of the county, north of the City of San Clemente, infill development and redevelopment of underutilized land are likely to have a greater role in accommodating future growth (Table 3.11-2) than in the past, resulting in higher average densities in cities and CDPs.

Table 3.11-5. Cities and Census – Designated places in Orange County, California, 2000 and 2010

			Change 2000	to 2010
	2000	2010	Number	Percent
Population	2,846,289	3,010,232	163,943	5.8%
Incorporated Cities ¹	2,678,124	2,889,072	210,948	7.9%
Census-Designated Places (CDPs) ²	116,110	88,434	-27,676	-23.8%
Cities and CDPs	2,794,234	2,977,506	183,272	6.6%
Balance of County	52,055	32,726	-19,329	-37.1%
Housing Units	969,484	1,048,907	79,423	8.2%
Incorporated Cities ¹	908,306	1,008,970	100,664	11.1%
CDPs ²	43,576	30,023	-13,553	-31.1%
Cities and CDPs	951,882	1,038,993	87,111	9.2%
Balance of County	17,602	9,914	-7,688	-43.7%
Land Area in Square Miles ³	760.57	790.57	0.00	0.0%
Incorporated Cities ¹	471.661	518.43	46.82	9.9%
CDPs ²	40.73	23.91	-16.82	-41.3%
Cities and CDPs	512.34	542.34	30.00	5.9%
Balance of County	278.23	248.23	-30.00	-10.8%
Population Density (Units/Square Mile)	3,600.3	3,807.7	207.4	5.8%
Incorporated Cities ¹	5,678.7	5,572.7	-106.0	-1.9%
CDPs ²	2,850.7	3,698.6	847.9	29.7%
Cities and CDPs	5,453.9	5,490.1	36.2	0.7%
Balance of County	187.1	131.8	-55.3	-29.5%
Housing Density (Units/Square Mile)	1,226.3	1,326.8	100.5	8.2%
Incorporated Cities ¹	1,926.0	1,946.2	20.2	1.1%
CDPs ²	1,069.9	1,255.7	185.8	17.4%
Cities and CDPs	1,857.9	1,915.8	57.8	3.1%
Balance of County	63.3	39.9	-23.3	-36.9%

Source: U.S. Census Bureau, 2000 Census of Population and Housing, Population and Housing Unit Counts: California, Table 6, Population and Housing Units: 1980 to 2000; Area Measurements and Density: 2000; 2010 Census of Population and Housing, Population and Housing Unit Counts: California, Table 9, Population and Housing Units: 1990 to 2010; Area Measurements and Density: 2010.

 $^{^{1}}$ In Orange County, there were 33 incorporated cities in 2000 and 34 in 2010. The City of Aliso Viejo was incorporated in 2001.

² CDPs, which are statistical counterparts to incorporated cities, are located in unincorporated areas of the county. CDPs are delineated to provide data for settled concentrations of the population that are identifiable by name but not legally incorporated. Between 2000 and 2010, one CDP was incorporated (Aliso Viejo) and four were annexed to cities. Although cities and CDPs include the developed areas of the county, they also contain protected open spaces.

³ Land area excludes offshore and inland water areas. Land and water areas are delineated at each census and hence may differ between censuses. In 2000, the total land area of Orange County was reported as 789.40 square miles, or 1.17 square miles less than the total reported in 2010. For consistent comparison of land areas in the two census years, this difference was added to "Balance of County" in 2000 for the purpose of calculating changes in land area and density.

3.11.2.3 Employment

The working-age population of Orange County, or population 16 years and older, in 2010 was nearly 2.4 million, with 1.6 million, or 67%, participating in the civilian labor force (Table 3.11-6) (annual data from California Employment Development Department [EDD]). In addition, 150,700 persons, or 9.5% of the labor force, were unemployed. In 2000, the labor force participation rate was slightly higher, at nearly 69%, and the unemployment rate was substantially lower, at 3.5%. The 2010 figures reflect the impact of the national recession following the financial crisis.

Table 3.11-6. Employment by Industry, Orange County, California, 2000 and 2010

	2000		2010)
·	Number	Percent	Number	Percent
Population 16 Years and Over ¹	2,153,952		2,373,332	
Civilian Labor Force ²	1,481,100	68.8%³	1,591,000	67.0%3
Civilian Employment	1,429,100		1,440,400	
Civilian Unemployment	52,000	$3.5\%^{4}$	150,700	$9.5\%^{4}$
Total, All Industries ²	1,396,500	100.0%5	1,357,400	100.0%5
Farm	7,600	0.5%	3,700	0.3%
Mining and Logging	600	0.0%	500	0.0%
Construction	76,600	5.5%	68,000	5.0%
Manufacturing - Durable Goods	152,500	10.9%	106,500	7.8%
Manufacturing - Nondurable Goods	63,000	4.5%	43,900	3.2%
Wholesale Trade	80,800	5.8%	77,600	5.7%
Retail Trade	147,000	10.5%	140,100	10.3%
Transportation, Warehousing, and Utilities	30,300	2.2%	26,700	2.0%
Information	41,200	3.0%	24,800	1.8%
Financial Activities	100,900	7.2%	103,500	7.6%
Professional and Business Services	247,500	17.7%	243,500	17.9%
Educational and Health Services	112,100	8.0%	155,500	11.5%
Leisure and Hospitality	145,900	10.4%	168,600	12.4%
Other Services	43,900	3.1%	42,200	3.1%
Government	146,600	10.5%	152,300	11.2%

Source: U.S. Census Bureau, 2000 and 2010 Census, Summary File 3 (SF 3), DP-3: Profile of Selected Economic Characteristics; California Employment Development Department (EDD), Industry Employment and Labor Force by Annual Average, March 2011 Benchmark, Santa Ana-Anaheim-Irvine MD (Orange County).

MD = Metropolitan Division.

¹ From 2000 and 2010 census.

² From EDD, Industry Employment and Labor Force.

³ Percentage of population 16 years and over.

⁴ Percentage of civilian labor force.

⁵ Percentage of total employment, all industries.

Excluding self-employed workers, unpaid family workers, and private household employees, Orange County's total employment in 2010 was slightly less than 1.4 million. A distribution of workers by industry (Table 3.11-6) shows that the proportion of workers in construction, manufacturing (both durable and non-durable goods), and information declined between 2000 and 2010, while the proportion of workers in some services (education, health, leisure, and hospitality) and government increased.

Orange County Transportation Authority

Section 3.11. Socioeconomics and Environmental Justice

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3.12.1 Regulatory Setting

3.12.1.1 Federal Regulations

Moving Ahead for Progress in the 21st Century Act (MAP 21)

The Moving Ahead for Progress in the 21st Century Act (MAP 21) was signed into law by President Obama on July 6, 2012. Funding surface transportation programs at over \$105 billion for fiscal years 2013 and 2014, MAP-21 is the first long-term highway authorization enacted since 2005. MAP-21 creates a streamlined and performance-based surface transportation program and builds on many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

Congestion Management System (CMS)

In order to meet federal certification requirements for the Federal Transportation Improvement Program (FTIP), SCAG and the County Congestion Management Agencies (CMAs) have developed a Congestion Management System (CMS) process for the region. In Orange County, the CMS is made up of the combined activities of the RTP, the State Congestion Management Program (CMP), and the Regional Transportation Improvement Program (RTIP).

3.12.1.2 State Regulations

The planning framework is imposed from the top down by SAFETEA-LU at the federal level and by the California Transportation Plan (Chapter 106, Statutes of 1989) at the state level. Both federal and state requirements are incorporated into the RTP prepared by SCAG. Local plans must be consistent with the RTP.

California Transportation Plan

Caltrans prepares a long-range plan called the California Transportation Plan (CTP). The CTP is updated every two years to reflect new and completed projects. In Orange County, Caltrans District 12 coordinates with OCTA each time the CTP is updated to ensure consistency with the long-range transportation plan. Projects seeking state funding must be included in the State Transportation Improvement Program (STIP) in order to be funded. Regional Transportation Planning Agencies (RTPAs) and Caltrans develop the STIP.

3.12.1.3 Local Regulations

Regional Transportation Plan (RTP)

The RTP for the Southern California region, which includes Orange County, is prepared by SCAG, the federally designated Metropolitan Planning Organization (MPO). The RTP consists of policies, programs, and a list of specific projects needed to meet long-range transportation needs. The RTP is updated every four years. It must be financially constrained and analyzed to ensure conformity with air quality regulations.

Local Programs

OCTA is the County Transportation Commission (CTC) and RTPA for Orange County and leads the preparation of Orange County projects for inclusion in the FTIP, the CTP at the state level, and the RTP at the regional level. OCTA also produces a long-range transportation plan for Orange County. In addition, OCTA is the County's CMA. As the CMA, OCTA ensures the compliance and mobility goals established in state and federal law and is responsible for updating the CMP for Orange County.

Congestion Management Program

In addition to SCAG's RTP, the key elements of the federal CMS are addressed through the Orange County CMP. The Orange County CMP is a composite of OCTA and local agency programs and submittals, developed through a cooperative effort involving local jurisdictions, public agencies, businesses, and community groups. The goals of the Orange County CMP are to reduce traffic congestion and provide a mechanism for coordinating land use and development decisions. By state law, all CMPs perform the monitoring and management functions shown below, which also fulfill the federal CMP requirements.

- Land Use Coordination: Each jurisdiction in Orange County selects a CMP Traffic Impact Analysis (TIA) process to analyze impacts of development project submittals on the CMP Highway System.
- Transportation Demand Management (TDM): TDM programs are designed to reduce the need or demand for trips, especially during congested commute times. TDM strategies are geared toward increasing vehicle occupancy, promoting the use of alternative modes, reducing the number of work and non-work trips, and decreasing overall trip lengths.
- Transit Services: The CMP contains elements to evaluate the performance of other transportation modes including transit.
- **Transportation Modeling and Planning:** The CMP develops a uniform database on traffic impacts for use in a countywide transportation computer model. The traffic model should be consistent among subarea models, the County's model, and the regional (SCAG) model, both in terms of methodology and databases.
- **Highway Level of Service (LOS):** Each CMA monitors the performance of an identified highway system. This allows the County to monitor how the highway system is performing against established LOS standards and how it changes over time. To assess the traffic operations on arterials, the County of Orange has established a roadway LOS standard of LOS D or better (i.e., volume-to-capacity [v/c] ratio of 0.90 or lower) on arterial streets. For CMP facilities, the LOS standard is LOS E or better.
- **Deficiency Plans:** The CMP includes provisions for "deficiency plans" to address unacceptable levels of congestion. The plan must provide a list of improvements, programs, actions, and estimates of costs that will measurably improve the level of service of the system and contribute to significant improvements in air quality.
- **Capital Improvement Program (CIP):** The CMP requires the development of a seven-year CIP to maintain or improve the performance of the multimodal system for the movement of people and goods and to mitigate regional transportation impacts.
- Monitoring and Conformance: The CMP requires that the CMA (OCTA) monitor the
 implementation of all elements of the CMP and biennially determine conformance. The CMP
 highway system consists of the Orange County Smart Street network as well as the state

highway system. The CMP monitors the LOS at all CMP intersections, including intersections between Smart Streets and freeways (including toll corridors). In addition, levels of service on freeways and toll corridors are monitored.

3.12.2 Environmental Setting

Existing transportation facilities within Orange County consist of freeways, tollways, highways, local arterials, bus transit, commuter rail, and on- and off-road bicycle facilities. Existing freeways and highways within Orange County include I-5, I-405, and I-605 and SR 1 (Pacific Coast Highway), SR 22 (Garden Grove Freeway), SR 39 (Beach Boulevard), SR 55 (Costa Mesa Freeway), SR 57 (Orange Freeway), SR 74 (Ortega Highway), SR 90 (Imperial Highway), SR 91 (Riverside Freeway), and SR 133 (Laguna Canyon Road). Three tollways are located within the County: SR 73 (San Joaquin Hills Tollway), SR 241 (Foothill Tollway), and SR 261 (Eastern Tollway).

The arterial street system comprises 1,456 miles of streets throughout the County. Of these, approximately 95 miles are also part of the state highway system. OCTA is Orange County's primary provider of public transportation. OCTA provides local, rail feeder, express, and paratransit services. Additionally, OCTA provides fixed route, express, and rail connector bus services throughout Orange County with a fleet of over 800 vehicles, ranging in size from 60-foot articulated buses used on high-density corridors in central Orange County to 25-foot mini-buses used for lightly traveled routes. Annually, the fixed route bus fleet carries nearly 69 million passengers and travels over 23 million miles.

The number of workers in Orange County has topped 1.5 million, nearly double that of 1980 and more than San Diego, Sacramento, and Santa Clara Counties. The economy has shifted from manufacturing to service and financial hubs ranging from higher paying technical and professional jobs to lower paying retail and tourism industry jobs. Employees are working in mega job centers and multiple downtowns rather than one central business district.

Metrolink is the regional rail system serving the County and includes commuter and other passenger services. There are currently 40 Metrolink trains operating on three routes in the county serving 55 Metrolink stations and 87.2 miles of routes. The Orange County Line provides service between Oceanside in northern San Diego County and Union Station in Los Angeles County. The Inland Empire–Orange Line provides service between San Bernardino, Riverside, and Orange County as far south as Irvine. The 91 Line operates between Riverside, Orange, and Los Angeles Counties.

There are currently about 1,000 miles of bikeways in Orange County with roughly another 700 miles planned (OCTA 2013). These bikeways provide an alternative mode of transportation for commuters as well as a recreational resource for residents of Orange County.

OCTA has created a transportation analysis model (OCTAM 3.4) that uses the demographic projections above and a baseline transportation network to assess how Orange County's growth will affect the transportation system. The model calculates that people in Orange County made over 13 million trips in 2000. It projects that by 2030, this number will increase to almost 16 million. Most of these trips (79%) will be internal to Orange County, meaning they both start and end within the County's borders.

The model also projects how many miles will be traveled by vehicles (as opposed to all trips), average speeds on the County's arterials (local streets and roads) and freeways, and how many transit trips (on bus or rail) will be made. By 2030, vehicle miles traveled are expected to increase by 38.5%, while speeds on arterials in the morning peak hours will drop by 32%, and freeway speeds in the morning peak hours will drop by 31%. Transit trips are projected to increase by 26%, and, due to declining arterial speeds, transit trip time will double as well.

Chapter 4

Environmental Impacts and Mitigation Measures

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This chapter presents the environmental consequences for each of the three Alternatives including the Proposed Plan. The analysis methodology, significance criteria, and environmental effects are described for each of the following resource topics.

- Section 4.2, Agriculture
- Section 4.3, Air Quality and Greenhouse Gases
- Section 4.4, Biological Resources
- Section 4.5, Cultural Resources
- Section 4.6, Geology, Soils, and Seismicity
- Section 4.7, Hazards and Hazardous Materials
- Section 4.8, Hydrology and Water Quality
- Section 4.9, Land Use
- Section 4.10, Noise
- Section 4.11, Socioeconomics and Environmental Justice
- Section 4.12, Transportation and Circulation

Each resource section contains the following information:

- Methodology and Significance Criteria Describes the methods, models, process, procedures, data sources, and/or assumptions used to conduct the impact analysis. Where possible, effects are evaluated quantitatively. Where quantification is not possible, effects of each alternative are evaluated qualitatively.
 - Criteria for Determining Significance provides the criteria used in this document to define the level at which an impact would be considered significant in accordance with CEQA. Significance criteria (sometimes called *thresholds of significance*) used in this Draft EIR/EIS are based on CEQA's mandatory findings of significance (as summarized in State CEQA Guidelines Section 15065); the checklist presented in Appendix G of the State CEQA Guidelines; factual or scientific information and data; reasonable assumptions based on factual information; expert opinion based on fact; and regulatory standards of federal (i.e., Department of Interior), state, and local agencies. The significance criteria will be applied to reach the CEQA and NEPA conclusions for each effect (i.e., determination of effects).
- **Impacts and Mitigation Measures** describes the analysis of effects relating to each resource topic.
 - Effects/Impacts. To avoid confusion between the two regulations, separate and distinct CEQA and NEPA determinations of effect/impact are made. To comply with CEQA and NEPA, the effects are considered and evaluated for all direct, indirect, cumulative, and/or beneficial effects. Direct effects are those that are caused by the action and occur at the same time and place. Indirect effects are reasonably foreseeable consequences to the physical environment

that may occur at a later time or at a distance from the location of the alternative. Because direct and indirect effects are often interrelated, there is no distinction made between the two in the effects discussion. Cumulative effects for all resource topics are addressed in each individual resource chapter.

The effects are listed numerically and sequentially (e.g., BIO-1, BIO-2, etc.) throughout each section. An effect statement precedes the discussion of each effect and provides a summary of the impact topic. Each effect is accompanied by a finding or conclusion, as required under CEQA and NEPA.

CEQA impact findings are defined more specifically below.

- **No Impact:** The proposed project would not result in any change in the environment as measured by the applicable significance criterion.
- **Less-than-Significant Impact:** A less-than-significant impact would cause no substantial adverse change in the environment as measured by the applicable significance criterion; therefore, no mitigation would be required.
- **Significant Impact:** A significant impact would cause a substantial adverse change in the physical conditions of the environment. Impacts determined to be significant adverse effects based on the significance criteria fall into two categories: those for which there is feasible mitigation available that would reduce the environmental effects to less-than-significant levels and those for which there is either no feasible mitigation available or for which, even with implementation of feasible mitigation measures, there would remain a significant adverse effect on the environment.
- **Less than Significant Impact after Mitigation**. Significant impacts for which there is feasible mitigation to reduce effects to a less-than-significant level.
- **Significant and Unavoidable Impact**. A significant, unavoidable impact is a substantial adverse change in the environment that cannot be avoided or mitigated to a less-than-significant level if the alternative is implemented.
- Mitigation Measures. Both CEQA and NEPA require presentation of mitigation measures. Mitigation under both the State CEQA Guidelines and CEQ's NEPA Regulations is defined as either avoiding the impact, minimizing the impact rectifying the impact, reducing or eliminating the impact over time, or compensating for the impact (40 CFR 1508.20; State CEQA Guidelines 15370). CEQ's NEPA Regulations require the EIS to specifically include a discussion of a means to mitigate adverse environmental impacts (if not covered in the alternatives). CEQA requires the EIR to present all feasible mitigation for significant adverse impacts (Section 15126.4). Therefore, measures to mitigate impacts considered adverse or significant accompany each impact discussion. Each mitigation measure (MM) will be listed numerically and sequentially (e.g., MM BIO-1a, MM BIO-1b, MM BIO-2a, etc.).
- **Cumulative Effects.** The potential for cumulatively considerable impacts to result from the proposed project when added to related projects will be included in the Draft EIR/EIS. Cumulatively considerable impacts means that the effects of the project are considerable when viewed in connection with past, current, and probable future projects (State CEQA Guidelines Section 15130(a)). The State CEQA Guidelines also state that cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (15355(b)).

The State CEQA Guidelines (Section 15130) and CEQs NEPA regulations (40 CFR 1580.25) require a reasonable analysis of the significant cumulative impacts of a proposed project. *Cumulative impacts* refers to "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." The cumulative impact that results from several closely related projects is

...the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (State CEQA Guidelines, Section 15355[b]). The cumulative impact analysis may be less detailed than the analysis of the project's individual effects (State CEQA Guidelines Section 15130[b]).

There are two approaches to identifying cumulative projects and the associated impacts. The list approach identifies individual projects in order to identify potential cumulative impacts. The projection approach uses a summary of projections in an adopted general plan or related planning document to identify potential cumulative impacts. The Draft EIR/EIS will use the list approach to cumulative analysis. Cumulative effects of build out and development within the County as a whole and within each of the local land use agencies has been addressed in the EIRs for each of the general plans and is not addressed in this analysis. Furthermore, the cumulative effects of the covered freeway improvement projects are not reassessed in this Draft EIR/EIS. Freeway improvement projects are a separate discretionary action requiring independent environmental review. While the issuance of NCCPA and ESA permits for the Proposed Plan eliminates one of the hurdles to freeway project implementation, the Proposed Plan does not directly authorize the implementation of such projects. As such, cumulative effects associated with freeway improvement projects will be addressed in separate CEQA documentation prepared for each individual freeway project. The impact analysis in this EIR/EIS does incorporate the programmatic cumulative impact analysis from the 2006 LRTP Program EIR with respect to the covered freeway improvement projects.

The Proposed Plan considers cumulative conditions in its assessment of potential impacts on Covered Species and in the development of an appropriate conservation strategy. As a regional plan, the Proposed Plan considers cumulative impacts on Covered Species in light of other conservation programs that also regionally affect the same Covered Species.

Cumulative projects in the region that were identified are described below.

National Audubon Society: The National Audubon Society owns and manages the 4,000-acre Starr Ranch Sanctuary, which is located in the foothills of the Santa Ana Mountains in southeastern Orange County. The sanctuary is bordered by the CNF to the north and east, the Ronald W. Caspers Regional Park to the south, and the Dove Canyon and Coto de Caza developments to the west. The mission of the Starr Ranch Sanctuary is to offer innovative approaches to land management and environmental education that will influence the way Orange County citizens appreciate, conserve, and manage wildlands.

The Trust for Public Land: Founded in 1972, The Trust for Public Land (TPL) has completed more than 4,250 park and conservation projects totaling more than 3 million acres (TPL 2011). Within the Plan Area, TPL owns and manages the 714-acre Baker Canyon. The property supports a variety of vegetation communities, including chaparral, nonnative grasslands, and riparian habitats. The property was acquired by TPL using Proposition 12 (Parks Bond Act) funds, which allocated funds for acquisition of lands for watershed or habitat protection. Thus, the property is managed primarily for the benefit of wildlife and habitats.

The Irvine Company: The Irvine Company historically owned the 93,000-acre Irvine Ranch, which stretches 9 miles along the coast (north and south) and 22 miles inland, to the boundary of the CNF. Approximately 50,000 acres of the ranch have been permanently protected as open space. The City of Irvine lies in the middle of Irvine Ranch and separates coastal and inland open space. The Irvine Ranch Conservancy was established in 2005 to assist in the management of the permanently protected wildlands and parks on the historic Irvine Ranch (Irvine Ranch Conservancy 2011). Recently, The Irvine Company donated more than 20,000 acres of the Irvine Ranch to Orange County Parks. Although day-to-day management will remain the responsibility of the Irvine Ranch Conservancy, land management will be conducted under the oversight of Orange County Parks (Irvine Ranch Open Space Interim Operations Plan). Seven distinct open space units—Fremont Canyon, Black Star Canyon, Weir Canyon, Gypsum Canyon, Laguna Laurel, Limestone Canyon, and Loma Ridge East—are found within the Irvine Ranch Open Space and the Plan Area.

The Wildlands Conservancy: The Wildlands Conservancy (TWC) owns and operates California's largest non-profit preserve system, totaling more than 145,000 acres (Wildlands Conservancy 2011). Two TWC preserves, Hidden Ranch and Big Oak Canyon, are found within the Plan Area. Hidden Ranch was acquired using Proposition 12 (Parks Bond Act) funds and is managed primarily for the benefit of wildlife and habitats. Big Oak Canyon currently has no management restrictions.

4.1.1 CEQA and NEPA Requirements for Environmental Analyses

The focus of the analysis of environmental consequences is limited to the determination of whether the alternatives would result in a "significant effect on the environment," according to CEQA, or would "significantly affect the quality of the human environment," according to NEPA.

CEQA defines a *significant effect on the environment* as "a substantial, or potentially substantial, adverse change in the environment" (Public Resources Code [PRC], title 13, section 21068). State CEQA Guideline 15382 describes *adverse change* as an "adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

CEQ NEPA Guideline 1508.14 defines the *human environment* as "the natural and physical environment and the relationship of people with that environment." *Significantly,* as used in NEPA, requires considerations of both context and intensity (CEQ NEPA Guideline 1508.27). Context can include the society as a whole (human, national), the affected region, the affected interests, and the locality. In this Draft EIR/EIS, the context is explained in the impact discussions presented in Sections 3.2 through 3.10.

Intensity refers to the severity of impact. For the purposes of this Draft EIR/EIS, the intensity or severity of impacts is characterized using CEQA terminology. To determine whether impacts might be significant, potentially adverse impacts are identified and evaluated using the specific significance threshold criteria developed for each environmental issue.

While CEQA focuses on adverse impacts, NEPA addresses both adverse and beneficial impacts. Section 1508.8 of the CEQ Regulations for Implementing NEPA states that "effects may also include those resulting from actions which may have both beneficial and detrimental effects." Consequently, this Draft EIR/EIS identifies potentially adverse and beneficial impacts of the Proposed Plan.

4.2.1 Methodology and Significance Criteria

Impacts related to agriculture were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of applicable documents, such as the County of Orange General Plan. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact on agriculture.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Result in the conversion of a substantial amount of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the FMMP of the Department of Conservation, to non-agricultural use.
- Conflict with existing zoning for agricultural land or land under a Williamson Act contract.

4.2.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated agricultural impacts from the covered freeway improvement projects, as presented in the 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The 2006 LRTP Program EIR determined that agricultural impacts from the covered freeway improvement projects would be less than significant, and no mitigation was proposed.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on Covered Species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any applicable mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as "significant unavoidable" on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated agricultural impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated agricultural impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.2.2 Impacts and Mitigation Measures

Potential impacts of the NCCP/HCP alternatives on agriculture are discussed here in terms of the short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.2.1.1, impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.2.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use for covered freeway improvement projects.

Based on the analysis completed in OCTA's 2006 LRTP Program EIR, impacts from covered freeway improvement projects to Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would be less than significant because LRTP projects would generally be consistent with County and local cities' General Plan data and the LRTP includes measures to help reduce the consumption and disturbance of agricultural lands.

Impact AG-2: Conflict with existing zoning for agricultural land or land under a Williamson Act contract from covered freeway improvement projects.

Based on the analysis completed in OCTA's 2006 LRTP Program EIR, potential conflicts between covered freeway improvement projects and zoning for agricultural land or land under a Williamson Act contract would be less than significant because LRTP projects would generally be consistent with County and local cities' General Plan data and the LRTP includes measures to help reduce the consumption and disturbance of agricultural lands.

Impacts from Biological Mitigation and Conservation Activities

Impact AG-3: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use for biological mitigation and conservation activities.

Under the No Project/No Action Alternative, it is possible that mitigation for individual freeway improvement projects could be established on parcels of land supporting prime farmland, unique farmland, or farmland of statewide importance; however, any determination of where such lands would occur or what agricultural uses might be converted would be speculative because specific locations are not known at this time.

Impact AG-4: Conflict with existing zoning for agricultural land or land under a Williamson Act contract from biological mitigation and conservation activities

Under the No Project/No Action Alternative, it is possible that mitigation for individual freeway improvement projects could be established on parcels of land zoned for agriculture or under a Williamson Act contract; however, any determination of where such lands would occur or what agricultural land use conflicts might occur would be speculative because specific locations are not known at this time.

4.2.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact AG-1: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use for covered freeway improvement projects.

As described above in the No Project/No Action Alternative, covered freeway improvement projects, as analyzed in the 2006 LRTP Program EIR, would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.

Impact AG-2: Conflict with existing zoning for agricultural land or land under a Williamson Act contract from covered freeway improvement projects.

As described above in the No Project/No Action Alternative, covered freeway improvement projects, as analyzed in the 2006 LRTP Program EIR, would not conflict with existing agricultural land zoning or Williamson Act contracts.

Impacts from Biological Mitigation and Conservation Activities

Impact AG-3: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use for biological mitigation and conservation activities.

The acquired Preserves do not include land designated as Important Farmland (i.e., Prime Farmland, Farmland of Statewide Importance, or Unique Farmland) or as grazing land. Thus, covered preserve management activities under the Proposed Plan would not result in impacts associated with the conversion of farmland. None of the properties being evaluated for future Preserve acquisition occur within land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance or as grazing land. No impact would occur, and no mitigation measures would be required.

Impact AG-4: Conflict with existing zoning for agricultural land or land under a Williamson Act contract from biological mitigation and conservation activities.

The acquired Preserves do not include any lands where conflicts with existing agricultural use zoning or a Williamson Act contract would arise. Thus, no impacts associated with zoning or Williamson Act contracts would result with implementation of the Proposed Plan. None of the properties being evaluated for future Preserve acquisition occur on lands under current Williamson Act contracts or on lands designated for agricultural use. No impact would occur, and no mitigation measures would be required.

4.2.2.3 Alternative 3: Reduced Plan

Impacts AG-1, AG-2, AG-3, and AG-4

Under Alternative 3, effects on agricultural resources would be similar to those discussed under the Proposed Plan Alternative, and no impact would occur. No mitigation measures would be required.

4.2.2.4 Cumulative Impacts

Orange County has seen a trend toward the conversion of agricultural lands, and it is unlikely that the county will expand agricultural uses in the future. However, implementation of Alternatives 2 (Proposed Plan) or 3 (Reduced Plan) would not contribute to this trend because these alternatives would not result in impacts on agricultural resources. The possibility of Alternative 1 (No Plan/Action) contributing to cumulative effects on agricultural uses is speculative because the potential use of agricultural lands as mitigation on a project-by-project basis cannot be known at this time. Therefore, implementation of Alternative 2 (Proposed Plan) or Alternative 3 (Reduced Plan) would not contribute to a cumulatively significant impact on agricultural resources; the contribution from Alternative 1 (No Project/No Action) to cumulative agricultural impacts would be speculative.

4.2.2.5 Summary of Impacts

Implementation of the Proposed Plan Alternative or the Reduced Plan Alternative would not impact prime farmland, unique farmland, or farmland of statewide importance to non-agricultural use, as the acquired Preserves do not contain land designated as such. Additionally, the acquired Preserves do not include any lands where conflicts with existing agricultural use zoning or a Williamson Act contract would arise. Therefore, no impacts on farmland or associated with zoning or Williamson Act contracts would result with implementation of the Proposed Plan or Reduced Plan Alternatives. Under the No Project/No Action Alternative the possibility exists that parcels of land needed to meet mitigation required for individual covered freeway improvement projects could impact Important Farmland or Williamson Act lands; however, such effects are speculative because the location of mitigation land is not known at this time.

Table 4.2-1. Summary of Agricultural Effects under All Alternatives

	Effects of Alternatives				
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
AG-1	0	0 (same as Alt 1)	0 (same as Alt 2)		
AG-2	0	0 (same as Alt 1)	0 (same as Alt 2)		
AG-3	0	0	0		
AG-4	0	0	0		

0 = no substantial change relative to current conditions

- = negative trend relative to current conditions
- + = positive trend relative to current conditions
- ++ = substantial positive trend relative to current conditions

Table 4.2-2. Summary of Agricultural Impact Determinations under All Alternatives

		Effects of Alternatives				
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan			
AG-1	Less than Significant	Less than Significant	Less than Significant			
AG-2	Less than Significant	Less than Significant	Less than Significant			
AG-3	No Determination Possible	No Impact	No Impact			
AG-4	No Determination Possible	No Impact	No Impact			

Orange	County	Transportation	n Authority

Section 4.2. Agriculture

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4.3.1 Methodology and Significance Criteria

Impacts related to air quality and greenhouse gases (GHG) were assessed on the basis of the proposed NCCP/HCP and its alternatives, consultation with OCTA staff, and a review of applicable documents and materials related to air quality and GHG with state, county, and local jurisdictions.

Covered Activities associated with the Proposed Plan are all based on providing and acquiring native habitat. Activities associated with the Proposed Plan would generally include Preserve management activities (inclusive of vegetation management, fire management, on-site vehicle use, demolition or removal of structures or roads, and control of invasive species); habitat restoration; species surveys, monitoring, and research; response to Changed Circumstances; construction of recreational facilities (trails); and other management activities that would occur as-needed.

Activities as part of Preserve management would result in both short- and long term generation of criteria pollutant and GHG emissions. Mass daily and annual emissions were estimated using a combination of on-road emission factors from the EMission FACtors (EMFAC) model 2011 web-tool; construction equipment exhaust emission factors, as published within the CalEEMod (version 2013.2.2) emission calculation model; and ground disturbance methodologies as published within the CalEEMod (version 2013.2.2) emission calculation model. Construction activity data, including construction and operational schedule and equipment, was obtained through consultation with OCTA. Off-road emission factors for 2012 were obtained from the CalEEMod's User's Guide. On-road emission factors were obtained from the EMFAC web-tool, assuming light- and heavy-duty worker pickup trucks travel 30 miles per hour (mph) to the Proposed Plan sites and 5 mph within the sites on a given day. GHG emissions from on-road pickup trucks were determined by dividing the annual CO₂ emissions by 0.95. This statistic is based on EPA's recommendation that CH₄, N₂O, and other GHG emissions account for 5% of on-road emissions (EPA 2012c). A worker commute distance of 12.7 miles per trip was assumed, which is the default worker trip distance in CalEEMod. Ground disturbance was estimated consistent with CalEEMod's methodologies.

Construction-related emissions discussed herein would occur on a temporary basis during construction of facilities related to Preserve management only. Once these activities are completed, permanent emission sources from biological mitigation or conservation activities would be limited to the emissions associated with long-term and periodic monitoring and data collection within the Preserves. Emissions associated with monitoring and data collection are included in the operational analysis herein.

For the purposes of this analysis, the Covered Activities within the Preserve System would have an adverse or significant impact on the environment if they cause any of the results discussed under "Federal Criteria" and "State Criteria" below.

4.3.1.1 Federal Criteria

The NEPA review process must be integrated with other regulatory review processes and consider applicable regulations. A non-transportation project located in a nonattainment or maintenance area must undergo a General Conformity analysis in accordance with 40 CFR 93 to ensure that the project does not result in any of the following,

- Cause or contribute to new violations of any standard in any area.
- Increase the frequency or severity of an existing violation of any standard.
- Delay timely attainment of any standard required interim emission reduction, or other milestones.

As part of the General Conformity process, a conformity analysis is required if a federal action satisfies the following condition.

- The action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants (or precursors) at or above the applicable emission rates shown in Tables 3.3-3 and 3.3-4. The applicable emission rates for the Plan Area are as follows.
 - o For ozone precursors ROG and NO_X, 10 tons per year
 - o For PM10, 100 tons per year
 - For PM2.5, 100 tons per year of direct PM2.5 emissions, as well as 100 tons per year of the precursor SO₂
 - o For CO, 100 tons per year

There are currently no adopted numeric thresholds at the federal level regarding GHG emissions. However, as discussed in Section 3.3.1.1, CEQ's reference point of 25,000 MT provides a trigger point for providing an indicator that further NEPA review may be warranted. Thus, in the absence of an adopted threshold, CEQ's reference point is used herein to determine whether the Proposed Plan would result in a significant impact or effect on the environment due to GHG emissions from a NEPA context (see the discussion of CEQ's reference point in Section 3.3.1.1).

4.3.1.2 State and Local Criteria

The following significance criteria are based on Appendix G of the State CEQA Guidelines and provide the basis for determining significance of impacts associated with air quality and GHGs resulting from the implementation of the Proposed Plan. The State CEQA Guidelines state that the significance criteria established by the applicable local air quality management district or air pollution control district may be relied upon to make the determinations of significance. The analysis herein relies on the CEQA significance criteria established by the South Coast Air Quality Management District (SCAQMD).

With regards to air quality, Appendix G of the State CEQA Guidelines states that a project would normally have a significant impact on the environment if it causes any of the following results.

- 1. Conflicts with or obstruct implementation of the applicable air quality plan.
- 2. Violates any air quality standard or contribute substantially to an existing or projected air quality violation.
- Results in a cumulatively considerable net increase of any criteria pollutant for which the
 project region is in nonattainment under an applicable federal or state ambient air quality
 standard (including releasing emissions that exceed quantitative thresholds for ozone
 precursors).
- 4. Exposes sensitive receptors to substantial pollutant concentrations.

5. Creates objectionable odors affecting a substantial number of people.

For the assessment of criteria 2 and 3, which relate to regional construction and operational emissions, the SCAQMD thresholds identified in Table 4.3-1 below are used. SCAQMD guidelines suggest using the same thresholds to determine a project-level impact and a "cumulatively considerable" net increase in criteria pollutants. For criterion 4, which addresses local pollutant concentrations at sensitive receptors, this analysis uses the localized thresholds established by SCAQMD, as shown in Table 4.3-2 below, as well as SCAQMD's risk thresholds of 10 cancer cases in a million and 1.0 acute and chronic hazard indices.

Regarding GHG emissions, State CEQA Guidelines Section 15064.4 provides guidance to lead agencies for determining the significance of impacts from GHG emissions. Section 15064.4(a) provides that a lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a proposed project. Section 15064.4(a) further provides that a lead agency shall have the discretion to determine, in the context of a particular project, whether (1) to use a model or methodology to quantify GHG emissions resulting from a project and which model methodology to use, and/or (2) to rely on qualitative analysis or performance based standards.

State CEQA Guidelines Section 15064.4(b) also provides that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which the project may increase or reduce GHG emissions as compared to existing conditions, (2) whether the project's GHG emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Additionally, although the new State CEQA Guidelines are silent on whether CEQA evaluations should address the potential impacts of climate change on a project, Section 15126.2(a) does note that the lead agency should "evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions." With this, a lead agency should consider whether construction and operation of a proposed project would be affected by climate change. In conducting such an evaluation, the agency should focus on the long-term impacts of the project that are more likely to experience the effects of climate change in the future. Foreseeable shifts in regional climate will likely spur changes in local patterns of flooding, wildfire potential, water availability, energy demand, environmental health, and heat-wave events (CEC 2009). The Proposed Plan could place persons and property at higher levels of risk to climate change effects if the Proposed Plan, and all projects within the Plan Area, does not anticipate reasonably foreseeable changes in environmental conditions.

Pursuant to Appendix G, Section VII (Greenhouse Gas Emissions) of the State CEQA Guidelines, the Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- Expose property and persons to the physical effects of climate change, including but not limited to flooding, public health, wildfire risk, or other impacts resulting from climate change.

The Proposed Plan would preserve existing open space as well as increase open space and linkages by purchasing rural residential properties. This will act to help sequester carbon and help offset

project-related GHG emissions. However, since the Proposed Plan is only acting to preserve vegetated open space that currently sequesters carbon, the Proposed Plan cannot take credit for sequestering said carbon. This approach is consistent with the California Air Pollution Control Officers Association's (CAPCOA's) *Quantifying Greenhouse Gas Mitigation Measures* document (CAPCOA 2010).

Table 4.3-1 SCAQMD Regional Emission Thresholds (pounds per day)

Pollutant	Construction	Operation
Nitrogen Oxides (NO _X)	100	55
Reactive Organic Gases (ROG)	75	55
Suspended Particulate Matter (PM10)	150	150
Fine Particulate Matter (PM2.5)	55	55
Sulfur Oxides (SO _x)	150	150
Carbon Monoxide (CO)	550	550
Lead (Pb) ¹	3	3

Source: SCAQMD 2011b.

4.3.1.3 Assessment of Covered Freeway Improvement Projects

A summary of anticipated air quality impacts from the covered freeway improvement projects as presented in the OCTA 2006 LRTP Program EIR is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. Moreover, GHG emissions were calculated in the Final LRTP Program EIR in response to comments received from the Attorney General during the public review period. The LRTP Program EIR was certified in 2006 along with associated CEQA findings including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The 2006 LRTP Program EIR determined that air quality impacts from the covered freeway improvement projects would include exceeding criteria pollutant thresholds and exposing sensitive receptors to significant health risk during construction activities. Short-term construction-related impacts (i.e., emissions from NO_X, CO, PM10, SO_X, and ROG) remain significant after mitigation is incorporated. The 2006 LRTP Program EIR found long-term operational effects related to criteria pollutants and health risk to be less than significant and noted that GHG emissions would be lower than comparative 2030 baseline conditions (i.e., no project).

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as

¹The Proposed Plan would not result in lead emissions sources during the construction or operations period. As such, lead emissions are not evaluated in this report.

significant unavoidable on a programmatic level can be mitigated to a less than significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated air quality and GHG impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated air quality and GHG impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

Table 4.3-2. SCAQMD Localized Emission Thresholds by Source Receptor Area (pounds per day)

Pollutant	Construction	Operation
SRA 16		
Nitrogen Oxides (NO _X)	103	103
Suspended Particulate Matter (PM10)	4	1
Fine Particulate Matter (PM2.5)	3	1
Carbon Monoxide (CO)	522	522
SRA 17		
Nitrogen Oxides (NO _x)	81	81
Suspended Particulate Matter (PM10)	4	1
Fine Particulate Matter (PM2.5)	3	1
Carbon Monoxide (CO)	485	485
SRA 19		
Nitrogen Oxides (NO _x)	91	91
Suspended Particulate Matter (PM10)	4	1
Fine Particulate Matter (PM2.5)	3	1
Carbon Monoxide (CO)	696	696
SRA 21		
Nitrogen Oxides (NO _x)	91	91
Suspended Particulate Matter (PM10)	4	1
Fine Particulate Matter (PM2.5)	3	1
Carbon Monoxide (CO)	696	696

Source: SCAQMD 2009.

Notes

Localized thresholds derived from SCAQMD localized significance threshold tables and based on the project location, potential project area disturbed in any given day (1 acre), and the potential distance to the nearest sensitive receptor (25 meters).

4.3.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP Alternatives associated with air quality and GHG are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.3.1.3, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP

Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.3.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact AIR-1: Short-term and long-term increases in criteria pollutant and GHG emissions from covered freeway improvement projects.

As described in the 2006 LTRP Program EIR, covered freeway improvement project construction activities would create short-term temporary air emissions from the following activities: (1) demolition; (2) site preparation operations (grading/excavation); (3) fuel combustion from the operation of construction equipment; (4) delivery and hauling of construction materials and supplies to and from the site; (5) the use of asphalt or other oil-based substances during the final construction phases; and (6) travel by construction workers to and from the site. Construction activities associated with transportation facilities of any medium- to large-scale highways or arterials would be expected to individually generate a significant amount of construction activity and therefore exceed the significance thresholds established in the CEQA Handbook. This would create a potentially significant short-term impact. These impacts would occur in localized areas, depending on the construction site locations. Additionally, long-term impacts associated with changes in region-wide vehicle miles traveled (VMT) due to 2006 LRTP implementation were estimated to result in emissions below the significance thresholds established in the CEQA Handbook.

Mitigation Measure 4.1-A in the 2006 LRTP Program EIR (project-level air quality analysis and applicable best management practices) would reduce potential air quality impacts. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) The 2006 LRTP Program EIR identified that individual freeway project construction could continue to exceed emission thresholds for regional NO_X , CO, PM10, SO_X , and ROG during construction, resulting in residual significant short-term construction air quality impacts following mitigation. The 2006 LRTP Program EIR identified less-than-significant impacts related to long-term operational effects related to criteria pollutants, and health risk (and a reduction in GHGs compared to the future year "no project" scenario), as VMT would only increase slightly but overall emissions would decrease, as speeds would increase as congestion decreases.

Post-LRTP Program EIR

Since the time when the 2006 LRTP Program EIR was developed, OCTA and the OCCOG developed the Orange County SCS, which identifies strategies for GHG emissions reduction. Implementation of the covered freeway improvement projects and the M2 Environmental Mitigation Program that is folded into the M2 NCCP/HCP would be consistent with Orange County SCS sustainability strategies for GHG emissions reduction. SCS sustainability strategies to achieve GHG emissions reductions (including a reduction in basin-wide VMT and increased use of alternative fuel vehicles) would reduce all exhaust-related pollutants, including criteria pollutants. Therefore, any residual air quality impacts identified in the 2006 LRTP Program EIR would be further reduced by strategies within the SCS.

Impact AIR-2: Consistency of covered freeway improvement projects with SCAQMD's Air Quality Management Plan.

The 2006 LRTP Program EIR notes that due to projected growth, increases in regional vehicle travel would result in significant air quality impacts. However, the covered freeway improvement projects were identified as being consistent with local general plans, the AQMP, and other regional planning strategies to reduce the number of trips and the length of trips in the region and to improve the balance between jobs and housing at the subregional level. This, in turn, would reduce the future VMT and associated air pollutants. Therefore, the covered freeway improvement projects would be considered consistent with the AQMP and RTP.

Impact AIR-3: Exposure of sensitive receptors to substantial pollutant concentrations resulting from covered freeway improvement projects.

As described in the 2006 LRTP Program EIR, it is expected that the cancer risk resulting from construction activities for any individual freeway improvement project could exceed the acceptable threshold of one in a million at locations close to freeways. This is the case for the maximum one-year cancer risk, which reflects the temporary nature of construction. When this same risk is spread over a 70-year lifetime (in accordance with health risk assessment procedures), risk levels are much lower, approaching the threshold of one in a million. Overall, this impact was identified as potentially significant in the 2006 LRTP Program EIR.

Mitigation Measure 4.1-B in the 2006 LRTP Program EIR (project-level Toxic Air Contaminant health risk assessment and applicable best management practices such as use of diesel particulate traps) would reduce potential air quality health risk impacts on sensitive receptors (See Appendix E for descriptions of all LRTP programmatic mitigation measures). However, the 2006 LRTP Program EIR identified that individual freeway project construction could continue to result in residual exposure and health risks to sensitive receptors, resulting in significant short-term construction air quality impacts following mitigation.

Impact AIR-4: Exposure of a substantial number of people to objectionable odors resulting from covered freeway improvement projects.

Project construction and operations would not create odorous sources, which are generally limited to heavy industry and agriculture land uses. Thus, the covered freeway improvement projects would not emit odor emissions that would affect a substantial number of people. No mitigation measures would be required.

Impacts from Biological Mitigation and Conservation Activities

Impact AIR-5: Short-term and long-term increases in criteria pollutant and GHG emissions from biological mitigation and conservation activities.

The 2006 LRTP Program EIR did not consider the emissions of biological mitigation that may be implemented in association with individual freeway improvement projects, and a detailed analysis would have been speculative at the time of the LRTP development. The analysis below for Alternative 2, the Proposed Plan, provides a conservative substitute for assessing biological mitigation air quality and GHG emissions, particularly since land acquisition and habitat restoration under the Proposed Plan would be substantially greater than what would be achieved on an

individual project basis under the No Project/ No Action Alternative (see Chapter 2 Project Description for further details). Impacts described under Alternative 2 would be less than significant; therefore it can be reasonably concluded that criteria pollutant and GHG emissions under Alternative 1 would be less than significant. No mitigation measures would be required.

Impact AIR-6: Consistency of biological mitigation and conservation activities with SCAQMD's Air Quality Management Plan.

The 2006 LRTP Program EIR did not consider the emissions of biological mitigation that may be implemented in association with individual freeway improvement projects, and a detailed analysis relative to AQMP consistency would have been speculative at the time of the LRTP development. The analysis below for Alternative 2, the Proposed Plan, is comparable for assessing Alternative 1 AQMP consistency, particularly since land acquisition and habitat restoration under the Proposed Plan would be substantially greater than what would be achieved on an individual project basis under the No Project/ No Action Alternative (see Chapter 2 Project Description for further details). Alternative 2 would be consistent with the AQMP; therefore it can be reasonably concluded that Alternative 1 also would be consistent with the AQMP with respect to biological mitigation activities. Impacts would be less than significant, and no mitigation measures would be required.

Impact AIR-7: Exposure of sensitive receptors to substantial pollutant concentrations resulting from biological mitigation and conservation activities.

Biological mitigation and conservation activities would be minimal, intermittent, and sporadic; would not occur in a given place for an extended period of time; and would occur over a period much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks. Ongoing operational activities would be minimal and limited to a few days per year. Accordingly, the project would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant, and no mitigation measures would be required.

Impact AIR-8: Exposure of a substantial number of people to objectionable odors resulting from biological mitigation and conservation activities.

Biological mitigation and conservation activities would not create odorous sources, which are generally limited to heavy industry and agriculture land uses. Thus, these activities would not emit odors that would affect a substantial number of people. Impacts would be less than significant, and no mitigation measures would be required.

4.3.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact AIR-1: Short-term and long-term increases in criteria pollutant and GHG emissions from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in short- and long-term increases in criteria pollutant and GHG emissions was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact AIR-2: Consistency of covered freeway improvement projects with SCAQMD's Air Quality Management Plan.

The potential for covered freeway improvement projects to be inconsistent with SCAQMD's Air Quality Management Plan was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact AIR-3: Exposure of sensitive receptors to substantial pollutant concentrations resulting from covered freeway improvement projects.

The potential for covered freeway improvement projects to expose sensitive receptors to substantial pollutant concentrations was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact AIR-4: Exposure of a substantial number of people to objectionable odors resulting from covered freeway improvement projects.

The potential for covered freeway improvement projects to expose a substantial number of people to objectionable odors was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact AIR-5: Short-term and long-term increases in criteria pollutant and GHG emissions from biological mitigation and conservation activities.

Preserve management activity emissions would temporarily generate criteria pollutant (ROG, NO_X, SO_X, CO, PM₁₀, and PM_{2.5}) and GHG (CO₂, CH₄, and N₂O) emissions, which could result in adverse effects on short-term ambient air quality and climate change. Primary emission sources associated with Preserve management activities would include mobile and construction equipment exhaust, employee vehicle exhaust, and dust from clearing land and exposed soil eroded by wind. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content. The methodology for estimated project-related construction emissions is detailed in Section 4.3.1 above. Construction emissions are summed both daily (for comparison with SCAQMD mass regional and localized thresholds) and annually (for comparison with the appropriate federal de minimis threshold levels and SCAQMD's draft GHG threshold).

Further, periodic but long-term maintenance, monitoring, and data collection activities would generate criteria pollutant (ROG, NO_X , SO_X , CO, PM_{10} , and $PM_{2.5}$) and GHG (CO_2 , CH_4 , and N_2O) emissions, which could result in adverse effects on long-term ambient air quality and climate change. The methodology for estimated long-term monitoring and data collection emissions is detailed in Section 4.3.1 above. Emissions are summed both daily (for comparison with SCAQMD mass regional and localized thresholds) and annually (for comparison with the appropriate federal de minimis threshold levels and SCAQMD's draft GHG threshold).

Construction-related criteria pollutant emission estimates with respect to CEQA are shown in Tables 4.3-3 and 4.3-4 below. Construction-related criteria pollutant emission estimates with respects to

NEPA are shown in Tables 4.3-5. Construction-related GHG emission estimates with respect to both CEOA and NEPA are shown in Tables 4.3-6.

Operations-related criteria pollutant emission estimates with respect to CEQA are shown in Tables 4.3-7 and 4.3-8 below. Operations -related criteria pollutant emission estimates with respect to NEPA are shown in Tables 4.3-9. Operations -related GHG emission estimates with respects to both CEQA and NEPA are shown in Tables 4.3-6.As shown in Table 4.3-3 and 4.3-4, daily emissions estimates during construction would be well below SCAQMD daily mass regional and localized threshold levels.

As shown in Table 4.3-5, annual emissions estimates during construction would be well below federal de minimis levels.

Table 4.3-3. Estimate of Construction-Related Regional Criteria Pollutant Emissions for CEQA (pounds per day)

Phase	ROG	NO _X	СО	SO_X	PM10	PM2.5
Invasive species removal - Mechanical	0.75	7.97	7.52	0.00	0.47	0.35
Herbicide/Pesticide Treatment	0.03	0.04	0.46	0.00	0.00	0.00
Habitat Restoration	0.92	9.88	8.99	0.01	0.65	0.44
Trail Improvements	1.87	19.34	14.11	0.01	1.16	0.97
New Structures (e.g., info kiosks)	0.05	0.20	0.70	0.00	0.08	0.01
Maximum Daily Emissions ¹	4	37	33	0	2	2
SCAQMD Regional Significance Threshold	75	100	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No

Source: ICF emissions modeling, 2013.

Table 4.3-4. Estimate of Construction-Related Localized Criteria Pollutant Emissions for CEQA (pounds per day)

Phase	ROG	NOx	СО	SO _X	PM10	PM2.5
Invasive species removal – Mechanical	0.66	7.64	5.90	0.00	0.36	0.33
Herbicide/Pesticide Treatment	0.00	0.00	0.00	0.00	0.00	0.00
Habitat Restoration	0.83	9.55	7.37	0.01	0.45	0.41
Trail Improvements	1.76	18.98	12.01	0.01	1.03	0.95
New Structures (e.g., info kiosks)	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Daily Emissions ¹	3	36	25	0	2	2
SCAQMD Localized Significance Threshold ²		81	485		4	2
Exceed Threshold?		No	No		No	No

Source: ICF emissions modeling, 2013.

¹ Maximum daily emissions assume all Preserve management activities occur on the same day.

¹ Maximum daily emissions assume all Preserve management activities occur on the same day.

² Localized Significance Thresholds used here are the minimum (i.e., worst case) of the four SRA's within the Plan Area, as shown in Table 3.3-5.

Table 4.3-5. Estimate of Construction-Related Criteria Pollutant Emissions for NEPA (tons per year)

Phase	ROG	NO _X	СО	SO_X	PM10	PM2.5
Invasive species removal - Mechanical	0.00	0.01	0.01	0.00	0.00	0.00
Herbicide/Pesticide Treatment	0.00	0.00	0.00	0.00	0.00	0.00
Habitat Restoration	0.00	0.02	0.02	0.00	0.00	0.00
Trail Improvements	0.00	0.05	0.04	0.00	0.00	0.00
New Structures (e.g., info kiosks)	0.00	0.00	0.00	0.00	0.00	0.00
Maximum Annual Emissions ¹	0.01	0.08	0.06	0.00	0.00	0.00
EPA De Minimis Threshold	10	10	100	100	100	100
Adverse?	No	No	No	No	No	No

Source: ICF emissions modeling, 2013.

Table 4.3-6. Estimate of Construction-Related Greenhouse Gas Emissions (metric tons per year)

		Equipmen	t	On-Road	l Vehicles	Total
Phase	CO_2	CH_4	N_2O	CO_2	Other	CO_{2e}
Invasive species removal – Mechanical	0.64	0.00	0.00	0.52	0.03	1.20
Herbicide/Pesticide Treatment	0.00	0.00	0.00	0.07	0.00	0.08
Habitat Restoration	1.34	0.00	0.00	0.87	0.04	2.27
Trail Improvements	2.77	0.00	0.00	1.09	0.05	3.96
New Structures (e.g., info kiosks)	0.00	0.00	0.00	0.38	0.02	0.40
Maximum Annual Construction Emissions ¹	4.75	0.00	0.00	2.94	0.15	7.91
Monitoring/Data Collection	0.00	0.00	0.00	1.52	0.08	1.59
Maximum Annual Operational Emissions	0.00	0.00	0.00	1.52	0.08	1.59
Draft SCAQMD Threshold						3,000
Exceed Threshold?						No
CEQ Reference Point						25,000
Exceed Reference Point?						No

Source: ICF emissions modeling, 2013.

Table 4.3-7. Estimate of Operations-Related Regional Criteria Pollutant Emissions for CEQA (pounds per day)

Phase	ROG	NO_X	CO	SO_X	PM10	PM2.5
Monitoring/Data Collection	0.04	0.04	0.48	0.00	0.00	0.00
SCAQMD Regional Significance Threshold	55	55	550	150	150	55
Exceed Threshold?	No	No	No	No	No	No
Source: ICF emissions modeling, 2013.						

 $^{^{1}}$ Maximum daily emissions assume all Preserve management activities occur during the same year.

¹ Maximum daily emissions assume all Preserve management activities occur during the same year.

Table 4.3-8. Estimate of Operations-Related Localized Criteria Pollutant Emissions for CEQA (pounds per day)

Phase	ROG	NO _X	СО	SO_X	PM10	PM2.5
Monitoring/Data Collection	0.00	0.00	0.00	0.00	0.00	0.00
SCAQMD Localized Significance Threshold ¹		81	485		1	1
Exceed Threshold?		No	No		No	No

Source: ICF emissions modeling, 2013.

Table 4.3-9. Estimate of Operations -Related Criteria Pollutant Emissions for NEPA (tons per year)

ROG	NO_X	CO	SO_X	PM10	PM2.5
0.00	0.00	0.01	0.00	0.00	0.00
10	10	100	100	100	100
No	No	No	No	No	No
	0.00 10	0.00 0.00 10 10	0.00 0.00 0.01 10 10 100	0.00 0.00 0.01 0.00 10 10 100 100	0.00 0.00 0.01 0.00 0.00 10 10 100 100 100

As shown in Table 4.3-6, annual emissions estimates would be well below both SCAQMD draft GHG thresholds (3,000 MT) and CEQ's reference point (25,000 MT). However, GHGs are analyzed based on the sum of construction and operational emissions. Annual operational emissions estimates would be well below both SCAQMD draft GHG thresholds (3,000 MT) and CEQ's reference point (25,000 MT) during combined construction and operational activities.

As shown in Table 4.3-7 and 4.3-8, daily emissions estimates would be well below SCAQMD daily mass regional and localized threshold levels.

As shown in Table 4.3-9, annual emissions estimates would be well below federal de minimis levels.

As such, all air quality and GHG-related impacts are considered less than significant. No mitigation measures would be required. Further, while not quantified herein, the application of pesticides and herbicides would also result in a minimal amount of off-gassing ROG/VOC emissions; and nitrogen-based fertilizer applications, if utilized for restoration purposes, also are a major source of N_2O emissions. The extent of potential pesticide and herbicide applications is unknown at this point. However, any VOC and N_2O emissions from prescribed pesticide and herbicide activities would be minimal (i.e., isolated treatment of problem areas) and are not expected to change significance determinations herein. Impacts would be less than significant, and no mitigation measures would be required.

Impact AIR-6: Consistency of biological mitigation and conservation activities with SCAQMD's Air Quality Management Plan.

SCAQMD is required, pursuant to the CAA, to reduce emissions of the criteria pollutants for which the SCAB is in nonattainment status (i.e., O_3 , NO_2 , PM10, and PM2.5). The Proposed Plan is subject to SCAQMD's AQMP, which contains a comprehensive list of pollution-control strategies directed at reducing emissions and achieving ambient air quality standards. These strategies are, in part, based on regional population, housing, and employment projections prepared by SCAG. The Growth Management and Regional Mobility chapters of SCAG's RCPG are the basis for the land use and

¹ Localized Significance Thresholds used here are the minimum (i.e., worst case) of the four SRA's within the Plan Area, as shown in Table 3.3-5.

transportation components of the AQMP. These chapters are used in the preparation of the air quality forecasts and consistency analysis included in the AQMP. Both the RCPG and AQMP are based, in part, on projections that originated from county and city general plans and are incorporated into SCAG's most recent 2012–2035 RTP/SCS.

The Proposed Plan would result in a small number of currently designated residential lands being converted to permanent open space, which would likely result in an emissions reduction in these areas. The Proposed Plan would not result in any permanent emission sources. Pursuant to SCAQMD guidelines, it is considered consistent with the region's AQMP. Impacts would be less than significant, and no mitigation measures would be required.

Impact AIR-7: Exposure of sensitive receptors to substantial pollutant concentrations resulting from biological mitigation and conservation activities.

Biological mitigation and conservation activities would be minimal, intermittent, sporadic, would not occur in a given place for an extended period of time, and would occur over a period much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks. Ongoing operational activities would be minimal and limited to a few days per year. Accordingly, the project would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant and no mitigation measures would be required.

Impact AIR-8: Exposure of a substantial number of people to objectionable odors resulting from biological mitigation and conservation activities.

Biological mitigation and conservation activities would not create odorous sources, which are generally limited to heavy industry and agriculture land uses. Thus, these activities would not emit odors that would affect a substantial number of people. Impacts would be less than significant, and no mitigation measures would be required.

4.3.2.3 Alternative 3: Reduced Plan

Under Alternative 3, air quality and GHG effects would be essentially the same as those discussed under the Proposed Plan.

Impacts AIR-1, AIR-2, AIR-3, AIR-4, AIR-5, AIR-6, AIR-7, and AIR-8

All impacts under the Reduced Plan would be considered less than significant. No mitigation measures would be required.

4.3.2.4 Cumulative Impacts

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. The region of analysis for cumulative effects on air quality is the SCAB. The SCAB experiences chronic exceedances of state and federal ambient air quality standards as a consequence of past and present projects, and is subject to continued nonattainment status by reasonably foreseeable future projects. These nonattainment conditions within the region are considered cumulatively significant, and SCAQMD thresholds have been established to ensure attainment of NAAQS and CAAQS. Therefore, the construction and operational impacts of related projects in areas surrounding the Plan Area would be cumulatively considerable within the SCAB if

their combined construction or their combined operational emissions would exceed the SCAQMD daily emission thresholds for construction and operation, respectively.

The 2006 LRTP Program EIR found that the LRTP (including covered freeway improvement projects), in conjunction with future urban development within Orange County, would not have a substantial change on air quality and its contribution to cumulative air quality; therefore, LRTP covered project impacts were considered less than significant.

With respect to criteria pollutants, Proposed Plan–related criteria pollutant emissions are considered to be less than significant, as shown in Tables 4.3-3 through 4.3-6. Preserve management activity construction-related criteria pollutant emissions would be below both regional and localized SCAQMD thresholds of significance during construction. Although the specific timing of Proposed Plan–related management activities is unknown at this point, such activities, once commenced, could potentially overlap with other nearby construction projects (the details of which are not currently known). If projects were to overlap, their emissions could combine to worsen both local (with respect to Localized Significance Thresholds shown in Table 4.3-2) and/or regional (with respect to the mass emission thresholds shown in Table 4.3-1) air quality. However, Proposed Plan–related emissions are minimal, and are well below the SCAQMD regional and localized thresholds. Therefore, the Proposed Plan would not contribute considerably to a cumulative air quality impact.

With respect to GHG and climate change, GHGs and climate change are exclusively cumulative impacts, and there are no non-cumulative GHG emission impacts from a climate change perspective. As such, GHGs and climate change are cumulatively considerable even though the contribution may be individually limited (SCAQMD 2008). SCAQMD methodology and thresholds are thus cumulative in nature. As discussed above, the Proposed Plan would be below SCAQMD draft GHG threshold and CEQ's reference point. Therefore, the Proposed Plan would not contribute to a cumulatively significant impact related to air quality and GHGs.

4.3.2.5 Summary of Impacts

Preserve management activity emissions would temporarily generate criteria pollutant (ROG, NO_X , SO_X , CO, PM_{10} , and $PM_{2.5}$) and GHG (CO_2 , CH_4 , and N_2O) emissions, which could result in adverse effects on short-term ambient air quality and climate change. Daily emissions estimates would be well below SCAQMD daily mass regional and localized threshold levels, annual emissions estimates would be well below federal de minimis levels, and annual emissions estimates would be well below both SCAQMD draft GHG thresholds (3,000 MT) and CEQ's reference point (25,000 MT). As such, all air quality and GHG-related impacts, including cumulative impacts, are considered less than significant, with no mitigation required.

Table 4.3-10. Summary of Air Quality and Greenhouse Gases Effects under All Alternatives

	Effects of Alternatives					
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan			
AIR-1	-	- (same as Alt 1)	- (same as Alt 2)			
AIR-2	0	0 (same as Alt 1)	0 (same as Alt 2)			
AIR-3	-	- (same as Alt 1)	- (same as Alt 2)			
AIR-4	0	0 (same as Alt 1)	0 (same as Alt 2)			
AIR-5	-	- (same as Alt 1)	- (same as Alt 2)			
AIR-6	0	0 (same as Alt 1)	0 (same as Alt 2)			
AIR-7	0	0 (same as Alt 1)	0 (same as Alt 2)			
AIR-8	0	0 (same as Alt 1)	0 (same as Alt 2)			

^{0 =} no substantial change relative to current conditions

Table 4.3-11. Summary of Air Quality and Greenhouse Gases Impact Determinations for Biological Mitigation and Conservation Activities

		Effects of Alternatives					
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan				
AIR-5	Less than Significant	Less than Significant	Less than Significant				
AIR-6	Less than Significant	Less than Significant	Less than Significant				
AIR-7	Less than Significant	Less than Significant	Less than Significant				
AIR-8	Less than Significant	Less than Significant	Less than Significant				

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Orange County Transportation Authority	

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Section 4.3. Air Quality and Greenhouse Gases

4.4.1 Methodology and Significance Criteria

Impacts related to biological resources were assessed based on the analysis of the proposed NCCP/HCP, consultation with OCTA staff, and review of applicable documents and materials available with the state, County, and local jurisdictions. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact related to biological resources.

The Proposed Plan or its alternatives would have a significant impact if it causes any of the following:

- Have a substantial adverse effect on wetlands or other sensitive natural vegetation community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect, either directly or indirectly, on any species identified as a candidate, sensitive, or special-status species (including species listed as threatened or endangered) in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Substantially interferes with the movement of any native resident or migratory fish or wildlife species.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree
 preservation policy or ordinance.

Direct Effects: For the purposes of the NCCP/HCP and the EIR/EIS, OCTA developed "planning-level" footprints for each of the covered freeway improvement projects. While the effects from freeway improvements would have effects both permanent and temporary in nature, at this stage of project design, these footprints do not distinguish between permanent and temporary effects. For the effects evaluation, the entire footprints were considered direct and permanent effects, which are likely to overestimate the actual extent of permanent effects on biological resources. Further, the actual areas of temporary effect associated with covered freeway improvement projects would be restored to pre-project conditions.

Indirect Effects: Covered freeway improvement projects may have effects on biological resources beyond the direct effects of their construction footprints and project duration, resulting in indirect effects during and after construction. Many ecological effects of transportation are subtle and gradual which makes the extent and amount of indirect effects difficult to quantify (NRC 1997). Forman and Deblinger (2000) estimated the maximum distance of ecological effects, including factors such as altered streams, habitat invasion by exotics, noise, and animal density, from a suburban freeway averaged about 1,000 feet, but they noted a high degree of variability in that average. For the purposes of the NCCP/HCP and the EIR/EIS, the Wildlife Agencies recommended the use of a buffer of 300 feet around the direct effect footprint to estimate the level of indirect effects. Although some indirect effects on Covered Species may extend beyond 300 feet from the edge of the roadway, it is recognized that the proposed M2 freeway projects

primarily consist of improvements within the existing freeway footprint, so potential indirect effects would be limited to incremental increases of existing indirect effects. These incremental increases would be concentrated in the area closest to the edge of the roadway.

The primary types of indirect effects associated with freeway improvement projects would include the following.

Noise and Light Pollution. Construction equipment and activities may result in a temporary increase in noise and light pollution around project sites, while increased traffic volume along improved freeways would be associated with noise and lighting effects that may extend beyond existing background levels. Bird breeding success can be inversely correlated with proximity of the breeding site to roads and with road density for a wide variety of species (Kociolek et al. 2011). Light pollution may affect essential wildlife behavior, including movement through wildlife corridors, foraging, and reproduction patterns. Some artificial lighting structures could attract migrating bird species, increasing the probability that they may encounter collisions, or have their flight paths redirected, which may deplete their energy stores (Kociolek et al. 2011).

Air Pollution. Important ecological effects are associated with chemical pollutants emitted into the atmosphere by motor vehicles. These emissions may become widely dispersed and alter air, water, and soil chemistry over large areas, thus affecting ecosystems through mechanisms as varied as exposure to tropospheric ozone and haze, to acid deposition and nitrogen enrichment (NRC 1997). The combustion of fossil fuels used in motor vehicles accelerates the process that causes increased concentrations of carbon dioxide in the atmosphere, and transportation is second only to industry as the energy-use sector producing the most CO₂ emissions (NRC 1997). Besides carbon, excess input of nitrogen can affect biodiversity and ecosystem function significantly, as nitrogen is usually a limiting factor. Differences in the rate of nitrogen assimilation among species can eventually alter the mix and abundance of plants in the ecosystem, potentially making it more difficult for rare species to persist in these altered communities (NRC 1997; Weiss 1999). Besides its role in soil and water acidification or nutrient enrichment, N₂O is an ozone-depleting substance and a long-lived greenhouse gas that has potential implications for global nitrogen cycling and future changes in climate (NRC 1997). Road traffic can also mobilize and spread dust, which can block photosynthesis, respiration, and transpiration of plants or cause physical damage that could be sufficient to alter plant community structure (Trombulak and Frissell 2000).

Hydrology and Water Quality Effects. Nearby streams and wetlands may be affected by increased sedimentation or runoff during or after construction, or by runoff of oil and grease from larger roads with more traffic (Angermeier et al. 2004). Roads directly change the hydrology of slopes and stream channels, resulting in surface-water habitats that are often detrimental to native biota (Trombulak and Frissell 2000). The covered freeway improvement projects would result in the conversion from undeveloped to developed land cover types. This conversion would increase the amount of impervious surfaces within the Plan Area. Impervious surfaces are materials of natural or anthropogenic sources that prevent the infiltration of water into soil. Impervious surfaces can affect the flow, sedimentation load, water temperature, and pollution composition of stormwater runoff. The proliferation of impervious surfaces fundamentally alters the timing of precipitation runoff, resulting in higher peak flows during storms and lower base flows, or causing flooding that incises channels and adds sediment to bottom substrates (Angermeier et al. 2004). In addition, construction-related activities may result in contamination spills that could affect water quality of nearby streams and wetlands. Covered Species relying on aquatic habitats would be especially vulnerable to hydrological and water quality effects.

Introduction and Spread of Invasive Species. Construction activities related to freeway improvement projects would present opportunities for the introduction and/or proliferation of invasive plant species in the Plan Area. Roads provide dispersal of exotic species via three mechanisms: providing habitat by altering conditions, making invasion more likely by stressing or removing native species, and allowing easier movement by wild or human vectors (Trombulak and Frissell 2000). While roads may provide dispersal corridors for animals and plants, by providing linear strips of suitable habitat within an otherwise hostile landscape, they can also act as immigration corridors for exotic and invasive species worldwide (Holderegger and Di Giulio 2010). Construction equipment and personnel can serve as vectors for transport of invasive species, especially plant seeds and propagules. Vegetation clearing at project sites allows invasive species to become established. These species are generally fast growing and thrive in disturbed habitats. Once established, they can spread quickly into natural areas and out compete native species for resources.

Habitat Connectivity. Of all the indirect effects of roads, the barriers to movement, migration, and gene flow that roads present may have the greatest effect on vertebrates (Forman and Alexander 1998) through increased functional isolation of populations leading to a reduction of gene flow and potential detrimental effects on the gene pool. In a recent review of the genetic effects of roads, 19 species-specific studies (on invertebrates, amphibians and mammals) were identified of which 14 reported negative effects on genetic diversity and 5 reported no effects (Holderegger and Di Giulio 2010). In all cases, the M2 covered freeway improvement projects would be designed to improve existing freeway infrastructure; therefore, wildlife movement and habitat connectivity/ fragmentation effects have already occurred with original construction of these roadways. For the most part, the covered freeway improvement projects would occur within urbanized areas where habitat connectivity is not an issue. There are a few instances in which the covered freeway improvement projects would be located between blocks of natural habitat (e.g., SR-91 between Chino Hills and Santa Ana Mountains and SR-57 through Chino Hills) or adjacent to key habitat linkages.

Risk of Fire Ignition - Wildfires can be ignited along the edge of freeways from car fires, flares, sparks, discarded cigarette butts, and various other freeway sources/activities. The covered freeway improvement projects would expand the existing freeways resulting in greater traffic volumes along these routes. The risk of fire ignition would be slightly increased. This risk is greatest in situation where blocks of natural habitat are adjacent to freeways.

Vehicular Mortality - The addition of lanes and other road improvements would result in wider roadways and increases in traffic volumes that may contribute to slight increases to the existing level of vehicular mortality (road kill).

4.4.1.1 Assessment of Covered Freeway Improvement Projects

Unlike other resource topics covered in this EIR/EIS which rely on a summary of anticipated covered freeway improvement project impacts as presented in the OCTA Long Range Transportation Plan (LRTP) Program EIR (2006 LRTP Program EIR), the biological resources analysis presented herein provides an assessment of biological resources effects resulting from covered freeway improvement projects as determined and described in the NCCP/HCP. As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and analyze the potential impact on

jurisdictional wetlands and waters for the purpose of establishing streamlined permitting processes and approving mitigation sites associated with Clean Water Act (CWA) Section 401 and California Fish and Game Code Section 1602 authorizations. USACE is conducting a separate NEPA analysis to establish a streamlined permitting process and mitigation site approval for CWA Section 404 permits. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate projectspecific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents, including detailed impacts on jurisdictional wetlands and waters, and comply with any applicable mitigation requirements identified as part of project-specific environmental review, as well as all avoidance and minimization measures addressed in the NCCP/HCP and any mitigation measures contained in the general plans for each of the participating jurisdictions. As part of the impact tracking requirements under the NCCP/HCP, OCTA will utilize information from project-level analyses to ensure that the degree of impact that ultimately occurs under the Proposed Plan is consistent with the degree of impact characterized in the Proposed Plan and EIR/EIS (see Table 4.4-1). If impacts exceed the caps set in the Proposed Plan, OCTA will coordinate with the Wildlife Agencies to process a minor amendment to the Proposed Plan to adjust the cap if warranted.

For CEQA purposes, each alternative is compared with respect to anticipated biological resource impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated biological resource impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.4.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP alternatives on biological resources are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management). As noted in Section 4.4.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.4.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact BIO-1: Potential for direct impacts on sensitive natural communities from covered freeway improvement projects.

To estimate effects resulting from implementation of covered freeway improvement projects on natural communities, the direct footprints were overlaid with the regional natural communities information. Effects on each natural community cover types are summarized in Table 4.4-1.

Table 4.4-1. Effects on Natural Communities

	Freeway Improvement Projects				
Land Cover Type	Direct Effects ¹ (acres)	Estimate of Indirect Effects ² (acres)			
Chaparral	5.0	41.9			
Coniferous Forest	0.0				
Grassland	108.1	280.9			
Riparian	5.0	57.0			
Scrub	10.0	85.2			
Water	0.4	0.1			
Wet Meadows/Marsh	2.5				
Woodland	10.0	19.3			
Totals	141.0	484.4			

¹ Direct effects resulting from freeway improvement projects include both permanent and temporary effects. Estimated direct effects are based on a "planning-level" footprint. Actual effects are expected to be less through the implementation of avoidance and minimization measures. The amount of direct effects on natural communities has been adjusted to address the low precision and accuracy of the regional habitat data and allow for habitat types with a small amount of impact to serve as a reasonable cap to direct effects under the Plan.

The calculations of direct effects represent reasonable worst-case assumptions of future project effects because the actual effects of Covered Projects over the 40-year permit term may vary from those presented above; they would likely be less than the estimated effects as a result of avoidance and minimization measures that will be applied as part of project-specific environmental review and project design. Grasslands are the most heavily affected natural land cover type because this cover type is especially common in previously disturbed areas, including areas surrounding existing freeway infrastructure; however, most of the grassland impacts would be in highly degraded areas immediately adjacent to the existing freeways that have been mapped as grassland but provide less habitat value than typical grassland communities because they are exposed to a variety of indirect effects such as noise, light, pollution, and invasion by non-native weedy species.

Direct impacts on sensitive natural communities would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-11, would reduce this impact to less than significant.

Impact BIO-2: Potential for indirect impacts on sensitive natural communities from covered freeway improvement projects.

To estimate the indirect effects resulting from implementation of covered freeway improvement projects on natural communities, the indirect footprints (300 foot buffer around the direct impact footprint) were overlaid with the regional natural communities information. Indirect effects on each natural community cover types are summarized in Table 4.4-1. Similar to the direct impacts, grasslands are the natural community that would be most heavily affected by indirect effects. However, other sensitive natural communities would also be indirectly affected including coastal sage scrub, woodlands, and riparian areas.

² Indirect effects have been estimated using a 300-foot buffer around direct effect areas as recommended by the Wildlife Agencies.

Indirect impacts on sensitive natural communities would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-12, would reduce this impact to less than significant.

Impact BIO-3: Potential for direct impacts on Covered Species from covered freeway improvement projects.

For all Covered Species, direct impacts associated with covered freeway improvement projects were assessed based on the intersection of the direct footprints with the predicted species habitat models, known species occurrences, and designated critical habitat. Table 4.4-2 provides a summary of these impacts.

All Covered Species and their habitat have the potential to be directly impacted by the covered freeway improvement projects. The removal of suitable occupied habitat has the potential to be an adverse direct effect on Covered Species. Direct impacts on Covered Species and their habitat would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-13, would reduce this impact to less than significant.

Table 4.4-2. Effects on Covered Species from Covered Freeway Improvement Projects

		Species Habitat or Habitat (acres)		wn Occurrences s / individuals)
Species	Direct	Indirect	Direct	Indirect
Plants				
Intermediate mariposa lily	3.9	28.1	0	0
Many-stemmed dudleya	11.1	83.7	0	0
Southern tarplant	9.2	35.3	0	0
Fish				
Arroyo chub	0.1	0.9	0	1/1
Reptiles				
Coast horned lizard	63.4	184.2	0	0
Orangethroat whiptail	45.1	110.7	0	2/2
Western pond turtle			1/2	1/7
Aquatic	3.1	16.5		
Upland	45.8	283.8		
Birds				
Cactus wren	9.7	85.2	0	2/3
Coastal California gnatcatcher			2/6	5/9
Very High	2.4	13.9		
High	3.5	53.1		
Moderate	2.7	24.2		
Low	1.7	4.8		
Total	10.3	96.0		
Critical Habitat	11.9	123.9		
Least Bell's vireo	4.9	55.2	4/21	10/14
Southwestern willow flycatcher	5.1	60.5	0	0
Mammals				
Bobcat	45.9	246.0		
Mountain lion	26.4	123.0		

Impact BIO-4: Potential for indirect impacts on Covered Species from covered freeway improvement projects.

For all Covered Species, indirect impacts associated with covered freeway improvement projects were assessed based on the intersection of the direct footprints with the predicted species habitat models, known species occurrences, and designated critical habitat. Table 4.4-2 provides a summary of these impacts.

All Covered Species and their habitat have the potential to be indirectly impacted by the covered freeway improvement projects. Indirect impacts on Covered Species and their habitat would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-14, would reduce this impact to less than significant.

Impact BIO-5: Potential for direct impacts on non-covered special status species from covered freeway improvement projects.

As documented in the 2006 LRTP Program EIR, covered freeway improvement projects could result in direct impacts on non-covered special-status species and their habitats. The 2006 LRTP Program EIR identifies a total of 139 special-status species within the 2006 LRTP Program EIR planning area. A review of current CNDDB occurrences (1990 and later) identified a total of nine species from this list that have extant occurrences within the M2 NCCP/HCP covered freeways improvement project footprints (see Table 4.4-3).

Table 4.4-3. Non-Covered Special-Status Species Occurrences within Covered Freeway Improvement Project Footprint

			Federally or State Threatened or	Direct/
Туре	Species Common Name	Species Latin Name	Endangered	Indirect
Plants				
	Braunton's milk-vetch	Astragalus brauntonii	Yes	Indirect
	Long-spined spineflower	Chorizanthe polygonoides var. longispina	No	Direct
Invertebrate	s			
	Tiger beetle	Cicindelinae	No	Indirect
	Monarch butterfly	Danaus plexippus	No	Direct
Fish				
	Santa Ana sucker	Catostomus santaanae	Yes	Direct
Amphibians				
	Coast Range newt	Taricha torosa torosa	No	Direct
Birds				
	So. California rufous- crowned sparrow	Aimophila ruficeps canescens	No	Indirect
	Golden eagle	Aquila chrysaetos	No	Indirect
Mammals				
	Western mastiff bat	Eumops perotis	No	Direct

The process that was undertaken for the Proposed Plan to evaluate and select covered species is included in Appendix C.4 of the Proposed Plan. The majority of the non-covered special-status species were removed from consideration because they do not overlap the freeway improvement project footprints and no impacts are expected. Other species were not included on the covered species list if it was determined that potential for impacts was very low, future listing of the species was unlikely, and/or feasibility of conservation under the M2 NCCP/HCP was not possible.

As noted in the 2006 LRTP Program EIR, impacts and appropriate mitigation measures would need to be identified and assessed on a project-by-project basis. During environmental review of individual freeway improvement projects, comprehensive biological field studies will be required to assess the site specific characteristics of each proposed project and to further determine potential presence and impacts on special-status species and their habitats.

At a programmatic level, implementation of covered freeway improvement projects, if unmitigated, could have the potential to result in significant impacts on special-status species due to direct impacts on species and loss of habitat. Mitigation measures in the 2006 LRTP Program EIR (Mitigation Measure 4.2-A) include avoidance and minimization measures to minimize potential impacts through project design, compensation for loss of habitat, and construction impact minimization measures (see Table ES-1 of Appendix E for descriptions of all LRTP programmatic mitigation measures). These mitigation measures would reduce potential impacts, and many impacts on special-status species would be mitigated or avoided; however, the 2006 LRTP Program EIR concluded that there would remain the potential for some residual project impacts. Therefore, potential impacts on non-covered special-status species were still considered significant and unavoidable after mitigation (OCTA 2006).

Impact BIO-6: Potential for indirect impacts on non-covered special-status species from covered freeway improvement projects.

Covered freeway improvement projects may have indirect effects on non-covered special-status species similar to those described above for Covered Species in Impact BIO-4, including noise and light pollution, hydrology and water quality effects, potential introduction and spread of invasive species, and vehicular mortality. Indirect impacts on non-covered special-status species and their habitat would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-16, would reduce this impact to less than significant.

Impact BIO-7: Potential for direct impacts on federally and state protected wetlands and jurisdictional aquatic resources from covered freeway improvement projects.

The covered freeway improvement projects have the potential to result in adverse direct impacts on federally and/or state-protected wetlands and jurisdictional aquatic resources. As part of the comprehensive permitting strategy, OCTA has estimated covered project impacts, reported in ranges, on potential federal and state jurisdictional features resulting from covered freeway improvement projects (see Table 4.4-4). Approximately 75% of the features that may be affected are concrete-lined and those impact totals are included in the impact totals below. The impact table does not differentiate between permanent and temporary impacts. Temporary impacts will be restored, except for concrete features, and permanent impacts will be mitigated (as applicable) at the sites listed in Tables 4.4-7 through 4.4-9, below. In addition, mitigation ratios by habitat type for impacts on CDFW jurisdictional streambed are included in Table 4.4-10. Note that some project

Table 4.4-4. Summary of Estimated Jurisdictional Wetlands and Other Waters Impacts

Project Name	HUC 10 ¹	HUC 8 ¹	Waters of the U.S. (acres)	Waters of the U.S. Wetlands (acres)	Waters of the U.S. (linear feet)	CDFW Streambed (acres)	CDFW Riparian (acres)	CDFW (linear feet)
Project A	San Diego Creek (HA 801.10) Santiago Creek (HA 801.10) Lower Santa Ana River (HA 801.10)	Santa Ana (HU 801.00)	0.50-1.0	0.0-0.1	2,500-3,500	0.75-1.25	0.0-0.1	2,500-3,500
Project B	San Diego Creek (HA 801.10)	Santa Ana (HU 801.00)	0.50-1.0	0.0-0.1	9,750-10,750	1.75-2.25	0.0-0.1	7,000-8,000
Project E	Bolsa Chica – Frontal HH (HA 801.10)	Santa Ana (HU 801.00)	0.50-1.0	0.0	4,000-5,000	1.0-1.5	0.0	4,000-5,000
Project F North ⁴	Lower Santa Ana River (HA 801.10) Santiago Creek (HA 801.10)	Santa Ana (HU 801.00)	1.0-1.5	0.0-0.5	2,000-3,000	1.5-2.0	0.0-0.5	750-1,750
Project F South ⁵	San Diego Creek (HA 801.10)	Santa Ana (HU 801.00)	0.75-1.25	0.0-0.1	5,500-6,500	1.0-1.5	0.0-0.5	4,000-5,000
Project G North ⁶	Lower San Gabriel River (HA 845.60)	San Gabriel (HU 805.00)	0.0-0.5	0.0-0.25	2,000-3,000	0.0-0.5	0.25-0.75	500-1,500
Project G South ⁷	Lower Santa Ana River (HA 801.10)	Santa Ana (HU 801.00)	1.0-1.5	0.0-0.1	100-1,100	1.25-1.75	0.0-0.1	100-1,100
Project I (Mainline Improvement)	Lower San Gabriel River (HA 845.60) Lower Santa Ana River (HA 801.10)	San Gabriel (HU 805.00) Santa Ana (HU 801.00)	1.5-2.0	0.0-0.1	1,000-2,000	1.75-2.25	0.0-0.1	250-1,250
Project L	San Diego Creek (HA 801.10)	Santa Ana (HU 801.00)	1.75-2.25	0.0-0.50	19,000-20,000	2.75-3.25	0.0-0.5	15,000-16,000
Totals Under Con	nprehensive Permitti	ng	7.50-12.00	0.0-1.75	45,850-54,850	11.75-16.25	0.25-2.65	34,100-43,100

Project Name	HUC 10 ¹	HUC 8 ¹	Waters of the U		rs of the U.S. ands (acres)	Waters U.S. (linea		CDFW Streambe (acres)	ed	CDFW Riparian (acres)	CDFW (linear feet)
M2 Project Not	Requiring Permits										
Project C2	San Mateo Creek (HA 901.30)	San Juan (HU 901.00)	none		none	non	е	none		none	none
M2 Projects Th	at May Proceed Under	Separate Perm	itting								
Project C ²	Aliso Creek- Frontal Gulf (HA 901.10) San Juan Creek (HA 901.20)	San Juan (HU 901.00)	0.08 (permane 0.057 (temporary)	,	permanent)	72 (perm 151 (tem)		0.05 (permand 0.80 (tempora		0.18 (temporary)	72 (permanent) 151 (temporary)
Project D ³	See Project C ³										
Project K ⁸	Lower San Gabriel River (HA 845.60) Bolsa Chica - Frontal HH (HA 801.10) Lower Santa Ana River (HA 801.10)	San Gabriel (HU 805.00) Santa Ana (HU 801.00) Santa Ana (HU 801.00)	1.14 (permane 5.33 (tempora	-	0.00	1,50 (perma: 4,92 (tempo	nent) 25	1.14 (permane 5.33 (tempora		0.00	1,508 (permanent) 4,925 (temporary)
Project M ⁹	See Project K ⁹										
M2 Projects Th Permitting	at May Proceed Under	- · · · · ·	1.22 (permanent) 5.39 (temporary)	0.04 (permanent	5,076	nanent)	1.19 (perma 6.13 (tempo	nent)	0.18 (temp	oorary)	1,580 (permanent) 5,076 (temporary)
M2 Projects Alı	ready Permitted										
Project H	Covered under separ	ate CEQA									
Project J	Covered under separ	ate CEQA									

¹ The U.S. Geological Survey created a hierarchical system of hydrologic units which are successively smaller and classified into six hydrologic unit codes (HUCs) from 2 to 12 digits long, called regions, subregions, basins, subbasins, watersheds, and subwatersheds. HUC 10 is the watershed level, and HUC 8 is the subbasin level.

² Project C is also known as Project C, Segment 1. Project C Impacts Source: 1) The I-5 Widening Project from State Route 73 to El Toro Road Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment dated August 2013, prepared by Caltrans, and 2) The I-5 Widening Project Between SR-73 and El Toro Road dated April 2013. The impact numbers reported in this table are associated with Alternative 2 (Preferred Alternative)..

³ Impacts occurring within the Project D footprint also occur within the Project C footprint. Because the schedule for Project C occurs prior to Project D, the impacts for Project D are analyzed as part of Project C.

						CDFW	CDFW	
			Waters of the U.S.	Waters of the U.S.	Waters of the	Streambed	Riparian	CDFW
Project Name	$\mathrm{HUC}\ 10^{1}$	$\mathrm{HUC}8^{1}$	(acres)	Wetlands (acres)	U.S. (linear feet)	(acres)	(acres)	(linear feet)

⁴ Project F North is also known as Project F, Segment 2

⁵ Project F South is also known as Project F, Segment 1

⁶ Project G North is also known as Project G, Segment 3

⁷ Project G South is also known as Project G, Segment 1a

⁸ Project K may be permitted separately; however, information for Project K is provided because this project may be permitted under the comprehensive permitting strategy. Project K impact source: 1) the San Diego Freeway (I-405) Improvement Project Draft Environmental Impact Report/Environmental Impact Statement dated May 2012 prepared by Caltrans and 2) the Natural Environment Study San Diego Freeway (I-405) Improvement Project SR-73 to I-605 dated March 2012. The impact numbers reported are associated with the largest Project K impact footprint, Alternative 3.

⁹ Project M occurs within the Project K footprint and is considered part of that project.

segments are being permitted outside of the comprehensive permitting strategy, and information on impacts for those projects is included in a separate section of the table. In addition, one project is not expected to result in impacts on federally and/or state-protected wetlands or jurisdictional aquatic resources, as depicted in the table below.

Direct impact on federally and/or state-protected wetlands and jurisdictional aquatic resources would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-17, would reduce this impact to less than significant.

Impact BIO-8: Potential for indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources from covered freeway improvement projects.

The covered freeway improvement projects have the potential to result in adverse indirect impacts on federally and/or state-protected wetlands and jurisdictional aquatic resources. These include changes in hydrology, water quality, and erosion and sedimentation from construction.

Indirect impacts on federally and/or state-protected wetlands and jurisdictional aquatic resources would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-18, would reduce this impact to less than significant.

Impact BIO-9: Potential for effects on wildlife movement from covered freeway improvement projects.

In all cases, covered freeway improvement projects would be designed to improve existing freeway infrastructure, and, therefore, wildlife movement and habitat connectivity/fragmentation effects have already occurred with original construction of these roadways. For the most part, the covered freeway improvement projects occur within urbanized areas where habitat connectivity is not an issue. There are four freeway improvement projects that are located either adjacent to or within Core Habitat Areas and Linkages (see Figure 4-1 in the Proposed Plan) and include:

- Project C2 has the potential to result in the loss of habitat where Interstate 5 occurs adjacent to a Trabuco Canyon/San Juan Creek Linkage Area.
- Project G has the potential to impact an identified Core Habitat Area (Chino Hills on Proposed Plan Figure 4-1) that occurs to the east and west of SR 57. The main corridor across the freeway in this area is Tonner Canyon.
- Project J has the potential to impact identified wildlife movement corridors where SR 91 occurs adjacent to the Santa Ana River and over Coal Canyon (Coal Canyon Linkage Area).
- Project L has the potential to result in the loss of habitat where Interstate 405 occurs adjacent to a Core Habitat Area (San Joaquin Hills) and near the potential Irvine Linkage Area.

Effects on wildlife movement would be potentially significant and would require mitigation. Mitigation, as described below under Impact BIO-19 would reduce this impact to less than significant.

Impact BIO-10: Potential for covered freeway improvement projects to conflict with local tree preservation policies and ordinances.

As identified in the 2006 LRTP Program EIR, many cities have tree protection ordinances for trees planted in public lands and parks that require permits and a one-to-one replacement ratio for

removal of trees. Compliance with such ordinances would mitigate any potential impacts related to conflicts with local tree ordinances.

Mitigation Measure 4.2-E in the 2006 LRTP Program EIR requires compliance with local tree protection ordinances (see Table ES-1 of Appendix E for descriptions of all LRTP programmatic mitigation measures). This mitigation measure would reduce potential impacts to a less than significant level (OCTA 2006).

Impacts from Biological Mitigation and Conservation Activities

Under the No Project/No Action Alternative, the proposed NCCP/HCP would not be implemented, and the associated take permits would not be authorized. It is anticipated that covered freeway improvement projects would continue; however, project approvals would be handled on a project-by-project basis. Projects without a federal nexus (i.e., Section 404 Permit or federal funding) that impact federally listed species would be required to obtain individual Section 10 permits by preparing project-level HCPs. In the absence of a coordinated conservation program, mitigation would be implemented in a piecemeal fashion and the cumulative net benefit of mitigation would be less effective on both the small and large scale.

While project-by-project mitigation may be effective at targeting and preserving high-value habitat, the creation of a large number of smaller mitigation sites would likely result in less effective species conservation across the landscape. Smaller mitigation areas may have difficulty meeting the preserve design standards of a coordinated conservation program to maximize preserve size, incorporate environmental gradients, minimize edges, and preserve habitat linkages. Furthermore, the absence of a comprehensive monitoring and adaptive management program would create less certainty in the long-term success of mitigation sites.

Impact BIO-11: Potential for direct impacts on sensitive natural communities from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project direct impacts on sensitive natural communities would occur under the No Project/No Action Alternative on a project-by-project basis that could include requirements for onsite habitat preservation/restoration as well as the acquisition (including purchasing credits in conservation banks) and restoration of offsite habitat areas. Under the No Project/No Action Alternative, mitigation of direct impacts on sensitive natural communities are expected to result in smaller, more isolated mitigation actions in comparison to the comprehensive mitigation approach included under the Proposed Plan; however, it is expected that the direct impacts of the biological mitigation and conservation activities would be less than significant. No mitigation is required.

Impact BIO-12: Potential for indirect impacts on sensitive natural communities from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project indirect impacts on sensitive natural communities also would occur under the No Project/No Action Alternative. Mitigation of indirect effects is generally addressed in the application of project-specific best management practices. Under the No Project/No Action Alternative, mitigation of indirect effects on biological resources is not expected to result in the offset of effects through habitat restoration and/or the purchase of mitigation bank credits, though this could be a project-specific requirement. It is expected that

indirect impacts of the biological mitigation and conservation activities would be less than significant. No mitigation is required.

Impact BIO-13: Potential for direct impacts on Covered Species from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project direct impacts on Covered Species would occur under the No Project/No Action Alternative as described above in BIO-11. It is expected that freeway improvement project impacts would be mitigated to a less-than-significant level; however, under the No Project/No Action Alternative, mitigation of direct impacts on Covered Species and their habitats are expected to result in smaller, more isolated mitigation actions in comparison to the comprehensive mitigation approach included under the Proposed Plan. The ongoing and long-term management of mitigation lands would be expected to be less under the No Project/No Action Alternative in comparison to the Proposed Plan that includes requirements for adequate funding to support management and monitoring of Preserves in perpetuity. Impacts would be less than significant, and no mitigation is required.

Impact BIO-14: Potential for indirect impacts on Covered Species from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project indirect impacts on Covered Species would occur under the No Project/No Action Alternative as described above in BIO-11. It is expected that freeway improvement project impacts would be mitigated to a less-than-significant level.

Potential indirect effects of biological mitigation and conservation activities on Covered Species would be reduced to less-than-significant levels through implementation of best management practices and any project-specific regulatory permit conditions. No mitigation is required.

Impact BIO-15: Potential for direct impacts on non-covered special-status species from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project direct impacts on non-covered species would occur under the No Project/No Action Alternative as described above in BIO-11. The 2006 LRTP Program EIR focuses on potential effects on special-status and special interest species located outside of designated NCCP/HCP areas. Mitigation measures in the 2006 LRTP Program EIR (Mitigation Measure 4.2-A) include avoidance and minimization measures to minimize potential impacts through project design, compensation for loss of habitat, and construction impact minimization measures (see Table ES-1 of Appendix E for descriptions of all LRTP programmatic mitigation measures). These mitigation measures would reduce potential impacts, and many impacts on special-status species would be mitigated or avoided; however, the 2006 LRTP Program EIR concludes that there is the potential for some residual project impacts to remain. Therefore, potential direct impacts on non-covered special-status species were considered significant and unavoidable after mitigation (OCTA 2006). When the 2006 LRTP Program EIR was prepared, it did not analyze that OCTA would develop a comprehensive conservation plan that also could reduce the potential for impacts on non-covered special-status species.

Impact BIO-16: Potential for indirect impacts on non-covered special-status species from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project indirect impacts on non-covered special-status species also would occur under the No Project/No Action Alternative. Mitigation of indirect effects is generally addressed in the application of project-specific best management practices.

Under the No Project/No Action Alternative, mitigation of indirect effects on biological resources is not expected to result in the offset of effects through habitat restoration and/or the purchase of mitigation bank credits, though this could be a project-specific requirement. It is expected that indirect impacts of the biological mitigation and conservation activities would be less than significant. No mitigation is required.

Impact BIO-17: Potential for direct impacts on federally and state protected wetlands and jurisdictional aquatic resources from biological mitigation and conservation activities.

Mitigation for direct impacts resulting from covered freeway improvement projects on federally and state protected wetlands and jurisdictional aquatic resources would occur under the No Project/No Action Alternative. Mitigation may be addressed on a project-by-project basis or through a more comprehensive strategy currently being pursued by OCTA (described further under the Proposed Plan). It is expected that impacts would be mitigated to a less-than-significant level.

Biological mitigation and conservation activities would not result in adverse direct effects on federally and state protected wetlands and jurisdictional aquatic resources because the purpose of such activities is the preservation, restoration, and enhancement of such communities and such activities would be implemented as part of project-specific regulatory permit conditions. Impacts would be less than significant, and no mitigation is required.

Impact BIO-18: Potential for indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources from biological mitigation and conservation activities.

Mitigation for covered freeway improvement project indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources also would occur under the No Project/No Action Alternative. Mitigation of indirect effects is generally addressed by the application of best management practices and appropriate design features. Mitigation of indirect effects on biological resources is not expected to result in the offset of effects through habitat restoration and/or the purchase of mitigation bank credits, though this could be a project-specific requirement. It is expected that indirect impacts of the biological mitigation and conservation activities would be less than significant. Impacts would be less than significant, and no mitigation is required.

Impact BIO-19: Potential for effects on wildlife movement from biological mitigation and conservation activities.

Mitigation for covered freeway improvement projects effects on wildlife movement would be addressed under the No Project/No Action Alternative on a project-by-project basis. Mitigation of wildlife movement effects would be generally addressed by the application of best management practices and project design, but may involve the purchase of mitigation bank credits and/or habitat restoration. It is expected that impacts would be mitigated to a less-than-significant level.

Biological mitigation and conservation activities would not result in adverse effects on wildlife movement because the purpose of such activities is the preservation, restoration, and enhancement of species habitats, and such activities would be implemented as part of project-specific regulatory permit conditions. Impacts would be less than significant, and no mitigation is required.

Impact BIO-20: Potential for biological mitigation and conservation activities to conflict with local tree preservation policies and ordinances.

As described above in Impact BIO-10, the 2006 LRTP Program EIR requires that covered freeway improvement projects comply with local tree protection ordinances (Mitigation Measure 4.2-E)(OCTA 2006). This mitigation would apply to biological mitigation and conservation activities as well, though it is more likely that biological mitigation and conservation activities would complement tree preservation policies and ordinances. Mitigation Measure 4.2-E would assure that any impacts would be reduced to a less-than-significant level.

4.4.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact BIO-1: Potential for direct impacts on sensitive natural communities from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in direct impacts on sensitive natural communities would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-11.

Impact BIO-2: Potential for indirect impacts on sensitive natural communities from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in indirect impacts on sensitive natural communities would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-12.

Impact BIO-3: Potential for direct impacts on Covered Species from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in direct impacts on covered species would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-13.

Impact BIO-4: Potential for indirect impacts on Covered Species from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in indirect impacts on covered species would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-14.

Impact BIO-5: Potential for direct impacts on non-covered special-status species from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in direct impacts on non-covered

special-status species would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur as described below under Impact BIO-15.

Impact BIO-6: Potential for indirect impacts on non-covered special-status species from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in indirect impacts on non-covered special-status species would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur as described below under Impact BIO-16.

Impact BIO-7: Potential for direct impacts on federally and state protected wetlands and jurisdictional aquatic resources from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in direct impacts on federally and state protected wetlands and jurisdictional aquatic resources would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-17.

Impact BIO-8: Potential for indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-18.

Impact BIO-9: Potential for effects on wildlife movement from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in effects on wildlife movement would be as described above for the No Project/No Action Alternative. Mitigation of these impacts would occur through Proposed Plan implementation as described below under Impact BIO-19.

Impact BIO-10: Potential for covered freeway improvement projects to conflict with local tree preservation policies and ordinances.

The potential for covered freeway improvement projects to conflict with local tree preservation policies and ordinances was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Under Alternative 2 (Proposed Plan), OCTA will implement the NCCP/HCP as a mechanism to offset potential project-related effects on threatened and endangered species and their habitats in a comprehensive manner. The Proposed Plan will provide for programmatic mitigation to offset impacts from the covered freeway improvement projects. As described in Chapter 2 "Proposed Plan and Alternatives," the Proposed Plan conservation strategy includes the acquisition of Preserve lands, funding of restoration projects, and implementation of avoidance and minimization measures. The Proposed Plan achieves higher-value conservation than what would be expected

through project-by-project mitigation in exchange for a streamlined project review and permitting process for the covered freeway improvement projects.

In addition, management and monitoring activities in the Preserve Areas could result in a small amount of take of Covered Species as a result of ongoing habitat management, restoration, and monitoring activities by Preserve Managers. These routine activities would also be covered by the Proposed Plan. In addition, OCTA has made a commitment to allow some public access and passive recreation (e.g., trails for hiking and equestrian use) to the degree that such activities do not conflict with the overall goals and objectives of wildlife and habitat protection on the Preserve Areas. Improvements to and, where appropriate, creation of new trails would also be covered under the Proposed Plan. The Proposed Plan establishes a threshold of 11 acres (approximately 1%) of the natural habitat within the combined Preserve System that can be permanently impacted through the construction of new trails, access roads, kiosk, maintenance facilities, or other features.

The conservation analysis (see Chapter 6, "Conservation Analysis," of the Proposed Plan) demonstrates how the conservation achieved through the conservation strategy (preserve acquisitions, restoration projects, avoidance and minimization measures) results in a level of conservation that meets or exceeds the Proposed Plan's biological goals, objectives, and targets. A quantitative summary of how the Proposed Plan meets the Plan targets is included as Table 4.4-5. A summary of the analysis of how the Proposed Plan also achieves the broader biological goals and objectives is included in Table 4.4-6. In some instances, the Proposed Plan identifies priorities for the future restoration projects to enhance and expand on the level of conservation needed to meet the Proposed Plan's biological goals, objectives, and targets. The specific Covered Species highlighted for additional conservation include arroyo chub and many-stemmed dudleya.

Table 4.4-5. Summary of Conservation Analysis for Plan Targets

	Total	Impro	eway vement jects	Preserve Activities		Conservati	on Actions	
Biometrics	within Plan Area	Direct Effects ¹	Indirect Effects ²	Direct Effects ³	Plan Targets ⁴	Preserve Acquisitions	Restoration Projects	Conservation Above or Below Target
Natural Communit	ies (acres)							
Chaparral	82,947	5.0	41.9	3.4	37.8	275.8	4.3	242.3
Coniferous Forest	1,930	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Grasslands ⁵	41,631	108.1	280.9	0.9	358.5	72.6	68.9	-217.0
Riparian	4,446	5.0	57.0	0.1	38.7	9.0	122.2	92.5
Scrub	59,477	10.0	85.2	2.7	68.0	218.9	170.6	321.5
Water	2,696	0.4	0.1	0.0	0.9	0.0	1.0	0.1
Wet Meadows/ Marsh	2,236	2.5	0.0	0.0	5.0	0.0	5.0	0.0
Woodland	13,993	10.0	19.3	3.9	37.5	312.5	16.9	291.9
Totals	209,356	141.0	484.4	11.0	546.4	888.8	388.9	731.3
Predicted Species H	Habitat Mode	els (acres)						
<u>Plants</u>								
Intermediate Mariposa Lily	55,623	3.9	28.1	1.5	24.9	119.8	0.0	94.9

	Total .	Impro	eway vement jects	Preserve Activities		Conservati	on Actions	
Biometrics	within Plan Area	Direct Effects ¹	Indirect Effects ²	Direct Effects ³	Plan Targets ⁴	Preserve Acquisitions	Restoration Projects	Conservation Above or Below Target
Many-stemmed Dudleya	91,237	11.1	83.7	5.9	75.8	474.4	0.0	398.6
Southern Tarplant	5,963	9.2	35.3	0.1	36.3	9.4	31.2	4.3
<u>Fish</u>								
Arroyo Chub	61	0.1	0.9	0.0	0.6	0.1	13.0	12.5
<u>Reptiles</u>								
Coast Horned Lizard	96,100	63.4	184.2	3.0	225.1	246.2	170.6	191.7
Orangethroat Whiptail	23,469	45.1	110.7	0.6	146.9	49.6	170.6	73.3
Western Pond Turtle–Aquatic	5,963	3.1	16.5	0.1	14.7	9.3	24.4	19.0
Western Pond Turtle–Upland	90,120	45.8	283.8	6.4	246.2	515.6	97.8	367.2
<u>Birds</u>								
Cactus Wren	55,686	9.7	85.2	2.4	66.8	194.0	14.5	141.7
Coastal California Gnatcatcher	65,616	10.3	96.0	2.9	74.5	238.2	170.6	334.3
Least Bell's Vireo	4,466	4.9	55.2	0.1	37.6	9.2	122.2	93.8
Southwestern Willow Flycatcher	4,807	5.1	60.5	0.1	40.7	9.2	122.2	90.7
<u>Mammals</u>								
Bobcat	189,607	45.9	246.0	11.0	236.7	885.2	343.2	991.7
Mountain Lion	156,554	26.4	123.0	10.3	134.8	831.4	171.4	868.0
Critical Habitat								
Coastal California Gnatcatcher	18,752	11.9	123.9	7.4	100.6	602.0	5.5	506.9

- Estimated direct effects are based on a "planning-level" footprint. Actual effects are expected to be less through the implementation of avoidance and minimization measures. The amount of direct effects for individual habitat types and predicted species habitat models have been adjusted to address the low precision and accuracy of the regional habitat data and allowance for habitat types with small amount of impacts to serve as a reasonable cap to direct effects under the Plan.
- ² Indirect effects have been estimated using a 300-foot buffer around direct effect areas.
- Direct effects associated with Preserve implementation activities (new trails, kiosks, maintenance facilities, etc.) have been estimated to be no more than 11 acres of natural habitat (approximately 1% of the Preserves). Because the location of the Preserve activity effects is not known at this time, a conservative estimate has been taken based on the proportion of the biometric within the Preserves. Actual effects on sensitive habitats are expected to be less through the implementation of avoidance and minimization measures.
- Plan targets were calculated using the following formula: (direct effects * 2) + (indirect effects * 0.5).
- Grasslands—All natural community types are substantially above their targets except for grasslands. The negative conservation balance for grasslands is, however, offset based on the following considerations: (a) direct and indirect effects on grasslands will generally occur for small patches of disturbed, predominantly nonnative grasslands along freeway edges that have low biological value; (b) conservation of grassland is occurring within large, intact areas of protected natural habitat that have a high biological value; (c) Preserve acquisitions include large patches of native grasslands; and (d) the Plan results in conservation of other sensitive habitats, including scrub, riparian, and woodlands, that exceed Plan targets.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Landscape Level Biological Goals and Obj	
	hance natural landscapes that result in conservation of areas large enough ble populations of Covered Species, and are linked to each other and/or nt to the Plan Area.
Landscape Objective 1.1: OCTA will conserve and manage natural landscape within core and linkage areas contiguous with existing protected lands.	Acquire. OCTA has acquired five Preserves—Ferber Ranch, Hafen, Hayashi, O'Neill Oaks, and Saddle Creek South—totaling 888.8 acres of natural habitat. In all instances, the five Preserves are located within priority conservation areas (as defined by the CBI Conservation Assessment) and immediately adjacent to other protected lands. These Preserves add to the protection of large blocks of natural open space in areas important for regional conservation.
Landscape Objective 1.2: OCTA will fund and successfully implement restoration projects within the Plan Area to restore or enhance habitat that supports populations of Covered Species and natural landscapes.	Restore. OCTA has approved for funding 11 restoration projects to date, totaling an estimated 388.9 acres of restored habitats. The restoration projects occur throughout the Plan Area in core habitat areas and within key habitat linkages and riparian corridors. The restoration projects are on lands that are either currently protected or are in the process of being protected through a conservation easement or an equivalent long-term protection mechanism approved by the Wildlife Agencies, and will enhance habitats that support Covered Species, including coastal sage scrub, cactus scrub, riparian, wetlands, and woodland habitats.
Landscape Goal 2 : Protect and enhance nat within the Plan Area.	ural and semi-natural landscapes important to maintain wildlife movement
Landscape Objective 2.1: OCTA will acquire, protect, and manage natural landscapes that help to secure wildlife movement corridors and provide landscape connectivity.	Acquire. OCTA has acquired four Preserves—Ferber Ranch, Hafen, O'Neill Oaks, and Saddle Creek South—totaling 597.6 acres of natural habitat in the Trabuco Canyon area that provides a significant addition to the protection of open space in a region of the Plan Area that provides connectivity between O'Neill Park, Cleveland National Forest, the Central Subregion of the Central-Coastal NCCP/HCP reserve system, and Orange County Southern Region HCP reserve system. In addition, OCTA has acquired the Hayashi Preserve in the Chino Hills area that provides 291.2 acres of natural habitat in a location that provides connectivity between the Puente Hills to the northwest and Santa Ana Mountains to the south.
Landscape Objective 2.2: OCTA will restore or enhance habitat through restoration projects that improve habitat connectivity and wildlife movement through existing protected lands.	Restore. Of the 11 restoration projects OCTA has approved for funding to date, five (totaling 213.4 acres of restored habitat) are located in areas highly important for habitat connectivity and wildlife movement and/or include specific design features (e.g., improve directional fencing to wildlife crossings) to promote wildlife movement. These restoration projects include North Coal Canyon (located in the Coal Canyon Linkage mapped by the Conservation Biology Institute [CBI]), West Loma (directional fencing to reduce roadkill on the 241 toll road), Big Bend (essential connection between Aliso and Wood Canyons Wilderness Park to the Laguna Coast Wilderness Park), Aliso Creek (riparian corridor linking several open space Preserves), and City Parcel (located in the Trabuco and San Juan Creeks Linkage mapped by CBI).

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective

Landscape Objective 2.3: OCTA will set forth policies and procedures requiring the planning and execution of Covered Projects in a manner that maintains and, if feasible, enhances wildlife connectivity through existing structures. OCTA will provide monitoring, when and where appropriate, to demonstrate this objective has been met.

Policy. The Plan includes the Wildlife Crossing Policy (see Section 5.6.2.3) as part of the avoidance and minimization measures. This policy requires that Covered Projects be evaluated during pre-project surveys to determine if existing structures function as a wildlife movement crossing. OCTA will require that appropriate design features are implemented to ensure that the wildlife crossing continues to function after the freeway construction improvements are completed. OCTA will provide a technical report summarizing design recommendations for review and approval by the Wildlife Agencies prior to final design. This technical report will set forth appropriate monitoring requirements of the wildlife crossing using guidance outlined in the Caltrans Wildlife Crossing Guidance Manual.

Conservation Actions¹

Landscape Goal 3: OCTA will protect, enhance, and/or restore natural landscapes within a range of environmental gradients and contiguous to other protected areas to allow for shifting species distributions in response to catastrophic events (e.g., fire, prolonged drought) or changed circumstances (e.g., climate change).

Landscape Objective 3.1: OCTA will acquire and/or restore natural landscapes within elevation ranges (0-500, 500-1,000, 1,000-1,500, 1,500-2,000 feet). The conservation and restoration of Covered Species habitat in or contiguous with existing Preserve lands will benefit potential shifting species distributions in response to catastrophic events and changed circumstances.

Acquire and Restore. OCTA has acquired Preserves and approved for funding restoration projects within different elevation ranges:

Elevation Range	Combined Preserve and Restoration Acres
0-500 feet	318.5
500-1,000 feet	772.8
1,000-1,500 feet	162.9
1,500-2,000 feet	23.5

Areas of the Plan Area at higher elevations already have a high percent of protected lands.

Landscape Goal 4: Protect and enhance habitat in geographically distinct areas across the Plan Area to conserve species and genetic diversity.

Landscape Objective 4.1: OCTA will acquire and/or restore natural landscapes within all the major watersheds (Los Angeles/San Gabriel River, Santa Ana River, San Juan) and a majority of core and linkage areas contributing to the conservation of genetic diversity within these areas.

Acquire and Restore. OCTA has acquired Preserves and approved funding for restoration projects within all of the major watersheds:

<u>Watersheds</u>	Combined Preserve and Restoration Acres
Los Angeles/San Gabriel Riv	er 310.7
Santa Ana River	257.7
San Juan Creek	709.3

In addition, OCTA has acquired Preserves and/or approved funding for restoration projects in 9 of the 12 core and linkage areas mapped by CBI.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹					
Natural Community Level Biological Goal	s and Objectives					
Natural Community Goal 1: Protect, manage	Natural Community Goal 1: Protect, manage, and enhance natural communities to promote native biodiversity.					
Natural Community Objective 1.1 [Chaparral]: OCTA will acquire and/or restore chaparral habitat to promote conservation of native biodiversity and connectivity that benefit Covered Species of the chaparral natural community.	Acquire and Restore. OCTA has acquired five Preserves that include a total of 275.8 acres of chaparral habitat. A majority of the Hafen (63%) and O'Neill Oaks (54%) Preserves include chaparral natural communities. In addition, the Agua Chinon/Bee Flat Canyon restoration project includes 4.3 acres of chaparral habitat restoration and/or enhancement. The conservation and restoration of chaparral habitat will benefit coast horned lizard, orangethroat whiptail, bobcat, and mountain lion.					
Natural Community Objective 1.2 (Grassland): OCTA will acquire and/or restore grassland habitat to promote native biodiversity and connectivity that benefit Covered Species of the grassland natural community.	Acquire and Restore. OCTA has acquired the Ferber Ranch and Hayashi Preserves, which have a combined 72.6 acres of grassland habitat. Native grassland has been mapped on both Preserves with a large patches of high quality native grassland habitat (totaling 17.1 acres) occurring on the Ferber Ranch property. OCTA will ensure appropriate management actions to protect and enhance the native grassland patches in both Preserves will be completed in accordance with the requirements incorporated into the Ferber Ranch and Hayashi RMPs. In addition, OCTA has approved funding for four restoration projects that include restoration of grassland habitats totaling 68.9 acres. Together these efforts amount to 141.5 acres of grassland habitat acquired and/or restored.					
Natural Community Objective 1.3 (Riparian): OCTA will acquire and/or restore riparian habitat in multiple locations across the Plan Area. These actions will enhance and expand riparian communities in key locations for wildlife movement, provide potentially suitable nesting habitat for Covered Species, and promote native biodiversity and connectivity that benefit Covered Species of the riparian natural community.	Acquire and Restore. OCTA has acquired three Preserves—Ferber Ranch, Hafen, and Hayashi—that have a total of 9.0 acres of riparian habitat. On the Hayashi Preserve, OCTA has undertaken steps to remove grazing within the riparian zone (using fencing) to allow the riparian habitat to passively recover and expand. In addition, 9 of the 11 restoration projects OCTA has approved for funding to date include riparian habitat restoration totaling 122.2 acres. The riparian restoration projects occur within areas important for regional conservation, including large sized restoration projects along Aliso Creek and Lower Silverado Canyon. Conservation of riparian habitat will benefit Covered Species that rely on healthy streambed ecosystems (western pond turtle), riparian nesting birds (least Bell's vireo, southwestern willow flycatcher), and large mammals using riparian habitat for movement cover (bobcat, mountain lion).					

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective Conservation Actions1 **Acquire** and **Restore**. OCTA has acquired four Preserves—Ferber Ranch, Natural Community Objective 1.4 (Scrub): OCTA will acquire and/or restore scrub Hafen, O'Neill Oaks, and Saddle Creek South—that have a total of 218.9 habitat. These actions will enhance and acres of scrub habitat. These Preserves support nesting populations of expand scrub habitat in key locations for coastal California gnatcatcher and cactus wren and add to the protection wildlife movement, provide potentially of an important block of scrub habitat between the Orange County suitable nesting habitat for Covered Southern Subregion HCP and Central-Coastal NCCP/HCP reserve systems. Species, and promote native biodiversity In addition, OCTA has approved for funding two restoration projects—UC and connectivity that benefit Covered Irvine Ecological Reserve and Chino Hills State Park—that include 14.5 Species of the scrub natural community. acres of cactus scrub habitat in locations known to support cactus wren and seven restoration projects that included coastal sage scrub habitat (156.1 acres) that will enhance and expand habitat for the coastal California gnatcatcher. This amounts to a total of 389.5 acres of scrub habitat that has been acquired and/or will be restored. Natural Community Objective 1.5 Acquire and Restore. OCTA has acquired five Preserves that include a (Woodland): OCTA will acquire and/or total of 312.5 acres of woodland habitat. A majority of the Hayashi (64%) restore woodland habitat. These actions Preserve includes woodland habitat, including 11.6 acres of coast live oak will enhance and expand woodland habitat woodland and 174.4 acres of California walnut woodland. The California for foraging and cover by Covered Species. walnut woodland is a habitat type considered of special concern by the and will promote native biodiversity and state and found to be under protected (CBI 2009). In addition, the Agua connectivity that benefit Covered Species Chinon/Bee Flat Canyon restoration project includes 16.9 acres of of the woodland natural community. woodland habitat restoration and/or enhancement. A wide range of species use woodlands for reproduction, foraging, shelter, and dispersal, including bobcat and mountain lion. Natural Community Goal 2: Maintain and enhance riparian and wetland function and values to benefit Covered Species and promote native biodiversity. Natural Community Objective 2.1: OCTA **Acquire and Restore**. For all of the Preserves that OCTA has acquired and will acquire, restore and/or enhance areas 6 of the 11 restoration projects approved for funding by OCTA, detailed with aquatic resources (per CDFW jurisdictional delineations have been completed to identify and map the jurisdiction). These conservation actions extent of aquatic resources within the Preserve/project boundaries. A will protect riparian and wetlands total of 80.6 acres of aquatic resources (per CDFW jurisdiction) occurs functions and values by improving the within the Preserves and approximately 101.5 acres of aquatic resources condition and integrity of the physical will be restored, enhanced, and/or rehabilitated through the restoration streambed, aquatic and riparian habitat, projects. The conservation actions protect riparian and wetland functions and values and will mitigate any unavoidable impacts on aquatic and hydrology. resources resulting from Covered Projects. Natural Community Objective 2.2: OCTA Policy. The Plan sets forth the Streambed Program (Section 5.7 and will set forth policies and procedures to Appendix E) designed to protect, and compensate for unavoidable impacts ensure Covered Projects result in no net on streambed areas and riparian/wetland habitats under jurisdiction of loss of wetland habitat values and acreage CDFW. Table E-2 in Appendix E shows that impacts will be mitigated using in the Plan Area. mitigation ratios depending on the type and quality of resources affected and timing of mitigation. OCTA will track impacts and mitigation of aquatic resources by habitat type and acreage using a Mitigation Ledger and provide a summary in an annual report.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Level Biological Goals and Object	ives
Species Goal 1 : Provide Conservation of int impacts associated with Covered Projects an	ermediate mariposa lily within the Plan Area and minimize and mitigate and Activities.
Species Objective 1.1: OCTA will acquire Preserves with occurrences of intermediate mariposa lily. OCTA will ensure that appropriate management and monitoring actions are incorporated into the RMPs for each Preserve to support sustainable populations of intermediate mariposa lily.	Acquire. OCTA completed baseline biological surveys in 2012 of the five acquired Preserves. During these surveys, four of the five Preserves—Ferber Ranch, Hafen, O'Neill Oaks, and Saddle Creek South in the Trabuco Canyon area—had a total of 77 identified locations, with a minimum population of 428 plants, of intermediate mariposa lily. OCTA will protect and monitor these locations and any future locations found, as part of the Preserve RMPs.
Species Objective 1.2: OCTA will establish policies and procedures that require OCTA to identify, track, mitigate, and report annually any unavoidable impacts on intermediate mariposa lily.	Policy. The Plan includes the Covered Plant Species Policy (see Section 5.6.2.2) which sets forth policies and procedures requiring OCTA to evaluate impacts based on project-specific field surveys of the Covered Projects and to mitigate any unavoidable impacts (at a 3:1 ratio) using credits determined through field surveys of Preserves and actions taken to enhance, restore, and create populations of covered plant species as part of restoration projects approved for funding by OCTA. OCTA will maintain a ledger-type accounting system to track credits and debits and report status as part of the Plan's annual report.
Species Goal 2 : Provide Conservation of ma impacts associated with Covered Projects ar	iny-stemmed dudleya within the Plan Area and minimize and mitigate and Activities.
Species Objective 2.1: OCTA will implement restoration projects where there are known occurrences of many-stemmed dudleya in the project vicinity. The restoration actions are expected to improve and enhance habitat for many-stemmed dudleya.	Restore. OCTA has approved for funding two restoration projects, West Loma and Big Bend; many-stemmed dudleya has been mapped in the vicinity of both projects. This plant is capable of self-fertilization and remains dormant as an underground corm in the dry months (June–November). The restoration actions have the potential to improve habitat conditions for many-stemmed dudleya to establish. OCTA will complete rare plants surveys (timing will be dependent on rainfall) at these restoration project sites to determine if populations of many-stemmed dudleya establish within the sites.
Species Objective 2.2: OCTA will select and oversee the implementation of a future restoration project that will be designed to establish a sustainable population of many-stemmed dudleya within an area of protected open space.	Restore. To ensure that the Plan provides conservation and management for many-stemmed dudleya, OCTA will select and oversee implementation of a future restoration project that will be designed to establish a population of many-stemmed dudleya (minimum of 500 individuals) within an area of protected open space. The design of the restoration project will take into consideration factors influencing the long-term viability of a many-stemmed dudleya population. If populations are identified as part of the monitoring on already approved restoration projects (see Species Objective 2.1) and/or identified during additional surveys within the acquired Preserves before the future restoration project funding is initiated, OCTA will not be required to complete this objective.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Objective 2.3: OCTA will establish policies and procedures that require OCTA to identify, track, mitigate, and report annually any unavoidable impacts on many-stemmed dudleya.	Policy. The Plan includes the Covered Plant Species Policy (see Section 5.6.2.3) which sets forth policies and procedures requiring OCTA to evaluate impacts based on project-specific field surveys of the Covered Projects and to mitigate any impacts (at a 3:1 ratio) using credits determined through field surveys of Preserves and actions taken to enhance, restore, and create populations of covered plant species as part of restoration projects approved for funding by OCTA. OCTA will maintain a ledger-type accounting system to track credits and debits and report status as part of the Plan's annual report.
Species Goal 3 : Provide Conservation of sou associated with Covered Projects and Activit	ithern tarplant within the Plan Area and minimize and mitigate impacts ies.
Species Objective 3.1: OCTA will implement a restoration project in an area with known occurrences of southern tarplant. The restoration design plans includes elements to promote the expansion of southern tarplant as part of the restoration efforts.	Restore. OCTA has approved for funding the Harriet Weider Regional Park restoration project that has southern tarplant mapped in the project vicinity. The restoration project sponsor has agreed to include specific measures as part of the restoration project design plan to achieve the establishment of southern tarplant. Southern tarplant seeds have been harvested from mature plants near the restoration site, and they will be included in the restoration seed mix. OCTA will ensure the restoration project sponsor conducts focused surveys for southern tarplant as part of their monitoring efforts to quantify the population established through the restoration process.
Species Objective 3.2: OCTA will establish policies and procedures that require OCTA to identify, track, mitigate, and report annually any unavoidable impacts on southern tarplant.	Policy. The Plan includes the Covered Plant Species Policy (see Section 5.6.2.2), which sets forth policies and procedures requiring OCTA to evaluate impacts based on project-specific field surveys of the Covered Projects and to mitigate any impacts (at a 3:1 ratio) using credits determined through field surveys of Preserves and actions taken to enhance, restore, and create populations of covered plant species as part of restoration projects approved for funding by OCTA. OCTA will maintain a ledger-type accounting system to track credits and debits and report status as part of the Plan's annual report.
Species Goal 4 : Provide Conservation of arr associated with Covered Projects and Activit	royo chub within the Plan Area and minimize and mitigate impacts ries.
Species Objective 4.1: OCTA will restore and enhance riparian habitat in the areas that potentially support arroyo chub and conserve natural habitat in the headwaters of a stream supporting arroyo chub to protect in-stream water quality.	Restore and Acquire. The City Parcel restoration project approved for funding by OCTA results in 13.0 acres of riparian restoration along lower reaches of Trabuco Creek. This restoration effort includes removal of nonnative plant species, removal of debris and trash, and planting of native plant species. These restoration activities will contribute to the improvement of the natural hydrological functions and water quality for this important coastal stream course and will improve Trabuco Creek as habitat for arroyo chub. In addition, OCTA has acquired the Ferber Ranch, Hafen, and O'Neill Oaks Preserves, which are located in headwaters of Trabuco Creek. The protection of 546.5 acres of natural habitat in this location contributes to the protection of water quality, sedimentation, and hydrological processes important for arroyo chub habitat downstream in Trabuco Creek.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Objective 4.2: OCTA will implement a restoration project focused on improving habitat conditions for arroyo chub, such as improving water quality, removal of nonnative aquatic species or modifying check dams to allow passage, to support sustainable populations in occupied areas.	Restore . OCTA will fund a future restoration project that will acheive a direct benefit to an existing population of arroyo chub. This restoration project could include actions to improve water quality in a subwatershed known to have arroyo chub (e.g. in Bell Canyon), removal or modification of check dams to facilitate fish passage (e.g. along San Juan creek in USFS lands), and/or a focused nonnative fish removal within a select tributary (e.g. fish trapping of source populations of nonnatives in Oso Creek)
Species Objective 4.3: OCTA will establish policies and procedures to avoid and minimize impacts to arroyo chub and its habitat.	Policy. The Plan includes the Aquatic Resources and Species Policy that outlines appropriate avoidance and minimization measures for construction activities in aquatic resources, such as rivers, creeks, and riparian areas. The Construction Lead will retain a qualified biologist during any project that could impact potential arroyo chub habitat to determine if arroyo chub might be present and subject to potential injury or mortality from construction activities. When arroyo chub are present, the project biologist will identify appropriate methods to capture, handle, exclude, and/or relocate those individuals. All fish exclusion and salvage activities will adhere to accepted NOAA Fisheries Service and CDFW protocols. Other policies that will provide for the protection of arroyo chub include the Avoidance and Minimization of Sensitive Biological Areas, Wildlife Crossing Policy, Stormwater and Water Quality BMPs, Wildfire Protection Techniques, and Wetland and Riparian Streambed Protection Program.
Species Objective 4.4: OCTA will participate in the implementation of a regional arroyo chub management plan and/or arroyo chub research being developed by the Orange County Vector Control District and/or CDFW. This does not obligate OCTA to dedicate additional funds or implement any specific measure in the arroyo chub management plan.	Policy . OCTA agrees to participate in a regional arroyo chub management plan and/or arroyo chub research being developed by the Orange County Vector Control District and/or CDFW. This may involve the introduction of arroyo chub to streams or ponds on the OCTA-acquired Preserves as an option to control mosquitos. OCTA also agrees to collaborate with these agencies and the restoration project sponsors to help determine if arroyo chub research is a viable option within any of the restoration projects approved for funding.
Species Goal 5 : Provide Conservation of coa associated with Covered Projects and Activit	st horned lizard within the Plan Area and minimize and mitigate impacts ies.
Species Objective 5.1: OCTA will acquire natural habitat that includes areas with loose, fine soils with high sand fraction, open areas with limited overstory for basking, and other features known to support coast horned lizard.	Acquire. OCTA has acquired five Preserves—Ferber Ranch, Hafen, Hayashi, O'Neill Oaks, and Saddle Creek South—totaling 888.8 acres of natural habitat. During baseline biological surveys completed for these Preserves in 2012, it was noted that each of these Preserves provide quality habitat features for coast horned lizard.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective

Conservation Actions¹

Species Goal 6: Provide Conservation of **orangethroat whiptail** within the Plan Area and minimize and mitigate impacts associated with Covered Projects and Activities.

Species Objective 6.1: OCTA will acquire Preserves that have documented occurrences of orangethroat whiptail. OCTA will ensure that appropriate management and monitoring actions are incorporated into the RMPs for each Preserve to protect and maintain habitat to support sustainable populations of orangethroat whiptail.

Acquire. During the baseline biological surveys in 2012 of the five acquired Preserves, it was noted that all of these Preserves provide quality habitat features for orangethroat whiptail and occurrences were identified on the Ferber Ranch and O'Neill Oaks Preserves.

Species Goal 7: Provide Conservation of **western pond turtle** within the Plan Area and minimize and mitigate impacts associated with Covered Projects and Activities.

Species Objective 7.1: OCTA will acquire a Preserve(s) with the potential to expand western pond turtle populations, potentially via translocation. OCTA will enhance the riparian and streambed habitat within the Preserve to create and/or improve permanent and intermittent water sources that could provide habitat for western pond turtle.

Acquire. OCTA has acquired the Hayashi Preserve in the Chino Hills area that has had incidental observations of western pond turtle (observed in 2011) by Chino Hills State Park staff. OCTA has undertaken steps to remove grazing within the Soquel Canyon riparian zone (using fencing) to allow the riparian habitat along this drainage to passively recover and expand. OCTA will include appropriate management actions to protect and/or enhance western pond turtle habitat and locations, such as monitoring and as-needed adaptive management through collaboration with, and agreement between, OCTA and the Wildlife Agencies, as part of the Preserve RMP.

Species Objective 7.2: OCTA will implement a restoration project that will directly benefit known populations of western pond turtle by removing invasive plant species degrading the stream course, expanding ponds and open water, and/or exposing potential basking sites.

Restore. OCTA has approved for funding the Aliso Creek restoration project, which involves 55 acres of riparian and transitional habitat restoration, including the removal of dense stands of arundo that have clogged the stream course and substantially degraded the quality of the stream as habitat for western pond turtle. There are four known occurrences of western pond turtle within the restoration project site. The restoration actions will improve western pond turtle habitat by improving water quality and aquatic habitat (exposing ponds and basking sites), enhancing aestivation habitat and access to aestivation habitat, and improving upland nesting habitat.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Objective 7.3: OCTA will establish policies and procedures to avoid and minimize impacts to western pond turtle and its habitat.	Policy. The Plan includes the Aquatic Resources and Species Policy that outlines appropriate avoidance and minimization measures for construction activities in aquatic resources, such as rivers, creeks, and riparian areas. Prior to ground-disturbing activities in or near aquatic habitats, OCTA will conduct preconstruction surveys for western pond turtles to determine their presence or absence within the construction footprint. If western pond turtles are found within the construction footprint, the occupied habitat and appropriate buffer, as determined by a qualified biologist, will be avoided to the maximum extent practicable. If avoidance is not possible and the species is determined to be present in work areas, the biologist may capture turtles prior to construction activities and relocate them to nearby, suitable habitat a minimum of 300 feet downstream from the work area. Alternatively, if recommended/approved by the Wildlife Agencies, the turtles may be captured and either temporarily held or relocated to an appropriate, nearby location. Other policies that will provide for the protection of western pond turtle include the Avoidance and Minimization of Sensitive Biological Areas, Wildlife Crossing Policy, Stormwater and Water Quality BMPs, Wildfire Protection Techniques, and Wetland and Riparian Streambed Protection Program.
Species Goal 8: Provide Conservation of cacassociated with Covered Projects and Activit Species Objective 8.1: OCTA will protect and manage blocks of occupied cactus wren habitat to support sustainable populations and maintain habitat linkages between cactus wren populations within the Plan Area.	tus wren within the Plan Area and minimize and mitigate impacts ites. Acquire. OCTA has acquired four Preserves—Ferber Ranch, Hafen, O'Neill Oaks, and Saddle Creek South in the Trabuco Canyon area—that support nesting populations of cactus wren and add to the protection of an important block of cactus scrub patches between the Orange County Southern Subregion HCP and the Central-Coastal NCCP/HCP reserve systems. During the 2012 baseline biological surveys of the Preserves, cactus wren occurrences were recorded on these Preserves.
Species Objective 8.2: OCTA will implement restoration project(s) focused on creating cactus scrub habitat to expand habitat in areas of known cactus wren populations.	Restore . OCTA has approved for funding two restoration projects—UC Irvine Ecological Reserve and Chino Hills State Park—that include 14.5 acres of cactus scrub habitat in locations known to support cactus wren.
Species Objective 8.3: OCTA will establish policies and procedures to avoid and minimize impacts to cactus wren habitat, including cactus scrub.	Policy: The Plan includes the policies that will require covered freeway improvement projects to be designed in a manner that avoids and/or minimizes impacts to sensitive biological resources, including cactus scrub. Temporary staging areas, access roads, and other project components that have the flexibility to be sited outside of sensitive areas will be incorporated into the project design. Best management practices will be followed to delineate environmentally sensitive areas and provide for training and monitoring to ensure these areas are protected. If temporary impacts to cactus sage scrub cannot be avoided, temporary impacts will be restored to their previous conditions. Other policies that will provide for the protection of cactus wren include the Nesting Birds Policy and Wildfire Protection Techniques.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Goal 9 : Provide Conservation of coa mitigate impacts associated with Covered Pr	astal California gnatcatcher within the Plan Area and minimize and rojects and Activities.
Species Objective 9.1: OCTA will protect and manage blocks of occupied gnatcatcher nesting habitat to support sustainable populations and maintain habitat linkages between coastal California gnatcatcher populations within the Plan Area.	Acquire. OCTA has acquired four Preserves—Ferber Ranch, Hafen, O'Neill Oaks, and Saddle Creek South in the Trabuco Canyon area—that protect coastal sage scrub habitat and support nesting populations of coastal California gnatcatchers. These Preserves add to the protection of important blocks of coastal sage scrub between the Orange County Southern Subregion HCP and Central-Coastal NCCP/HCP reserve systems and provide suitable habitat at a low elevation for movement of gnatcatchers. During the 2012 baseline biological surveys of the Preserves, occurrences of coastal California gnatcatchers were noted at the Ferber Ranch and O'Neill Oaks Preserves, and previous sightings have been recorded at the Saddle Creek South Preserve.
Species Objective 9.2: OCTA will restore and/or enhance coastal sage scrub habitat to expand coastal California gnatcatcher habitat.	Restore. OCTA has approved funding for eight restoration projects that include restoration of coastal sage scrub and cactus scrub habitat, totaling 170.6 acres. The Big Bend, City Parcel, Fairview Park, Harriett Weider Regional Park, Lower Silverado Canyon, UC Irvine Ecological Reserve, Chino Hills State Park, and North Coal Canyon restoration projects will restore coastal sage scrub and cactus scrub habitat in locations important for providing for coastal California gnatcatcher movement and dispersal. The coastal sage scrub restoration that is part of the West Loma and Aqua Chinon/Bee Flat Canyon restoration projects will improve coastal California gnatcatcher habitat within the Central-Coastal NCCP/HCP reserve system.
Species Objective 9.3: OCTA will establish policies and procedures to avoid and minimize impacts to coastal California gnatcatcher habitat, including coastal sage scrub.	Policy: The Plan includes the policies that will require covered freeway improvement projects to be designed in a manner that avoids and/or minimizes impacts to sensitive biological resources, including coastal sage scrub. Temporary staging areas, access roads, and other project components that have the flexibility to be sited outside of sensitive areas will be incorporated into the project design. Best management practices will be followed to delineate environmentally sensitive areas and provide for training and monitoring to ensure these areas are protected. If temporary impacts to coastal sage scrub cannot be avoided, temporary impacts will be restored to their previous conditions. Other policies that will provide for the protection of coastal California gnatcatcher include the Nesting Birds Policy and Wildfire Protection Techniques.

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹				
=	Species Goal 10 : Provide Conservation of least Bell's vireo within the Plan Area and minimize and mitigate impacts associated with Covered Projects and Activities.				
Species Objective 10.1: OCTA will acquire a Preserve with the potential to enhance riparian habitat to expand least Bell's vireo habitat.	Acquire. OCTA has acquired the Hayashi Preserve in the Chino Hills area, which has an existing riparian corridor along Soquel Canyon that has been historically disturbed by grazing. OCTA has taken steps to remove grazing from the riparian corridor by installing fencing to allow for the passive restoration of riparian habitat. In similar situations in the Chino Hills State Park, shortly after grazing was removed from the riparian zone, the habitat recovered and least Bell's vireo moved in. There are known least Bell's vireo occurrences above and below the Hayashi property, and, as the riparian habitat recovers on this Preserve, there is a strong likelihood it will support least Bell's vireo.				
Species Objective 10.2: OCTA will restore and/or enhance riparian habitat adjacent to occupied least Bell's vireo habitat.	Restore. OCTA has approved funding for the Aliso Creek and City Parcel restoration projects, which include restoration of riparian habitat totaling 68.0 acres. Each of these restoration projects has documented occurrences of least Bell's vireo within the project sites. The Aliso Creek restoration has had seven occurrences and City Parcel has had one occurrence that overlaps with the project sites. The riparian habitat restoration and enhancement will provide an immediate benefit to least Bell's vireo nesting habitat.				
Species Objective 10.3: OCTA will restore and/or enhance riparian habitat in areas not currently occupied by least Bell's vireo to encourage future expansion of the species distribution within the Plan Area.	Restore. OCTA has approved funding for five restoration projects that include restoration of riparian habitat (totaling 54.2 acres) in locations with documented occurrences of least Bell's vireo in the vicinity. These restoration projects are Fairview Park, Lower Silverado Canyon, Chino Hills, West Loma, and Agua Chinon/Bee Flat Canyon. These riparian habitat restoration projects will create least Bell's vireo habitat and are expected to support least Bell's vireo in the future.				
Species Objective 10.4: OCTA will establish policies and procedures to avoid and minimize impacts to least Bell's vireo habitat, including riparian habitat.	Policy: The Plan includes the policies that will require covered freeway improvement projects to be designed in a manner that avoids and/or minimizes impacts to sensitive biological resources, including riparian habitat. Temporary staging areas, access roads, and other project components that have the flexibility to be sited outside of sensitive areas will be incorporated into the project design. Best management practices will be followed to delineate environmentally sensitive areas and provide for training and monitoring to ensure these areas are protected. If temporary impacts to riparian habitat cannot be avoided, temporary impacts will be restored to their previous conditions. Other policies that will provide for the protection of least Bell's vireo include the Nesting Birds Policy and Wildfire Protection Techniques.				

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Goal 11 : Provide Conservation of so	outhwestern willow flycatcher within the Plan Area and minimize and
mitigate impacts associated with Covered Pr	rojects and Activities.
Species Objective 11.1: OCTA will restore and/or enhance riparian habitat adjacent to occupied southwestern willow flycatcher habitat.	Restore . OCTA has approved for funding the Aliso Creek restoration project, which includes 55.0 acres of riparian habitat restoration. The Aliso Creek restoration project has had three occurrences of southwestern willow flycatcher within the project site. The riparian habitat restoration and enhancement will provide an immediate benefit to southwestern willow flycatcher habitat.
Species Objective 11.2: OCTA will establish policies and procedures to avoid and minimize impacts to southwestern willow flycatcher habitat, including riparian habitat.	Policy: The Plan includes the policies that will require covered freeway improvement projects to be designed in a manner that avoids and/or minimizes impacts to sensitive biological resources, including riparian habitat. Temporary staging areas, access roads, and other project components that have the flexibility to be sited outside of sensitive areas will be incorporated into the project design. Best management practices will be followed to delineate environmentally sensitive areas and provide for training and monitoring to ensure these areas are protected. If temporary impacts to riparian habitat cannot be avoided, temporary impacts will be restored to their previous conditions. Other policies that will provide for the protection of southern willow flycatcher include the Nesting Birds Policy and Wildfire Protection Techniques.
Species Goal 12 : Provide Conservation of b owith Covered Projects and Activities.	obcat within the Plan Area and minimize and mitigate impacts associated
Species Objective 12.1: OCTA will protect and manage natural habitat that includes a combination of land cover types important for wildlife movement of large mammals such as bobcat.	Acquire. OCTA has acquired five Preserves in the Trabuco Canyon and Chino Hills areas that include 885.2 acres of predicted suitable habitat for bobcat. These Preserves are located in areas important for regional conservation and provide connectivity to other protected lands. They provide a diverse land cover beneficial for large mammal movement. Incidental observations of bobcat have been noted on the Hayashi Preserve, and photo monitoring on the O'Neill Oaks Preserve has detected bobcat as well.
Species Objective 12.2: OCTA will implement a restoration project(s) designed to improve wildlife movement by large mammals such as bobcat.	Restore . OCTA has approved for funding the West Loma restoration project, which includes fence realignment around a key wildlife corridor in the vicinity of the 241 toll road. With fencing improvements and the restoration of habitat along the wildlife corridor, the crossing becomes more attractive, reduces road kill, and improves connectivity for bobcat and other species.
Species Objective 12.3: OCTA will restore or enhance habitat through restoration projects that improve habitat connectivity and wildlife movement for bobcat.	Restore. OCTA has approved for funding four restoration projects in areas highly important for habitat connectivity and wildlife movement. These restoration projects include North Coal Canyon (located in the Coal Canyon Linkage mapped by CBI), Big Bend (essential connection between Aliso and Wood Canyons Wilderness Park to the Laguna Coast Wilderness Park), Aliso Creek (riparian corridor linking several open space Preserves), and the City Parcel (located in the Trabuco and San Juan Creeks Linkage mapped by CBI).

Table 4.4-6. Biological Goals, Objectives, and Conservation Actions

Biological Goal or Objective	Conservation Actions ¹
Species Objective 12.4: OCTA will establish policies and procedures to protect and maintain wildlife movement corridors.	Policy: The Plan includes the Wildlife Crossing Policy that requires OCTA to perform pre-construction surveys to evaluate if an existing structure contributes to important wildlife movement. If it is determined that an existing structure does function as an important wildlife crossing, the Construction Lead will implement appropriate design features to ensure that the wildlife crossing experiences no decrease in functionality (i.e., no increase in mortality on the adjacent roadway and no decrease in wildlife using the undercrossing) after the freeway construction improvements are completed.
Species Goal 13 : Provide Conservation of m associated with Covered Projects and Activit	countain lion within the Plan Area and minimize and mitigate impacts iies.
Species Objective 13.1: OCTA will protect and manage natural habitat that includes a combination of land cover types important for wildlife movement of large mammals such as mountain lion.	Acquire. OCTA has acquired five Preserves in the Trabuco Canyon and Chino Hills areas that include 831.4 acres of predicted suitable habitat for mountain lion. These Preserves are located in areas important for regional conservation and provide connectivity to other protected lands. They provide a diverse land cover beneficial for large mammal movement. Recent observations of mountain lion have been noted on the O'Neill Oaks and Ferber Ranch Preserves.
Species Objective 13.2: OCTA will implement a restoration project(s) designed to improve wildlife movement by large mammals such as mountain lion.	Restore . OCTA has approved funding for the West Loma restoration project, which includes fence realignment around a key wildlife corridor in the vicinity of the 241 toll road. With fencing improvements and the restoration of habitat along the wildlife corridor, the crossing becomes more attractive, reduces road kill, and improves connectivity.
Species Objective 13.3: OCTA will restore or enhance habitat through restoration projects that improve habitat connectivity and provide benefits to wildlife movement for mountain lion.	Restore. OCTA has approved funding for the North Coal Canyon restoration project (located in the Coal Canyon Linkage mapped by CBI) that is a critical wildlife linkage across SR-91. This linkage can provide movement opportunities for mountain lions to the Chino Hills State Park. Other restoration projects in the eastern portion of the County (Chino Hills State Park, Lower Silverado Canyon, West Loma, Aqua Chinon/Bee Flat Canyon) include restoration of riparian or scrub habitat that can provide cover for mountain lion.
Species Objective 13.4: OCTA will establish policies and procedures to avoid and minimize impacts to wildlife movement corridors.	Policy: The Plan includes a Wildlife Crossing Policy that requires OCTA to perform pre-construction surveys to evaluate if an existing structure contributes to important wildlife movement. If it is determined that an existing structure does function as an important wildlife crossing, the Construction Lead will implement appropriate design features to ensure that the wildlife crossing experiences no decrease in functionality (i.e., no increase in mortality on the adjacent roadway and no decrease in wildlife using the undercrossing) after the freeway construction improvements are completed.

Conservation actions involving restoration projects include an estimate of conserved habitats based on conceptual restoration design plans. The final acreage of restored habitat may be refined during final restoration design and during implementation. Attainment of objectives dependent on restoration actions will be achieved once the restoration project meets the restoration design success criteria.

Impact BIO-11: Potential for direct impacts on sensitive natural communities from biological mitigation and conservation activities.

The primary elements and actions of the Proposed Plan conservation strategy would include preserve acquisitions and restoration projects. The long-term direct impacts of preserve acquisition and restoration would be beneficial for Covered Species.

Preserve management activities are expected to occur within the Proposed Plan's Preserve System and entail the following activities: management activities, recreation, habitat enhancement, restoration and creation, species surveys, monitoring and research, and responses to changed circumstances (emergency actions). Effects on Covered Species associated with preserve management activities are expected to occur during new facilities construction within Preserves (kiosks, new trails, maintenance facilities, etc.), as well as during implementation of habitat restoration and enhancement projects. The Proposed Plan establishes a threshold of 11 acres (approximately 1%) of the natural habitat within the combined Preserve System that can be permanently impacted through the construction of new trails, access roads, kiosk, maintenance facilities, or other features. These activities would have minimal potential to result in adverse direct effects on Covered Species and would be more than compensated for through the creation and management of the Preserve System. Impacts would be less than significant, and no mitigation is required.

Impact BIO-12: Potential for indirect impacts on sensitive natural communities from biological mitigation and conservation activities.

Under the Proposed Plan alternative, indirect effects on biological resources would be accounted for in the development of Plan targets that offset the impacts of covered freeways improvement projects. In addition, indirect effects would be minimized through the implementation of avoidance and minimization measures outlined in the Proposed Plan. Impacts would be less than significant, and no mitigation is required.

Impact BIO-13: Potential for direct impacts on Covered Species from biological mitigation and conservation activities.

The primary elements and actions of the Proposed Plan conservation strategy would include preserve acquisitions and restoration projects. The long-term direct impacts of preserve acquisition and restoration would have a beneficial effect on Covered Species.

Preserve management activities are expected to occur within the Proposed Plan's Preserve System and entail the following activities: management activities, recreation, habitat enhancement, restoration and creation, species surveys, monitoring and research, adaptive management, and responses to changed circumstances. Effects on Covered Species associated with preserve management activities are expected to occur during new facilities construction within Preserves (kiosks, new trails, maintenance facilities, etc.), as well as during implementation of habitat restoration and enhancement projects. The Proposed Plan establishes a cap such that no more than 11 acres of the natural habitat within the combined Preserve System that can be permanently impacted through the construction of new trails, access roads, kiosk, maintenance facilities, or other features. These activities have minimal potential to result in adverse direct effects on Covered Species and would be fully compensated for through the creation and management of the Preserve System. Impacts would be less than significant, and no mitigation is required.

Impact BIO-14: Potential for indirect impacts on Covered Species from biological mitigation and conservation activities.

Under the Proposed Plan alternative, indirect effects on biological resources are accounted for in the development of Plan targets that offset the impacts of covered freeways improvement projects. In addition, indirect effects would be minimized through the implementation of avoidance and minimization measures outlined in the Proposed Plan. Impacts would be less than significant, and no mitigation is required.

Impact BIO-15: Potential for direct impacts on non-covered special-status species from biological mitigation and conservation activities.

The primary elements and actions of the Proposed Plan conservation strategy would include preserve acquisitions and/or restoration projects. The long-term direct impacts of preserve acquisition and restoration would be beneficial to non-covered special-status species as well as Covered Species.

Preserve management activities are expected to occur within the Proposed Plan's Preserve System and entail the following activities: management activities, recreation, habitat enhancement, restoration and creation, species surveys, monitoring and research, adaptive management, and responses to changed circumstances. Effects on non-covered special-status species associated with preserve management activities are expected to occur during new facilities construction within Preserves (kiosks, new trails, maintenance facilities, etc.), as well as during implementation of habitat restoration and enhancement projects. The Proposed Plan establishes a threshold of 11 acres (approximately 1%) of the natural habitat within the combined Preserve System that can be permanently impacted through the construction of new trails, access roads, kiosk, maintenance facilities, or other features. These activities have minimal potential to result in adverse direct effects on non-covered special-status species and would be fully compensated for through the creation and management of the Preserve System. Impacts would be less than significant, and no mitigation is required.

Impact BIO-16: Potential for indirect impacts on non-covered special-status species from biological mitigation and conservation activities.

Under the Proposed Plan alternative, indirect effects on non-covered special-status species would be accounted for in the development of Plan targets that offset the impacts of covered freeways improvement projects on Covered Species. In addition, indirect effects would be minimized through the implementation of avoidance and minimization measures outlined in the Proposed Plan. Impacts would be less than significant, and no mitigation is required.

Impact BIO-17: Potential for direct impacts on federally and state protected wetlands and jurisdictional aquatic resources from biological mitigation and conservation activities.

Approximately 37.35 acres of USACE and SWRCB jurisdiction, of which 3.63 acres consist of wetland Waters of the U.S. (WoUS), will be restored at five restoration sites. OCTA will determine which of these projects will be necessary to offset impacts on jurisdictional protected wetlands and aquatic resources during the State and Federal permitting process. The jurisdictional totals in Table 4.4-7 were verified by USACE in 2013 and 2014 (Chino Hills State Park is pending approval). Approximately 101.50 acres of CDFW jurisdiction will be restored at nine restoration sites to mitigate impacts on state-protected wetlands and jurisdictional aquatic resources. Project-level

permitting for impacts on federally and state protected wetlands and jurisdictional aquatic resources will occur separately and will be subject to project-level CEQA and NEPA analyses, as applicable. Habitat Mitigation and Monitoring Plans (HMMPs), including jurisdictional delineations and California Rapid Assessment Method (CRAM) analyses, will be submitted for each site for agency approval, as applicable. In addition, approximately 9.54 acres of USACE jurisdiction, of which 1.44 acres consist of wetland WoUS; 9.54 acres of SWRCB jurisdiction, of which 1.44 acres consist of wetland WoUS; and 82.81 acres of CDFW jurisdiction will be preserved at five acquisition sites.

Additional details for USACE and SWRCB restoration and Preserve sites are presented below, with additional details for CDFW restoration and Preserve sites immediately following.

USACE and SWRCB Wetlands and Water Resources

Table 4.4-7, below, provides a summary of USACE and SWRCB jurisdictional areas within the restoration projects, including the mitigation site name, watershed location, type of resource associated with the mitigation activity (rehabilitation/enhancement), and type and amount of mitigation available at the site. As defined by USACE in 33 CFR 323, rehabilitation is "the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area." Enhancement is defined in 33 CFR 323 as "the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area."

Orange County Transportation Authority Section 4.4. Biological Resources

Table 4.4-7. USACE/SWRCB Mitigation Site Summary*

Mitigation Site	Watershed – HUC 8	Watershed – HUC 10	Туре	Riparian Enhancement/ Rehabilitation – USACE Non-wetland WoUS (acres)	Riparian Enhancement/ Rehabilitation – USACE Wetland WoUS (acres)	Linear Feet
Agua Chinon	Santa Ana (HU 801.00)	San Diego Creek (HA 801.10)	Riparian	1.13	-	2,093
Aliso Creek	San Juan Creek (HU 901.00)	Aliso Creek – Frontal Gulf (HA 901.10)	Riparian	9.39	1.80	12,375
Lower Silverado Canyon	Santa Ana River (HU 801.00)	Santiago Creek (HA 801.10)	Riparian	22.39	0.62	2,580
West Loma	Santa Ana River (HU 801.00)	Santiago Creek (HA 801.10)	Riparian	0.56	0.76	20,086
Chino Hills State Park	San Gabriel River (HU 805.00)	Lower San Gabriel (HA 845.60)	Riparian	0.25***	0.45***	**
Total Enha	ncement/Reha	bilitation		33.72***	3.63***	37,791*

^{*} These acreage estimates are based on conceptual restoration design plans. The final amount of restored habitat may be refined during final restoration design and implementation.

 $[\]ensuremath{^{**}}$ Total linear feet will be submitted to USACE and SWRCB when available.

^{***} To be verified by USACE.

Table 4.4-8 provides a summary of the preservation/enhancement mitigation, including the acquisition site name, watershed location, and type and amount of USACE and SWRCB jurisdiction being preserved and enhanced by land management activities such as fencing, removal of livestock grazing, and removal of weeds. Resource Management Plans (RMPs) detailing the existing biological conditions and intended maintenance activities on each acquisition property are under development which will be approved by the USACE/SWRCB if mitigation credits are requested from those entities. The jurisdictional totals below were verified by USACE in March 2014.

Table 4.4-8. USACE/SWRCB Preservation/Enhancement Summary

Acquisition Site	Watershed – HUC 8	Watershed – HUC 10	USACE/SWRCB Non-wetland WoUS (acres)	USACE/SWRCB/ Wetland WoUS (acres)
Ferber Ranch	San Juan Creek (HU 901.00)	San Juan Creek (HA 901.20)	4.80	0.45
Hafen	San Juan Creek (HU 901.00)	San Juan Creek (HA 901.20)	0.76	0.00
Hayashi	Santa Gabriel River (HU 805.00)	Lower San Gabriel River (HA 845.60)	1.03	0.99
O'Neill Oaks	San Juan Creek (HU 901.00)	San Juan Creek (HA 901.20)	1.07	0.00
Saddle Creek South	San Juan Creek (HU 901.00)	Aliso Creek – Frontal Gulf (HA 901.10)	0.45	0.00
Total Preservation/Enhancement 8.11 1.44				

CDFW Wetlands and Water Resources

Table 4.4-9 identifies the mitigation site, watershed location, type of resource associated with the mitigation activity (rehabilitation/enhancement and establishment¹), and type and amount of mitigation available at the site. In addition, Table 4.4-9 provides information for the Preserve Area acquisition properties including watershed location, and type and amount of CDFW jurisdiction being preserved and enhanced by land management activities such as fencing, removal of livestock grazing, and removal of weeds. Resource Management Plans (RMPs) detailing the existing biological conditions and intended maintenance activities on each acquisition property are under development, which will be approved by CDFW.

¹ For this program, CDFW is following the USACE definition of establishment at 33 CFR 323: "(creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area and functions."

Table 4.4-9. Streambed Mitigation Summary

Mitigation Site	Acquisition Site	Watershed	Type	Rehabilitation/ Enhancement	Establishment	Preservation
Restoration Projec	-		2) P 0		200000000000000000000000000000000000000	1100011440011
Big Bend		San Juan Creek (HU 901.00)	Riparian	0.5		
City Parcel		San Juan Creek (HU 901.00)	Riparian	4.48		
Fairview Park		Santa Ana River (HU 801.00)	Wetland		6	
Fairview Park		Santa Ana River (HU 801.00)	Riparian	3.3		
Agua Chinon		Santa Ana River (HU 801.00)	Riparian	6.69		
Aliso Creek		San Juan Creek (HU 901.00)	Riparian	50.98		
Lower Silverado Canyon		Santa Ana River (HU 801.00)	Riparian	23.01		
West Loma		Santa Ana River (HU 801.00)	Riparian	2.61		
Chino Hills State Park		San Gabriel River (HU 805.00)	Riparian	3.58		
Harriett Wieder		Santa Ana River (HU 801.00)	Riparian		0.35	

Mitigation Site	Acquisition Site	Watershed	Туре	Rehabilitation/ Enhancement	Establishment	Preservation
Acquired Preserves						
	Ferber Ranch	San Juan Creek (HU 901.00)	Riparian			53.30
	Hafen Estate	San Juan Creek (HU 901.00)	Riparian			4.35
	Hayashi	Santa Gabriel River (HU 805.00)	Riparian			6.35
	O'Neil Oaks	San Juan Creek (HU 901.00)	Riparian			11.47
	Saddle Creek South	San Juan Creek (HU 901.00)	Riparian			7.33
Total Mitigation	_			95.15	6.35	82.81

Final compensatory mitigation ratios for permanent impacts on CDFW jurisdictional streambeds will be determined at the project-level when impact details will be available and provided to CDFW to adequately assess compensatory mitigation requirements, but will not exceed the established habitat type ratios identified in Table 4.4-10 below. The habitat types listed in Table 4.4-10 include those expected to occur within the M2 project impact areas, based on baseline studies conducted in 2010-2011. Although not anticipated, if a habitat type not listed in Table 4.4-10 were to develop within an M2 impact area, this would be considered an extraordinary circumstance requiring additional mitigation ratio negotiations not covered by this Streambed Program.

Factors that will be used in determining project-specific mitigation ratios, within the established ratio caps, may include the habitat type being affected (see Table 4.4-10), the habitat type mitigating the impact (i.e., in-kind mitigation), watershed location of the impact site relative to watershed location of the restoration site, amount and quality of buffer area surrounding the restoration site, the existing level of streambed function at the restoration site prior to the mitigation, the resulting level of streambed function expected at the restoration site after the project reaches its success criteria, as well as initiation of the restoration activities prior to impacts associated with the Covered Project (i.e., compensating for temporal loss of streambed functions and values). In addition, if a restoration site qualifies for pre-mitigation status, the required compensatory mitigation for a given Covered Project will be reduced by one ratio point. Premitigation means the restoration site has been signed-off by CDFW or close to establishment (e.g. Years 4–5 for 5-year sites or Years 9–10 for 10-year sites) and is meeting its final year success criteria, including having irrigation shut off for 2 years, subject to prior approval by CDFW.

Table 4.4-10. Streambed Program Wetland Mitigation Ratio Caps for Permanent Impacts

Habitat Type	Mitigation Ratio Caps
Riparian Habitats	
Oak riparian forest	3:1
Riparian forest	3:1
Riparian woodland	3:1
Riparian scrub	2:1
Freshwater Marsh	2:1
Natural Flood Channel	2:1
Disturbed Wetland	2:1

Compensatory mitigation will not be required for unvegetated or herbaceous (non-wetland) ditches if replaced in another location on-site with a similar feature or an environmentally superior feature (i.e., replacement of an unvegetated ditch or herbaceous mixed native and non-native riparian ditch with an herbaceous native riparian vegetated swale). The replacement feature must be installed within 12 months of initial occurrence of project impacts to jurisdictional habitats. Any temporal loss of riparian/streambed function caused by delays in replacement shall be mitigated offsite at a 0.5:1 replacement-to-impact ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). If an unvegetated or herbaceous (non-wetland) ditch is permanently filled and not replaced as described above, compensatory mitigation would be required at a 1:1 ratio.

In addition, concrete-lined features, which were previously affected and mitigated or man-made features constructed to convey downstream flows consisting mostly of urban and storm runoff, will not require compensatory mitigation contingent upon continued conveyance of baseline flows downstream. Impacts on concrete features are anticipated to include filling and replacing with a similar feature, or an environmentally superior feature, in a different location or converting to an underground pipe. Additional anticipated impacts on concrete-lined features include extending box culverts and adding piers to bridges. If a concrete feature is permanently filled and not replaced with a feature that conveys flows, compensatory mitigation would be required at a 1:1 ratio.

Temporary impacts must be restored to pre-project conditions, in accordance with CDFWapproved restoration plans, with no additional compensatory mitigation required. Implementation of the restoration of temporary impacts shall commence immediately following completion of construction or, with written approval from CDFW, at the beginning of the next growing season after project completion. Restoration of temporary impacts shall be installed within 12 months of initial occurrence of project impacts on jurisdictional habitats. Any temporal loss of riparian/wetland/streambed function caused by delays in mitigation implementation shall be mitigated in-kind through riparian/wetland/streambed establishment, rehabilitation, and/or enhancement at a 0.5:1 replacement-to-impact ratio for every 6 months of delay (i.e., 1:1 for 12 months delay, 1.5:1 for 18 months delay, etc.). In the event that the Construction Lead is wholly or partly prevented from restoring temporary impacts within the above time frame (causing temporal losses due to delays) because of unforeseeable circumstances or causes beyond reasonable control, and without the fault or negligence of the Construction Lead, including but not limited to natural disasters (e.g., earthquakes, flooding, etc.), labor disputes, or actions by federal or state agencies, or other governments, OCTA/Caltrans may be excused by such unforeseeable cause(s) from the additional 0.5:1 per 6 months mitigation. Any on-site restoration deemed infeasible as a result of such unforeseeable causes(s) will be considered a permanent impact and will be mitigated accordingly.

The status of the restoration of temporary impacts will be provided in a memo or as required in project-level LSAAs. Information on impacts will also be included with the NCCP/HCP annual report to CDFW. Mitigation tracking, including the type and amount of acreage debited, will be recorded in the M2 Freeway Program Mitigation Summary Ledger (Appendix E - Section VIII. Table E-4) and Restoration Site Tracking Sheet (Appendix E - Section VIII. Table E-5). As project impacts are initiated, restoration acreage will be deducted from the Mitigation Summary Ledger and Restoration Site Tracking Sheet.

The direct impacts on federally and/or state-protected wetlands and jurisdictional water resources are considered less than significant because of the restoration of wetland habitats and water resources associated with the Proposed Plan, as described above.

Impact BIO-18: Potential for indirect impacts on federally and state protected wetlands and jurisdictional aquatic resources from biological mitigation and conservation activities.

Under the Proposed Plan Alternative, indirect effects on wetlands and aquatic resources are accounted for in the development of Plan targets that offset the impacts of covered freeways improvement projects. In addition, indirect effects would be minimized through the implementation of avoidance and minimization measures outlined in the Proposed Plan. Impacts would be less than significant, and no mitigation is required.

Impact BIO-19: Potential for effects on wildlife movement from biological mitigation and conservation activities.

Under the Proposed Plan Alternative, effects of wildlife movement would be addressed as part of the Covered Freeway Projects' Wildlife Crossing Policy, which requires implementation of appropriate design features to ensure that the wildlife crossing experiences no decrease in functionality (i.e., no increase in mortality on the adjacent roadway and no decrease in wildlife using the undercrossing) after freeway construction improvements are completed. Design elements may include, but not limited to, steps to maintain the Openness Indices (OI) of existing culverts, protect suitable habitat on either side of the roadway, minimize human activity, reduce noise and lighting, provide funneling/fencing, improve internal habitat, and incorporate ledges or other appropriate structural features. As such, potential effects on wildlife movement from biological mitigation and conservation activities would be less than significant. No mitigation is required.

Impact BIO-20: Potential for biological mitigation and conservation activities to conflict with local tree preservation policies and ordinances.

Under the Proposed Plan Alternative, there would be no potential for removal of trees covered in a preservation policy or ordinance because the focus of mitigation in this alternative is the preservation and conservation of habitats within a Preserve System whereby such trees (if they occur) would be protected. Therefore, there would be no impact, and no mitigation is required.

4.4.2.3 Alternative 3: Reduced Plan

Under Alternative 3, the following impacts on biological resources would essentially be the same as those discussed under the Proposed Plan:

Impacts BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, BIO-14, BIO-16, BIO-17, BIO-18, BIO-19, and BIO-20

Effects would be the same for ESA and CESA-listed species, but not for non-listed covered and non-covered special-status species. Land acquisition would remain the same, so the non-listed covered and non-Covered Species would benefit from this similar to Alternative 2. The amount of restoration required under Alternative 3 would be less. Additionally, conservation measures for non-listed species would not be part of the conservation strategy. Therefore, beneficial effects on non-covered and non-listed species would be reduced under Alternative 3, compared with Alternative 2, but would still exceed the level of biological mitigation and conservation that would occur under the No Project/No Action Alternative. Impacts would be less than significant, and no mitigation is required.

Impact BIO-13: Potential for direct impacts on Covered Species from biological mitigation and conservation activities.

Under Alternative 3, the amount of land acquisition and Preserve Area assembled would be equal to that of the Proposed Plan. The amount of species-specific habitat restoration required would be less because the conservation strategy measures under Alternative 3 would be focused only on the three ESA-listed species (southern willow flycatcher, coastal California gnatcatcher, least Bell's vireo). There would be no focused species-specific restoration for non-ESA-listed species. Restoration activities would have minimal potential to result in adverse direct effects on Covered Species and would be fully compensated for through the creation and management of the Preserve System. Impacts would be less than significant, and no mitigation is required.

Impact BIO-15: Potential for direct impacts on non-covered special-status species from biological mitigation and conservation activities.

Under Alternative 3, the amount of land acquisition and Preserve Area assembled would be equal to that of the Proposed Plan. The amount of species-specific management and habitat restoration required would be less because the conservation strategy measures would be focused only on the three ESA-listed species (southern willow flycatcher, coastal California gnatcatcher, least Bell's vireo). The residual benefits to other non-covered special-status species would be slightly less under the Alternative 3 in comparison to Alternative 2. Restoration activities would have minimal potential to result in adverse direct effects on non-covered species and would be fully compensated for through the creation and management of the Preserve System. Impacts would be less than significant, and no mitigation is required.

4.4.2.4 Cumulative Impacts

Covered freeway improvement projects would result in the expansion and improvement of existing freeway infrastructure, and, therefore, the primary biological effects have already occurred with original construction of these roadways. The additional impacts associated with the covered freeway improvement projects would represent a negligible increase to cumulative effects across the Plan Area that would be mitigated on a project-by-project basis; therefore, they would not make a considerable contribution to cumulative effects across the Plan Area.

Under Alternatives 2 (Proposed Plan) and 3 (Reduced Plan), implementation of covered freeway improvement projects may result in impacts on non-covered special-status species that would be cumulatively significant. However, implementation of mitigation measures would reduce this impact to a less-than-significant level such that the effect of the overall conservation program, combined with other conservation projects in the region, including the Orange County Central-Coastal Subregion NCCP/HCP and the Orange County Southern Subregion HCP, would be a beneficial cumulative impact on non-covered special-status species.

4.4.2.5 Summary of Impacts

Under the No Project/No Action, Proposed Plan, and Reduced Plan Alternatives, construction and maintenance of covered freeway improvement projects would have similar impacts for biological resources. Under each alternative, covered freeway improvement projects would result in temporary and permanent impacts on sensitive natural communities, species and their habitat, and federally and state protected wetlands and jurisdictional aquatic resources. These impacts are potentially significant and would require mitigation to be considered less than significant.

The difference between the alternatives would be how impacts on biological resources are mitigated and the type and amount of benefits resulting from conservation activities. Under Alternative 1 (No Project/No Action), the proposed NCCP/HCP would not be implemented and mitigation would be addressed on a project-by-project basis. While project-by-project mitigation may be effective at targeting and preserving high-value habitat, the creation of smaller mitigation sites would likely result in ineffective species conservation across the landscape. Smaller preserve areas may fail to meet preserve design standards to maximize preserve size, incorporate environmental gradients, minimize edges, and preserve habitat linkages. Furthermore, the absence of a comprehensive monitoring and adaptive management program would create less certainty in the long-term success of mitigation sites.

Under the Alternative 2 (Proposed Plan) and Alternative 3 (Reduced Plan), conservation would be completed in a comprehensive manner under the NCCP/HCP that would result in large blocks of preserved and restored habitat in locations important for regional conservation. Under Alternative 3, the beneficial effects on covered and non-covered species would be reduced since the level of species-specific management and restoration efforts would be slightly less with fewer Covered Species.

Table 4.4-11. Summary of Biological Effects under All Alternatives

	Effects of Alternatives			
	Alternative 1:	Alternative 2:	Alternative 3:	
Impact	No Project/No Action	Proposed Plan	Reduced Plan	
BIO-1	_	- (same as Alt 1)	- (same as Alt 1)	
BIO-2	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-3	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-4	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-5	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-6	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-7	-	-(same as Alt 1)	-(same as Alt 1)	
BIO-8	-	- (same as Alt 1)	-(same as Alt 1)	
BIO-9	-	- (same as Alt 1)	- (same as Alt 1)	
BIO-10	0	0 (same as Alt 1)	0 (same as Alt 1)	
BIO-11	0	++	++ (same as Alt 2)	
BIO-12	-	++	++ (same as Alt 2)	
BIO-13	0	++	+	
BIO-14	-	++	++ (same as Alt 2)	
BIO-15	-	++	+	
BIO-16	-	++	++ (same as Alt 2)	
BIO-17	0	++	++ (same as Alt 2)	
BIO-18	-	++	++ (same as Alt 2)	
BIO-19	-	++	++ (same as Alt 2)	
BIO-20	0	+	+ (same as Alt 2)	

^{0 =} no substantial change relative to current conditions

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Table 4.4-12. Summary of Biological Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

		Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
BIO-11	Less than Significant	Less than Significant	Less than Significant		
BIO-12	Less than Significant	Less than Significant	Less than Significant		
BIO-13	Less than Significant	Less than Significant	Less than Significant		
BIO-14	Less than Significant	Less than Significant	Less than Significant		
BIO-15	Potentially Significant and Unavoidable	Less than Significant	Less than Significant		
BIO-16	Less than Significant	Less than Significant	Less than Significant		
BIO-17	Less than Significant	Less than Significant	Less than Significant		
BIO-18	Less than Significant	Less than Significant	Less than Significant		
BIO-19	Less than Significant	Less than Significant	Less than Significant		
BIO-20	Less than Significant with Mitigation	No impact	No impact		



Section 4.4. Biological Resources

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4.5.1 Methodology and Significance Criteria

Impacts on cultural resources were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and review of applicable documents, including the Orange County General Plan and an SCCIC records search. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact on cultural resources.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- A substantial adverse change in the significance of a historical resource, as defined by CEQA.
- Alteration of characteristics of a property that may qualify it for listing in the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR).
- Effects that would diminish the integrity of an NRHP-listed, CRHR-listed, or eligible property, as defined below.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

Because the Proposed Plan conservation strategy involves both species-oriented preserve management and restoration activities that cannot be completely known at this time (e.g., future locations of adaptive management for invasive species or habitat restoration sites), in the timeframe of this environmental review it is not feasible to identify *specific* impacts on cultural resources in the Draft EIR/EIS. Rather than identifying *specific* resources and *specific* impacts, the Draft EIR/EIS identifies the *types* of impacts likely to occur to *types* of cultural resources as a result of the *types* of activities proposed for each alternative based on known cultural resources recorded to date within the acquired Preserve Area parcels. Likewise, general types of measures are recommended to mitigate potentially significant effects, including a process for assessing the potential for cultural resources on specific sites and methods/measures to ensure avoidance of impacts. The Draft EIR/EIS will serve as the documentation of efforts to identify cultural resources and their potentially significant effects for the purpose of CEQA and their potentially adverse effects for the purposes of NEPA and National Historic Preservation Act (NHPA) Section 106.

4.5.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated impacts on cultural resources from the covered freeway improvement projects as presented in the 2006 OCTA LRTP Program EIR is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The 2006 LRTP Program EIR determined that cultural resource impacts from the covered freeway improvement projects would remain significant after mitigation is incorporated.

As noted in Section 3.5, Caltrans has implemented a statewide Programmatic Agreement (PA) for the purposes of complying with Section 106 of the NHPA. The PA grants Caltrans some approval powers that previously required State Historic Preservation Officer (SHPO) and FHWA approvals, including definition of the project's Area of Potential Effects (APE), methods to inventory the APE, and methods to determine cultural resource significance. Where FHWA has been eliminated from the Section 106 process, in most cases, Caltrans' Sacramento staff now approves some documents that previously required FHWA approval. The SHPO must still concur on the eligibility of historic properties to the NRHP, the measures taken to eliminate or reduce adverse effects to eligible resources, and the adequacy of Native American consultation efforts. The SHPO must still be a signatory to any Memorandum of Agreement (MOA) developed to ameliorate adverse effects on historic properties.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated cultural resource impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated cultural resource impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.5.1.2 Archaeological Resources

For archaeological resources, significance criteria is defined by both the CRHR and NRHP and also included in Article 5 of the State CEQA Guidelines, Section 15064.5, "Determining the Significance of Impacts on Historical and Unique Archaeological Resources."

California Register of Historical Resources: The CRHR, adopted in 1992, is the "authoritative guide to be used by State and local agencies, private groups, and citizens to identify the state's historical resources and indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change." State and local agencies may also determine which resources are to be considered as significant in order to comply with CEQA.

The criteria for listing a resource on the CRHR are based on the criteria used for the NRHP. Determining whether a resource should be considered eligible for listing on the CRHR is a two-step process. The resource must first meet one of the following criteria:

- 1. It is associated with the events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
- 2. It is associated with the lives of persons important to local, California, or national history.

- 3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
- 4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

A resource that meets one of these four criteria possesses historical significance. Pursuant to CRHR regulations, sufficient time must have passed since a resource's period of significance to "obtain a scholarly perspective on the events or individuals associated with the resource." Generally, the regulations advocate that a resource must be at least 50 years old in order to have sufficient time to develop a legitimate understanding of the resource's significance. A resource less than 50 years old may be considered for listing on the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance.

Nevertheless, resources that have historical significance are not necessarily considered significant historic resources under CEQA. A second criterion must also be met. A resource must retain integrity. To retain integrity, a resource should have its original location, design, setting, materials, workmanship, feeling, and association. Which of these factors is most important will depend on the particular criteria under which the resource is considered eligible for listing.

National Register of Historic Places: The NRHP is the authoritative guide "used by federal, State, and local governments, private groups and citizens to identify the nation's cultural resources and indicate what properties should be afforded protection from destruction or impairment." The National Park Service administers the NRHP. Listing on the NRHP recognizes a historic resource's significance to the nation, state, or community. Significance of the resource is weighed using the following criteria:

- A. It is associated with events that have made a significant contribution to the broad patterns of our history; or
- B. It is associated with the lives of persons significant in our past; or
- C. It embodies the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. It has yielded, or may be likely to yield, information important in prehistory or history.

In addition, a resource must retain enough integrity to "convey its significance" (NRHP Bulletin 15). An analysis of integrity is based on location, design, feeling, association, setting, workmanship, and materials. Sites may be eligible for inclusion on the NRHP as an individual resource and/or as a contributor to a district. A resource that no longer reflects historic significance as a result of damage or alterations is not eligible for the NRHP. Whether a resource is listed on or eligible for listing on the NRHP, it receives the same protections under federal law.

The CRHR uses essentially the same criteria for evaluating historic resources as the NRHP. It focuses on events in California history, and resources eligible for nomination to the CRHR do not necessarily have to demonstrate the same level of importance as those resources eligible for the NRHP. However, it must be noted that both registers recognize that resources may be significant at a national, state, or local level. Resources not normally eligible for listing on the CRHR would also not be eligible for listing on the NRHP. Resources found locally significant by a county or city may or may not be eligible for the NRHP or CRHR depending on how the resource was evaluated and the criteria used to make a determination of significant.

4.5.1.3 Paleontological Resources

Significant paleontological resources are fossils or assemblages of fossils that are unique, unusual, rare, uncommon, or diagnostically or stratigraphically important and those that add to an existing body of knowledge in specific areas stratigraphically, taxonomically, or regionally. They include fossil remains of large to very small aquatic and terrestrial vertebrates, remains of plants and animals previously not represented in certain portions of the stratigraphy, and assemblages of fossils that might aid stratigraphic correlations, particularly those offering data for the interpretation of tectonic events, geomorphologic evolution, paleoclimatology, and the relationships of aquatic and terrestrial species. The fossils from Orange County fall into the above categories and can thus be characterized as being significant.

4.5.2 Impacts and Mitigation Measures

Orange County is rich in its variety and extent of cultural resources. Therefore, any excavation in previously undisturbed soil has the potential to result in impacts on cultural resources. Additionally, because there are already thousands of resource locations identified in Orange County, it is reasonable to assume that the implementation of biological mitigation and conservation activities included in each of the alternatives below may affect known as well as currently unidentified archaeological and paleontological sites.

Impacts on cultural resources can be direct or indirect and generally occur in three categories: (1) direct disturbance to archaeological resources, (2) direct disturbance to aboveground built resources, and (3) indirect impacts on resources from adjacent or nearby activities, such as providing access to archaeological sites not previously accessible, through ground vibration and corrosive air contaminants, or by the introduction of elements that detract from the historic integrity of the surroundings. For example, historic architectural resources can suffer indirect effects by the development of new transportation facilities if those facilities change the surroundings to such a degree that the environmental setting is no longer compatible or such that the activity's intrusive effects cause the resource to no longer be enjoyed for its original intended purpose (e.g., tourism).

It is important to note that most of Orange County has not been inventoried for cultural resources. Prior to the implementation of CEQA, archaeologists throughout most of the 20th century concentrated on those sites having the greatest depth, artifact recovery potential, and most notoriety. Many of these sites were confined to the coastal plains and embayment areas of the county. Interior regions went mostly unsurveyed until compliance archaeology became a necessity with project environmental approvals. In the last 40 years more acreage has been inventoried than all pre-1970s surveys combined because the land was tied to ministerial decisions of the land managing agencies. As a result archaeologists and paleontologists have learned vastly more about the natural and cultural history of the county in recent years.

Potential impacts of the NCCP/HCP alternatives on cultural resources are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.5.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.5.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact CR-1 and CR-2: Effects on archaeological and historic resources from covered freeway improvement projects.

The 2006 LRTP Program EIR identified 107 properties listed on the NRHP and 25 registered CHLs in Orange County as well as many resources that have been recorded but not evaluated for listing in the CHL, the NRHP, or the CRHR. These historic structures were identified as having the potential to be significantly impacted by covered freeway improvement projects. Improvements in existing rights-of-way could also affect historic resources by impacting the physical and aesthetic integrity of historic buildings, communities, and the surrounding environment, as well through increased levels of corrosive air contaminants that may damage the exterior of historic buildings.

The 2006 LRTP Program EIR also identified 1,640 archaeological sites identified in Orange County. All earthmoving construction activities in undisturbed soil would have the potential to impact archaeological resources. These included but are not limited to grading, excavation, trenching, and removal of existing modern features of the subject property. Ground-disturbing activities within urbanized areas also would have the potential to encounter unknown archaeological resources if the existing uses were developed prior to federal, state, and local requirements to perform cultural resource assessments. Thus, it was established that there was the potential for any project that required ground disturbing activities to result in potentially significant impacts on archaeological resources (OCTA 2006).

Mitigation measures 4.3-A (review of historic records and performance of resource surveys) and 4.3-B (conduct construction activities to avoid historic resources when possible) in the 2006 LRTP Program EIR would reduce potential impacts to less than significant for most projects. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, the 2006 LRTP Program EIR identified that there could be projects where impacts on historic resources would remain significant after mitigation.

Mitigation measures 4.3-C (consultation with Native American Heritage Commission) and 4.3-D (stopping construction and excavation activities if cultural resources are encountered until archeological assessments can be made) in the 2006 LRTP Program EIR would reduce potential impacts to less than significant for most projects. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, the 2006 LRTP Program EIR identified that there could be projects where impacts on archeological resources would remain significant after mitigation.

Impact CR-3: Earthmoving construction activities as a result of implementing the covered freeway improvement projects have the potential to result in impacts on paleontological resources.

As documented in the OCTA Program EIR, paleontological resources are known to occur throughout Orange County in various geologic formations that extend from the ground surface to hundreds of feet below the ground surface. Therefore, construction excavations and soil removal of any kind, regardless of depth, was found to have the potential to impact paleontological resources. While some geologic formations are known for yielding paleontological resources, the generally high

occurrence of fossils in Orange County makes it difficult to predict which areas would be paleontologically sensitive. Thus, covered freeway improvement projects that would require excavation into sensitive geologic formations were found to potentially result in significant impacts on paleontological resources (OCTA 2006).

Mitigation measures 4.3-E (evaluation of area by qualified paleontologist), 4.3-F (avoidance of known paleontological resources and adherence to a management plan for salvaging resources), and 4.3-G ((stopping construction and excavation activities if paleontological resources are encountered until paleontological assessments can be made) in the 2006 LRTP Program EIR would reduce potential impacts to less than significant for most projects. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, the 2006 LRTP Program EIR identified that there could be projects where impacts on paleontological resources would remain significant after mitigation.

Impact CR-4: Earthmoving construction activities as a result of implementing the covered freeway improvement projects have the potential to result in impacts on human remains.

As documented in the OCTA Program EIR, humans have occupied Southern California for over 10,000 years, and their archaeological human remains have been discovered in Orange County. These remains are sometimes isolated and not associated with archaeological sites, which makes it hard to predict where they will occur. Internments are often unmarked and can consist of cremation remains and informal and formal burials. Human remains are protected under NEPA, CEQA, and NAGPRA of 1990. When earthmoving construction activities occur in previously undisturbed soil, they have the potential to encounter human remains and result in potentially significant impacts on this resource.

Mitigation measure 4.3-H (notification of County Coroner upon discovery of remains and notification of the NAHC if remains are determined to be prehistoric) in the 2006 LRTP Program EIR would reduce potential impacts to less than significant for most projects (See Appendix E for descriptions of all LRTP programmatic mitigation measures). However, the 2006 LRTP Program EIR identified that there could be projects where impacts on human remains would remain significant after mitigation.

Impacts from Biological Mitigation and Conservation Activities

Impact CR-5 and CR-6: Effects on archaeological and historic resources from biological mitigation and conservation activities.

The level of impact on cultural resources resulting from biological mitigation and conservation activities under the No Project/No Action Alternative is difficult to evaluate. Individual freeway projects would need to comply with ESA, CESA, and CWA Section 404 and to develop their own project-specific mitigation for impacts on species and habitats. This mitigation would likely include habitat creation, restoration, and enhancement activities that involve ground disturbance; therefore, biological mitigation efforts would likely have similar effects on cultural resources as those effects described above under Impacts CR-1 and CR-2. Mitigation measures 4.3-A through 4.3-D as described above would apply. As stated in the OCTA Program EIR, impacts on archaeological and historical resources may remain significant after mitigation.

Impact CR-7: Earthmoving construction activities as a result biological mitigation and conservation activities have the potential to result in impacts on paleontological resources.

The level of impact on cultural resources resulting from biological mitigation and conservation activities under the No Project/No Action Alternative is difficult to evaluate. Individual freeway projects would need to comply with ESA, CESA, and CWA Section 404 and to develop their own project-specific mitigation for impacts on species and habitats. This mitigation would likely include habitat creation, restoration, and enhancement activities that involve ground disturbance; therefore, biological mitigation efforts would likely have similar effects on cultural resources as those effects described above under Impact CR-3. Mitigation measures 4.3-E through 4.3-G as described above would apply. As stated in the OCTA Program EIR, impacts on paleontological resources may remain significant after mitigation.

Impact CR-8: Earthmoving construction activities as a result of biological mitigation and conservation activities have the potential to result in impacts on human remains.

The level of impact on cultural resources resulting from biological mitigation and conservation activities under the No Project/No Action Alternative is difficult to evaluate. Individual freeway projects would need to comply with ESA, CESA, and CWA Section 404 and to develop their own project-specific mitigation for impacts on species and habitats. This mitigation would likely include habitat creation, restoration, and enhancement activities that involve ground disturbance; therefore, biological mitigation efforts would likely have similar effects on cultural resources as those effects described above under Impact CR-4. Mitigation measure 4.3-H as described above would apply. As stated in the OCTA Program EIR, impacts on human remains may remain significant after mitigation.

4.5.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact CR-1 and CR-2: Effects on archaeological and historic resources from covered freeway improvement projects.

The potential for effects on archeological and historic resources from covered freeway improvement projects was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impact CR-3: Earthmoving construction activities as a result of implementing the covered freeway improvement projects have the potential to result in impacts on paleontological resources.

The potential for effects on paleontological resources from earthmoving construction as a result of covered freeway improvement projects was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impact CR-4: Earthmoving construction activities as a result of implementing the covered freeway improvement projects have the potential to result in impacts on human remains.

The potential for effects on human remains from earthmoving construction as a result of covered freeway improvement projects was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impacts CR-5 and CR-6: Effects on archaeological and historic resources from biological mitigation and conservation activities.

Orange County contains over 110 properties listed on the NRHP and 25 registered CHLs, as well as many resources that have been recorded but not evaluated for listing in the CHL, the NRHP, or the CRHR. These resources have the potential to be significantly affected by physical disturbances associated with habitat restoration and creation; planting; grading; dethatching; construction of trails and access roads; use of heavy mechanized equipment; stream alterations; ground disturbance; demolition of buildings; alterations of settings, landscaping, or viewsheds; and audible intrusions, to name just a few. Presently, none of the above resources occur within the Preserves that have been acquired to date; however, the likelihood that NRHP-or CRHR-eligible resources exist within these areas cannot be discounted until such time as the lands have been completely inventoried and the resources located there evaluated for their potential NRHP and CRHR eligibility.

Therefore, the potential exists for impacts on known and unknown resources to result from activities described in the Proposed Plan. Potential impacts on cultural resources would be reduced to less-than-significant level through implementation of **MM CR-1** through **MM CR-4** below.

The potential for impacts is especially true for built environment resources where case law has established that the recordation of a building does not mitigate for its loss (*League for the Protection of Oakland's Architectural and Historic Resources v. City of Oakland and Montgomery Ward*, 52 Cal. App. 4th 896, No. A074348, 1997); however, built environment resources are not proposed to be impacted by Proposed Plan implementation. Archaeological resources can normally be mitigated to a less-than-significant level through data recovery excavations, but the presence of sacred features, like rock art, or Native American cemeteries would require preservation in place.

In order to mitigate effects, Preserves will be adequately surveyed where site disturbance is planned for, and all site activities will avoid archaeological resources. If avoidance is not possible, impacts on the resources will have to be evaluated and appropriately treated prior to disturbance. Treatment measures could include intensive documentation, subsurface testing, and construction monitoring by a qualified archaeologist of all earthmoving activities.

With implementation of MM CR-1 through MM CR-4, impacts on archaeological and historical resources would be less than significant.

MM CR-1: Built environment resources (e.g., farm sheds or other structures relating to prior use of Preserve Areas) will be left in place and intact.

MM CR-2: Resource Management Plans prepared for individual Preserve Areas will include an archaeological sensitivity assessment to determine portions of the Preserve Area, if any, that have a reasonable likelihood to yield archaeological resources. The archaeological assessment will include verification of the records search and a field survey by a qualified archaeologist (unless previous surveys have been recently conducted and the qualified archaeologist determines that a new survey is not warranted). The archaeological sensitivity assessment will identify management activities that may occur without an archaeological monitor in locations that may yield archaeological resources, and will identify activities that require an archaeological and/or Native American monitor to be present. The assessment will also include a consultation with the Native American Heritage Commission (NAHC) to determine whether

known Traditional Cultural Places and/or sacred sites are in the project area. The NAHC will then identify specific Native American groups or individuals to be contacted that may have concerns or additional information.

MM CR-3: All preserve management will adhere to the requirements of the RMP archaeological sensitivity assessment. Where archaeological sites are discovered in the field, avoidance of the identified resource will be the highest priority. If avoidance is not possible, data recovery excavations, analysis of the remains, preparation of a data recovery report, and curation of the remains in a qualified facility will be completed by a qualified archaeologist. Most Likely Descendants will be notified in case human remains are unearthed or items of significant cultural patrimony are found.

MM CR-4: Project implementation agencies will stop construction activities and excavation if cultural resources are encountered until a qualified archaeologist can assess the find and determine its significance. If required, MM CR-3 will be adhered to.

Impact CR-7: Earthmoving construction activities as a result of biological mitigation and conservation activities have the potential to result in impacts on paleontological resources.

Paleontological resources are known to occur throughout Orange County in various geologic formations that extend from at or near the ground surface to hundreds of feet below the ground surface. While some geologic formations are known for yielding paleontological resources as indicated in Table 3.5-1, the generally high occurrence of fossils in Orange County makes it difficult to predict which areas are paleontologically sensitive. Therefore, preserve management—related excavations where soil disturbance occurs in previously undisturbed soils or exceeds the depth of prior soil disturbance (i.e., existing trails and roads, agricultural fields) have the potential to result in impacts on paleontological resources. With implementation of MM CR-5 and MM CR-6 below, impacts on paleontological resources would be less than significant.

MM CR-5: Prior to ground-disturbing activities in previously undisturbed surface soils or undisturbed soils at depths below known levels of disturbance within Preserve Areas, a qualified paleontologist will evaluate the potential for the soil disturbance to yield paleontological resources. If no potential exists for paleontological resources, then no further action is required. If the potential does exist for paleontological resources to occur, then **MM CR-6** below will be adhered to.

MM CR-6: If unknown paleontological resources are encountered, preserve management activities shall be halted and the area avoided until a qualified paleontologist can assess the find and determine its significance. The recommendations of the qualified paleontologist will be adhered to. If resource recovery is recommended, a management plan outlining how paleontological resources will be recovered will be prepared. Any fossil remains encountered will be curated at an appropriate institution where they can be studied and/or displayed.

Impact CR-8: Earthmoving construction activities as a result of biological mitigation and conservation activities have the potential to result in impacts on human remains.

Humans have occupied Southern California for over 10,000 years, and archaeological human remains have been discovered in Orange County. These remains are sometimes isolated and not associated with archaeological sites, which makes it hard to predict where they will occur. Internments are often unmarked and can consist of cremation remains and informal and formal

burials. Human remains are protected under NEPA, CEQA, and NAGPRA of 1990. When earthmoving construction activities occur in previously undisturbed soil, they have the potential to encounter human remains and result in potentially significant impacts on this resource.

With implementation of MM CR-7, this effect would be less than significant.

MM CR-7: If human remains are encountered, California Health and Safety Code Section 7050.5 states that no further disturbance can occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The county coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the coroner will notify the NAHC, which will determine and notify a Most Likely Descendant. With the permission of the landowner or his/her authorized representative, the descendant may inspect the site of the discovery. The descendant will complete the inspection within 24 hours of notification by the NAHC. The Most Likely Descendant may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. If cultural materials are discovered during any excavation, a qualified archaeologist will be notified to assess the significance of such material.

4.5.2.3 Alternative 3: Reduced Plan

Impacts CR-1, CR-2, CR-3, CR-4, CR-5, CR-6, CR-7, and CR-8

Under Alternative 3, cultural resources effects would be essentially the same as those discussed under the Proposed Plan, and all impacts under the Reduced Plan would be the same as discussed under the Proposed Plan. Mitigation measures MM CR-1 through MM CR-7 would be required, as described under Alternative 2.

4.5.2.4 Cumulative Impacts

The cumulative impact area for cultural resources would be Orange County.

The 2006 LRTP Program EIR identified that not all impacts of covered freeway projects can be completely avoided or mitigated and residual impacts would likely to remain. Therefore, the LRTP's contribution to future impacts on cultural resources was considered cumulatively significant (OCTA 2006).

Preserve management activities associated with Alternatives 1, 2, and 3 have the potential to create significant impacts on built environment resources, archaeological resources, paleontological resources, and archaeological human remains. Future development within Orange County has the potential to also result in similar significant impacts on these resources. Mitigation for such impacts is likely to include archival research, cultural resource surveys, Native American consultation, resource documentation and evaluation, and test and/or data recovery excavations. Implementation of the Proposed Plan would avoid impacts on cultural resources to the extent feasible, and would minimize impacts during development of preserve specific RMPs. Furthermore, cultural resource impacts would be mitigated when necessary through resource documentation and evaluation, and test and/or data recovery excavations. Therefore, neither Alternatives 2 nor 3 would make a considerable contribution to a cumulatively significant impact. However, Alternative 1, which would result in significant impacts on cultural resources after mitigation, would result in a cumulatively considerable contribution.

4.5.2.5 Summary of Impacts

The potential exists for earthmoving activities of covered preserve management and freeway improvement project activities to have impacts on known and unknown archeological, historic, built environment, and paleontological resources. Potential impacts on these resources would be reduced to less-than-significant level through implementation of mitigation measures. Earthmoving activities would also have the potential to impact archeological human remains; however, this impact would be reduced to less than significant with the implementation of mitigation measures. Tables 4.5-1 and 4.5-2 outline these potential impacts for each alternative. Impacts from covered preserve management and freeway improvement project activities could add to the impact of other impacts on cultural resources in Orange County. However, the application of mitigation measures would prevent the impacts from making a considerable contribution to a cumulatively significant impact.

Table 4.5-1. Summary of Cultural Effects under All Alternatives

	Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
CR-1	-	- (same as Alt 1)	- (same as Alt 2)	
CR-2	-	- (same as Alt 1)	- (same as Alt 2)	
CR-3	-	- (same as Alt 1)	- (same as Alt 2)	
CR-4	-	- (same as Alt 1)	-(same as Alt 2)	
CR-5	-	-	- (same as Alt 2)	
CR-6	-	-	- (same as Alt 2)	
CR-7	-	-	-(same as Alt 2)	
CR-8	-	-	-(same as Alt 2)	

⁰ = no substantial change relative to current conditions

Table 4.5-2. Summary of Cultural Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

	Effects of Alternatives		
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan
CR-5	Significant and Unavoidable	Less than Significant with Mitigation	Less than Significant with Mitigation
CR-6	Significant and Unavoidable	Less than Significant with Mitigation	Less than Significant with Mitigation
CR-7	Significant and Unavoidable	Less than Significant with Mitigation	Less than Significant with Mitigation
CR-8	Significant and Unavoidable	Less than Significant with Mitigation	Less than Significant with Mitigation

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Orange County	Transportation	Authority

Section 4.5. Cultural Resources

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4.6.1 Methodology and Significance Criteria

Impacts related to geology, soils, and seismicity were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of applicable documents and materials related to geologic formations, geologic hazards, and seismicity with state, county, and local jurisdictions. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact related to geology, soils, and seismicity.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42; California Department of Conservation 1999);
 - o strong seismic ground shaking;
 - o seismically related ground failure, including liquefaction; or
 - o landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on expansive soil, thereby creating substantial risks to life or property.

4.6.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated impacts on geology, soils, and seismicity from the covered freeway improvement projects, as presented in the OCTA 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that could remain significant after mitigation. The 2006 LRTP Program EIR determined that impacts related to geology, soils, and seismicity from the covered freeway improvement projects would remain significant after mitigation is incorporated.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate

environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated geological impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated geological impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.6.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP alternatives on geology, soils, and seismicity are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.6.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.6.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact GEO-1: Potential for covered freeway improvement projects to expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure.

The entire Orange County region is susceptible to impacts from regional seismic activity. Numerous active faults are known to exist in the region that could potentially generate seismic events capable of significantly affecting existing and proposed transportation facilities. As such, covered freeway improvement projects would be exposed to both direct and indirect effects of earthquakes. Potential effects from surface rupture and severe ground shaking could cause catastrophic damage to transportation infrastructure, particularly overpasses and underground structures (OCTA 2006). The potential for projects to be significantly affected by liquefaction would be higher in areas exhibiting shallow groundwater levels and unconsolidated soils such as fill material, some alluvial soils, and coastal sands (OCTA 2006). As documented in the 2006 LRTP Program EIR, potential impacts on property and public safety from seismic activity could potentially be significant.

Mitigation Measure 4.4-A in the 2006 LRTP Program EIR include using current earthquake resistant design standards for new structures, retrofitting existing structures, and comprehensive geotechnical site investigation during design and construction which would reduce potential

impacts related to seismic shaking and unstable soils. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, due to the unstable seismic nature of the region and the magnitude of some freeway improvement projects, the 2006 LRTP Program EIR determined that residual impacts may remain and would be considered significant after mitigation.

Impact GEO-2: Potential for covered freeway improvement projects to expose people or structures to landslides.

As documented in the 2006 LRTP Program EIR, covered freeway improvement projects could result in substantial grading or other earth modifications that could generate air and waterborne erosion and slope failure. Earth work or major cuts into hillsides could create unstable slope conditions and lead to long-term soil erosion, creating potential landslide and falling rock hazards. Therefore, covered freeway improvement projects have the potential to generate significant erosion and slope failure impacts (OCTA 2006).

Mitigation Measure 4.4-B (avoidance of unstable slopes and landslide prone areas) and 4.4-C (appropriate slope drainage construction methods, revegetation of modified slopes, proper earthwork, and road cut design) in the 2006 LRTP Program EIR would reduce potential impacts related to landslides. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, the 2006 LRTP Program EIR identified that residual erosion and slope failure impacts for some freeway improvement projects, given their magnitude, could remain and would be considered significant after mitigation.

Impact GEO-3: Potential for covered freeway improvement projects to result in substantial soil erosion or loss of topsoil.

As documented in the 2006 LRTP Program EIR, earth work or major cuts into hillsides can create unstable slope conditions and lead to long-term soil erosion, creating potential landslide and falling rock hazards. Potential impacts related to long-term erosion and slope failure due to covered freeway improvement projects have the potential to generate significant erosion and loss of topsoil (OCTA 2006).

Mitigation Measure 4.4-B (avoidance of unstable slopes and landslide prone areas) and 4.4-C (appropriate slope drainage construction methods, revegetation of modified slopes, proper earthwork, and road cut design) in the 2006 LRTP Program EIR would reduce potential impacts related to soil erosion and loss of topsoil. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) However, the 2006 LRTP Program EIR identifies that residual erosion impacts for some freeway improvement projects, given their magnitude, could remain and would be considered significant after mitigation.

Impact GEO-4: Potential for covered freeway improvement projects to be located on expansive soil.

As documented in the 2006 LRTP Program EIR, some covered freeway improvement projects would occur where expansive soils may be expected to have already been investigated and removed. However, damage to proposed facilities caused by subsidence in unstable soils is considered a potentially significant impact due to the historical occurrence of subsidence within the Orange County region due to groundwater overdraft and petroleum extraction (OCTA 2006).

Mitigation Measure 4.4-D (comprehensive geotechnical site investigation and implementation of corrective measures) and 4.4-E (investigation of soil conditions near abandoned wells) in the 2006 LRTP Program EIR would reduce potential impacts related to expansive soils to less than significant levels (see Appendix E for descriptions of all LRTP programmatic mitigation measures).

Impacts from Biological Mitigation and Conservation Activities

Impact GEO-5: Potential for biological mitigation and conservation activities to expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure.

Mitigation for biological resources impacts also would occur under the No Project/No Action Alternative as a consequence of freeway improvements on a project-by-project basis that could include requirements for onsite habitat preservation as well as the acquisition (including purchasing credits in conservation banks) and restoration of offsite habitat areas. The mitigation activities under the No Project/No Action Alternative could simply maintain existing land cover, or could substantially change some land cover (e.g., restoration of disturbed habitat to wetlands). Neither the preservation of natural habitat or habitat restoration activities are expected to result in exposure of people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure. Impacts would be less than significant, and no mitigation would be required.

Impact GEO-6: Potential for biological mitigation and conservation activities to expose people or structures to landslides.

Mitigation for biological resources impacts would occur, as described above under Impact GEO-5. Neither the preservation of natural habitat or habitat restoration activities are expected to result in exposure of people or structures to landslides. Impacts would be less than significant, and no mitigation would be required.

Impact GEO-7: Potential for biological mitigation and conservation activities to result in substantial soil erosion or loss of topsoil.

Mitigation for biological resources impacts would occur as described above under Impact GEO-5. Neither the preservation of natural habitat or habitat restoration activities are expected to result in substantial soil erosion or loss of topsoil. Where necessary, stream restoration activities would be undertaken on an individual project basis throughout the Plan Area, which would typically include grading, excavating, and other activities involving the use of heavy equipment that could result in short-term impacts from erosion.

Based on the analysis completed in the 2006 LRTP Program EIR, these impacts would be mitigated through local standards for drainage and water quality control. For instance, any construction activity that disturbs one acre or more of soil would comply with the State General Construction Activity Storm Water Permit 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002. Additionally, construction BMPs would be employed, as specified in a Storm Water Pollution Prevention Plan (SWPPP) for the individual project. Construction BMPs act as physical barriers to prevent sediment and other construction-related pollutants from leaving a construction site and into receiving waters. The project design, along with the use of the above-mentioned BMPs, would reduce potential impacts to less than significant. No additional mitigation would be required.

Impact GEO-8: Potential for biological mitigation and conservation activities to be located on expansive soil.

Mitigation for biological resources impacts would occur as described above under Impact GEO-5. Neither the preservation of natural habitat or habitat restoration activities are expected to result in impacts associated with being located on expansive soils because these activities do not involve the installation of structure which could be subject to damage by expansive soils. Impacts would be less than significant, and no mitigation would be required.

4.6.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact GEO-1: Potential for covered freeway improvement projects to expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure.

The potential for covered freeway improvement projects to expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact GEO-2: Potential for covered freeway improvement projects to expose people or structures to landslides.

The potential for covered freeway improvement projects to expose people or structures to landslides was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact GEO-3: Potential for covered freeway improvement projects to result in substantial soil erosion or loss of topsoil.

The potential for covered freeway improvement projects to result in substantial soil erosion or loss of topsoil was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact GEO-4: Potential for covered freeway improvement projects to be located on expansive soil.

The potential for covered freeway improvement projects to be located on expansive soil was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact GEO-5: Potential for biological mitigation and conservation activities to expose people or structures to rupture of a known earthquake fault, strong seismic ground shaking, or seismically related ground failure.

The potential for damage to structures occupied by people is the principal concern related to human exposure to a rupture of an earthquake fault, strong ground shaking, or seismically related ground failure. Structures intended for human occupancy (e.g., houses, apartments, condominiums, etc.) are

prohibited by the Alquist-Priolo Act from being constructed on known active faults. These types of structures are not proposed for construction under the Proposed Plan. Any minor construction, such as the installation of preserve management offices, maintenance sheds, restrooms, wildlife observation platforms, or educational kiosks, would be built according to appropriate standards, including the current IBC, as implemented through the CBC (discussed in Section 3.6, "Regulatory Setting"). Therefore, impacts associated with these issues would be less than significant. No mitigation measures would be required.

Impact GEO-6: Potential for biological mitigation and conservation activities to expose people or structures to landslides.

The habitat restoration and creation activities associated with the Proposed Plan could create unstable slopes if improperly designed or constructed. Additionally, although the Proposed Plan does not propose structures intended for human occupancy (e.g., houses, apartments, condominiums, etc.), construction of smaller facilities such as restrooms, parking lots, wildlife observation platforms, educational kiosks, trails, etc., could include substantial earthwork.

Any activity of the Proposed Plan that would involve substantial earthwork (e.g., grading, excavating) would require a grading permit from the local land use authority (e.g., Orange County Public Works, as discussed in Section 3.6, "Regulatory Setting"). To obtain a grading permit, OCTA or the designated Preserve management entity would need to retain a qualified professional who would conduct site-specific geotechnical investigations consistent with all applicable standards of professional geologic/geotechnical engineering practice. These investigations would provide the geologic basis needed for the development of appropriate project design by making earthwork recommendations based on existing site conditions and ensuring that proper slope stability and erosion controls are incorporated into project construction. Therefore, with adherence to county or local jurisdiction grading permit requirements, the potential risk from landslides to people or structures resulting from the project would be less than significant. No mitigation measures would be required.

Impact GEO-7: Potential for biological mitigation and conservation activities to result in substantial soil erosion or loss of topsoil.

Implementation of the Proposed Plan would involve minor amounts of earthwork in association with preserve management activities, which could result in soil erosion or a loss of topsoil. Restorations activities and the construction of new facilities such as trail improvements, parking lots, restrooms, kiosks, etc., could include earthwork involving grading, excavation, or trenching, which may promote soil erosion and/or a loss of topsoil.

Implementation of the stormwater and water quality BMPs discussed in Chapter 5 of the Proposed Plan (Section 5.6.4, "Stormwater and Water Quality BMPs") would reduce this impact to less than significant. No mitigation measures would be required.

Impact GEO-8: Potential for biological mitigation and conservation activities to be located on expansive soil.

Expansive soils expand and contract with moisture, causing damage to building foundations and paved areas. The presence of expansive soils would be determined through geotechnical investigation, which would be required for any Preserve construction considered by the Proposed Plan. For areas where expansive soils are found, compliance with the CBC, which contains provisions for constructing on expansive soils, would reduce the impact to a less-than-significant level. No mitigation measures would be required.

4.6.2.3 Alternative 3: Reduced Plan

Impacts GEO-1, GEO-2, GEO-3, GEO-4, GEO-5, GEO-6, GEO-7, and GEO-8

Under Alternative 3, geology, soils, and seismicity effects would be essentially the same as those discussed under the Proposed Plan. All impacts under the Reduced Plan would be considered less than significant. No mitigation measures would be required.

4.6.2.4 Cumulative Impacts

As identified in the 2006 LRTP Program EIR, the cumulative impact area of the covered freeway improvement projects is the entire Orange County area. Future planned development and redevelopment within Orange County would have the potential to generate similar geologic seismic and soil impacts as the covered freeway improvement projects. Each of these projects would be required to identify appropriate mitigation to minimize these impacts. The actions have the potential to cause cumulatively considerable adverse effects on human beings when considered at the regional scale. Given the distribution of potentially hazardous geological and seismic factors in Southern California, and given the regional scale of transportation projects, when taken along with anticipated growth associated with local land use planning efforts, the contribution of covered freeway improvement projects to the cumulative geologic and soil impacts was determined to be potentially significant (OCTA 2006).

With respect to biological mitigation and conservation activities, the habitat restoration and construction activities in the Proposed Plan could result in increased soil erosion. However, the implementation of conservation measures and BMPs to limit erosion would ensure that such activities would not result in a considerable contribution to cumulative impacts associated with soils and erosion. Furthermore, the Proposed Plan would not result in increased exposure to geologic or seismic hazards for people or structures and therefore would not contribute to a cumulatively significant impact.

4.6.2.5 Summary of Impacts

The potential for damage to structures occupied by people is the principal concern related to human exposure to a rupture of an earthquake fault, strong ground shaking, or seismically related ground failure. Any minor construction resulting from covered preserve management activities, such as the installation of preserve management offices, maintenance sheds, restrooms, wildlife observation platforms, or educational kiosks, would be built according to appropriate standards, including the current IBC and CBC. Therefore, impacts associated with these issues would be less than significant. Covered preserve management activities may also expose people or structures to landslides, result in soil erosion or loss of topsoil, or be located on expansive soils. However, activities would be closely monitored, with all relevant precautions taken and regulations followed, causing impacts to be less than significant. An overview of impacts from each alternative is provided in Table 4.6-1. Table 4.6-2 provides a summary of the potential impacts related to the biological mitigation and conservation activities. Habitat restoration and construction activities could also contribute to cumulative impacts on soil erosion; however, implementation of conservation measures and BMPs would limit this contribution from being a cumulatively considerable impact.

Table 4.6-1. Summary of Geology Effects under All Alternatives

	Effects of Alternatives				
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
GEO-1	-	-(same as Alt 1)	- (same as Alt 2)		
GEO-2	-	-(same as Alt 1)	- (same as Alt 2)		
GEO-3	-	-(same as Alt 1)	- (same as Alt 2)		
GEO-4	0	0 (same as Alt 1)	0 (same as Alt 2)		
GEO-5	0	0	0 (same as Alt 2)		
GEO-6	0	0	0 (same as Alt 2)		
GEO-7	0	0	0 (same as Alt 2)		
GEO-8	0	0	0 (same as Alt 2)		

^{0 =} no substantial change relative to current conditions

Table 4.6-2. Summary of Geology, Soils, and Seismicity Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

	Effects of Alternatives				
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
GEO-5	Less than Significant	Less than Significant	Less than Significant		
GEO-6	Less than Significant	Less than Significant	Less than Significant		
GEO-7	Less than Significant	Less than Significant	Less than Significant		
GEO-8	Less than Significant	Less than Significant	Less than Significant		

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

4.7.1 Methodology and Significance Criteria

Impacts related to hazards and hazardous materials were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of applicable documents and materials related to hazards and hazardous materials with state, county, and local jurisdictions. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact related to hazards and hazardous materials.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials within onequarter mile of an existing or proposed school.
- Be located on a site that is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment.
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.
- Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working the project area.
- Expose people or structures to a significant loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

None of the alternatives contain any provisions that would create safety hazards for any public airports or private airstrips, or interfere with any emergency response plans, or existing or future emergency response plans or emergency evacuation plans. OCTA currently complies, and will continue to comply, with all applicable hazardous materials regulations. Thus, the issue of safety hazards/hazardous materials was not considered to be a potentially significant issue that warranted detailed analysis in this Draft EIR/EIS.

4.7.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated impacts related to hazards and hazardous materials from the covered freeway improvement projects, as presented in the 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the

alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The 2006 LRTP Program EIR determined that impacts related to hazards and hazardous materials from the covered freeway improvement projects would be less than significant after mitigation is implemented.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated hazards and hazardous materials impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated hazards and hazardous materials impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.7.2 Impacts and Mitigation Measures

Potential impacts of the NCCP/HCP alternatives related to hazards and hazardous materials are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.7.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.7.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact HAZ-1: Use or disposal of hazardous materials for covered freeway improvement projects.

As discussed in the 2006 LRTP Program EIR, construction activities associated with the covered freeway improvement projects could involve the use of hazardous materials such as solvents, paints, and other architectural coatings. The use and storage of these materials is regulated by local fire departments, CUPAs, and OSHA. Some materials left over from construction activities could be

reused on other projects; for materials that cannot be or are not reused, disposal would be regulated by the DTSC under state and federal hazardous waste regulations. However, because all hazardous materials would be used in accordance with all local, state, and federal regulations, potential impacts were considered to be less than significant (OCTA 2006).

Impact HAZ-2: Accidental releases of hazardous materials into the environment from covered freeway improvement projects.

As discussed in the 2006 LRTP Program EIR, covered freeway improvement projects would increase the current capacity of the existing transportation system through expansion of existing facilities. The enhancements included in the project provide additional capacity that could be used to increase truck travel. This improvement in capacity would better facilitate the movement of goods, including hazardous materials, through the county, thereby increasing the potential for the risk of release or incident of hazardous waste over existing conditions (OCTA 2006).

Covered freeway improvement projects could be expected to reduce the level of risk posed by hazardous materials transport by separating trucks from other traffic types. This separation would reduce the likelihood of accidents due to the different acceleration rates and driving patterns of heavy trucks compared with other vehicles. This improvement may be somewhat offset by increases in truck usage of freeways (OCTA 2006).

This increase in truck traffic would correlate with an increase in the movement of hazardous materials in the county, thereby increasing the risk of hazardous waste releases. Schools and other sensitive receptors (such as hospitals and nursing home facilities) within 0.25 mile of existing freeways could be affected due to the increased incident risk resulting from increases in truck traffic volume. Although the increase in truck volume is expected to increase incident risk to schools and other sensitive receptors within 0.25 mile of the projects, the impact was found to be less than significant because the risk of incidence to the schools is already present due to their location in proximity to existing highways and would not be substantially increased by implementation of the covered freeway improvement projects (OCTA 2006).

Mitigation measures 4.6-A (driver safety training) and 4.6-B (speed limit and existing regulation enforcement for hazardous material transport) in the 2006 LRTP Program EIR would reduce potential impacts related to accidental release of hazardous materials to a less-than-significant level. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.)

Impact HAZ-3: Disturbance of contaminated property from covered freeway improvement projects.

As discussed in the 2006 LRTP Program EIR, construction related to the covered freeway improvement projects could involve construction through or next to sites that have become contaminated due to past chemical use or disposal. Although two decades have passed since federal and state laws were adopted providing for remediation of these sites, it is unlikely that all contaminated sites have been identified due to continuously changing businesses and land uses that use hazardous materials. It is possible that the expansion or improvement of existing facilities would encounter previously unidentified contaminated properties, including, but not limited to, unknown soil and groundwater contamination, asbestos-containing materials, and lead-based paints. This impact was found to be potentially significant (OCTA 2006).

Mitigation measure 4.6-C (prevention of further environmental contamination and the minimization of public exposure to an acceptable level) in the 2006 LRTP Program EIR would reduce potential impacts related to disturbance of contaminated property to a less-than-significant level. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.)

Impact HAZ-4: Potential for covered freeway improvement projects to expose people or structures to a significant loss, injury, or death involving wildland fires.

Wildfires can be ignited along the edge of freeways from car fires, flares, sparks, discarded cigarettes, and various other freeway sources/activities. To minimize the potential for wildfires, wildlife protection techniques would be implemented whereby OCTA and Caltrans would ensure that the covered freeway improvement projects would be designed to maintain an adequately safe distance between the road edge and flammable natural habitat. Project designs, as appropriate, would include additional pavement, gravel shoulders, mowed edges, manufactured mats, and/or retaining walls. Therefore, potential exposure of people and structures to significant loss, injury, or death involving wildland fires resulting from freeway improvement projects would be less than significant. No mitigation would be required.

Impacts from Biological Mitigation and Conservation Activities

Impact HAZ-5: Use or disposal of hazardous materials for biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur under the No Project/No Action Alternative as a consequence of freeway improvements on a project-by-project basis that could include requirements for onsite habitat conservation as well as the acquisition (including purchasing credits in conservation banks) and restoration of offsite habitat areas. The mitigation activities under the No Project/No Action Alternative could simply maintain existing land cover, or could substantially change some land cover (e.g., restoration of disturbed habitat to wetlands). Maintenance of these habitat areas may include the use of chemical herbicides or pesticides. OCTA currently complies, and would continue to comply, with all applicable hazardous materials regulations. Thus, impacts would be less than significant, and no mitigation would be required.

Impact HAZ-6: Accidental releases of hazardous materials into the environment from biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur as described above under Impact HAZ-5. Neither the preservation of natural habitat or habitat restoration activities are expected to result in accidental releases of hazardous materials into the environment. Mitigation for biological impacts could require the use of a number of hazardous materials, such as fuels, oils, solvents, herbicides, and pesticides in limited quantities. These materials would be contained in vessels engineered for safe storage. Spills during onsite fueling of equipment or an accidental upset (e.g., puncture of a fuel or pesticide/herbicide tank through operator error or slope instability) could result in a release of fuel, oils, or pesticides/herbicides into the environment. It is possible that mitigation sites could occur within one-quarter mile of an existing or proposed school that could be exposed to such a release. Storage of large quantities of these materials within habitat areas is not anticipated; however, the uncontrolled release of these materials would be a potentially significant impact. An accidental spill of these materials would require immediate clean-up and remediation as mandated by state and federal regulations, and the Proposed Plan addresses hazardous materials spills and toxic materials. The use and storage of hazardous materials is also regulated by state agencies, as

well as OCTA protocols. Furthermore, Hazardous Materials Management/Spill Prevention Plans would be prepared as part of the RMPs for each Preserve to address procedures should a spill occur or hazardous materials be encountered during excavations. Therefore, hazardous material effects associated with potential hazardous materials use are not anticipated to result in significant impacts, and no mitigation would be required.

Impact HAZ-7: Disturbance of contaminated property from biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur as described above under Impact HAZ-5. Earth moving activities and the restoration of disturbed habitat to wetlands would have the potential to disturb contaminated property. The 2006 LRTP Program EIR requires mitigation for soil disturbance in areas with potential contamination (see MM 4.6-C in Table ES-1 of Appendix E). Prior to earthwork, soil samples would be taken to determine whether contamination is present. In the event that contaminated soil is found, appropriate remediation measures would be taken to ensure that contamination does not spread. Contaminated properties would not be used for wetland restoration areas. Thus, impacts would be less than significant after mitigation is incorporated.

Impact HAZ-8: Potential for biological mitigation and conservation activities to expose people or structures to a significant loss, injury, or death involving wildland fires.

Mitigation for biological resources impacts would occur as described above under Impact HAZ-5. Mitigation efforts that occur adjacent to wildlands would be required to comply with Orange County Fire Authority (OCFA) requirements regarding fire suppression and prevention measures. Therefore, potential exposure of people and structures to significant loss, injury, or death involving wildland fires resulting from freeway improvement projects would be less than significant. No mitigation would be required.

4.7.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact HAZ-1: Use or disposal of hazardous materials for covered freeway improvement projects.

The potential for covered freeway improvement projects to result the use or disposal of hazardous materials was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impact HAZ-2: Accidental releases of hazardous materials into the environment from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in accidental releases of hazardous materials into the environment was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impact HAZ-3: Disturbance of contaminated property from covered freeway improvement projects.

The potential for covered freeway improvement projects to result the disturbance of contaminated property was considered in the 2006 LRTP Program EIR as described above for the No Project/No Action Alternative.

Impact HAZ-4: Potential for covered freeway improvement projects to expose people or structures to a significant loss, injury, or death involving wildland fires.

The potential for covered freeway improvement projects to result in the exposure of people or structures to wildland fires would be as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact HAZ-5: Use or disposal of hazardous materials for biological mitigation and conservation activities.

Maintenance of habitat in the Preserves would require a number of management actions to achieve vegetation management objectives. RMPs prepared for each Preserve would provide for multiple vegetation management strategies including grazing, herbicide and pesticide use, and removal by hand; however, prescribed burning is not a component of Proposed Plan vegetation management strategies. OCTA currently complies, and would continue to comply, with all applicable hazardous materials regulations. Thus, impacts would be less than significant, and no mitigation would be required.

Impact HAZ-6: Accidental releases of hazardous materials into the environment from biological mitigation and conservation activities.

Habitat restoration and maintenance activities within Preserves would require the use of a number of hazardous materials, such as fuels, oils, solvents, herbicides, and pesticides. These materials would generally be contained in vessels engineered for safe storage. Spills during onsite fueling of equipment or an accidental upset (e.g., puncture of a fuel or pesticide/herbicide tank through operator error or slope instability) could result in a release of fuel, oils, or pesticides/herbicides into the environment. It is possible that Preserves could occur within one-quarter mile of an existing or proposed school that could be exposed to such a release. Storage of large quantities of these materials within Preserves is not anticipated; however, the uncontrolled release of these materials would be a potentially significant impact. An accidental spill of these materials would require immediate clean-up and remediation as mandated by state and federal regulations, and the Proposed Plan addresses hazardous materials spills and toxic materials. The use and storage of hazardous materials is also regulated by state agencies, as well as by OCTA protocols. Therefore, hazardous material effects associated with potential hazardous materials use are not anticipated to result in significant impacts. No mitigation would be required.

Impact HAZ-7: Disturbance of contaminated property from biological mitigation and conservation activities.

Habitat restoration and maintenance activities within Preserves would involve earthmoving activities that could potentially disturb contaminated property. None of the Preserves are known to have contaminated soils; however, consistent with mitigation measure MM 4.6-C of the 2006 LRTP Program EIR, prior to any earthwork, soil samples would be taken to determine whether contamination is present. In the event that contaminated soil is found, appropriate remediation measures would be taken to ensure that contamination does not spread. Thus, impacts would be less than significant with mitigation incorporated.

Impact HAZ-8: Potential for biological mitigation and conservation activities to expose people or structures to a significant loss, injury or death involving wildland fires.

Under the Proposed Plan, Preserve managers would be required to develop fire management plans that would include fire management actions such as preparation of a preserve-specific fire management plan, establishment of fuel management zones, brush management activities to reduce combustible materials in individual Preserves, and public education and enforcement related to fire management concerns. Additionally, OCTA has been working closely with OCFA on weed abatement and fuel modification within the Preserve System. Therefore, potential exposure of people and structures to significant loss, injury, or death involving wildland fires resulting from biological mitigation and conservation activities would be less than significant. No mitigation would be required.

4.7.2.3 Alternative 3: Reduced Plan

Under Alternative 3, hazards and hazardous materials effects would be essentially the same as those discussed under the Proposed Plan.

Impacts HAZ-1, HAZ-2, HAZ-3, HAZ-4, HAZ-5, HAZ-6, and HAZ-8

All impacts under the Reduced Plan would be considered less than significant. No mitigation would be required.

Impact HAZ-7

The impact would be similar to Impact HAZ-7 under the Proposed Plan. With implementation of mitigation measure MM 4.6-C of the 2006 LRTP Program EIR, impacts would be less than significant.

4.7.2.4 Cumulative Impacts

As identified in the 2006 LRTP Program EIR, the cumulative impact area of the covered freeway improvement projects is the entire Orange County area. Future planned development and redevelopment within Orange County would have the potential to generate similar hazards and hazardous materials impacts as the covered freeway improvement projects. Compliance with federal, state, and local regulations concerning the storage and handling of hazardous materials and/or waste, as well as Mitigation Measures 4.6-A through 4.6-C of the 2006 LRTP Program EIR would reduce the potential for significant public health and safety impacts from hazardous materials to occur. Therefore, the impact of the covered freeway improvement projects in addition to future transportation projects in surrounding areas is not expected to affect public health and safety due to exposure to hazardous materials.

Similarly, biological mitigation and conservation activities would comply with federal, state, and local regulations and would not result in project-level significant impacts; therefore, these activities would not make a measurable contribution to potential cumulative hazard and hazardous materials impacts in the county. Contributions from Alternatives 1, 2, and 3 would be less than cumulatively considerable.

4.7.2.5 Summary of Impacts

Covered freeway improvement projects and biological mitigation and conservation activities would not have significant impacts on the use or disposal of hazardous materials. Covered freeway improvement projects would have potential for accidental release of hazardous materials or the disturbance of contaminated soils. However, impacts would be less than significant with mitigation identified in the 2006 LRTP Program EIR. Biological mitigation and conservation activities would have less-than-significant impacts related to hazards and hazardous materials under all alternatives. The degree of impact associated with each alternative is outlined in Table 4.7-1, below. Table 4.7-2 provides a summary of the impact determinations for the biological mitigation and conservation activities.

Table 4.7-1. Summary of Hazards and Hazardous Materials Effects under All Alternatives

		Effects of Alternatives					
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan				
HAZ-1	-	- (same as Alt 1)	- (same as Alt 2)				
HAZ-2	-	- (same as Alt 1)	-(same as Alt 2)				
HAZ-3	-	- (same as Alt 1)	- (same as Alt 2)				
HAZ-4	0	0 (same as Alt 1)	0 (same as Alt 2)				
HAZ-5	-	-	- (same as Alt 2)				
HAZ-6	-	_	- (same as Alt 2)				
HAZ-7	-	-	- (same as Alt 2)				
HAZ-8	0	0 (same as Alt 1)	0 (same as Alt 2)				

^{0 =} no substantial change relative to current conditions

Table 4.7-2. Summary of Hazards and Hazardous Materials Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

	Effects of Alternatives					
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan			
HAZ-5	Less than Significant	Less than Significant	Less than Significant			
HAZ-6	Less than Significant	Less than Significant	Less than Significant			
HAZ-7	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation			
HAZ-8	Less than Significant	Less than Significant	Less than Significant			

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

4.8.1 Methodology and Significance Criteria

Impacts related to hydrology and water quality were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and review of applicable documents such as the Orange County and City of Brea General Plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact on hydrology and water quality.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Violate water quality standards or waste discharge requirements.
- Substantially alter existing drainage patterns or substantially increase the rate or amount of surface runoff in a manner that would result in erosion or siltation on or off site.
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge.
- Expose people or structures to a significant risk of loss, injury, or death involving flooding.

4.8.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated impacts on hydrology and water quality from the covered freeway improvement projects as presented in the 2006 LRTP Program EIR is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation. The 2006 LRTP Program EIR determined that certain impacts from the covered freeway improvement projects related to hydrology and water quality would be significant and unavoidable.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on Covered Species and estimated impacts on jurisdictional wetlands and waters for the purpose of establishing streamlined permitting processes and approving mitigation sites associated with Clean Water Act (CWA) Section 401 and California Fish and Game Code Section 1602 authorizations. USACE is conducting a separate NEPA analysis to establish a streamlined permitting process and mitigation site approval for CWA Section 404 permits. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents, including detailed impacts analysis of jurisdictional wetlands and waters,

and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated hydrology and water quality impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated hydrology and water quality impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.8.2 Impacts and Mitigation Measures

Potential impacts of the NCCP/HCP alternatives on hydrology and water quality are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.8.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.8.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact WTR-1: Potential for short-term or long-term degradation of surface water quality from freeway improvement projects.

Under the No Project/No Action Alternative, construction and maintenance of covered freeway improvement projects would still occur and compliance with ESA, CESA, NEPA, and CEQA would be addressed on a project-by-project basis. These activities would result in temporary and permanent impacts on drainage and stormwater quality, including the general categories of effects listed below.

- Increased stormwater runoff from increased impervious surfaces.
 - Increased runoff, especially during storm events, may result in greater levels of scour and/or incision of local creeks, increased sediment loads, alterations of downstream hydrology, and decreased groundwater recharge.
- Potential increase in the amount of automotive waste (e.g., oil, grease, brake dust, tires) that would be transported to local drainages.
- Potential increase in erosion and siltation in local drainages resulting from bridge, culvert, or other drainage crossings.

Based on the analysis completed in the 2006 LRTP Program EIR these impacts would be mitigated through local standards for drainage and water quality control. For instance, any construction activity that disturbs one acre or more of soil would comply with the Construction General Permit, Order No. 2009-0009-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002. Additionally, construction BMPs would be employed, as specified in a Storm Water Pollution Prevention Plan (SWPPP) for the individual project. Construction BMPs act as physical barriers to prevent sediment and other construction-related pollutants from leaving a construction site and into receiving waters.

Other requirements for mitigating construction and operational drainage and water quality impacts would be based on project-by-project ESA, NEPA, and CEQA review. Prior to the approval of individual freeway improvement projects within the Plan Area, Caltrans would evaluate potential long-term water quality impacts of the project and identify specific post-construction water quality BMPs as part of the environmental review for the project. These measures include preparation of a Water Quality Management Plan (WQMP) or Standard Urban Stormwater Management Plan (SUSMP) (if the project is within the San Diego Region of the SWRCB). OCTA and Caltrans also would undertake stream restoration activities on an individual project basis throughout the Plan Area, which would typically include grading, excavating, and other activities involving the use of heavy equipment that could result in short-term impacts from erosion. The project design, along with the use of the above-mentioned BMPs, would reduce potential impacts to less than significant under CEQA.

Impact WTR-2: Potential degradation of groundwater quality from freeway improvement projects.

Under the No Project/No Action Alternative, construction and maintenance of covered freeway improvement projects would still occur and compliance with ESA, CESA, NEPA, and CEQA would be addressed on a project-by-project basis. Based on the analysis completed in the 2006 LRTP Program EIR, the construction of individual covered freeway improvement projects could result in potentially significant impacts on groundwater quality (i.e., recharge and supply) due to the increase in impervious surface and the dependency on groundwater for water supply in the Orange County region. Mitigation Measures 4.7-C (Groundwater Supply and Recharge) in the 2006 LRTP Program EIR and groundwater Mitigation Measures W31-W35 of the SCAG Program EIR would reduce potential long-term degradation of groundwater quality to less than significant. (See Appendix E for descriptions of all long range and regional transportation plan mitigation measures.) Project-specific mitigation may include infiltration basins, vegetated swales, and other methods to control surface runoff and facilitate groundwater recharge.

Impact WTR-3: Potential exposure of people or structures to increased flooding from freeway improvement projects.

Under the No Action Alternative, construction and maintenance of covered freeway improvement projects would still occur and compliance with ESA, CESA, NEPA, and CEQA would be addressed on a project-by-project basis. Based on the analysis completed in 2006 LRTP Program EIR, the construction of individual covered freeway improvement projects could result in potentially significant impacts associated with flooding due to alterations of a drainage course, increases in surface runoff, or placement of new facilities such as widened roadways within an existing floodplain. Many developed areas are within the 100-year floodplain zone (flood hazard area) of the Santa Ana River. Placing new facilities such as widened roadways and new transit stations within an

existing floodplain could impede flood waters, altering the flood risks both upstream and downstream. In addition, modifications to bridges, culverts, and other drainage structures within a 100-year flood hazard area could impede or redirect flood flows and could alter the 100-year flood hazard area as mapped on a FEMA Flood Insurance Rate Map (FIRM). This would create risks of flooding to people and property in the 100-year floodplain. Mitigation Measures 4.7-D (Erosion and Siltation), and 4.7-E through 4.7-G (100-Year Flood Hazard Area) in the Program EIR and flood hazard Mitigation Measures W36-W38 of the SCAG Program EIR reduce potential exposure to increased flooding to less than significant. (See Appendix E for descriptions of all long range and regional transportation plan mitigation measures.) Project-specific mitigation includes performing hydraulic studies to reduce peak flows and to ensure that no flood risks to people or property are created by the project and following federal regulations relative to construction within mapped floodplains.

Impact WTR-4: Potential for short-term or long-term effects on watershed beneficial uses from covered freeway improvement projects.

Potential impacts on watershed beneficial uses from any one freeway improvement project would be minimal but potentially significant. Considering that most of the areas that might be impacted border an active freeway system and are subject to disturbance associated with urban areas, impacts on the overall hydrologic regime would not be substantial. Impacts on wetland and riparian areas, while small, would require mitigation for these impacts to be considered less than significant. As part of a comprehensive permitting strategy being developed by OCTA and integrated with the Proposed Plan, Table 4.8-1 was developed to summarize the estimated impacts on jurisdictional features and effects on beneficial uses from M2 projects (note: the list of M2 projects for the comprehensive permitting is slightly different than the list of Covered Projects in the Proposed Plan because some projects have been permitted outside of the comprehensive permitting program). Under the No Project Alternative, the impacts of covered freeway projects on beneficial uses would be offset and mitigated on the project-by-project basis most likely through onsite and/or smaller restoration projects within each watershed.

Impacts from Biological Mitigation and Conservation Activities

Impact WTR-5: Potential for short-term or long-term degradation of surface water quality from biological mitigation and conservation activities.

Mitigation for biological resources impacts also would occur under the No Project/No Action Alternative as a consequence of freeway improvements on a project-by-project basis that could include requirements for onsite habitat preservation as well as the acquisition (including purchasing credits in conservation banks) and restoration of offsite habitat areas. Under the No Project/No Action Alternative, mitigation of biological resources are expected to result in smaller, more isolated mitigation actions in comparison to the comprehensive mitigation approach included under the Proposed Plan. The mitigation activities under the No Project/No Action Alternative could simply maintain existing land cover, or could substantially change some land cover (e.g., restoration of disturbed habitat to wetlands). Restoration and conservation efforts performed under mitigation measures would typically be conducted at a 1:1 or 3:1 ratio, depending on the type and quality of habitat impacted. Preservation of natural habitat is not expected to result in changes to hydrology or water quality and will have beneficial effects of protecting watersheds from further development. Habitat restoration of wetlands is expected to have beneficial hydrologic impacts as the wetlands can buffer peak runoff conditions. The process of grading the site to create wetland topography is an

Table 4.8-1. Summary of Project-Specific Covered Freeway Project Effects on Beneficial Uses¹

M2 Project	Location	Watershed	Hydrologic Unit/Area/Subarea	Estimated Impacts ²	Effects on Beneficial Uses (BUs)
Project A	I-5 (SR-55 to SR-57)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 1 of Santiago Creek (Santiago HSA 801.12), Other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	Approx. 0.50-1.0 acre of non-wetland WoUS and approx. 0.0-0.1 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project A are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project B	I-5 (I-405 to SR-55)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), Other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	Approx. 0.50-1.0 acre of non-wetland WoUS and approx. 0.0-0.1 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project B are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project C ⁹	I-5 (El Toro Interchange to SR-73)	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13), Oso Creek (Mission Viejo HA 901.20; Oso HSA 901.21)	Permanent impacts – 0.08 acre of non-wetland WoUS and 0.04 acre of wetland WoUS; Temporary impacts – 0.057 acre of non-wetland WoUS, of which 0.007 acre consists of concrete features	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project C are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.

M2 Project	Location	Watershed	Hydrologic Unit/Area/Subarea	Estimated Impacts ²	Effects on Beneficial Uses (BUs)
Project C2	I-5 Between Pacific Coast Highway and Pico	San Juan Creek	San Juan Creek (San Juan HU 901.00; Mission Viejo HA 901.20; Lower San Juan HSA 901.27), Prima Deshecha Creek (San Clemente HA 901.30; Prima Deshecha HSA 901.31), Segunda Deshecha Creek (Segunda Deshecha HSA 901.32)	No impacts to WoUS expected to occur for this project	This project was not permitted as part of comprehensive permitting strategy. In addition, no impacts to WoUS are expected to occur for this project.
Project D ³	I-5 (Interchanges between El Toro and Avery Parkway)	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13)	Evaluated as part of Project C	Evaluated as part of Project C.
Project E	SR-22 (Interchanges between Euclid and Harbor)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11)	Approx. 0.50-1.0 acre of non-wetland WoUS	No wetland or riparian impacts are expected to occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project E are not expected to occur.
Project F North ⁴	SR-55 (I-5 to SR-22)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 1 of Santiago Creek (Santiago HSA 801.12), Other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	Approx. 1.0-1.5 acres of WoUS and approx. 0.0-0.5 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially affected and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project F North are not expected to occur. Given the minimal size of the riparian/wetland area that may be affected and the overall size of the watershed, these impacts would be less than substantial. In addition, the overall hydrologic regime would not be substantially affected.

M2 Project	Location	Watershed	Hydrologic Unit/Area/Subarea	Estimated Impacts ²	Effects on Beneficial Uses (BUs)
Project F South ⁵	SR-55 (I-405 to I-5, not including Alton over- crossing)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), Other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	Approx. 0.75-1.25 acre of non-wetland WoUS and approx. 0.0-0.1 acre of wetland WoUS	Minor wetland/riparian impacts may occur Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project F South are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project G North ⁶	SR-57 (Lambert to Tonner Canyon)	San Gabriel River	Carbon Canyon Creek (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Anaheim HSA Split 845.61; La Habra HSA Split 845.62; Yorba Linda HSA Split 845.63)	Approx. 0.0-0.5 acre of WoUS and approx. 0.0-0.25 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially affected and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project G North are not expected to occur. Given the minimal size of the riparian/wetland area that may be affected and the overall size of the watershed, these impacts would be less than substantial.
Project G South ⁷	SR-57 (Northbound Orangewood to Katella)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11)	Approx. 1.0-1.5 acres of non-wetland WoUS and approx. 0.0-0.1 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project G South are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project H	SR-91 (I-5 to SR-57)		Carbon Creek (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Anaheim HSA Split 845.61)	Project specific environmental review	This project was not permitted as part of comprehensive permitting strategy.

M2 Project	Location	Watershed	Hydrologic Unit/Area/Subarea	Estimated Impacts ²	Effects on Beneficial Uses (BUs)
Project I	SR-91 (SR-57 to SR-55, not including Tustin Ave Interchange)	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11 and Santa Ana Narrows HSA 801.13)	Approx. 1.5-2.0 acres of non-wetland WoUS and approx. 0.0-0.1 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project I are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project J	SR-91 (SR-55 and SR-241 [Weir Canyon])	Santa Ana	Reach 2 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11 and Santa Ana Narrows HSA 801.13)	Project specific environmental review	This project was not permitted as part of comprehensive permitting strategy.
Project K ⁸	I-405 (SR-55 to I-605)	Santa Ana & San Gabriel River	Reach 1 of Santa Ana River (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), San Gabriel River Drainage (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Anaheim HSA Split 845.61)	Permanent impacts - 1.14 acres of non- wetland WoUS; Temporary impacts - 5.35 acres of non- wetland WoUS	No wetland or riparian impacts are expected to occur. Considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project K are not expected to occur. In addition, the overall hydrologic regime would not be substantially impacted.
Project L	I-405 (I-5 to SR-55 and interchange at Lake Forest)	Santa Ana	Reach 1 of San Diego Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; East Coastal Plain HSA 801.11), Reach 2 of San Diego Creek (East Coastal Plain HSA 801.11), Other tributaries to San Diego Creek (East Coastal Plain HSA 801.11)	Approx. 1.75-2.25 acres of WoUS and approx. 0.0-0.5 acre of wetland WoUS	Minor wetland/riparian impacts may occur. Given the small area to be potentially impacted and considering these areas border an active freeway system and are subject to disturbance associated with urban areas, substantial impacts on the BUs listed for Project L are not expected to occur. Given the minimal size of the riparian/wetland area that may be affected and the overall size of the watershed, these impacts would be less than substantial. In addition, the overall hydrologic regime would not be substantially impacted.

M2 Project	Location	Watershed	Hydrologic Unit/Area/Subarea	Estimated Impacts ²	Effects on Beneficial Uses (BUs)
Project M ⁸	I-605 / Katella Interchange	San Gabriel River	San Gabriel River Drainage (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Anaheim HSA Split 845.61)	Evaluated as part of Project K	Evaluated as part of Project K.

¹This table is derived from information prepared for the regulatory agencies (US Army Corps of Engineers and SWRCB) as part of a comprehensive permitting strategy to address wetlands, jurisdictional waters, and riparian areas regulated at the state and/or federal level. It does not include impact information or a beneficial uses analysis for M2 projects permitted outside of the comprehensive permitting strategy (Projects H and J). Projects C and K may be permitted separately; however, impact information and a beneficial uses analysis for Projects C and K is provided because these projects may be permitted under the comprehensive permitting strategy.

² Estimated combined temporary and permanent impacts, reported in ranges, of jurisdictional features are based on preliminary calculations using a 'planning-level' impact footprint and program-wide mapping of jurisdictional features. Site specific impact analysis will be completed on a project-by-project basis in the project-level CEQA document. Approximately 75% of the estimated impacts reported in this table consist of impacts on concrete features.

³ Impacts occurring within the Project D footprint also occur within the Project C footprint. Since the schedule for Project C occurs prior to Project D, the impacts for Project D are analyzed as part of Project C.

⁴ Project F North is also known as Project F, Segment 2

⁵ Project F South is also known as Project F, Segment 1

⁶ Project G North is also known as Project G, Segment 3

⁷ Project G South is also known as Project G, Segment 1a

⁸ Impacts from Project K (and Project M, which occurs within the Project K footprint and is considered a part of that project) are derived from 1) the San Diego Freeway (I-405) Improvement Project Draft Environmental Impact Report/Environmental Impact Statement dated May 2012 and prepared by Caltrans and 2) the Natural Environment Study San Diego Freeway (I-405) Improvement Project SR-73 to I-605 dated March 2012.

⁹ Project C Impacts Source: 1) The I-5 Widening Project from State Route 73 to El Toro Road Initial Study with Proposed Mitigated Negative Declaration/Environmental Assessment dated August 2013, prepared by Caltrans, and 2) The I-5 Widening Project Between SR-73 and El Toro Road dated April 2013. The impact numbers reported in this table are associated with Alternative 2 (Preferred Alternative).

extensive earthmoving activity that could result in temporary impacts from erosion. The preparation of a WQMP and SUSMP (when appropriate) and other regulatory programs are expected to reduce these temporary impacts to less-than-significant levels.

Impact WTR-6: Potential degradation of groundwater quality from biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur as described above under Impact WTR-5. Preservation of natural habitat is not expected to result in changes to hydrology or groundwater quality and will have beneficial effects of protecting watersheds from further development. Habitat restoration of wetlands is expected to have beneficial hydrologic impacts as the wetlands can buffer peak runoff conditions and facilitate an increase to groundwater recharge. Impacts related to the degradation of groundwater quality would be less than significant, and no mitigation is required.

Impact WTR-7: Potential exposure of people or structures to increased flooding from biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur as described above under Impact WTR-5. Preservation of natural habitat is not expected to result in changes to hydrology or result in increases in flood hazards, and will have beneficial effects of protecting watersheds from further development. Habitat restoration of wetlands is expected to have beneficial hydrologic impacts as the wetlands can buffer peak runoff conditions and accommodate additional flooding from storm events. No adverse impact related to the exposure of people or structures to increased flooding would occur, and no mitigation is required.

Impact WTR-8: Potential for short-term or long-term effects on watershed beneficial uses from biological mitigation and conservation activities.

Mitigation for biological resources impacts would occur as described above under Impact WTR-5. Preservation of riparian and wetland habitat is not expected to result in changes to the watershed beneficial uses and will have beneficial effects of protecting watersheds from further development. Habitat restoration of riparian and wetlands is expected to result in improvements to the beneficial uses of the watershed as the wetlands can buffer peak runoff conditions and improve water quality. Impacts related to the short-term or long-term effects on watershed beneficial uses would be less than significant, and no mitigation is required.

4.8.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact WTR-1: Potential for short-term or long-term degradation of surface water quality from covered freeway improvement projects.

Covered freeway improvement projects would result in temporary and permanent or long-term impacts on drainage and stormwater quality as described above for the No Project/No Action Alternative.

Impact WTR-2: Potential degradation of groundwater quality from covered freeway improvement projects.

Covered freeway improvement projects would result in temporary and permanent or long-term impacts on groundwater quality as described above for the No Project/No Action Alternative.

Impact WTR-3: Potential exposure of people or structures to increased flooding from covered freeway improvement projects.

Covered freeway improvement projects would result in temporary and permanent or long-term impacts on exposure of people or structures to increased flooding as described above for the No Project/No Action Alternative.

Impact WTR-4: Potential for short-term or long-term effects on watershed beneficial uses from covered freeway improvement projects.

The potential effects of covered freeway improvement projects on watershed beneficial uses would be the same as under the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact WTR-5: Potential for short-term or long-term degradation of surface water quality from biological mitigation and conservation activities.

Under the Proposed Plan, OCTA would implement a comprehensive conservation program that includes acquisition of preserve lands and funding of restoration projects. Preserve management activities—including habitat management/restoration activities and the construction of recreational facilities (e.g., new trails, information kiosks, maintenance facilities)—could result in minor amount of impact on natural habitat and have the potential to cause increased sedimentation, turbidity, and resuspension of sediment-laden water quality constituents in nearby streams and rivers. The Plan limits the amount of disturbance to be no more than 1% of the natural habitat within the Preserves. In addition, other Covered Activities involving vegetation management activities, specifically pesticide/herbicide use to achieve biological goals, could introduce toxins into nearby streams via runoff. Covered Activities on Preserves could result in short-term or long-term adverse impacts on surface water quality. However, this impact would be considered less than significant since the percentage of the Preserves that could be disturbed is minimal and OCTA will be required to implement appropriate stormwater and water quality BMPs (see Plan Section 5.6.4, "Stormwater and Water Quality BMPs") such as use of silt fencing, fiber rolls, gravel bag berms, sand bag barriers, straw mulch and dry season scheduling. No mitigation measures would be required.

The Proposed Plan would result in an overall positive benefit to surface water quality as a result of comprehensive conservation actions. The acquisition of Preserve lands under the Proposed Plan would be substantially greater than the mitigation expected under the No Project/No Action Alternative. These Preserve lands would provide for the preservation of natural lands that contribute to the protection of headwaters for local streams and help to maintain natural hydrologic functions. Restoration projects funded by OCTA would improve riparian habitat and restore hydrologic functions at a number of locations in Orange County. Impacts related to the short-term and/or long-term degradation of surface water quality would be less than significant, and no mitigation is required.

Impact WTR-6: Potential degradation of groundwater quality from biological mitigation and conservation activities.

Under the Proposed Plan, OCTA would implement a comprehensive conservation program that includes acquisition of preserve lands and funding of restoration projects. The use of stormwater and water quality BMPs in association with covered preserve management activities would prevent degradation of groundwater quality. This impact would be considered less than significant. In contrast, implementation of the Proposed Plan could positively alter the existing groundwater recharge pattern through habitat restoration within Preserves. The increase of properly functioning wetland areas, including ponds, would improve groundwater quality and encourage recharge by filtering out sediment and pollutants and by creating groundwater recharge areas. Therefore, the Proposed Plan would have an overall benefit to groundwater, as compared to the No Project/No Action Alternative. Impacts related to the degradation of groundwater quality would be less than significant, and no mitigation is required.

Impact WTR-7: Potential exposure of people or structures to increased flooding from biological mitigation and conservation activities.

If construction of new structures, kiosks, and/or other physical structures within Preserves is warranted, these would be planned to avoid or minimize exposure to existing floodplains and flood-vulnerable areas following flood protection ordinances and regulations. There would be no impact on the potential exposure of people or structures to increased flooding. No mitigation measures would be required.

Impact WTR-8: Potential for short-term or long-term effects on watershed beneficial uses from biological mitigation and conservation activities.

Under the Proposed Plan, OCTA would implement a comprehensive conservation program that includes acquisition of preserve lands and funding of restoration projects. The potential effects of OCTA funded restoration project on watershed beneficial uses are described in Table 4.8-2. Restoration projects would provide positive effects on beneficial uses such as enhancing water quality through natural filtration, encouraging groundwater recharge, and improving warm freshwater and wildlife habitats through nonnative invasive species controls. Impacts related to the short-term or long-term effects on watershed beneficial uses would be less than significant, and no mitigation is required. Therefore, long-term impacts on surface water quality associated with Covered Projects would be considered less than significant.

Protection of the Preserves from development would have a beneficial effect on long-term beneficial uses of the hydrologic basins they reside in because the surface water drainage patterns would not be modified and would be maintained as a naturally functioning hydrologic system. In addition, the Preserves may include restoration of riparian habitat (through passive or active restoration) that would increase properly functioning wetland areas and improve water quality and flood control by slowing flow velocity and causing sediment and pollutants to settle and absorb into wetland vegetation and bottom sediments. Therefore, the Proposed Plan would have an overall benefit to the watershed beneficial uses. No mitigation measures would be required.

Table 4.8-2. Restoration Project Effects on Beneficial Uses

Restoration		Hydrologic	Restoration	
Project Site	Watershed	Unit/Area/Subarea	Activities	Effects on Beneficial Uses (BUs)
Agua Chinon	Santa Ana	Reach 3 of Santiago Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	Approx. 1.13 acres riparian enhancement (non-wetland WoUS)	Removal of nonnative vegetation and replacing with native vegetation will enhance municipal and domestic water supplies by naturally filtering and purifying water used for that purpose. In addition, enhancing the native system will encourage groundwater recharge by removing invasive species that generally contribute a higher rate of water loss through evapotranspiration. The overall aesthetic value of restoration sites will be improved by contributing native species richness, and eradicating nonnative invasive species, which form large stands of monoculture. In addition, warm freshwater and wildlife habitat will be greatly improved by re-introducing native species that will contribute to the structural quality of riparian areas, which in-turn provides nesting habitat and foraging areas for native wildlife species. This will also contribute to wildlife movement by providing additional cover.
Aliso Creek	San Juan Creek	Aliso Creek (San Juan HU 901.00; Laguna HA 901.10; Aliso HSA 901.13)	Approx. 9.39 acres riparian rehabilitation (non-wetland WoUS) Approx. 1.80 acres riparian rehabilitation (wetland WoUS)	Removing invasive species that generally contribute a higher rate of water loss through evapotranspiration will allow for the conservation of local water resources, which can alternatively provide additional available water resources for agricultural uses. The overall aesthetic value of restoration sites will be improved by contributing native species richness, and eradicating nonnative invasive species, which form large stands of monoculture. In addition, warm freshwater and wildlife habitat will be greatly improved by re-introducing native species that will contribute to the structural quality of riparian areas, which in-turn provides nesting habitat and foraging areas for native wildlife species. This will also contribute to wildlife movement by providing additional cover.

Restoration Project Site	Watershed	Hydrologic Unit/Area/Subarea	Restoration Activities	Effects on Beneficial Uses (BUs)
Lower Silverado Canyon	Santa Ana	Silverado Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	Approx. 22.39 acres riparian enhancement (non-wetland WoUS) Approx. 0.62 acre riparian enhancement (wetland WoUS)	Removal of nonnative vegetation and replacing with native vegetation will enhance municipal and domestic water supplies by naturally filtering and purifying water used for that purpose. In addition, enhancing the native system will encourage groundwater recharge by removing invasive species that generally contribute a higher rate of water loss through evapotranspiration. The overall aesthetic value of restoration sites will be improved by contributing native species richness, and eradicating nonnative invasive species, which form large stands of monoculture. In addition, warm freshwater and wildlife habitat will be greatly improved by re-introducing native species that will contribute to the structural quality of riparian areas, which in-turn provides nesting habitat and foraging areas for native wildlife species. This will also contribute to wildlife movement by providing additional cover.
West Loma	Santa Ana	Santiago Creek (Santa Ana River HU 801.00; Lower Santa Ana River HA 801.10; Santiago HSA 801.12)	Approx. 0.56 acres riparian enhancement (non-wetland WoUS) Approx. 0.76 acres riparian enhancement (wetland WoUS)	Removal of nonnative vegetation and replacing with native vegetation will enhance municipal and domestic water supplies by naturally filtering and purifying water used for that purpose. In addition, enhancing the native system will encourage groundwater recharge by removing invasive species that generally contribute a higher rate of water loss through evapotranspiration. The overall aesthetic value of restoration sites will be improved by contributing native species richness, and eradicating nonnative invasive species, which form large stands of monoculture. In addition, warm freshwater and wildlife habitat will be greatly improved by re-introducing native species that will contribute to the structural quality of riparian areas, which in-turn provides nesting habitat and foraging areas for native wildlife species. This will also contribute to wildlife movement by providing additional cover.

Restoration		Hydrologic	Restoration	
Project Site	Watershed	Unit/Area/Subarea	Activities	Effects on Beneficial Uses (BUs)
Chino Hills State Park	San Gabriel	Carbon Canyon Creek (Los Angeles-San Gabriel River HU 805.00; Anaheim HA Split 845.60; Yorba Linda HSA Split 845.63)	Approx. 0.25 acre riparian enhancement (non-wetland WoUS) Approx. 0.45 acres riparian enhancement (wetland WoUS)	Removal of nonnative vegetation and replacing with native vegetation will enhance municipal and domestic water supplies by naturally filtering and purifying water used for that purpose. Removing invasive species that generally contribute a higher rate of water loss through evapotranspiration will allow for the conservation of local water resources that will alternatively provide additional available water resources for agricultural uses, and will encourage groundwater recharge. The overall aesthetic value of restoration sites will be improved by contributing native species richness, and eradicating nonnative invasive species, which form large stands of monoculture. In addition, warm freshwater and wildlife habitat will be greatly improved by re-introducing native species that will contribute to the structural quality of riparian areas, which in-turn provides nesting habitat and foraging areas for native wildlife species. This will also contribute to wildlife movement by providing additional cover.

4.8.2.3 Alternative 3: Reduced Plan

Impacts WTR-1, WTR-2, WTR-3, WTR-4, WTR-5, WTR-6, WTR-7, WTR-8

Under Alternative 3, hydrology and water quality effects would be essentially the same as those discussed under the Proposed Plan. All impacts under the Reduced Plan would be considered less than significant. No mitigation measures would be required.

4.8.2.4 Cumulative Impacts

As identified in the 2006 LRTP Program EIR, freeway improvement projects would mitigate their individual contribution to cumulative water quality and hydrology impacts by incorporating site design elements that manage surface runoff and allow for filtration or removal of pollutants prior to entering downstream waters. Residual water quality impacts could still occur, which would result in cumulatively significant water quality impacts under each alternative.

With respect to biological mitigation and conservation plans, there are many watershed management and habitat conservation planning efforts that have been initiated within the Proposed Plan Area. The cumulative impact from habitat conservation plans would result in water quality improvements due to the preservation of large watershed areas as natural open space. Only beneficial water quality improvements would result from watershed management plans and other regional conservation plans. None of the biological mitigation or conservation activities associated with any of the alternatives would result in significant effects on water quality, and the Proposed Plan's contribution to cumulative water quality impacts would not be cumulatively considerable.

4.8.2.5 Summary of Impacts

Under the No Project/No Action, Proposed Plan, and Reduced Plan Alternatives, construction and maintenance of covered freeway improvement projects would have similar impacts for hydrology and water quality. Under each alternative, covered freeway improvement projects would result in temporary and permanent impacts on drainage and stormwater quality, including the general categories of increased stormwater runoff from increased impervious surfaces, increased amounts of automotive waste transported into local drainages, increased erosion and siltation in local drainages, degradation of groundwater quality, and exposure to flooding. However, the project design, along with the use of the above mentioned BMPs, would reduce potential impacts to less than significant under CEQA.

Under the Proposed Plan and Reduced Plan Alternatives, the implementation of an NCCP/HCP will result in a larger acreage of mitigation/conservation of biological resources that would also benefit hydrology and water quality. The acquisition of large blocks of Preserve lands and funding of restoration projects would contribute to the protection and enhancement of natural hydrologic functions and improvement of water quality.

Table 4.8-3. Summary of Hydrologic and Water Quality Effects under All Alternatives

		Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
WTR-1	-	- (same as Alt 1)	- (same as Alt 2)		
WTR-2	-	- (same as Alt 1)	- (same as Alt 2)		
WTR-3	-	- (same as Alt 1)	- (same as Alt 2)		
WTR-4	-	- (same as Alt 1)	- (same as Alt 2)		
WTR-5	0	+	+ (same as Alt 2)		
WTR-6	0	+	+ (same as Alt 2)		
WTR-7	0	0	0 (same as Alt 2)		
WTR-8	0	+	+ (same as Alt 2)		

^{0 =} no substantial change relative to current conditions

Table 4.8-4. Summary of Hydrology and Water Quality Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

-	Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
WTR-5	Less than Significant	Less than Significant	Less than Significant	
WTR-6	Less than Significant	Less than Significant	Less than Significant	
WTR-7	No Impact	No Impact	No Impact	
WTR-8	Less than Significant	Less than Significant	Less than Significant	

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Orange	County	Transno	rtation	Authority	,
Orange	Country	παπορυ	rtation	Authorit	y

Section 4.8. Hydrology and Water Quality

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4.9.1 Methodology and Significance Criteria

Impacts related to land use were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and review of applicable documents such as the cities' and County's general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact on land use. This section will assess potential impacts related to Section 4(f)/6(f) resources from the implementation of the covered freeway improvement projects and the Preserves. It will also address the potential future use of the Preserves, which includes but is not limited to: land management activities, preservation of the biological resources, and public access where it does not conflict with the preservation of the biological resources.

In accordance to CEQA and NEPA, the Proposed Plan or its alternatives would have a significant impact if they cause any of the following.

- Physically divides an established or planned community.
- Creates land uses substantially incompatible with existing land uses within or adjacent to the Preserves and/or restoration projects.
- Conflicts with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Proposed Plan (including, but not limited to general plans or zoning ordinances) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflicts with other applicable NCCPs or HCPs.
- Increases the use of existing neighborhood and regional parks or other recreational facilities or requires the construction or expansion of recreational facilities that might have an adverse impact on the environment.
- Potential changes in access and availability of recreational opportunities.

4.9.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated land use impacts from the covered freeway improvement projects, as presented in the 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that could remain significant after mitigation. The 2006 LRTP Program EIR determined that land use impacts from the covered freeway improvement projects would be less than significant after mitigation is incorporated.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP

must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

For CEQA purposes, each alternative is compared with respect to anticipated land use impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated land use impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section

4.9.2 Impacts and Mitigation Measures

Potential impacts of the NCCP/HCP alternatives on land use are discussed here in terms of short-and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation and conservation activities (i.e., preserve acquisition and management). As noted in Section 4.9.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.9.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact LU-1: Physically divide an established or planned community through covered freeway improvement projects.

Covered freeway improvement projects would consist only of expanding existing roadways and would not include the construction of new roadways. As such, these projects would not physically divide an established or planned community. There would be no impact, and no mitigation would be required.

Impact LU-2: Incompatibility of covered freeway improvement projects with existing and adjacent land uses.

Covered freeway improvement projects would not significantly impact existing and adjacent land uses, as projects would occur along existing freeways. Additionally, covered freeway improvement projects are listed in County and city General Plans, and as such do not conflict with them. There would be no impact, and no mitigation would be required.

Impact LU-3: Potential inconsistencies between covered freeway improvement projects and local land use plans and policies.

Covered freeway improvement projects contain strategies to help distribute population, housing, and employment growth more efficiently, and are listed in the County's Master Plan of Arterial Highways (MPAH). Because these projects are listed in the MPAH, individual cities have accounted for these projects within their General Plans. Therefore, cities have anticipated these transportation project improvements and have planned in the General Plans for implementation of these improvements. As such, covered freeway improvement projects are generally consistent with the cities' and County's available General Plan data. Therefore, potential impacts for inconsistencies with local land use plans and policies are considered less than significant. No mitigation is required.

Impact LU-4: Potential conflicts between covered freeway improvement projects and existing HCPs or NCCPs.

Covered freeway improvement projects are located solely along existing freeways, and as such do not impact areas identified as habitat conservation plans or natural community conservation plans. There would be no impact, and mitigation is not required.

Impact LU-5: Potential for covered freeway improvement projects to result in an increased demand of parks and other recreational facilities such that expansion or construction of new facilities is required.

Each freeway improvement project will be required to go through an individual environmental document analysis. As part of this analysis, potential project-level impacts on Section 4(f)/6(f) resources will be assessed. If there is an impact on Section 4(f)/6(f) resources (i.e., publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites), the project proponent will be required to adhere to the FHWA Section 4(f)/6(f) guidance in which a systemic approach will be placed on the "use" of a Section 4(f)/6(f) resource(s). The project proponent will need to demonstrate there are no prudent and feasible alternatives to impacting these resources before they can be affected by the project and would be mitigated accordingly. The covered freeway improvement projects are located solely along existing freeways, and the scope of these projects generally consists of adding a travel lane in each direction where construction generally occurs within the existing right of way. It is unlikely that an increased demand for parks and other recreational facilities would result with the freeway improvement projects. The freeway projects are intended to accommodate growth and not induce growth. There would be less than significant impact with the incorporation of the processes set forth in the FHWA Section 4(f)/6(f) guidance, and mitigation is not required.

Impact LU-6: Potential for covered freeway improvement projects to result in changes in access and availability of recreational opportunities.

As discussed above, each freeway improvement project will be required to go through an individual environmental document analysis. As part of this analysis, potential project-level impacts on Section 4(f)/6(f) resources will be assessed. If there is an impact on Section 4(f)/6(f) resources, the project proponent will be required to adhere to the FHWA Section 4(f)/6(f) guidance in which a systemic approach will be placed on the "use" of a Section 4(f)/6(f) resource(s). Specifically, the project proponent will need to demonstrate there are no prudent and feasible alternatives to impacting these resources before they can be affected by the project and would be mitigated accordingly.

The covered freeway improvement projects are located solely along existing freeways, and the scope of these projects generally consists of adding a travel lane in each direction where construction largely occurs within the existing right of way. It is unlikely that these projects would result in changes in access and availability of recreational opportunities. The freeway projects are intended to accommodate growth and not induce growth. There would be less-than-significant impacts with the incorporation of the processes set forth in the FHWA Section 4(f)/6(f) guidance.

Impacts from Biological Mitigation and Conservation Activities

Impact LU-7: Physically divide an established or planned community through biological mitigation and conservation activities.

Mitigation for biological resources impacts also would occur under the No Project/No Action Alternative as a consequence of freeway improvements on a project-by-project basis that could include requirements for onsite habitat preservation as well as the acquisition (including purchasing credits in conservation banks) and restoration of offsite habitat areas. The mitigation activities under the No Project/No Action Alternative could simply maintain existing land cover, or could substantially change some land cover (e.g., restoration of disturbed habitat to wetlands). Individual project mitigation would not divide established or planned communities because the focus of mitigation would be on preservation and restoration of existing disturbed habitats. Thus there would be no impact, and mitigation would not be required.

Impact LU-8: Incompatibility of biological mitigation and conservation activities with existing and adjacent land uses.

Mitigation for biological resources impacts would occur as described above under Impact LU-7. Neither the preservation of natural habitat nor the habitat restoration activities would be incompatible with existing and adjacent land uses because the focus of such efforts would be on existing degraded habitat areas, which are compatible with existing and adjacent land uses. Impacts would be less than significant, and no mitigation would be required.

Impact LU-9: Potential inconsistencies between biological mitigation and conservation activities and local land use plans and policies.

Mitigation for biological resources impacts would occur as described above under Impact LU-7. Neither the preservation of natural habitat nor the habitat restoration activities would be inconsistent with local land use plans and policies because the focus of such efforts would be on existing degraded habitat areas, which are compatible with existing and adjacent land uses. Impacts would be less than significant, and no mitigation would be required.

Impact LU-10: Potential conflicts between biological mitigation and conservation activities and existing HCPs or NCCPs.

Mitigation for biological resources impacts would occur as described above under Impact LU-7. Neither the preservation of natural habitat or habitat restoration activities are expected to be incompatible with existing HCPs or NCCPs. In fact, it is possible for individual mitigation efforts to provide some biological benefit to existing HCPs and NCCPs through habitat restoration or preservation of natural habitat that aligns with existing HCP or NCCP goals, but the scale of such efforts would be limited to meeting the mitigation requirements of the individual freeway

improvement project (versus the scale of benefits possible under the Proposed Plan). There would be no impact and no mitigation would be required.

Impact LU-11: Potential for biological mitigation and conservation activities to result in an increased demand of parks and other recreational facilities such that expansion or construction of new facilities is required.

Mitigation for biological resources impacts would occur as described above under Impact LU-7. Neither the preservation of natural habitat or habitat restoration activities are expected to increase to the demand on parks and other recreational facilities because no development is proposed that would create an increased demand. For all of the Preserves acquired, no impact would occur, and no mitigation would be required.

Impact LU-12: Potential for biological mitigation and conservation activities to result in changes in access and availability of recreational opportunities.

Mitigation for biological resources impacts would occur as described above under Impact LU-7. Neither the preservation of natural habitat through offsite acquisition or habitat restoration activities would change the access and availability of recreational opportunities. Impacts would be less than significant, and no mitigation would be required.

4.9.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact LU-1: Physically divide an established or planned community through covered freeway improvement projects.

The potential for covered freeway improvement projects to physically divide an established or planned community would be as described above for the No Project/No Action Alternative.

Impact LU-2: Incompatibility of covered freeway improvement projects with existing and adjacent land uses.

The potential for covered freeway improvement projects to be incompatible with existing and adjacent land uses would be as described above for the No Project/No Action Alternative.

Impact LU-3: Potential inconsistencies between covered freeway improvement projects and local land use plans and policies.

The potential for covered freeway improvement projects to be inconsistent with local land use plans and policies would be as described above for the No Project/No Action Alternative.

Impact LU-4: Potential conflicts between covered freeway improvement projects and existing HCPs or NCCPs.

The potential for covered freeway improvement projects to be in conflict with existing HCPs and NCCPs would be as described above for the No Project/No Action Alternative.

Impact LU-5: Potential for covered freeway improvement projects to result in an increased demand of parks and other recreational facilities such that expansion or construction of new facilities is required.

The potential for covered freeway improvement projects to result in an increased demand for parks and other recreational facilities would be as described above for the No Project/No Action Alternative.

Impact LU-6: Potential for covered freeway improvement projects to result in changes in access and availability of recreational opportunities.

The potential for covered freeway improvement projects to result in changes in access and availability of recreational opportunities would be as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact LU-7: Physically divide an established or planned community through biological mitigation and conservation activities.

As stated in Chapter 5, "Conservation Strategy and Analysis," of the Proposed Plan, OCTA is not a general land use agency with the jurisdictional authority to establish a "stand-alone" Preserve System for the entire Plan Area. Considering the Covered Projects extend across the Plan Area and across the study areas for other conservation planning efforts in Orange County, the Proposed Plan's central conservation strategy relies on contribution to the regional conservation strategies of the other existing conservation plans, connectivity to other protected areas, enhancing habitat within currently protected lands, and protecting important species habitat (e.g., designated critical habitat areas).

The Preserve Areas that have been included in the Proposed Plan conservation strategy were based on a selection process designed to meet the biological goals and objectives of the Proposed Plan and contribute to the collective goals of the existing regional protected area network within the Plan Area. OCTA, through the work of the EOC and Board, developed a set of criteria to scientifically and comprehensively evaluate and prioritize property acquisitions from willing sellers. The EOC/Board selection criteria considered a number of biological attributes pertaining to the degree to which a property contains habitat that would mitigate for species impacted by Covered Projects and contribute to the biological goals and objectives of the NCCP/HCP and the collective goals of the existing regional network of protected lands. An important criterion was the degree to which the property is adjacent to existing protected open space land. All the properties acquired to date are adjacent to and would contribute to existing protected open space and do not result in an impact related to dividing an established or planned community. No mitigation measures would be required.

Impact LU-8: Incompatibility of biological mitigation and conservation activities with existing and adjacent land uses.

It is not anticipated that Preserve acquisitions would be incompatible with existing and adjacent land uses. The acquired Preserve Areas to date have all been undeveloped, rural properties which would remain in a mostly natural state and are located adjacent to protected open space lands. Preservation of vacant land as open space would be compatible with the adjacent surrounding

vacant or rural land. Restoration projects have been located within currently protected open space lands. As such, the Proposed Plan does not result in changes to land uses from the current nature of the properties and would not be incompatible with existing land uses. Future acquisitions would be guided by the same criteria.

In instances where Preserves are adjacent to rural residential development or other land supporting urban or agricultural uses, it is not anticipated that management activities on the preserved lands would be incompatible with the adjacent urban or agricultural lands. The allowed uses within the Preserve Areas include general property management activities (e.g., trash removal, vegetation management, nonnative plant removal), passive recreation (e.g., approved hiking, biking, and horse-back riding), and species/habitat monitoring activities. These uses represent little opportunity for conflict and are compatible with adjacent land uses. The types of land uses within a Preserve Area that could be potentially incompatible (e.g., active recreation such as ball fields, itinerant worker camps, brush control through controlled burns, shooting, off-road vehicle use, or paint-ball parks) are prohibited uses and Preserve Areas would be actively managed to prohibit such activities. None of these management activities would have a significant impact on adjacent land uses, and no mitigation measures would be required.

Impact LU-9: Potential inconsistencies between biological mitigation and conservation activities and local land use plans and policies.

Of the 940 acres of habitat acquired to date, 294 acres (Hayashi property) are located in the eastern Carbon Canyon area of the City of Brea. The other four properties (Saddle Creek South, Ferber Ranch, O'Neill Oaks, and Hafen), totaling 646 acres, are located in the unincorporated area of Orange County near Trabuco Canyon, north of the City of Rancho Santa Margarita. Additional preserve acquisitions resulting in a minimum of 250 acres are planned in the near future. These acquisitions will target undeveloped land with important biological resources, which may be located in either incorporated or unincorporated areas of the county (see Chapter 2, "Proposed Plan and Alternatives").

In 2007, the City of Brea amended its general plan to reduce development intensity in the Carbon Canyon area and protect hillsides and ridgelines. The estimated allowable development on the Hayashi property is 15 residential units (Table 4.9-1). The city's Housing Element of the general plan emphasizes the use of vacant, underutilized, and mixed-use sites in the western area and on land with existing entitlements (City of Brea 2008). Accordingly, the potential loss of 15 units on undeveloped land with potentially sensitive biological resources is consistent with the general plan and does not significantly affect the city's ability to support future growth in population and housing.

The four properties acquired in 2011 in unincorporated areas of the county are located in Foothill/Trabuco Specific Plan area north of the City of Rancho Santa Margarita and east of the City of Lake Forest. The properties and the surrounding area are not in the sphere of influence of either city (County of Orange 2011a). The four properties have residential land use designations, with allowable densities between 0.25 and 0.5 units per acre. Based on these densities, approximately 203 residential units could be developed (Table 4.9-1).

Table 4.9-1. Estimated Number of Potentially Developable Housing Units on Properties Acquired in 2011 for Conservation and Mitigation

Location/Property	Date Acquired	Acres	Land Use Designation	Allowable Density	Estimated Number of Potentially Developable Units
City of Brea					
Hayashi	May 2011	293.7	Residential	0.05 to 2.2 D.U./Ac.	15 ¹
Unincorporated County/Trabuco					
Saddle Creek South	April 2011	82.1	UAR	0.25 to 0.5 D.U./Ac.	212
Ferber Ranch	May 2011	398.6	TCR/PQF	0.25 to 0.5 D.U./Ac.	140^{3}
O'Neil Oaks	May 2011	117.5	TCR	0.25 to 0.5 D.U./Ac.	30^{2}
Hafen	December 2011	48.0	TCR	0.25 to 0.5 D.U./Ac.	122
Total		939.9			218

Source: OCTA; City of Brea General Plan; "Carbon Canyon General Plan Amendment and Zone Change EIR"; County of Orange, "Foothill/Trabuco Specific Plan."

Note: Calculated sums may differ from those shown due to rounding.

D.U. Dwelling unity

PQF Public/Quasi-Public Facilities District

TCR Trabuco Canyon Residential District

UAR Upper Aliso Residential District

- ¹ Estimated using Carbon Canyon General Plan Amendment and Zone Change EIR (Appendix H), certified in March 2007, by applying allowable densities under the Hillside Residential land use designation to private properties.
- ² Based on gross density of 4 acres per dwelling unit, or 0.25 units per acre, as shown in "Foothill/Trabuco Specific Plan", Exhibit II-1, "Proposed Land Use Plan", and Appendix B.
- ³ Approximately 160 acres of Ferber Ranch is designated for residential density of 0.5 units per acre, with the remainder of the property designated for 0.25 units per acre.

If these properties were not preserved by OCTA and instead remained in private ownership, some development could likely have occurred on them. The county's strategy for accommodating future population and housing growth, however, does not rely on these properties or the area in which they are located. The primary areas identified by the Housing Element to support future development are (1) vacant land in new master-planned communities and (2) vacant infill sites or underutilized sites where existing development intensity is less than what is allowed under the general plan. The acquired properties and the surrounding area do not fall under either of these categories. Accordingly, the conservation of these properties and the removal of their development potential do not negatively affect the county's strategy to accommodate future growth.

The additional 250 acres (minimum) of acquisition may take place in either incorporated or unincorporated areas of the county. However, only undeveloped land with important biological resources would be acquired. In Orange County, such areas are either located in inland, foothill areas or, if in or near incorporated cities, in environmentally constrained areas, such as land with steep slopes, floodplains, or important biological resources, which would require mitigation for any negative impacts. As discussed above, the goal of the county's general plan is to encourage

development away from such areas. A similar approach is also incorporated into the county's SCS (OCTA/OCCOG 2011), which applies to all jurisdictions in the county. As a result, additional acquisition would not negatively affect future growth in the county or the jurisdiction in which the acquired property or properties are located. Impacts would be less than significant, and no mitigation would be required.

Impact LU-10: Potential conflicts between biological mitigation and conservation activities and existing HCPs or NCCPs.

The Orange County Central-Coastal NCCP/HCP and Orange County Southern Subregion HCP have been approved by the Wildlife Agencies in the Plan Area, establishing a habitat reserve network and perpetual land management program (Figure 1-3). As stated in Chapter 5, "Conservation Strategy," of the Proposed Plan, considering the Covered Projects extend across the Plan Area and across the study areas for other conservation planning efforts in Orange County, the Proposed Plan's central conservation strategy relies on contribution to the regional conservation strategies of the other conservation plans, connectivity to other protected areas, enhancing habitat within currently protected lands, and protecting important species habitat (e.g., designated critical habitat areas). The proposed NCCP/HCP is a regional, comprehensive plan that establishes a framework for complying with state and federal endangered species regulations while accommodating future transportation improvements within the Plan Area. Currently, the permitting and mitigation of impacts on special-status species associated with implementation of Caltrans freeway projects in Orange County is undertaken on a case-by-case basis. This approach does not provide a mechanism for coordinated, regional conservation and often results in uncoordinated and biologically ineffective mitigation. The proposed NCCP/HCP is designed to coordinate the process for permitting and mitigating the take of Covered Species associated with implementation of freeway projects in Orange County by implementing a broad strategy for conservation of species and habitats.

The Wildlife Agencies have the authority to regulate the take of threatened and endangered or otherwise protected species. One objective of the proposed NCCP/HCP is to provide the basis for the Wildlife Agencies to grant take authorization for otherwise lawful actions (e.g., construction of the M2 freeway projects) that may result in the take of individuals of a protected species. Considering the proposed NCCP/HCP is designed to ensure compliance with existing state and federal regulations, the Proposed Plan's conservation strategy and Preserve management activities would not conflict with the conservation strategy and Preserve management activities of other HCP's within the county and state, including the Orange County Central-Coastal NCCP/HCP and Southern Subregion HCP. Therefore, there would be no impact. No mitigation measures would be required.

Impact LU-11: Potential for biological mitigation and conservation activities to result in an increased demand of parks and other recreational facilities such that expansion or construction of new facilities is required.

The establishment of Preserves would not increase the demand for park and active recreational facilities because no development is proposed that would create an increased demand.

All of the Preserves acquired prior to October 2013 were under private ownership before to being sold to OCTA. Although some of these properties may have permitted access to private user groups when they were under private ownership, they never permitted open and unrestricted access to the public at large. Since the Preserves were acquired by OCTA, a public agency, a secondary benefit will be provided to the public through allowing limited public access on these properties. As part of the

requirements of the NCCP/HCP planning processes, RMPs will be prepared and will identify appropriate level of managed passive public access, where it does not conflict with the preservation of the biological resources.

The Proposed Plan would have a beneficial impact on recreational resources because it would protect the Preserves from development and would increase the availability of passive recreational resources on the properties that were previously privately owned. As discussed in Chapter 2, "Proposed Plan and Alternatives," managed low-intensity recreational use of the Preserves could be permitted to the degree that such activities do not conflict and are compatible with the overall goals and objectives of wildlife and habitat protection of the Preserves. Permitted low-intensity recreational activities include hiking, wildlife observation, horseback-riding, and non-motorized bicycling. The Proposed Plan does allow for a limited amount of potential construction and/or enhancement to recreational facilities, such as trails for pedestrian, equestrian, and mountain bicycling use, and other related recreational facilities. No adverse impact would occur, and no mitigation measures would be required.

Impact LU-12: Potential for biological mitigation and conservation activities to result in changes in access and availability of recreational opportunities.

Preserve Areas would be established with the first priority of protecting biological resources to meet the biological goals and objectives of the Proposed Plan. Low-intensity recreational uses would be allowed within the Preserve Areas as long as biological resources are not negatively impacted to the point that the biological goals of the Preserve Areas are not being met. A determination of approved trails and trail uses would be developed for each Preserve during the preparation of Preserve-specific RMPs. The RMPs will identify the appropriate level of public access, where it does not conflict with the preservation of the biological resources.

As previously stated, the Preserves acquired were under private ownership before being sold to OCTA. Although some of these properties may have permitted access to private user groups when they were under private ownership, they never permitted open and unrestricted access to the public at large. Since the Preserves were acquired by OCTA, a public agency, a secondary benefit will be provided to the public through allowing limited public access on these properties. The Preserves would improve access and availability to potential passive recreational opportunities.

OCTA has already initiated limited and managed public access by offering several property tours to the public at large. In 2011, a Saddle Creek South property tour was offered to the public during the commemoration event celebrating OCTA's first property acquisition. In 2012, OCTA partnered with the Transportation Corridors Agency (TCA) to offer a tour of Saddle Creek South and the TCA adjoining property Live Oak Canyon. In 2013, the public attended a hike and equestrian ride wilderness day on the Ferber Ranch property. In addition, another two hikes and two equestrian rides were opened to the public on Ferber Ranch in 2014.

Once OCTA permits limited public access in the future, potential impacts on access and availability of recreational opportunities within the Preserves could occur if recreational activities have to be modified to protect biological resources or as a result of natural events. It is anticipated that these potential impacts would be temporary and less than significant. For example, preserve management activities such as revegetation could temporarily disrupt potential future public access and recreational use of individual Preserves, or an access road could be washed out due to a major storm event and repairs are needed before access can be provided.

In the event that a publically accessible trail is to be permanently closed, it is anticipated that other comparable existing trails would be available within a Preserve, and access to connecting trails would be maintained through the use of other trails within the Preserve. Impacts would be less than significant, and no mitigation measures would be required.

4.9.2.3 Alternative 3: Reduced Plan

Impacts LU-1, LU-2, LU-3, LU-4, LU-5, LU-6, LU-7, LU-8, LU-9, LU-10, LU-11, and LU-12

Under Alternative 3, land use effects would be essentially the same as those discussed under the Proposed Plan.

All impacts under the Reduced Plan would be considered less than significant or would result in no impact. No mitigation measures would be required.

4.9.2.4 Cumulative Impacts

Covered freeway improvement projects are intended to mitigate the transportation impacts of future growth identified in General Plans and current forecasts. Land use changes beyond current General Plan levels will be addressed through separate General Plan environmental reviews. The strategies and policies put forth in the 2006 LRTP Program EIR could affect future land use but would generally stay within parameters of existing General Plans.

Implementation of biological mitigation and conservation activities under Alternatives 1, 2, and 3 would not conflict with any existing or planned land uses, and would not contribute to a cumulative impact. Implementation of Alternatives 2 and 3 within areas designated as Rural Residential would represent a very small percentage of the land currently designated for residential land uses in the eastern portion of the county; therefore, it would not contribute to a cumulatively significant impact.

The Preserve System established under Alternatives 2 and 3 would have a beneficial impact on recreational resources. The enhancement of existing trails and addition of new trails for pedestrian, equestrian, and mountain bicycling purposes would enhance recreational resources within Orange County.

4.9.2.5 Summary of Impacts

Under the No Action Alternative, development within the incorporated portions of the county would be consistent with general plan guidance. Mitigation for impacts would occur on a case-by-case basis and would not result in inconsistencies between existing, adjacent, and planned land uses. Properties acquired under the Proposed Plan and Reduced Plan Alternatives will contribute to existing protected open space and do not result in an impact related to dividing an established or planned community. There would be no impact on dividing an established or planned community under the Proposed Plan and Reduced Plan Alternatives, and potential loss of lands designated as residential would be less than significant.

Restoration projects under the Proposed Plan and Reduced Plan Alternatives have been located within currently protected open space lands, and as such would not result in changes to land uses from the current nature of the properties and would not be incompatible with existing land uses. The types of land uses within a Preserve that could be potentially incompatible (e.g., active

recreation (ball fields), itinerant worker camps, brush control through controlled burns, shooting, off-road vehicle use, paint-ball parks) are prohibited uses and will be actively managed not to occur. None of these management activities would have a substantial adverse impact on adjacent land uses. Therefore, potential impacts would be less than significant. Additionally, the Proposed Plan's conservation strategy and Preserve management activities would not conflict with the conservation strategy and Preserve management activities of other HCP's within the county and state, including the Southern Subregion HCP.

The Proposed Plan would have a beneficial impact on recreational resources because it would protect the Preserve Areas from development and would increase the availability of passive recreational resources on the properties that were previously privately owned. Preserve management activities such as revegetation could temporarily disrupt potential future public access and recreational use of individual Preserve Areas. These potentially negative impacts on recreation would most likely be temporary, and would be less than significant. An overview of the abovementioned impacts is provided in Table 4.9-2, and a summary of the impact determinations related to the implementation of the biological mitigation and conservation activities is provided in Table 4.9-3.

Table 4.9-2. Summary of Land Use Effects under All Alternatives

	Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
LU-1	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-2	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-3	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-4	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-5	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-6	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-7	0	0 (same as Alt 1)	0 (same as Alt 2)	
LU-8	0	0	0 (same as Alt 2)	
LU-9	0	0	0 (same as Alt 2)	
LU-10	0	+	+ (same as Alt 2)	
LU-11	0	+	+ (same as Alt 2)	
LU-12	0	0	0 (same as Alt 2)	

^{0 =} no substantial change relative to current conditions

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Table 4.9-3. Summary of Land Use Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

		Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
LU-7	No Impact	No Impact	No Impact		
LU-8	Less than Significant	Less than Significant	Less than Significant		
LU-9	Less than Significant	Less than Significant	Less than Significant		
LU-10	No Impact	No Impact	No Impact		
LU-11	No Impact	No Impact	No Impact		
LU-12	Less than Significant	Less than Significant	Less than Significant		

Implementation of Alternatives 1, 2, and 3 in areas designated for open space would not conflict with any existing or planned land uses, and would not contribute to a cumulative impact.

Implementation of Alternatives 2 and 3 within areas designated as Rural Residential would represent a very small percentage of the land currently designated for residential land uses in the eastern portion of the county; therefore, it would not contribute to a cumulatively significant impact.

Orange	County	Transportation	n Authority

Section 4.9. Land Use

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4.10.1 Methodology and Significance Criteria

Potential noise impacts were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of local standards and general plans. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant noise impact.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.
- Result in a substantial permanent increase in ambient noise levels in the vicinity above levels existing without the Proposed Plan.
- Result in a substantial temporary or periodic increase in ambient noise levels in the vicinity above levels existing without the Proposed Plan.

4.10.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated noise impacts from the covered freeway improvement projects, as presented in the 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that could remain significant after mitigation. The 2006 LRTP Program EIR determined that noise impacts from the covered freeway improvement projects would remain significant after mitigation.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions. Therefore, a detailed evaluation of noise impacts of the individual covered freeway improvement projects will be addressed in separate project-specific CEQA/NEPA documentation, and is not included in this Draft EIR/EIS. It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis.

Noise abatement measures such as sound barriers would be considered during the environmental study phase of each freeway project where noise sensitive receptors exist and would continue to be exposed to traffic noise levels that would approach or exceed their respective noise abatement criteria (NAC). The 2011 Caltrans Protocol (Protocol) designates activity categories and NACs depending on land use present. For example, the NAC for residential land uses (activity category B) is 67 A-weighted decibels (dBA)L $_{eq}$ (h). Commercial land uses (activity category E), such as hotels, motels, and restaurants, have a higher NAC (72 dBA $_{eq}$ (h)). Other land uses, such as agricultural and undeveloped land, do not have an NAC.

For CEQA purposes, each alternative is compared with respect to anticipated noise impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated noise impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.10.1.2 Impact Mechanisms

There would be three primary sources of noise related to the proposed NCCP/HCP:

- Truck traffic (i.e., hauling excavated material and fill/cover material to and from sites of habitat restoration/creation).
- Construction equipment engaged in earthmoving and construction associated with habitat enhancement, modification, or creation.
- Construction equipment engaged in earthmoving and construction associated with covered freeway improvement projects.

Certain habitat restoration activities would require the use of heavy construction equipment. Table 4.10-1 lists the typical noise levels produced by various types of construction equipment. Properly maintained equipment will produce noise levels comparable to the levels shown in the table. The types of construction equipment used for earthmoving typically generate noise levels of 70 to 90 dBA at a distance of 50 feet when operating.

Construction equipment operations can vary from intermittent to fairly continuous, with multiple pieces of equipment operating concurrently. A worst-case construction scenario may consist of concurrent operation of a bulldozer (87 dBA), a backhoe (90 dBA), a grader (90 dBA), and a front loader (82 dBA) in the same general area. Peak construction-period noise from this combination of equipment would be approximately 94 dBA at the noise source.

Table 4.10-2 summarizes noise levels as a function of distance from an active construction site, with the previously described equipment in operation. Episodes of noise levels greater than 60 dBA will occasionally occur at locations within about 1,900 feet of a construction site. Episodes of noise levels greater than 70 dBA will occur in areas within about 750 feet of a construction site.

Table 4.10-1. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source			
Air compressor	81			
Backhoe	80			
Compactor	82			
Concrete mixer	85			
Dozer	85			
Generator	81			
Grader	85			
Loader	85			
Pneumatic tool	85			
Roller/sheep's foot	74			
Scraper	89			
Truck	88			
Source: Federal Transit Administration 2006.				

Table 4.10-2. Estimated Noise near Construction Site

Distance Attenuation		Distance to dl	3A Contours
Distance to Receptor (feet)	Sound Level at Receptor (dBA)	Sound Level at Contour (dBA)	Distance to Contour (feet)
50	94	95	45
100	88	90	79
200	82	85	138
400	75	80	240
600	72	75	417
800	69	70	736
1,000	67	65	1,115
1,500	62	60	1,918
2,000	59	55	2,902
2,500	56	50	4,006
3,000	54	45	5,365
4,000	50	40	7,407
5,280	46	35	8,074
7,500	39	30	8,801

Source: Federal Transit Administration 2006.

The following assumptions were made:

- Rate of sound level decrease with distance: 6.0 decibels per doubling of distance.
- Atmospheric absorption coefficient: 0.5 decibel per 100 meters (328 feet).
- Reference noise level: 94 dBA at a distance of 50 feet

Notes:

- The effects of local shielding from buildings and topography are not included; where such effects are present, lower noise levels than those shown would result.
- Except for sounds with distinctive tonal characteristics, noise from a particular source is not identifiable when its level is substantially less than background noise levels.

4.10.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP alternatives with respect to noise are discussed here in terms of short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.10.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.10.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact NOI-1: Exposure of noise-sensitive land uses to construction-related noise from covered freeway improvement projects.

The 2006 LRTP Program EIR identified two types of short-term noise impacts that would occur during construction of covered freeway improvement projects. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally raise noise levels on access roads leading to the site. The pieces of heavy equipment for grading and construction activities would be moved on site, would remain for the duration of each construction phase, and would not add to the daily traffic volume in the project vicinity. There would be a relatively high single-event noise exposure potential at a maximum level of 87 dBA Lmax with trucks passing at 50 feet (OCTA 2006). However, the projected construction traffic would be small when compared to the existing traffic volumes on the local streets, and its associated long-term noise-level change would not be perceptible (OCTA 2006).

The second type of short-term noise impact identified in the 2006 LRTP Program EIR relates to noise generated during excavation, grading, and roadway/transit construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the alignments as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase.

As discussed in the 2006 LRTP Program EIR, typical noise levels at 50 feet from active construction areas range up to 91 dBA Lmax during the noisiest construction phases. The site-preparation phase, which includes grading and paving, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one to two minutes of full-power operation followed by three to four minutes at lower-power settings. Construction of the proposed freeway improvements is expected to require the use of earthmovers, bulldozers, and water and pickup trucks. Noise associated with the use of construction equipment is estimated between 79 and 89 dBA Lmax at a distance of 50 feet from the active construction area for the grading phase. The maximum noise level

generated by each earthmover is assumed to be 88 dBA Lmax at 50 feet from the earthmover in operation. Each bulldozer would also generate 88 dBA Lmax at 50 feet. The maximum noise level generated by water and pickup trucks is approximately 86 dBA Lmax at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Each piece of the construction equipment operates as an individual point source. The worst-case composite noise level at 50 feet from an active construction area would be 91 dBA Lmax.

Mitigation Measure 4.9-C in the 2006 LRTP Program EIR (construction vehicles or equipment equipped with properly operating and maintained mufflers, vehicle staging areas located as far as practicable from dwellings, and restricting the timing of construction activities) would reduce these impacts to less than significant where possible (See Appendix E for descriptions of all LRTP programmatic mitigation measures). However, the 2006 LRTP Program EIR identified that construction noise for any project could continue to exceed local noise criteria after mitigation; therefore, residual impacts were considered significant after mitigation.

Impact NOI-2: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards from covered freeway improvement projects.

As discussed in the 2006 LRTP Program EIR, covered freeway improvement projects could result in noise levels exceeding the Caltrans and FHWA NAC or result in a significant noise-level increase over existing conditions at sensitive receptors located in proximity to the proposed improvements. Covered freeway improvement projects could expose adjacent sensitive receptor locations to noise levels exceeding the local significance criteria or to significant noise increases. Potential noise impacts from any proposed improvement would be reduced for those receptors currently protected by a sound barrier such as a sound wall, earth berm, or intervening non-noise sensitive structure. Exceedances of noise standards or substantial noise level increases were considered potentially significant impacts in the 2006 LRTP Program EIR.

Mitigation Measure 4.9-A in the 2006 LRTP Program EIR (use of sound barriers for outdoor active use areas and façade upgrades for buildings) would help reduce impacts to less than significant. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.) Implementation of mitigation measures would reduce long-term noise level increases associated with covered freeway improvement projects to within local noise criteria; however, the 2006 LRTP Program EIR identified that long-term noise levels exceeding noise criteria may remain after mitigation for some project, and such impacts were considered significant.

Impact NOI-3: Potential increases in traffic noise levels from covered freeway improvement projects.

Potential increases in traffic noise levels from covered freeway improvement projects would be the same as addressed above in Impact NOI-2 (i.e., significant and unavoidable).

Impacts from Biological Mitigation and Conservation Activities

Impact NOI-4: Exposure of noise-sensitive land uses to construction-related noise from biological mitigation and conservation activities.

Under the No Project/No Action Alternative, biological mitigation and conservation measures could result in specific construction-related noise from restoration and conservation management activities (e.g., invasive species removal) within the Preserve System. Noise levels from restoration

and conservation management activities would be dependent on the proximity to sensitive receivers, such as homes, schools, parks, or other areas of frequent human use; the presence of intervening topography or shielding for structures; and environmental factors such as weather. Under the Orange County Municipal Code, Title 4, Division 6, Article 1, construction noise is exempt from the Orange County Noise Standards provided that it does not occur between the hours of 8 p.m. and 7 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. Construction noise would be periodic and temporary and would not be expected to occur outside these times. Therefore, noise effects from construction are considered less than significant provided that construction occurs on County lands.

Habitat restoration and conservation activities could occur in city jurisdictions, and construction noise-level requirements could vary depending on the respective local jurisdiction and its general plan or noise ordinance. Therefore, the No Project/No Action Alternative could result in noise-sensitive land uses being exposed to increased noise levels. Construction-related noise exposure at noise-sensitive receptors could be significant. To ensure that construction-related noise levels adhere to appropriate requirements and impacts related to the exposure of noise-sensitive receptors to construction-related noise remain less than significant, Mitigation Measure MM NOI-1 would be required.

MM NOI-1: NCCP/HCP implementation shall adhere to local construction noise standards

Construction-generated noise resulting from implementation of biological mitigation and conservation activities under the No Project/No Action Alternative will adhere to the construction noise standards of the local jurisdiction in which use of the construction equipment occurs. The following BMPs will be implemented as necessary to achieve this requirement:

- 1. All noise-producing project equipment and vehicles using internal combustion engines will be equipped with mufflers; air-inlet silencers, where appropriate; and any other shrouds, shields, or other noise-reducing features, in good operating condition, that meet or exceed original factory specification. Mobile or fixed "package" equipment (e.g., arc welders, air compressors) will be equipped with shrouds and noise-control features that are readily available for that type of equipment.
- 2. All mobile or fixed noise-producing equipment used on the project that is regulated for noise output by a local, state, or federal agency will comply with such regulation while in the course of project activity.
- 3. Material stockpiles and mobile equipment staging, parking, and maintenance areas will be located as far as practicable from noise-sensitive receptors.
- 4. The use of noise-producing signals, including horns, whistles, alarms, and bells, will be for safety warning purposes only.
- 5. Construction signs with a contact name and a phone number for registering noise complaints will be posted at the project site.

Implementation of MM NOI-1 would reduce this impact to less than significant.

Impact NOI-5: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards from biological mitigation and conservation activities.

Under the No Project/No Action Alternative, the Proposed Plan would not be implemented. The permanent exposure of noise sensitive land uses to noise levels in excess of established standards from biological mitigation and conservation activities would not result from biological mitigation that may be completed for individual freeway improvement projects. Impacts would be less than significant, and no mitigation would be required.

Impact NOI-6: Potential increases in traffic noise levels from biological mitigation and conservation activities.

Under the No Project/No Action Alternative, the Proposed Plan would not be implemented. Biological mitigation activities under the No-Project/No-Action Alternative could include habitat restoration, when required for an individual freeway improvement project, which would require the short-term mobilization and use of construction vehicles and equipment for vegetation removal, site recontouring and grading, or other related restoration activities. Temporary construction truck traffic in support of restoration activities could result in an increase in traffic noise in the short term. Quantification of noise effects would be speculative at this time; however, traffic-related noise would be temporary and would either be exempted by the county's municipal code or subject to the requirements of the local jurisdiction in which the activity occurs. Therefore, traffic noise impacts would be less than significant, and no mitigation would be required.

4.10.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact NOI-1: Exposure of noise-sensitive land uses to construction-related noise from covered freeway improvement projects.

The potential for covered freeway improvement projects to expose noise-sensitive land uses to construction-related noise was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact NOI-2: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards from covered freeway improvement projects.

The potential for covered freeway improvement projects to expose noise-sensitive land uses to noise levels in excess of established standards was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact NOI-3: Potential increases in traffic noise levels from covered freeway improvement projects.

The potential for covered freeway improvement projects to result in increases in traffic noise levels was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact NOI-4: Exposure of noise-sensitive land uses to construction-related noise from biological mitigation and conservation activities.

The Proposed Plan could result in specific construction-related noise from restoration and conservation management activities (e.g., invasive species removal) within the Preserve System similar to that described above under the No Project/No Action Alternative (Impact NOI-4). Therefore, Proposed Plan implementation could result in noise-sensitive land uses being exposed to increased noise levels. Construction-related noise exposure at noise-sensitive receptors could be significant. To ensure that construction-related noise levels adhere to appropriate requirements and impacts related to the exposure of noise-sensitive receptors to construction-related noise remain less than significant, Mitigation Measure MM NOI-1 would be required.

Implementation of MM NOI-1 would reduce this impact to less than significant.

Impact NOI-5: Potential permanent exposure of noise-sensitive land uses to noise levels in excess of established standards from biological mitigation and conservation activities.

The Proposed Plan would not result in long-term noise-sensitive land uses being exposed to noise in excess of an established standard because implementation of the Proposed Plan would not result in permanent noise. Therefore, there would be no impact. No mitigation measures would be required.

Impact NOI-6: Potential increases in traffic noise levels from biological mitigation and conservation activities.

The Proposed Plan would not result in an increase in traffic noise, with the exception of temporary construction truck traffic in support of restoration and conservation management activities. Traffic-related noise would be temporary and would either be exempted by the county's municipal code or subject to the requirements of the local jurisdiction in which the activity occurs. Impacts would be less than significant, and no mitigation measures would be required.

4.10.2.3 Alternative 3: Reduced Plan

Impacts NOI-1, NOI-2, NOI-3, NOI-5, and NOI-6

Under Alternative 3, noise impacts would be essentially the same as those discussed under the Proposed Plan. Impacts NOI-1, NOI-2, NOI-3, NOI-5, and NOI-6 under the Reduced Plan would be considered less than significant. No mitigation measures would be required.

Impact NOI-4

Under Alternative 3, noise impacts would be essentially the same as those discussed under the Proposed Plan. Impact NOI-4 under the Reduced Plan would be considered less than significant with implementation of mitigation measure MM NOI-1, listed above.

4.10.2.4 Cumulative Impacts

As identified in the 2006 LRTP Program EIR, covered freeway improvement projects could significantly increase noise levels above the existing ambient levels. Implementation of mitigation measures would reduce the noise impacts of each freeway improvement project. In conjunction with future development within Orange County, future cumulative noise levels are expected to increase and potentially exceed local noise standards, even with implementation of feasible mitigation measures. Given that the noise impacts of the covered freeway improvement projects may not be completely mitigated to within appropriate criteria, the covered freeway improvement projects' contribution to cumulative noise levels was considered significant (OCTA 2006).

No significant cumulative noise impacts are anticipated from the NCCP/HCP. The Proposed Plan could result in noise impacts associated with construction activities occurring as a result of restoration and conservation management activities; however, the noise would be temporary and limited with respect to duration and area of effect. Traffic would not be generated as a result of the NCCP/HCP directly. Therefore, incremental noise contributions from the Proposed Plan or its alternatives would not be considered cumulatively considerable.

4.10.2.5 Summary of Impacts

Construction activities associated with covered freeway improvement projects would generate noise from the movement of construction vehicles, and construction activities. All construction activities would be carried out in compliance with the California Department of Transportation Construction Noise Criteria, and mitigation measures would be implemented to reduce impacts to less than significant where possible.

The Proposed Plan could result in specific construction-related noise from restoration and conservation management activities (e.g., invasive species removal) within the Preserve System. Habitat restoration on Preserve System lands also could occur in city jurisdictions, and construction noise-level requirements could vary depending on the respective local jurisdiction and its general plan or noise ordinance. Mitigation measure MM NOI-1 would ensure that construction-related noise levels adhere to appropriate requirements and impacts related to the exposure of noise-sensitive receptors to construction-related noise remain less than significant.

Conservation activities under the Proposed Plan and Reduced Plan Alternatives would not result in long-term noise-sensitive land uses being exposed to noise in excess of an established standard because implementation of the Proposed Plan would not result in permanent noise. Additionally, conservation activities under the Proposed Plan and Reduced Plan Alternatives would not result in an increase in traffic noise, with the exception of temporary construction truck traffic in support of restoration and conservation management activities. An outline of the above-mentioned impacts is provided in Table 4.10-3 below.

Table 4.10-3. Summary of Noise Effects under All Alternatives

		Effects of Alternatives		
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
NOI-1	-	- (same as Alt 1)	- (same as Alt 2)	
NOI-2	-	- (same as Alt 1)	- (same as Alt 2)	
NOI-3	-	- (same as Alt 1)	- (same as Alt 2)	
NOI-4	_	– (same as Alt 1)	– (same as Alt 2)	
NOI-5	0	0	0 (same as Alt 2)	
NOI-6	0	0	0 (same as Alt 2)	

0 = no substantial change relative to current conditions

Table 4.10-4. Summary of Noise Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

		Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
NOI-4	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation		
NOI-5	Less than Significant	No Impact	No Impact		
NOI-6	Less than Significant	No Impact	No Impact		

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

4.11.1 Methodology and Significance Criteria

Impacts related to socioeconomics and environmental justice were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of applicable documents and materials available with the state, county, and local jurisdictions. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact related to socioeconomics and environmental justice.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Substantially affect employment, industry, or commerce, including displacement of businesses or farms
- Substantially affect the county's or its cities' ability to accommodate projected future growth in population and housing.
- Substantially and disproportionately affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group(s).

The draft EIR/EIS discloses potential impacts related to socioeconomics and environmental justice, as required by NEPA. The socioeconomics analysis addresses the potential removal of developable land for conservation purposes, which in turn may affect the county's or its cities' ability to accommodate the projected growth in population and housing. The draft EIR/EIS includes an assessment of impacts related to environmental justice based on the CEQ's environmental justice guidance and demographic data from the U.S. Census Bureau and the California Department of Finance.

4.11.1.1 Assessment of Covered Freeway Improvement Projects

The 2006 LRTP Program EIR was not prepared for NEPA compliance; therefore, it did not include analysis sections for socioeconomics and environmental justice because they are not required under CEQA. The 2006 LRTP Program EIR did include a population and housing analysis that provided a similar analysis in that it addressed the potential for the LRTP freeway improvements to disrupt a community or result in displacement of homes and businesses. Therefore, for the covered freeway improvement projects, a summary of anticipated impacts on population and housing is presented in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings including a Statement of Overriding Considerations for LRTP impacts that would potentially remain significant after mitigation.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands

and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions.

It is also noteworthy that project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis. For NEPA purposes, each alternative is compared with respect to anticipated socioeconomics and environmental justice impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.11.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP alternatives on socioeconomics and environmental justice are discussed here in terms of the short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management, including habitat restoration). As noted in Section 4.11.1.1, the impacts associated with the covered freeway improvement projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.11.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact SOCIO-1: Effects on employment, industry, or commerce or displacement of businesses or farms from covered freeway improvement projects.

Construction of covered freeway improvement projects would have a beneficial impact on employment and the local economy, which is burdened by the continuing effects of the recession following the financial crisis, including high levels of unemployment and lower proportions of workers in construction and manufacturing. Therefore, the No Project/No Action Alternative would not have an adverse impact on employment, industry, or commerce but may have indirect, beneficial effects on employment and the local economy.

With respect to displacement of businesses or farms, the 2006 LRTP Program EIR identified that the development of highway, arterial, and transit projects identified in the LRTP could result in the disturbance and/or loss of land currently used for residential or business purposes. While the alignments of these projects have not been developed to the point that they can be reliably overlaid onto land use maps, these projects could potentially require the acquisition and relocation of homes and businesses. As documented in the 2006 LRTP Program EIR, the acquisition and relocation of existing homes and businesses required by certain projects that are part of the LRTP would result in a significant impact.

Mitigation Measure 4.11-B through 4.11-D in the 2006 LRTP Program EIR include evaluating alternative alignments, providing relocation assistance, and establishing construction schedules that minimize neighborhood deterioration which would reduce potential impacts related to displacement to a less-than-significant level. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.)

Impact SOCIO-2: Potential effects on the county's or its cities' ability to accommodate projected future growth in population and housing from covered freeway improvement projects.

As identified in the 2006 LRTP Program EIR, the freeway improvement projects would provide more efficient transportation to accommodate increased travel demand associated with projected growth and would improve the existing conditions. Much of the large-scale growth would occur independent of the freeway improvement projects; however, the freeway improvement projects may contribute to some growth beyond current projections (OCTA 2006). As documented in the 2006 LRTP Program EIR, effects on growth could potentially be significant.

Mitigation Measure 4.11-A in the 2006 LRTP Program EIR includes working with other jurisdictions as part of the Growth Management Plan process, which would reduce potential impacts related to growth inducement to a less-than-significant level. (See Appendix E for descriptions of all LRTP programmatic mitigation measures.)

Impact SOCIO-3: Potential effects on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups from covered freeway improvement projects.

Construction of covered freeway improvement projects would have a beneficial impact on employment and the local economy, which is burdened by the continuing effects of the recession following the financial crisis, including high levels of unemployment and lower proportions of workers in construction and manufacturing. Therefore, the No Project/No Action Alternative may have beneficial effects on employment and the local economy for minority and low-income groups. Thus, no significant adverse impact on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups would result, and no mitigation would be required.

Impacts from Biological Mitigation and Conservation Activities

Impact SOCIO-4: Effects on employment, industry, or commerce or displacement of businesses or farms from biological mitigation and conservation activities.

Under the No-Project/No-Action Alternative, the NCCP/HCP would not be implemented. Biological mitigation measures implemented in association with covered freeway improvement projects would be done on a case-by-case basis and not be expected to include preserve acquisitions that would displace businesses, farms, or residences. Thus, no adverse impacts on employment, industry, or commerce are anticipated to occur. No mitigation would be required.

Impact SOCIO-5: Potential effects on the county's or its cities' ability to accommodate projected future growth in population and housing from biological mitigation and conservation activities.

Under the No-Project/No-Action Alternative, the NCCP/HCP would not be implemented. Biological mitigation measures implemented in association with covered freeway improvement projects would be done on a case-by-case basis. Mitigation requirements and any acquisition of property would

focus on undeveloped land with important biological resources (similar to the Proposed Plan but on a much smaller scale) where conservation of the important biological resources would make development of the site less than ideal. Accordingly, such acquisitions would not negatively affect the county's or other local jurisdiction's ability to support future population and housing growth. Impacts would be less than significant, and no mitigation would be required.

Impact SOCIO-6: Potential effects on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups from biological mitigation and conservation activities.

Under the No Project/No Action Alternative, the NCCP/HCP would not be implemented. Biological mitigation measures would be done on a case-by-case basis. Mitigation requirements and any acquisition of property would focus on undeveloped land with important biological resources, similar to the Proposed Plan but on a much smaller scale, and are not expected to result in disproportionate impacts on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups. No adverse impact would occur, and no mitigation would be required.

4.11.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact SOCIO-1: Effects on employment, industry, or commerce or displacement of businesses or farms from covered freeway improvement projects.

The potential for covered freeway improvement projects to affect employment, industry, or commerce or displacement of businesses or farms would be as described above for the No Project/No Action Alternative.

Impact SOCIO-2: Potential effects on the County's or its cities' ability to accommodate projected future growth in population and housing from covered freeway improvement projects.

The potential for covered freeway improvement projects to affect the County's or local jurisdictions' ability to accommodate projected future growth in population and housing would be as described above for the No Project/No Action Alternative.

Impact SOCIO-3: Potential effects on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups from covered freeway improvement projects.

The potential for covered freeway improvement projects to affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups would be as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact SOCIO-4: Effects on employment, industry, or commerce or displacement of businesses or farms from biological mitigation and conservation activities.

The Proposed Plan would assist in the implementation of covered freeway improvement projects by coordinating the permitting and mitigation for the take of Covered Species associated with those projects. The Proposed Plan involves, in part, the acquisition of approximately 1,100 acres of habitat

land for conservation (i.e., 946 acres acquired in 2011 plus a minimum of 125 acres of additional acquisition). Lands acquired to date are undeveloped and do not support active agricultural operations. Future acquisition would target undeveloped lands with important biological resources. Accordingly, acquisition and conservation of these lands would not displace businesses or farms and would not directly affect employment, industry, or commerce. Therefore, the Proposed Plan would not have an adverse impact on employment, industry, or commerce but may have indirect, beneficial effects on employment and the local economy. No impact would occur, and no mitigation would be required.

Impact SOCIO-5: Potential effects on the county's or its cities' ability to accommodate projected future growth in population and housing from biological mitigation and conservation activities.

Of the 946 acres of habitat acquired to date, 296 acres (Hayashi property) are located in the eastern Carbon Canyon area of the City of Brea. The other four properties (Saddle Creek South, Ferber Ranch, O'Neill Oaks, and Hafen), totaling 650 acres, are located in the unincorporated area of Orange County near Trabuco Canyon, north of the City of Rancho Santa Margarita. Approximately 125 acres of additional acquisition would target undeveloped land with important biological resources, which may be located in either incorporated or unincorporated areas of the county.

In 2007, the City of Brea amended its general plan to reduce development intensity in the Carbon Canyon area and protect hillsides and ridgelines. The estimated allowable development on the Hayashi property is 15 residential units (Table 4.11-1). The city's Housing Element of the general plan emphasizes the use of vacant, underutilized, and mixed-use sites in the western area and on land with existing entitlements (City of Brea 2008). Accordingly, the potential loss of 15 units on undeveloped land with potentially sensitive biological resources is consistent with the general plan and does not significantly affect the city's ability to support future growth in population and housing.

The four properties acquired in 2011 in unincorporated areas of the county are located in Foothill/Trabuco Specific Plan area north of the City of Rancho Santa Margarita and east of the City of Lake Forest. The properties and the surrounding area are not in the sphere of influence of either city (County of Orange 2011a). The four properties have residential land use designations, with allowable densities between 0.25 and 0.5 units per acre. Based on these densities, approximately 203 residential units could be developed (Table 4.11-1).

Although some development could occur on the acquired properties (if they are not conserved), the county's strategy for accommodating future population and housing growth does not rely on these properties or the area in which they are located. The primary areas identified by the Housing Element to support future development are (1) vacant land in new master-planned communities and (2) vacant infill sites or underutilized sites where existing development intensity is less than what is allowed under the general plan. The acquired properties and the surrounding area do not fall under either of these categories. Accordingly, the conservation of acquired properties and their removal from development do not negatively affect the county's strategy to accommodate future growth.

The additional 125 acres (minimum) of acquisition may take place in either incorporated or unincorporated areas of the county. However, only undeveloped land with important biological resources would be acquired. In Orange County, such areas are either located in inland, foothill areas or, if in or near incorporated cities, in environmentally constrained areas, such as land with steep slopes, floodplains, or important biological resources, which would require mitigation for any

negative impacts. As discussed above, the goal of the county's general plan is to encourage development away from such areas. A similar approach is also incorporated into the county's SCS (OCTA/OCCOG 2011), which applies to all jurisdictions in the county. As a result, additional acquisition would not negatively affect future growth in the county or the jurisdiction in which the acquired property or properties are located. Impacts would be less than significant, and no mitigation would be required.

Table 4.11-1. Estimated Number of Potentially Developable Housing Units on Properties Acquired in 2011 for Conservation and Mitigation

Location/Property	Date Acquired	Acres	Land Use Designation	Allowable Density	Estimated Number of Potentially Developable Units
City of Brea					
Hayashi	May 2011	296.3	Residential	0.05 to 2.2 D.U./Ac.	15 ¹
Unincorporated Cou	nty/Trabuco				
Saddle Creek South	April 2011	83.7	UAR	0.25 to 0.5 D.U./Ac.	212
Ferber Ranch	May 2011	398.8	TCR/PQF	0.25 to 0.5 D.U./Ac.	1403
O'Neil Oaks	May 2011	119.2	TCR	0.25 to 0.5 D.U./Ac.	30^{2}
Hafen	December 2011	47.9	TCR	0.25 to 0.5 D.U./Ac.	122
Total		945.8			218

Source: OCTA; City of Brea General Plan; "Carbon Canyon General Plan Amendment and Zone Change EIR"; County of Orange, "Foothill/Trabuco Specific Plan."

Note: Calculated sums may differ from those shown due to rounding.

D.U. Dwelling unity

PQF Public/Quasi-Public Facilities District

TCR Trabuco Canyon Residential District

UAR Upper Aliso Residential District

Impact SOCIO-6: Potential effects on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups from biological mitigation and conservation activities.

Preserve acquisition has and would continue to be focused on undeveloped land with important biological resources in the unincorporated portion of the county. Although these lands have some limited residential development potential, they are not lands that support agricultural production, an industry where minority and low-income populations are commonly employed. The Proposed

¹ Estimated using Carbon Canyon General Plan Amendment and Zone Change EIR (Appendix H), certified in March 2007, by applying allowable densities under the Hillside Residential land use designation to private properties.

² Based on gross density of 4 acres per dwelling unit, or 0.25 units per acre, as shown in "Foothill/Trabuco Specific Plan", Exhibit II-1, "Proposed Land Use Plan", and Appendix B.

 $^{^3}$ Approximately 160 acres of Ferber Ranch is designated for residential density of 0.5 units per acre, with the remainder of the property designated for 0.25 units per acre.

Plan would therefore not result in disproportionate impacts on minority, low-income, elderly, disabled, transit-dependent, or other specific interest groups. Therefore, the Proposed Plan may have beneficial effects on employment and the local economy for minority and low-income groups. No adverse impacts would occur, and no mitigation would be required.

4.11.2.3 Alternative 3: Reduced Plan

Under Alternative 3, socioeconomic and environmental justice effects would be essentially the same as those discussed under the Proposed Plan.

Impacts SOCIO-1, SOCIO-2, SOCIO-3, SOCIO-4, SOCIO-5, and SOCIO-6

All impacts under the Reduced Plan would be considered less than significant. No Mitigation measures would be required.

4.11.2.4 Cumulative Impacts

With implementation of mitigation measures described in the 2006 LRTP Program EIR, potential socioeconomic and environmental justice impacts of the covered freeway improvement projects under the No Project/No Action Alternative would be less than significant.

With respect to biological mitigation and conservation activities, it is unlikely that Alternatives 2 or 3 would result in significant adverse effects on the area's economy, land values, or tax base, nor would they result in a disproportionate impact on low-income or minority populations. Alternatives 2 and 3 would not interfere with logical and orderly development, pursuant to county and local general plans. Systematic development in accordance with local general plans would enable local jurisdictions to balance economic and social needs in development. Land preservation in the context of orderly growth, and in conjunction with other large-scale planning and conservation efforts, would allow for economic and social issues to be appropriately balanced with other needs in a manner that would not have significant adverse impacts.

4.11.2.5 Summary of Impacts

Construction of covered freeway improvement projects, which relies in part on adoption of the Proposed Plan, would have a beneficial impact on employment and the local economy, which is burdened by the continuing effects of the recession following the financial crisis. Therefore, the Proposed Plan may also have beneficial effects on employment and the local economy for minority and low-income groups. Alternatives 1-3 would not significantly impact the county's or city's ability to accommodate future growth and housing, as the preserved lands are generally considered to be undesirable for housing purposes in the corresponding land use plans. Potential impacts from all alternatives are outlined in Table 4.11-2, below; impact determinations related to biological mitigation and conservation activities are summarized in Table 4.11-3. None of the alternatives would have significant socioeconomic and environmental justice impacts.

Table 4.11-2. Summary of Socioeconomic and Environmental Justice Effects under All Alternatives

		Effects of Alternatives		
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
SOCIO-1	-	- (same as Alt 1)	- (same as Alt 2)	
SOCIO-2	-	- (same as Alt 1)	- (same as Alt 2)	
SOCIO-3	+	+ (same as Alt 1)	+ (same as Alt 2)	
SOCIO-4	0	+	+ (same as Alt 2)	
SOCIO-5	0	0 (same as Alt 1)	0 (same as Alt 2)	
SOCIO-6	0	+	+ (same as Alt 2)	

^{0 =} no substantial change relative to current conditions

Table 4.11-3. Summary of Socioeconomics and Environmental Justice Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

	Effects of Alternatives			
Impact	Alternative 1: Alternative 2: Alternative 3: No Project/No Action Proposed Plan Reduced Plan			
SOCIO-4	No Impact	No Impact	No Impact	
SOCIO-5	Less than Significant	Less than Significant	Less than Significant	
SOCIO-6	No Impact	No Impact	No Impact	

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

4.12.1 Methodology and Significance Criteria

Impacts related to transportation and circulation were assessed on the basis of the proposed NCCP/HCP, consultation with OCTA staff, and a review of applicable documents and materials related to transportation and circulation with state, county, and local jurisdictions. Criteria from Appendix G of the State CEQA Guidelines and standard professional practice were used to determine whether the NCCP/HCP alternatives would have a significant impact related to transportation and circulation.

The Proposed Plan or its alternatives would have a significant impact if they cause any of the following:

- Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system.
- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures.
- Result in a change in air traffic patterns.
- Substantially increase hazards due to a design feature.
- Result in inadequate emergency access.
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

4.12.1.1 Assessment of Covered Freeway Improvement Projects

A summary of anticipated impacts on transportation and circulation from the covered freeway improvement projects, as presented in the OCTA 2006 LRTP Program EIR, is included in the impacts discussion below as part of the basis for evaluating the similarities or differences among the alternatives under NEPA. The LRTP Program EIR was certified in 2006 along with associated CEQA findings, including a Statement of Overriding Considerations for LRTP impacts that could remain significant after mitigation. The 2006 LRTP Program EIR determined that transportation and circulation impacts from the covered freeway improvement projects would be less than significant after mitigation is incorporated.

As stated in Chapter 1 of this EIR/EIS, the Draft EIR/EIS prepared for the M2 NCCP/HCP is intended to provide CEQA and NEPA compliance for all preserve acquisition and management activities described in the Proposed Plan regarding impacts on covered species and jurisdictional wetlands and waters. Covered freeway improvement projects that receive take coverage under the NCCP/HCP must also comply with CEQA (and NEPA when triggered) through separate project-specific environmental analyses. OCTA and Caltrans would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any mitigation measures contained in the general plans for each of the participating jurisdictions.

It is also noteworthy that the project-specific CEQA analysis completed for individual covered freeway improvement projects may find that impacts that were framed as significant unavoidable on a programmatic level can be mitigated to a less-than-significant level during the project-specific analysis. At that time, each freeway project would be required to undertake a traffic analysis to determine the potential for impacts on traffic on the freeway system as well as on immediately adjacent local intersections/arterials. Appropriate measures would be taken to minimize traffic impacts at the project level.

For CEQA purposes, each alternative is compared with respect to anticipated transportation and circulation impacts to assist in the selection of the environmentally superior alternative. For NEPA purposes, each alternative is compared with respect to anticipated transportation and circulation impacts to assist in the selection of the environmentally preferred alternative. A summary of impacts and a comparative table are provided at the end of the section.

4.12.2 Impacts and Mitigation Measures

Potential impacts and benefits of the NCCP/HCP alternatives on transportation and circulation are discussed here in terms of the short- and long-term impacts of (1) the covered freeway improvement projects and (2) the proposed biological mitigation or conservation activities (i.e., preserve acquisition and management). As noted in Section 4.12.1.1, the impacts associated with the covered freeway projects were analyzed in the LRTP Program EIR, which was approved and certified in 2006 and satisfied CEQA compliance at a programmatic level. The impact discussion provided for the covered freeway improvement projects below is summarized from OCTA's LRTP Program EIR and provided as a basis for evaluating the similarities or differences among the alternatives under NEPA.

4.12.2.1 Alternative 1: No Project/No Action

Impacts from Covered Freeway Improvement Projects

Impact TRANS-1: Potential for covered freeway improvement projects to affect vehicle hours traveled, average daily speed, and arterial and freeway congestion levels.

Based on the analysis completed in the 2006 LRTP Program EIR, short-term traffic impacts associated with covered freeway improvement projects could occur during construction activities. Construction activities could require traffic detours and lane closures on freeways that could result in significant traffic delays near the construction area. As indicated in the 2006 LRTP Program EIR, individual projects would be required to implement mitigation to reduce the effects of site-specific construction-related traffic impacts to below a level of significance.

Mitigation measure 4.12-A (implementation of a Traffic Management Plan, if needed) in the 2006 LRTP Program EIR would reduce potential short-term impacts to less than significant.

In the long-term, covered freeway improvement projects would have a beneficial effect on vehicle hours traveled, average daily speed, and arterial and freeway congestion levels by providing facilities and improvements to accommodate projected future growth in Orange County (OCTA 2006).

Impact TRANS-2: Potential for covered freeway improvement projects to conflict with applicable congestion management plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system.

As discussed in the 2006 LRTP Program EIR, covered freeway improvement projects would decrease vehicle hours traveled, increase average daily speed, and improve the mobility along arterials and freeways. Covered freeway improvement projects would have a positive effect on the transportation system in Orange County (OCTA 2006) and would not conflict with applicable congestion management plans, ordinances, or policies. No mitigation would be required.

Impact TRANS-3: Potential for covered freeway improvement projects to result in a change in air traffic patterns.

Covered freeway improvement projects would not have an impact on air traffic patterns because the focus of the LRTP improvements is on ground transportation facilities and not locations supporting air traffic facilities. No mitigation would be required.

Impact TRANS-4: Potential for covered freeway improvement projects to substantially increase hazards due to a design feature or to result in inadequate emergency access.

Covered freeway improvement projects are intended to increase the safety of affected freeways by relieving congestion, and thus would not substantially increase hazards due to a design feature or result in inadequate emergency access. No mitigation would be necessary.

Impact TRANS-5: Potential for covered freeway improvement projects to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Covered freeway improvement projects would be constructed along existing freeways, and as such are not expected to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. No mitigation is required.

Impacts from Biological Mitigation and Conservation Activities

Impact TRANS-6: Potential for biological mitigation and conservation activities to affect vehicle hours traveled, average daily speed, and arterial and freeway congestion levels.

Mitigation for biological resources associated with covered freeway improvement projects would not affect vehicle hours traveled, average daily speed, or arterial or freeway congestion levels because the focus of biological mitigation would be on natural resource areas where transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be necessary.

Impact TRANS-7: Potential for biological mitigation and conservation activities to conflict with applicable congestion management plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system.

Mitigation for biological resources impacts would occur under the No Project/No Action Alternative as a consequence of freeway improvements on a project-by-project basis and could include requirements for onsite habitat preservation as well as the acquisition (including purchasing credits

in conservation banks) and restoration of offsite habitat areas. Neither the preservation of natural habitat nor habitat restoration activities would conflict with applicable congestion management plans, ordinances, or policies because the focus of biological mitigation would be on natural resource areas where transportation facilities would be either limited or non-existent. Impacts would be less than significant, and no mitigation would be required.

Impact TRANS-8: Potential for biological mitigation and conservation activities to result in a change in air traffic patterns.

Mitigation for biological resources impacts would occur as described above under Impact TRANS-7. Neither the preservation of natural habitat nor habitat restoration activities would result in a change in air traffic patterns because biological mitigation would not occur on lands supporting air traffic facilities, nor would mitigation create vertical physical obstacles that would interfere with air traffic movement. No impact would occur, and no mitigation would be required.

Impact TRANS-9: Potential for biological mitigation and conservation activities to substantially increase hazards due to a design feature or result in inadequate emergency access.

Mitigation for biological resources impacts would occur as described above under Impact TRANS-7. Neither the preservation of natural habitat nor habitat restoration activities would substantially increase hazards due to a design feature or result in inadequate emergency access because the focus of biological mitigation would be on natural resource areas where transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be required.

Impact TRANS-10: Potential for biological mitigation and conservation activities to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Mitigation for biological resources impacts would occur as described above under Impact TRANS-7. Neither the preservation of natural habitat nor habitat restoration activities would conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities because the focus of biological mitigation would be on natural resource areas where such transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be required.

4.12.2.2 Alternative 2: Proposed Plan

Impacts from Covered Freeway Improvement Projects

Impact TRANS-1: Potential for covered freeway improvement projects to affect vehicle hours traveled, average daily speed, and arterial and freeway congestion levels.

The potential for covered freeway improvement projects to affect vehicle hours traveled, average daily speed, and arterial and freeway congestion levels was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative. Impact TRANS-1 would be less than significant after mitigation is incorporated (i.e., mitigation measure 4.12-A).

Impact TRANS-2: Potential for covered freeway improvement projects to conflict with applicable congestion management plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system.

The potential for covered freeway improvement projects to conflict with applicable congestion management plans, ordinances, or policies establishing measures of effectiveness for the performance of the circulation system was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact TRANS-3: Potential for covered freeway improvement projects to result in a change in air traffic patterns.

The potential for covered freeway improvement projects to result in a change in air traffic patterns was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact TRANS-4: Potential for covered freeway improvement projects to substantially increase hazards due to a design feature or result in inadequate emergency access.

The potential for covered freeway improvement projects to substantially increase hazards due to a design feature or result in inadequate emergency access was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impact TRANS-5: Potential for covered freeway improvement projects to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The potential for covered freeway improvement projects to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities was considered in the 2006 LRTP Program EIR, as described above for the No Project/No Action Alternative.

Impacts from Biological Mitigation and Conservation Activities

Impact TRANS-6: Potential for biological mitigation and conservation activities to affect vehicle hours traveled, average daily speed, and arterial and freeway congestion levels.

Conservation activities would not affect vehicle hours traveled, average daily speed, or arterial and freeway congestion levels because the focus of conservation in the Proposed Plan would be on natural resource areas where transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be required.

Impact TRANS-7: Potential for biological mitigation and conservation activities to conflict with applicable congestion management plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.

Conservation activities would not generate traffic that would conflict with the performance of local and regional circulation systems because the focus of biological mitigation would be on natural resource areas where transportation facilities would be either limited or non-existent. A limited amount of new traffic would be generated on a sporadic and short duration basis in

conjunction with the implementation of Preserve management activities. These activities would be required to abide by local traffic ordinances and laws; therefore, potential impacts would be considered less than significant. No mitigation would be required.

Impact TRANS-8: Potential for biological mitigation and conservation activities to result in a change in air traffic patterns.

Conservation activities would not result in a change in air traffic patterns because preserve management and habitat restoration would not occur on lands supporting air traffic facilities, nor would conservation activities create vertical physical obstacles that would interfere with air traffic movement. No impact would occur, and no mitigation would be required.

Impact TRANS-9: Potential for biological mitigation and conservation activities to substantially increase hazards due to a design feature or result in inadequate emergency access.

Conservation Activities under the Proposed Plan would not substantially increase hazards due to a design feature or result in inadequate emergency access because the focus of preserve management and habitat restoration would be on natural resource areas where transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be required.

Impact TRANS-10: Potential for biological mitigation and conservation activities to conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Conservation activities under the Proposed Plan would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities because the focus of biological mitigation would be on natural resource areas where such transportation facilities would be either limited or non-existent. No impact would occur, and no mitigation would be required.

4.12.2.3 Alternative 3: Reduced Plan

Impact TRANS-1

Under Alternative 3, transportation and circulation effects would be essentially the same as those discussed under the Proposed Plan. Impact TRANS-1 would be less than significant after mitigation is incorporated (i.e., mitigation measure 4.12-A).

Impacts TRANS-2, TRANS-3, TRANS-4, TRANS-5, TRANS-6, TRANS-7, TRANS-8, TRANS-9, and TRANS-10

Under Alternative 3, transportation and circulation effects would be essentially the same as those discussed under the Proposed Plan. All impacts and mitigation measures under the Reduced Plan would be less than significant or result in no impact, as mentioned above for the Proposed Plan.

4.12.2.4 Cumulative Impacts

Covered freeway improvement projects under all alternatives would have an overall positive, but less-than-significant, contribution to cumulative transportation and circulation impacts. Biological mitigation and conservation activities would not contribute to a cumulative transportation and circulation impact.

4.12.2.5 Summary of Impacts

It is anticipated that the covered freeway improvement projects under all alternatives would have a less-than-significant, but beneficial, impact on vehicle hours traveled, average daily speed, and arterial and freeway congestion levels. Conservation activities under the Proposed Plan and the Reduced Plan could impact congestion levels during restoration activities, but this impact would be less than significant, and mitigation would not be required. None of the alternatives would impact air traffic or emergency access, increase hazards due to a design feature, or conflict with existing policies, plans, or programs for public transit, bicycle, or pedestrian facilities. Impacts on transportation and circulation under each alternative are outlined below in Table 4.12-1, and a summary of the impact determinations related to biological mitigation and conservation activities is provided in Table 4.12-2.

Table 4.12-1. Summary of Transportation and Circulation Effects under All Alternatives

	Effects of Alternatives		
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan
TRANS-1	-	- (same as Alt 1)	- (same as Alt 2)
TRANS-2	0	0 (same as Alt 1)	0 (same as Alt 2)
TRANS-3	0	0 (same as Alt 1)	0 (same as Alt 2)
TRANS-4	0	0 (same as Alt 1)	0 (same as Alt 2)
TRANS-5	0	0 (same as Alt 1)	0 (same as Alt 2)
TRANS-6	0	0	0 (same as Alt 2)
TRANS-7	0	0	0 (same as Alt 2)
TRANS-8	0	0	0 (same as Alt 2)
TRANS-9	0	0	0 (same as Alt 2)
TRANS-10	0	0	0 (same as Alt 2)

^{0 =} no substantial change relative to current conditions

Table 4.12-2. Summary of Transportation and Circulation Impact Determinations under All Alternatives for Biological Mitigation and Conservation Activities

		Effects of Alternatives			
Impact	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan		
TRANS-6	No Impact	No Impact	No Impact		
TRANS-7	Less than Significant	Less than Significant	Less than Significant		
TRANS-8	No Impact	No Impact	No Impact		
TRANS-9	No Impact	No Impact	No Impact		
TRANS-10	No Impact	No Impact	No Impact		

^{- =} negative trend relative to current conditions

^{+ =} positive trend relative to current conditions

^{++ =} substantial positive trend relative to current conditions

Orange County Transportation Authority	

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Section 4.12. Transportation and Circulation

5.1 Introduction

The environmental review process under both CEQA and NEPA requires a brief discussion of the irreversible impacts or irretrievable commitment of resources associated with a proposed project/action. Specifically, the State CEQA Guidelines, Sections 15126.2(b) and (c), require the significant unavoidable impacts of a proposed project, as well as any significant irreversible environmental changes that would result from project implementation, to be addressed in an EIR. Section 40 CFR 1502.16 of CEQ's NEPA Regulations require a discussion of "any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented."

5.2 Significant and Unavoidable Impacts

Any significant unavoidable impacts of a proposed project, including those impacts that can be mitigated but not reduced to below a level of significance despite the applicant's willingness to implement all feasible mitigation measures, must be identified in an EIR.

As evaluated in Chapter 4 of this draft EIR/EIS, there would be no significant unavoidable (i.e., immitigable) impacts that would result from conservation activities under the Proposed Plan or its alternatives. All potentially significant impacts resulting from Proposed Plan implementation would either be avoided or reduced to below a level of significance or adversity with the mitigation measures identified in this draft EIR/EIS. None of the NCCP/HCP conclusions are significant and unavoidable.

Regarding the underlying freeway improvement project impacts, analysis was incorporated directly and by reference from the OCTA LRTP Program EIR (2006). Some freeway improvement impacts were determined to be significant and unavoidable, and a Statement of Overriding Considerations was adopted for the 2006 LRTP Program EIR. The freeway improvement impact conclusions have been added in this Draft EIR/EIS analysis for informational purposes only.

5.3 Short-Term Uses of the Environment versus Maintenance and Enhancement of Long-Term Productivity (NEPA)

In accordance with NEPA, Section 102 (40 USC 4332), an EIS must include a discussion of the relationship between the short-term uses of the environment and the maintenance and enhancement of long-term productivity. The Proposed NCCP/HCP is fundamentally designed to ensure that the long-term productivity of the environment is ensured, despite the short-term uses of the environment. In the short term, a narrow range of Covered Projects and Activities would be

carried out under the terms and conditions of the Proposed NCCP/HCP. Although these activities would result in a loss of habitat and the take of special-status species, these activities would be undertaken pursuant to the terms of the NCCP/HCP. The Proposed NCCP/HCP provides for a comprehensive mechanism to avoid, minimize, and mitigate impacts on sensitive species and communities from Covered Projects and Activities. The NCCP/HCP creates the Preserve System upfront through land acquisition, providing for the preservation of lands to ensure that long-term conservation and enhancement measures are in place before the short-term impacts of Covered Projects and Activities occur.

5.4 Significant Irreversible Environmental Changes (CEQA)/Irreversible and Irretrievable Commitments of Resources (NEPA)

State CEQA Guidelines Section 15126.2(c) states that "Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or use thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvements which provide access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified." Similarly, Section 40 CFR 1502.16 of CEQ's NEPA Regulations require the discussion of environmental consequences to include "any irreversible or irretrievable commitment of resources which would be involved in the project should it be implemented."

Nonrenewable resources generally include biological habitat, agricultural land, water, and some energy sources.

Implementation of Alternative 2 (the Proposed Plan) or Alternative 3 (Reduced Plan) would authorize incidental direct take of approximately 141.0 acres of natural habitat that is potentially habitat for Covered Species. Mitigation measures have been outlined in the draft EIR/EIS that would reduce these impacts on biological resources to below a level of significance or no adverse effect. However, the incidental take of Covered Species and associated habitat would still comprise a small, but irreversible, environmental change associated with implementation of either Alternatives 2 or 3.

Relatively minor impacts on previously disturbed habitats, nonnative vegetation communities, and agricultural lands would also occur as a result of Alternatives 2 or 3. These environmental changes would be considered irreversible but not significant. In addition, the implementation of Covered Activities under Alternatives 2 or 3 would involve the irreversible consumption of natural resources and energy. This consumption would occur over the 40-year permit term, representing a very small increment of the effects of development and urbanization that will occur within the Plan Area as the result of activities not covered by Alternatives 2 or 3.

5.5 Growth Inducement (CEQA)

Section 21100(b)(5) of CEQA requires an EIR to discuss how a proposed project, if implemented, may induce growth and the impacts of that induced growth (State CEQA Guidelines Section 15126). CEQA requires the EIR to discuss specifically "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (State CEQA Guidelines Section 15126.2(d)).

Section 15126.2 of the State CEQA Guidelines states specifically that "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, growth inducement is not to be considered bad per se; mitigation for impacts on resources resulting from growth may be too far removed from the actions of the lead agency to require mitigation by the lead agency. The goal of the EIR in this regard is disclosure.

A project may be growth inducing if it directly or indirectly fosters economic or population growth or the construction of additional housing, removes obstacles to population growth or taxes community services to the extent that the construction of new facilities would be necessary, or encourages or facilitates other activities that cause significant environmental effects.

5.5.1 Impacts on Growth

The Proposed Plan would not have any direct growth-inducing impacts because no development would be specifically authorized in the Plan Area. The Proposed Plan would provide a streamlined mechanism for covered freeway projects to comply with the ESA and CESA. The improved permitting mechanism would not remove a barrier to growth but would perhaps lower it. Additionally, the acquired Preserves are existing open space properties in private holdings that have certain development rights. These developable lands would be placed under a permanent conservation easement or deed restriction, precluding their development and, arguably, slowing growth within the Plan Area.

Covered freeway improvement projects included in the Proposed Plan are derived directly from the OCTA Long-Range Transportation Plan (LRTP) and integrated into the regional transportation plan adopted by the Southern California Association of Governments (SCAG). The direct and indirect impacts of these freeway projects, including potential growth-inducing effects, are provided under the regional transportation program EIR for each jurisdiction (e.g., the OCTA 2006 LRTP Program EIR) as well as under project-specific environmental compliance that would be required for the freeway improvement projects. Without the proposed NCCP/HCP, these freeway improvement projects would presumably still be able to proceed under the existing case-by-case permit approval process.

As regional transportation facilities, future freeway improvement projects within Orange County would respond not only to anticipated growth within the county but also the entire state—and Southern California in particular (OCTA 2006). Covered freeway improvements would respond to existing and projected future regional transportation demand on state facilities, both from development within and outside Orange County (OCTA 2006).

5.6 Environmentally Superior Alternative (CEQA)

The CEQA Guidelines require the identification of an environmentally superior alternative to the proposed project (Section 15126.6[e]). If it is determined that the "no project" alternative would be the environmentally superior alternative, then the EIR must also identify an environmentally superior alternative among the other project alternatives (Section 15126.6[e]).

Significant and unavoidable impacts should be the first level of screening in determining the environmentally superior alternative; however, none of the Alternatives would result in a new potentially significant unavoidable impact beyond those identified in the 2006 LRTP Program EIR for the covered freeway improvement projects. Given the analysis presented in Chapter 4, the environmentally superior alternative is Alternative 2, the Proposed Plan. The impacts associated with Alternatives 2 and 3 are qualitatively similar. Alternative 2 would provide for a greater level of conservation, particularly through increased restoration. The overall benefit to species would therefore be greater because more species would be covered in the NCCP/HCP under Alternative 2, without a measurable difference in impacts on the environment, resulting in greater long-term preservation.

5.7 Environmentally Preferable Alternative (NEPA)

NEPA requires the identification of an environmentally preferable alternative (CEQ NEPA Guidelines Section 1505.2[b]). The environmentally preferable alternative is the alternative that would result in the least damage to the environment. Table 5.1 below provides a summary of overall impacts by resource topic for each of the alternatives for comparison under NEPA.

Given the analysis presented in Chapter 4 and summarized in Table 5.1, the environmentally preferable alternative is Alternative 2, the Proposed Plan. As was noted above in Section 5.6, the impacts associated with Alternatives 2 and 3 are qualitatively similar, though Alternative 2 would provide for a greater level of conservation, particularly through increased preserve management.

Table 5.1. Overall Impacts Summary by Resource Topic for All Alternatives¹

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Agriculture	0	improvement projects and the biological mitigation and conservation activities would not impact agricultural resources. The possibility exists that parcels of land needed to meet mitigation required for individual covered freeway improvement projects could impact Important Farmland or Williamson Act lands; however, such effects are unlikely and speculative because the sites are not known at this time.	0	There would be no impact on prime farmland, unique farmland, or farmland of statewide importance to nonagricultural use, as the acquired Preserve Areas and areas for the covered freeway improvement projects do not contain land designated as such. Agricultural impacts associated with the biological mitigation and conservation activities under Alternative 2 would not occur.	0	Effects under Alternative 3 would be the same as Alternative 2. Agricultural impacts associated with the biological mitigation and conservation activities under Alternative 3 would not occur.
Air Quality and Greenhouse Gases ²	-	As described in the LRTP Program EIR, covered freeway improvement project construction activities under Alternative 1 would create short-term temporary air emissions. Construction activities associated with transportation facilities of any medium- to large-scale highways or arterials would be expected to individually generate a significant amount of construction activity and therefore exceed the	-	In addition to the impacts from covered freeway improvement projects, Alternative 2 preserve management activity emissions would temporarily generate criteria pollutant (ROG, NO _X , SO _X , CO, PM10, and PM2.5) and GHG (CO ₂ , CH ₄ , and N ₂ O) emissions, which could result in adverse effects on short-term ambient air quality and climate change. Daily emissions estimates would be well below SCAQMD daily mass regional and localized threshold levels, annual emissions	-	Effects under Alternative 3 would be the same as Alternative 2. Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
		significance thresholds established in the CEQA Handbook. This would create a potentially significant short-term impact. These impacts would occur in localized areas, depending on the construction site locations. Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant.		estimates would be well below federal de minimis levels, and annual emissions estimates would be well below both SCAQMD draft GHG thresholds (3,000 MT) and CEQ's reference point (25,000 MT). Air quality and greenhouse gas impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.		
Biological Resources	-	improvement projects under Alternative 1 would have an overall negative effect on biological resources. While project-by-project mitigation may be effective at targeting and preserving high-value habitat, the creation of smaller mitigation sites would likely result in ineffective species conservation across the landscape. Smaller preserve areas may fail to meet preserve design standards to maximize preserve size, incorporate environmental gradients, minimize edges, and preserve habitat linkages. Furthermore, the absence of a	++	Alternative 2 achieves a higher-value conservation than what would be expected through project-by-project mitigation of the covered freeway improvement projects. Conservation would be completed in a comprehensive manner under the NCCP/HCP that would result in large blocks of preserved and restored habitat in locations important for regional conservation. Biological resource impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Alternative 3 achieves a higher-value conservation than what would be expected through project-by-project mitigation of the covered freeway improvement projects (i.e., Alternative 1); however, beneficial effects on Covered and Non-Covered Species would be reduced since the level of species-specific management and restoration efforts would be slightly less with fewer Covered Species. Biological resource impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Alternative 1: No Project/No Action		Alternative 2: Proposed Plan		Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary comprehensive monitoring and adaptive management program would create less certainty in the long-term success of mitigation sites. Biological resource impacts associated with the biological mitigation and conservation activities would be potentially significant and unavoidable under Alternative 1.	Impact Finding	Summary	Impact Finding	Summary
Cultural Resources ²	-	The potential exists under Alternative 1 for earthmoving activities of covered freeway improvement project activities to have impacts on known and unknown archeological, historic, built environment, and paleontological resources. Potential impacts on these resources would remain significant after implementation of mitigation measures. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities would be potentially significant and unavoidable under Alternative 1.	_	Although covered freeway improvement project impacts would be the same as Alternative 1, effects under Alternative 2 would be reduced when compared with Alternative 1 because the preserve sites are known, and cultural resource impacts would be mitigated to less than significant or avoided entirely. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant after mitigation is incorporated.	_	Effects under Alternative 3 would be the same as Alternative 2. Therefore, cultural resource impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant after mitigation is incorporated.

	Alternative 1: No Project/No Action		A	lternative 2: Proposed Plan	Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Geology, Soils, and Seismicity ²		As documented in the LRTP Program EIR, covered freeway improvement projects under Alternative 1 could result in substantial grading or other earth modifications that could generate air and waterborne erosion and slope failure. Earthwork or major cuts into hillsides could create unstable slope conditions and lead to long-term soil erosion, creating potential landslide and falling rock hazards. Therefore, potential impacts related to long-term erosion and slope failure due to covered freeway improvement projects have the potential to generate significant erosion and slope failure impacts, and the LRTP Program EIR identified this impact as significant and unavoidable. However, geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant.		In addition to impacts from covered freeway improvement projects which would be the same as under Alternative 1, any minor construction resulting from covered preserve management activities under Alternative 2, such as the installation of preserve management offices, maintenance sheds, restrooms, wildlife observation platforms, or educational kiosks, would be built according to appropriate standards, including the current IBC and CBC. Geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 2 would be less than significant.		Effects under Alternative 3 would be the same as Alternative 2. Geology, soils, and seismicity impacts associated with the biological mitigation and conservation activities under Alternative 3 would be less than significant.
Hazards and Hazardous Materials	-	Covered freeway improvement projects under Alternative 1 would have potential for accidental release of hazardous	-	Effects under Alternative 2 would be the same as Alternative 1. Hazards and hazardous materials impacts associated with the biological	-	Effects under Alternative 3 would be the same as Alternative 2. Hazards and hazardous materials impacts associated with the biological

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
		materials or the disturbance of contaminated soils. However, impacts would be less than significant impacts after mitigation. Hazards and hazardous materials impacts associated with the biological mitigation and conservation activities under Alternative 1 would be less than significant after mitigation.		mitigation and conservation activities under Alternative 2 would be less than significant after mitigation.		mitigation and conservation activities under Alternative 3 would be less than significant after mitigation.
Hydrology and Water Quality	-	Covered freeway improvement projects under As documented in the LRTP Program EIR, Alternative 1 would result in temporary and permanent impacts on drainage and stormwater quality, including the general categories of increased stormwater runoff from increased impervious surfaces, increased amounts of automotive waste transported into local drainages, increased erosion and siltation in local drainages, degradation of groundwater quality, and exposure to flooding. The LRTP Program EIR determined that this impact during project operation would be significant and unavoidable. However, for the	+	While covered freeway improvement project impacts would be the same as Alternative 1, the implementation of an NCCP/HCP would result in a larger acreage of biological resources mitigation/conservation that would also benefit hydrology and water quality. The acquisition of large blocks of Preserve lands and funding of restoration projects would contribute to the protection and enhancement of natural hydrologic functions and improvement of water quality. Hydrology and water quality impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Effects under Alternative 3 would be the same as Alternative 2. Hydrology and water quality impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	Alternative 2: Proposed Plan		Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary biological mitigation and conservation activities, the incorporation of project design features, along with the use of identified BMPs, would reduce potential hydrology and water quality impacts to less than significant.	Impact Finding	Summary	Impact Finding	Summary
Land Use	=	Under Alternative 1, development within the incorporated portions of the county would be consistent with general plan guidance; however, mitigation for covered freeway improvement impacts would occur on a case-by-case basis and could result in inconsistencies between existing, adjacent, and planned land uses. The LRTP Program EIR identified a significant and unavoidable impact related to land use for the covered freeway improvement projects. However, land use impacts related to the biological mitigation and conservation activities under Alternative 1 would be less than significant.	+	Impacts associated with covered freeway improvement projects would the same as Alternative 1. Restoration activities would not result in changes in land use from the current nature of the Preserves that would result in environmental impacts. Alternative 2 would have beneficial impact on recreational resources by protecting the Preserve Areas from development and increasing the availability of passive recreational resources on properties that were privately owned. Land use impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant.	+	Effects under Alternative 3 would be the same as Alternative 2. Land use impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant.

	Altern	ative 1: No Project/No Action	A	Alternative 2: Proposed Plan		Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary	
Noise ²		The LRTP Program EIR determined that long-term noise impacts from the covered freeway improvement projects would be significant and unavoidable, and construction activities associated with covered freeway improvement projects under Alternative 1 would generate noise from the movement of construction vehicles, and construction activities. Noise impacts associated with the biological mitigation and conservation strategies under Alternative 1 would result in minimal to no operational noise and much less construction activity and its associated noise. Furthermore, construction activities would be carried out in compliance with the California Department of Transportation (Caltrans) Construction Noise Criteria, and mitigation measures would be implemented to reduce impacts to less than significant.		In addition to noise associated with covered freeway improvement projects as under Alternative 1, Alternative 2 could result in specific construction-related noise from restoration and conservation management activities (e.g., invasive species removal) within the Preserve System. Conservation activities under the Proposed Plan would not result in long-term noise-sensitive land uses being exposed to noise in excess of an established standard because implementation of the Proposed Plan would not result in permanent noise. Furthermore, all construction activities would be carried out in compliance with Caltrans Construction Noise Criteria, and mitigation measures would be implemented. Therefore, noise impacts from the biological mitigation and conservation activities under Alternative 2 would be less than significant with mitigation incorporated.		Effects under Alternative 3 would be the same as Alternative 2. Noise impacts from the biological mitigation and conservation activities under Alternative 3 would be less than significant with mitigation incorporated.	

	Altern	ative 1: No Project/No Action	A	lternative 2: Proposed Plan	Alt	ernative 3: Reduced Plan
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary
Socioeconomics and Environmental Justice	+	The LRTP Program EIR determined that the development of covered freeway improvement projects under Alternative 1 could result in the disturbance and/or loss of land currently used for residential or business purposes. The acquisition and relocation of existing homes and businesses required by certain projects that are part of the LRTP would result in a less than significant impact after mitigation. Socioeconomic impacts associated with the biological mitigation and conservation activities would be less than significant because the conservation of land would not substantially affect, in an adverse manner, the provision of housing, employment, and economic well-being. Construction of covered freeway improvement projects would have a beneficial impact on employment and the local economy, which is burdened by the continuing effects of the recession following the financial crisis. Therefore, the	+	Covered freeway improvement effects, as well as biological mitigation and conservation activities, on housing, employment, and economic wellbeing under Alternative 2 would be the same as those described under Alternative 1. Impacts would be less than significant. In addition to impacts from covered freeway improvement projects as described in Alternative 1, construction activities in Preserve Areas under Alternative 2 would have beneficial impacts on employment and the local economy. No adverse impact would occur.	+	Effects under Alternative 3 would be the same as Alternative 2. Impacts would be less than significant.

	Alternative 1: No Project/No Action		A	Alternative 2: Proposed Plan		Alternative 3: Reduced Plan	
Resource Topic	Impact Finding	Summary	Impact Finding	Summary	Impact Finding	Summary	
		Proposed Plan may also have beneficial effects on employment and the local economy for minority and low-income groups through the conservation of biological resources in the community. Impacts would be less than significant.					
Transportation and Circulation	+	Based on the analysis completed in the LRTP Program EIR, short-term traffic impacts associated with covered freeway improvement projects under Alternative 1 could occur during construction activities. Covered freeway improvement projects would have a positive effect on the transportation system in Orange County (OCTA 2006) and would not conflict with applicable congestion management plans, ordinances, or policies. Moreover, implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 1.	+	In addition to the short-term traffic impacts associated with covered freeway improvement projects under Alternative 1, conservation activities under Alternative 2 could impact congestion levels during restoration activities, but this impact would be less than significant and mitigation would not be required. As with Alternative 1, covered freeway improvement projects would have a positive effect on the transportation system in Orange County (OCTA 2006) and would not conflict with applicable congestion management plans, ordinances, or policies. Implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 2.	+	Effects under Alternative 3 would be the same as Alternative 2. Implementation of biological mitigation and conservation activities would result in less-than-significant impacts under Alternative 3.	

	Alternative 1: No Project/No Action	Alternative 2: Proposed Plan	Alternative 3: Reduced Plan	
Resource Topic	Impact	Impact	Impact	
	Finding Summary	Finding Summary	Finding Summary	

¹ The findings within this table are for the purpose of evaluating the Proposed Plan and based on the information presented in the OCTA LRTP Program EIR (2006).

Notes:

- 0 = no substantial change relative to current conditions
- = negative trend relative to current conditions
- + = positive trend relative to current conditions
- ++ = substantial positive trend relative to current conditions

² The OCTA LRTP Program EIR (2006) identified potentially significant unavoidable effects resulting from covered freeway improvement projects in this environmental resource topic.

6.1 Introduction

This chapter provides an overview of the consultation, scoping and public involvement process, and other requirements for the proposed NCCP/HCP.

6.2 Consultation and Requirements

OCTA consulted with federal, state, and local agencies in the preparation of this joint EIR/EIS to comply with both CEQA and NEPA requirements, and other relevant environmental laws and regulations. Entities consulted during the development of the NCCP/HCP and the EIR/EIS included the following agencies:

Federal Agencies

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service

State Agencies

- California Department of Fish and Wildlife
- State Water Resources Control Board
- California Department of Transportation

Local Agencies

· County of Orange

6.2.1 Federal Endangered Species Act

Threatened and endangered species are listed under the provisions of Section 4 of the federal ESA; Section 9 prohibitions provide for substantial protection of these listed species. Through Section 7 and Section 10 processes, USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries ensure that activities undertaken by federal agencies and non-federal entities do not jeopardize listed species or result in adverse modification of critical habitat.

If federally listed species may be affected, the federal lead agency must informally consult with USFWS and/or NOAA Fisheries to assess the consequences of its actions and determine whether formal consultation is warranted. USFWS is proposing to issue a Section 10 incidental take permit, which is a federal action that triggers Section 7 consultation requirements. As the federal action agency for the Proposed Plan and permit, USFWS will consult internally, pursuant to Section 7. USFWS will initiate internal consultation following the submission of the Section 10 permit application package by the Habitat Conservation Plan Association. If USFWS concludes that the action is not likely to affect a listed species adversely, then no formal consultation will be conducted

and no biological opinion will be prepared. If the action is likely to result in adverse effects on a listed species, then USFWS will prepare a biological opinion describing how the action will affect the listed species. USFWS's opinion will be either a "jeopardy opinion" or a "no-jeopardy opinion." A jeopardy opinion concludes that the proposed action would jeopardize the continued existence of a federally listed species or would adversely modify designated critical habitat. Under this finding, the biological opinion must suggest "reasonable and prudent alternatives" that would avoid jeopardy. If USFWS issues a no-jeopardy opinion, this opinion may include "reasonable and prudent measures" to minimize adverse effects on listed species and an "incidental take statement" that specifies the allowable amount of take that may occur as a result of the action.

6.2.2 National Historic Preservation Act

Section 106 of the NHPA requires federal agencies to inventory historic properties and evaluate the eligibility of those properties for listing in the NRHP. The potential effects of the proposed NCCP/HCP, or alternatives, on cultural resources, including properties listed or eligible for listing in the NRHP, as well as any necessary measures to avoid or reduce impacts on such resources, are described in Section 4.5, "Cultural Resources," of this Draft EIR/EIS. As presented in that section, the Proposed Plan is not expected to result in any significant effects on cultural resources. If required through USACE CWA 404 permitting, a cultural resources management plan would be developed as a basis for establishment of a programmatic agreement between USFWS, SHPO, and OCTA for compliance with the requirements of the NHPA Section 106 process such that no listed, eligible, or potentially eligible NRHP resources would be affected. The need for a programmatic agreement is unlikely given the analysis conclusions in Section 4.5 of this Draft EIR/EIS.

6.2.3 Farmland Protection Policy Act

The FPPA of 1981 requires federal agencies to consider project alternatives that minimize or avoid adverse impacts on Important Farmland. As described in Section 3.2, "Agriculture," of this Draft EIR/EIS, the FPPA does not apply to federal permitting of private construction (7 CFR 658.2[a][1][i]). In addition, the Proposed Plan would not result in impacts on Important Farmland.

6.2.4 Clean Air Act

Section 176(c) of the CAA requires federal agencies to ensure that their proposed actions are consistent with the CAA and with federally enforceable SIPs (i.e., air quality management plans). The conformity review process is intended to ensure that federal agency actions will not cause or contribute to new violations of any federal ambient air quality standards, will not increase the frequency or severity of any existing violations of federal ambient air quality standards, and will not delay the timely attainment of federal ambient air quality standards.

As of November 2013, the Plan Area is within a portion of the SCAB classified as a federal nonattainment area with respect to ozone (extreme) and PM2.5 (nonattainment) and a maintenance area for CO (serious) and PM10 (serious). Given the current nonattainment status of the area, the Proposed Plan would conform to the SIP if its annual emissions of ozone total less than 10 tons (volatile organic compounds or NO_X).

As described in Section 3.3, "Air Quality and Climate Change," of this Draft EIR/EIS, the Proposed Plan, assuming all Preserve management activities occur in 1 year, would result in annual emissions of 0.01 ton per year of ROG and 0.08 ton per year of NO_X . Conformity calculations are provided in

Appendix D. These emissions would not exceed the de minimus thresholds of 10 tons per year for these ozone precursors.

6.2.5 Migratory Bird Treaty Act

The MBTA of 1918, as amended (16 USC 703–712), is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protects selected species of birds that are common to both countries (i.e., they occur in both countries at some point during their annual life cycle). The most prominent regulatory elements of the MBTA require the protection of active nest sites, eggs, and the young of species covered under the MBTA. USFWS has regulatory authority over implementation and enforcement of the MBTA. For species that are listed under both the ESA and MBTA, USFWS has the authority to authorize incidental take, with special terms and conditions, under Section 10(a)(1)(B) and have this permit also serve as a Special Purpose Permit under 50 CFR 21.27 of the MBTA. Special Purpose Permits are required in the event that an action would take, possess, or involve the sale or transport of birds protected by MBTA. The Proposed Plan would serve as the basis for incorporation of the MBTA Special Purpose Permit into the Section 10(a)(1)(B) permit for species that are protected by the MBTA. If the Section 10(a)(1)(B) permit is issued, any such take would not be in violation of the MBTA.

6.2.6 Department of Transportation Act of 1966

6.2.6.1 Section 4(f)

The DOT Act of 1966 included a special provision—Section 4(f)—which stipulates that the FHWA and other DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites for transportation projects unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land.
- The action includes all possible planning to minimize harm to the property resulting from use.

Section 4(f) applies to projects that receive funding from or require approval by an agency of the U.S. DOT. Before approving a project that uses Section 4(f) property, FHWA must determine that there is no feasible and prudent alternative that avoids the Section 4(f) properties and that the project includes all possible planning to minimize harm to the Section 4(f) properties; or FHWA makes a finding that the project has a de minimis impact on the Section 4(f) property. When appropriate, covered freeway improvement projects would be evaluated per Section 4(f) requirements.

6.2.6.2 Section 6(f)

State and local governments often obtain grants through the LWCFA to acquire or make improvements to parks and recreation areas. Section 6(f) of this act prohibits the conversion of property acquired or developed with these grants to uses other than public outdoor recreation without the approval of the DOI NPS. DOI has delegated most review, consultation, and assessment of Section 6(f) impacts and conversions to specified state recreation offices. When acquisition is required, Section 6(f) directs DOI to assure that replacement lands of at least equal fair market value and of reasonably equivalent usefulness and location are provided as a condition of such

conversions. Consequently, where conversions of Section 6(f) lands are proposed for highway projects, replacement lands are required.

Because it is not uncommon for recreational properties to receive the LWCFA funding, Section 6(f) may be an integral part of Section 4(f) when recreational properties are involved. When dealing with Section 4(f) parks and recreation areas, it is critical to determine if the properties were acquired or improved with the LWCFA funds, and if so, the specifics of the improvements or property acquisition.

While Section 6(f) is similar to the recreation-related provisions of Section 4(f), there are some key differences. Whereas Section 4(f) applies only to programs and policies undertaken by the U.S. DOT, Section 6(f) applies to programs and policies of any federal agency. Moreover, mitigation opportunities are more flexible under Section 4(f) and may or may not include replacement lands. Section 6(f) directs the NPS to assure that replacement lands are of equal value, location and usefulness as impacted lands.

6.3 Executive Orders

6.3.1 Executive Order 11988—Floodplain Management

Executive Order 11988 (May 24, 1977) requires federal agencies to prepare floodplain assessments for proposed actions located in or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed in the floodplain.

The proposed NCCP/HCP would not directly result in any incompatible development within a floodplain. Preserve properties are being acquired from existing open space properties in private holdings that have certain development rights; therefore, these acquisitions place permanent conservation easements or deed restrictions on developable lands, eliminating the potential for future development within floodplains on these parcels.

6.3.2 Executive Order 11990—Protection of Wetlands

Executive Order 11990, Protection of Wetlands, requires federal agencies to prepare wetland assessments for projects located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands.

The proposed NCCP/HCP has been designed to address Covered Project impacts on federal and state jurisdictional waters, including wetlands, and on state jurisdictional streams. The conservation strategy includes specific measures and restoration targets for the avoidance and mitigation of impacts on these resources, such as wetland restoration. Furthermore, implementation of the proposed NCCP/HCP conservation strategy would not result in new construction in wetlands.

6.3.3 Executive Order 12898—Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their actions on minorities and low-income populations and communities. Section 4.10, "Socioeconomics and Environmental Justice," provides analysis of potential impacts on disadvantaged communities. Because no permanent or temporary residences are located within the proposed Preserve System, the proposed NCCP/HCP would not result in disproportionately high or adverse human health or environmental effects on minority or low-income populations in the Plan Area.

6.3.4 Executive Order 13112—Invasive Species

Executive Order 13112, signed on February 3, 1999, requires federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued on August 10, 1999, directs the use of the state's invasive species list currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

6.4 Public Scoping

The process of determining the scope, focus, and content of an EIR/EIS is known as scoping. The scoping process assists the lead agencies in determining the substantive issues to be addressed in an EIR/EIS. The scoping period for this EIR/EIS began with publication of the NOI/NOP on December 3, 2010. Publication of the NOP/NOI initiated the scoping period, which lasted until January 13, 2011. One public scoping meeting was held during the scoping period. The meeting was held on December 15, 2010, from 5 p.m. to 7 p.m. at OCTA headquarters (600 South Main Street, Orange, CA 92863). The scoping meeting provided an opportunity for attendees to comment on environmental issues of concern and the alternatives that should be discussed in the Draft EIR/EIS. Comment letters were received from the following agencies, organizations, and individuals during the scoping period.

- 1. Carl Reinhart
- 2. Jennifer Choi
- 3. Ed Amador
- 4. Rancho Mission Vieio
- 5. Puente Hills Landfill Native Habitat Preservation Authority
- 6. Native American Heritage Commission
- 7. CDFW
- 8. Caltrans
- 9. Environmental Coalition

Key issues of public concern about the Proposed Plan that were identified during the scoping process include the following:

Biological Resources

- Wildlife and endangered species protection must be a priority.
- Integrate the January 2011 Department of the Interior USFWS Final Critical Habitat for Arroyo Toad Unit #8, Santa Ana River Basin (Ed Amador).
- Continued acquisition and management of lands within the Puente-Chino Hills Wildlife Corridor would further connectivity between this area and Orange County, extending to the Santa Ana Mountains (Puente Hills Landfill).
- Incorporate measures into the NCCP/HCP that promote wildlife movement and habitat connectivity within the Puente-Chino Hills Wildlife Corridor (Puente Hills Landfill).
- The Draft EIR/EIS should include complete an assessment of sensitive biological resources and a discussion of direct, indirect, and cumulative impacts on biological resources within and adjacent to the Plan Area (CDFW).
- Development within wetlands is discouraged (CDFW).
- Conservation easements should be placed on all acquisition and restoration properties to ensure proper protection (Environmental Coalition).
- NCCP/HCP should clearly define compatible uses (Environmental Coalition).

Cultural Resources

- Native American cultural resources were identified in within the Plan vicinity as a part of the NAHC Sacred Lands File research (NAHC).
- Avoidance of cultural resources in accordance with CEQA should be considered (NAHC).
- Consultation with Native American tribes regarding the Plan should be conducted in compliance with federal requirements (NAHC).

Funding

• There is a potential lack of funding for execution and maintenance of the Plan (Jennifer Choi).

Land Use

• Certain areas identified for conservation in the Conservation Assessment completed by the Conservation Biology Institute are identified as Planning Areas for future development by Rancho Mission Viejo (Rancho Mission Viejo).

Water Quality

• Runoff from the NCCP/HCP must conform to Regional Water Quality Control Board discharge requirements (Caltrans).

CEQA Process

- Each project proposed associated with the NCCP/HCP must have subsequent environmental documentation, and associated technical studies must adhere to Caltrans protocol (Caltrans).
- The Draft EIR should cover mitigation for losses of habitat associated with the freeway project, long-term management of the Preserve Areas, and funding mechanisms (CDFW).

The following professional staff contributed to the preparation of this Draft EIR/EIS:

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Chapter 8. References

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Appendix A **Acronyms and Glossary**

Acronyms and Glossary

Acronyms

° degrees

 $\mu g/m^3$ micrograms per cubic meter

AB Assembly Bill

ACHP Advisory Council on Historic Preservation Act

ACM asbestos-containing materials
ACS American Community Survey
AQMP air quality management plan
AR4 IPCC Fourth Assessment Report

ARB Air Resources Board

AST aboveground storage tanks

ATV all-terrain vehicle
AWP Annual Work Plan
BA biological assessment

Basin Plans Regional Water Quality Plans

BAU business as usual

BMPs best management practices

BO biological opinion

Board OCTA Board of Directors Committee
BRAC Base Realignment and Closure

 C_2H_3Cl vinyl chloride CAA Clean Air Act

CAAQS California Ambient Air Quality Standards
CalARP California Accidental Release Program
CAL-EPA California Environmental Protection Agency

Cal-IPC California Invasive Plant Council

Caltrans California Department of Transportation

CAPCOA California Air Pollution Control Officers Association

CBC California Building Code
CBI Conservation Biology Institute

CBSC California Building Standards Commission

CCAA California Clean Air Act

CCR California Code of Regulations

CDFW California Department of Fish and Wildlife

CDP Census-Designated Place

CDR Center for Demographic Research
CEC California Energy Commission
CEQ Council on Environmental Quality

CEQA California Environmental Quality Act of 1970

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CERCLIS Comprehensive Environmental Response, Compensation, and Liability

Information System

CESA California Endangered Species Act

CFR Code of Federal Regulations
CGP construction general permit

CH₄ methane

CHL California Historic Landmark

CHRIS California Historical Resources Information System

CIP Capital Improvement Program

CIWMB California Integrated Waste Management Board

CMA County Congestion Management Agency

CMP Congestion Management Program
CMS Congestion Management System
CNDDB California Natural Diversity Database
CNEL community noise equivalent level

CNF Cleveland National Forest
CNPS California Native Plant Society

CO carbon monoxide CO₂ carbon dioxide

CO₂e carbon dioxide equivalent

CORRACTS Corrective Actions

CPUC California Public Utilities Commission
CRAM California Rapid Assessment Method
CRHR California Register of Historical Resources

CTC County Transportation Commission
CTP California Transportation Plan
CUPA Certified Uniform Program Agency

CWA Clean Water Act

dB decibels

dBA A-weighted sound level
DNL day-night average sound level
DPM diesel particulate matter

DSA disturbed soil area

DTSC Department of Toxic Substances Control

EA Environmental Assessment
Eagle Act Eagle Protection Act

EAP Early Action Plan

EDD California Employment Development Department

EIR environmental impact report environmental impact statement

EMFAC Emission FACtors
EO Executive Order

EOC Environmental Oversight Committee

EPA U.S. Environmental Protection Agency
ESA Federal Endangered Species Act
EVeg USFS Existing Vegetation dataset

F Fahrenheit
FAR fire-affected rock
FE Federal Endangered

FEMA Federal Emergency Management Agency

FGC Fish and Game Code

FHWA Federal Highway Administration FIRM Flood Rate Insurance Map

FMMP Farmland Mapping and Monitoring Program

FP California Fully Protected Species
FPPA Farmland Protection Policy Act

FR Federal Register
FT Federal Threatened

FTIP Federal Transportation Improvement Program

GHG greenhouse gas

GIS geographic information system
GCWR gross vehicle weight rating
GWP global warming potential

H₂S hydrogen sulfide

HAP hazardous air pollutants
HCP Habitat Conservation Plan
HFCs hydrofluorocarbons

HMD hazardous materials disclosure

HMMP Habitat Mitigation and Monitoring Plan HRMP Habitat Reserve Management Program

HU hydrologic unit

HUD Department of Housing and Urban Development

HWCL Hazardous Waste Control Law

Hz hertz I- Interstate

IA Implementing Agreement
IBC International Building Code

IPCC International Panel on Climate Change

IPM integrated pest management
ITP Incidental Take Permit
LCFS Low Carbon Fuel Standard
Ldn day-night average sound level

 $\begin{array}{cc} L_{eq} & \text{sound equivalent level} \\ LOS & \text{Highway Level of Service} \end{array}$

LRTP Long Range Transportation Plan

LSAA Lake or Streambed Alteration Agreement

M2 renewal of Measure M

M2 NCCP/HCP M2 Natural Community Conservation Plan/Habitat Conservation Plan

MAP-21 Moving Ahead for Progress in the 21st Century Act

MBTA Migratory Bird Treaty Act
MCAS Marine Corps Air Station
mg/m³ milligrams per cubic meter
MLD Most Likely Descendant
MMT million metric tons

MOUS Memoranda of Understanding
MPAH Master Plan of Arterial Highways

mpg miles per gallon mph miles per hour

MPO Metropolitan Planning Organization

MRPP Mitigation and Resource Protection Program
MSAA master streambed alteration agreement

MSAT mobile source air toxics

MSHCP Multi Species Habitat Conservation Plan

msl mean sea level

MTCO₂e metric tons of carbon dioxide equivalent

mty metric tons per year N_2O nitrous oxide

NAAQS National Ambient Air Quality Standards

NAC Noise Abatement Criteria

NAGPRA Native American Graves Protection and Repatriation Act

NAHC Native American Heritage Commission
NCCP Natural Community Conservation Plan

NCCPA Natural Community Conservation Planning Act

NCP National Oil and Hazardous Substance Pollution Contingency Plan

NEPA National Environmental Policy Act of 1969

NFIP National Flood Insurance Program
NGOs nongovernmental organizations
NHPA National Historic Preservation Act
NMFS National Marine Fisheries Service

NO₂ nitrogen dioxide NOA Notice of Availability

NOAA National Oceanic and Atmospheric Administration

 $\begin{array}{ccc} NOC & Notice \ of \ Completion \\ NOI & Notice \ of \ Intent \\ NOP & Notice \ of \ Preparation \\ NO_X & nitrogen \ oxides \end{array}$

NPDES National Pollutant Discharge Elimination System

NPL National Priorities List

NRCS Natural Resource Conservation Service
NRHP National Register of Historic Places
NROC Nature Reserve of Orange County

NWF National Wildlife Refuge NWPs nationwide permits

 O_3 ozone

OCCOG Orange County Council of Governments
OCFCD Orange County Flood Control District

OCP Orange County Projections

OCTA Orange County Transportation Authority

OCWD Orange County Water District

OEHHA Office of Environmental Health Hazard Assessment

OPR Office of Planning and Research

OSHA Occupational Safety and Health Administration

PAD protected area database

Pb lead

PCBs polychlorinated biphenyls

PCWQCA Porter-Cologne Water Quality Act of 1969
Permittee Orange County Transportation Authority

PFCs perfluorocarbons

Plan M2 Natural Community Conservation Plan/Habitat Conservation Plan

PM10 suspended particulate matter

PM2.5 fine particulate matter

PMMP Preserve Management and Monitoring Program
Porter-Cologne Porter-Cologne Water Quality Control Act of 1969

ppm parts per million

PPP Public Participation Plan

PQF Public/Quasi-Public Facilities District

PRC Public Resources Code
Preserve System NCCP/HCP Preserve System

Proposed Plan Natural Community Conservation Plan/Habitat Conservation Plan

PSD Prevention of Significant Deterioration
RCPG Regional Comprehensive Plan and Guide
RCRA Resource Conservation and Recovery Act

RHA Rivers and Harbor Act

RHNA Regional Housing Needs Assessment

RMPs resource management plans

ROG reactive organic gases

RSPA Research and Special Programs Administration
RTIP Regional Transportation Improvement Program

RTP Regional Transportation Plan

RTPA Regional Transportation Planning Agency
RWQCBs Regional Water Quality Control Board
SAR IPCC Second Assessment Report

SB Senate Bill

SCAB South Coast Air Basin

SCAG Southern California Association of Governments SCAQMD South Coast Air Quality Air Management District

SCCIC South Central Coastal Information Center

SCS Sustainable Communities Strategy

SE State Endangered SF₆ sulfur hexaflouride

SHPO State Historic Preservation Officers

SIPs State Implementation Plans

SMART criteria Specific, Measurable, Achievable, Relevant, Timely

 $\begin{array}{ccc} SO_2 & & sulfur \ dioxide \\ SO_4 & sulfate \ particles \\ SO_x & sulfur \ oxides \\ SR & State \ Route \end{array}$

State Parks California Department of Parks and Recreation

State Water Board State Water Resources Control Board

STIP State Transportation Improvement Program
Streambed Program Streambed Protection Mitigation Program
SUSMP Standard Urban Stormwater Management Plan

SWIS solid waste information system

SWL solid waste landfill

SWPPP Storm Water Pollution Prevention Plan

T2020 Committee Transportation 2020 Committee

TACs toxic air contaminants
TAIC Technology Associates
TBD to be determined
TCE trichloroethene

TCPs Traditional Cultural Places

TCR Trabuco Canyon Residential District
TDM Transportation Demand Management

TIA Traffic Impact Analysis
TMDL Total Maximum Daily Load
TPL Trust for Public Land

TSD treatment, storage, and disposal TWC The Wildlands Conservancy UAR Upper Aliso Residential District

UNFCCC United Nations Framework Convention on Climate Change

USACE U.S. Army Corps of Engineers

USC U.S. Government Code

USDA U.S. Department of Agriculture USDOT U.S. Department of Transportation

USFS USDA Forest Service

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey
UST underground storage tanks

v/c volume-to-capacity
VMT vehicle miles traveled
VOC volatile organic compou

VOC volatile organic compounds
WDR Waste Discharge Requirement
WHR Wildlife Habitat Relationship

Wildlife Agencies CDFW and USFWS

WMAs Watershed Management Areas

WMUDS Waste Management Unit Database System

WoUS waters of the United States

WQMP Water Quality Management Plan

Glossary

100-year flood – A flood having a 1 percent chance of being equaled or exceeded in any given year.

A-weighted decibel (dBA) – Because the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as dBA. The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies.

Adaptive management – A method for examining alternative strategies for meeting measurable biological goals and objectives, and then if necessary, adjusting future conservation management actions according to what is learned. (See also Chapter 6, "Preserve Management and Monitoring Program," for alternative but similar definitions of adaptive management.)

Alquist-Priolo Earthquake Fault Zone – The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate impacts on structures for human occupancy related to surface faulting hazards. In accordance with this act, the state geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace.

Ambient air – Outside air; any portion of the atmosphere not confined by walls and a roof.

Ambient noise – The background noise in an area or environment; a composite of sounds from many sources near and far.

Anadromous fish – Fish that spend part of their life cycle in the ocean and part in fresh water. The National Marine Fisheries Service (NMFS) has jurisdiction over anadromous fish that spend the majority of their life cycle in the ocean.

Anthropogenic – Caused or produced through human agency.

Baseline – The baseline is the existing environmental state, which includes past and present impacts as well as the anticipated impacts of all permitted projects in the inventory area.

Beneficial Uses – The uses of water necessary for the survival, or wellbeing of man, plants and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals of mankind. Examples include drinking, swimming, industrial and agricultural water supply, and the support of fresh and saline aquatic habitats.

Best Management Practices (BMPs) – Methods or techniques that have been found effective and practical for achieving an objective (such as preventing or minimizing pollution).

Biodiversity – The variety of organisms considered at all levels, from genetic variants of a single species through arrays of species to arrays of genera, families, and higher taxonomic levels; includes the variety of ecosystems.

Biological opinion – The document stating the opinion of the U.S. Fish and Wildlife Service and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. A Biological Opinion (BO) is one of the decision documents of a consultation under Section 7 of the federal Endangered Species Act (ESA).

Buffer areas – Buffer areas are designated zones of agricultural lands, grassland, or other habitat types adjacent to preserves that are intended to prevent or reduce the undesired intrusion of biota, harmful materials, or disturbances into the preserve, as well as the movement of covered wildlife species from preserve areas into adjoining areas.

California Environmental Quality Act (CEQA) – A state law, originally enacted in 1970, that requires public agencies to document and consider the environmental effects of a proposed action before a decision is issued.

California Land Conservation Act (Williamson Act) – The California Land Conservation Act, or Williamson Act, is one of California's primary mechanisms for conserving farmland. The Williamson Act enables counties and cities to designate agricultural preserves, or "Williamson Act lands," and offer preferential taxation to private agricultural landowners based on the income-producing value of their property in agricultural use rather than the property's assessed market value. In return for the preferential tax rate, the landowner is required to sign a contract with the county or city and agree not to develop the land for a minimum of 10 years.

Carbon dioxide-equivalent – A measure used to compare emissions from various greenhouse gases based on their global warming potential.

Changed Circumstances – Changed Circumstances are defined under the U.S. Fish and Wildlife Service (USFWS) "No Surprises" rule as "changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for." Changed Circumstances for the M2 NCCP/HCP include the following reasonably foreseeable events: flood; fire; extended period of reduced precipitation; invasion by exotic species or disease; toxic spills, vandalism and other illegal human activity; and listing of non-covered species.

Community Noise Equivalent Level (CNEL) – The A-weighted acoustical energy during 24 hours, with weightings of 5 dB for the evening hours (7 p.m. to 10 p.m.) and 10 dB for nighttime hours (10 p.m. to 7 a.m.).

Conservation – According to the ESA (Section 3[3]), the terms *conserve*, *conserving*, and *conservation* are defined as the methods and procedures necessary to bring any endangered or threatened species to the point at which the measures provided under the Act are no longer necessary. Such methods and procedures include, but are not limited to, activities associated with resource management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transportation. The Natural Community Conservation Planning Act (NCCPA) defines *conserve*, *conserving*, and *conservation* as "the use of methods and procedures within the plan area that are necessary to bring any covered species to the point at which the measures provided pursuant to Chapter 1.5 ... are not necessary, and for covered species

that are not listed pursuant to Chapter 1.5 ..., to maintain or enhance the condition of a species so that listing pursuant to Chapter 1.5 ... will not become necessary."

Conservation measure – A management action that, when implemented, will partially or wholly achieve Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) objectives for covered species, vegetation communities, biodiversity, or ecosystem function.

Conserved habitat – Species habitat that is protected, enhanced, and/or restored under the NCCP/HCP.

Construction monitoring – Monitoring by biologists of construction activities to ensure that conservation measures are implemented and impacts on biological resources are avoided or minimized in accordance with M2 Natural Community Conservation Plan/Habitat Conservation Plan (Plan) requirements.

Contribute to recovery – Actions that measurably increase the baseline conditions necessary to support for covered species and contribute to the eventual de-listing of a listed species or prevention of listing of an unlisted species. A contribution to recovery does not include actions necessary to avoid, minimize, or mitigate impacts of covered activities,

Cover (e.g., canopy cover, areal cover) – The area of ground covered by vegetation of particular species or vegetation type, generally expressed as a percentage.

Covered Activities – Covered Activities are associated with the potential for a small amount of take of Covered Species to occur in the Preserves as a result of ongoing habitat management, restoration, and monitoring activities by Preserve Managers and from limited public access.

Covered Projects – Covered Projects are defined to include all habitat or ground-disturbing impacts resulting from the M2 transportation planning and project implementation process.

Covered Species – Those species addressed in the Plan for which conservation measures will be implemented and for which the permittee seeks authorization for take under Section 10 of the ESA and Section 2081 of the California Endangered Species Act (CESA).

Criteria air pollutant – Certain air pollutants for which the federal and state authorities have established specific standards of exposure to protect the public health and welfare.

Critical habitat – An area designated as critical habitat by the UUSFWS pursuant to the ESA. Critical habitat areas are specific geographic areas, whether occupied by listed species or not, that are determined to be essential for the conservation and management of listed species, and that have been formally described and designated in the Federal Register.

Cultural resource – The nonrenewable remains of human activity that is valued by or significantly representative of a culture, or that contains significant information about a culture. Cultural resources encompass archaeological, traditional, and built environmental resources, including landscapes or districts, sites, buildings, structures, objects, or cultural practices that are usually greater than 50 years of age and possess architectural, historic, scientific, or other technical value.

Cumulative impacts/effects – Cumulative impacts/effects result from the proposed actions' incremental impact when viewed together with past, present, and reasonably foreseeable future actions.

Cumulatively considerable – A CEQA term used to indicate whether or not a cumulative impact is significant.

Day-night noise level (L_{dn}) – Similar to CNEL, this noise descriptor adds a 10 dBA penalty to all nighttime noise events between 10:00 p.m. and 7:00 a.m. However, L_{dn} does not add the evening 5 dBA penalty.

Decibel (dB) – A unit used to measure the intensity of a sound or the power level of an electrical signal by comparing it with a given level on a logarithmic scale.

Direct effects – Direct effects are defined as activities or projects that remove or alter land cover types, or Covered Species habitat, populations, or occurrences (or portions of thereof). Direct effects are caused by the project and occur at the time and place of project implementation (e.g., ground disturbance, inundation). Direct effects can be either permanent or temporary (see definitions of permanent and temporary effects).

Discharge – The flow of surface water in a stream or canal or the outflow of groundwater from a flowing ditch or spring.

Dominance – The extent to which a given species predominates a community by virtue of its size, abundance, or coverage.

Ecosystem - A community of organisms and their physical environment interacting as an ecological unit.

Ecosystem function – The sum total of processes operating at the ecosystem level, such as the cycling of matter, energy, and nutrients.

Ecosystem restoration – The reestablishment of ecological functions within an area that historically supported those functions.

Effects – Effects are those actions affecting biological resources, specifically undeveloped land cover types and Covered Species, in the Permit Area. Effects can be direct or indirect; they can also be cumulative.

Effectiveness monitoring – The "Monitoring Biologist" is responsible for effectiveness monitoring, which assesses and tracks the biological success of the Plan's conservation strategy. Periodic biological surveys of the Preserves will be completed to compare with baseline surveys. Each Preserve will be evaluated to determine if potential habitat exists for Covered Species and which species surveys are appropriate for each Preserve

Endangered species – Any species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that is in serious danger of becoming extinct throughout all or a significant portion of its range. Such species are officially designated by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service, with the designation published in the Federal Register. Species may also be listed under the California Endangered Species Act by the California Department of Fish and Game.

Environmental gradient – A shift in physical and ecological parameters, as characterized by transition zones between land-cover types and natural communities or topographic gradients across a landscape.

Environmental Oversight Committee – The Environmental Oversight Committee (EOC) was formed in October 2007, following approval by the Board of Directors. The EOC makes recommendations on the allocation of environmental freeway mitigation funds and monitors the execution of the M2 NCCP/HCP between the Orange County Transportation Authority (OCTA) and state and federal resource agencies. Comprised of 12 members, the EOC has been meeting on a monthly basis to advance implementation of key M2 projects, including the freeway mitigation program. The EOC has been responsible for the oversight and review of the five-year M2 Early Action Plan (EAP) to evaluate, select and fund preserve acquisitions and restoration projects.

Ephemeral stream – Stream that flows only in response to rain events and receives no groundwater input.

Equivalent sound level (L_{eq}) – An average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level with the same acoustical energy as the time-varying sound that actually occurs during the monitoring period. The 1-hour A-weighted equivalent sound level $(L_{eq}1[h])$ is the energy average of A-weighted sound levels occurring during a 1-hour period.

Extinct Species - A species no longer in existence.

Farmland of Local Importance – Farmland of Local Importance is important to the local agricultural economy, as determined by each county's board of supervisors and a local advisory committee.

Farmland of Statewide Importance – The state defines Farmland of Statewide Importance as "irrigated land similar to Prime Farmland that has a good combination of physical and chemical characteristics for the production of agricultural crops." For land to be designated as Farmland of Statewide Importance, it must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date.

Fossorial - Adapted for digging or burrowing into the ground.

Fugitive dust – Small airborne particles that are released to the atmosphere by some means other than through a stack or tailpipe (non-point source emissions).

Fully Protected Species – California fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock. Fully protected species are described in Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.

Geographic Information System – Computer-based mapping technology that manipulates geographic data in digital layers and enables one to conduct a wide array of environmental analyses.

Goal – A broad, guiding principle that identifies an expected outcome of the Conservation Plan. Conservation strategy goals describe the desired future condition for each covered species with full implementation of the Plan.

Greenhouse gas – A gas that contributes to the greenhouse effect by absorbing or trapping heat from the sun as it is reflected back into the atmosphere, much like what a greenhouse does. By capturing heat in this manner, greenhouse gases (GHGs) contribute to global climate change. Some

examples of greenhouse gases are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), nitrous oxide (N_2O), and water vapor (H_2O).

Habitat – The environmental conditions that support occupancy of a given organism in a specified area. In scientific and lay publications, habitat is defined in many different ways and for many different purposes. For the purpose of the Plan, habitat is defined as the specific places where the environmental conditions (i.e., physical and biological conditions) required to support occupancy by individuals or populations of a given species are present. Habitat may be occupied (individuals or population of the species are, or have recently been, present) or unoccupied (see *unoccupied habitat* below).

Habitat creation – The establishment of a vegetation community in an area that did not previously support it. For example, stock ponds can be created in areas that previously did not support them by grading and installing a check dam.

Habitat enhancement – The improvement of an existing degraded vegetation community. Enhancement involves improving one or more ecological factors, such as species richness, species diversity, overall vegetative cover, or wildlife value. Enhancement activities typically occur on substrates that are largely intact.

Habitat-limited – A habitat-limited species is one whose abundance, distribution, or reproduction is limited by the availability or quality of suitable habitat. See definition of *suitable habitat* below.

Habitat quality – The ability of the environment to provide conditions that support the persistence of individuals and populations. The precise meaning of quality varies by species and depends on the subject species' specific needs in the context of a particular area. High-quality habitat for some species comprises only foraging and resting elements; for others it comprises foraging, resting, and nesting elements; for still others it may encompass all elements needed for the species to complete its lifecycle. Low-quality habitat would include only the minimal elements that support occurrence of the species. High-quality habitat tends to support larger numbers of species than low-quality habitat.

Habitat quantity – The area of the environment that supports or could support occupancy of a given organism.

Habitat replacement – To replace habitat is to mitigate habitat loss by enhancing or restoring habitat equivalent to or greater than the habitat lost.

Habitat restoration – Restoration is the establishment of a vegetation community in an area that historically supported it, but no longer supports it because of the loss of one or more required ecological factors. Restoration may involve altering the substrate to improve a site's ability to support the historic vegetation community.

Harass – An intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (Code of Federal Regulations (CFR), title 50, section 17.3).

Harm – An act that actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

Hazardous materials – According to Section 25501(h) of the California Health and Safety Code, materials that, because of their quantity, concentration, or physical or chemical characteristics, pose a substantial present or potential hazard to human health and safety or to the environment if released to the workplace or environment. Hazardous materials are used in commercial, agricultural, and industrial applications as well as residential areas to a limited extent.

Historic resource – A term that is sometimes used to refer to architectural or archaeological resources from the historic era.

Hydrology – The movement of surface and subsurface water flows in a given area. The hydrology of an area is intimately connected with its precipitation, soils, and topography.

Incidental take – Any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (50 CFR 17.3).

Indirect effects – Indirect effects are those effects that occur at the time of the proposed action but beyond the footprint of a project or activity (i.e., beyond the area of land cover disturbance). While more difficult to detect and track, indirect effects can undermine species viability or habitat quality, especially if multiple indirect or direct effects work cumulatively to impair the species or to degrade the habitat.

In-kind/like-value creation – Establishing the same vegetative community that would provide the same ecological values over time as the vegetation community affected. For example, creating an artificial vernal pool that supports species similar to those found in an affected vernal pool would be in-kind/like-value creation.

Intermittent stream – Stream that is supplied by both rainfall runoff and groundwater; intermittent streams tend to be seasonal, flowing during the rainy season and into the late spring or early summer.

Jurisdictional wetlands and waters – This term is used in the Plan to refer to state and federally regulated wetlands and other water bodies that cannot be filled or altered without permits from the U.S. Army Corps of Engineers (USACE) under Section 404 of the federal Clean Water Act (CWA), the State Water Board or the Regional Water Quality Control Boards (RWQCBs) under either Section 401 of the CWA or the Porter-Cologne Act, or the California Department of Fish and Game (DFG) under Fish and Game Code Section 1602 as of the date the Plan takes effect.

Known occurrence – Confirmed sightings of a species in a specific area.

Land-cover type – The dominant feature of the land surface discernible from aerial photographs and defined by vegetation, water, or human uses.

Land Management Entity – After performance criteria are met, any long-term management of restoration projects will be the responsibility of the underlying Land Management Entity. The Land Management Entity will manage the restoration project location for biological values as part of their overall management activities and responsibilities. OCTA will continue to have access to restoration

project locations to conduct assessments and qualitative monitoring of restoration project success over time to gain insights and knowledge of restoration strategies.

Land-use designation – The designation, by parcel, in an adopted city or county General Plan of the allowable uses.

Loss of habitat – Loss of habitat is a reduction in habitat quality or quantity that results from an adverse change in an environmental condition. Environmental conditions may include cover, substrate, channel type, interacting species, river area, reservoir area, water quality, and groundwater depth.

Mitigation – Refers to one or all of the following:

- 1. Avoiding an impact altogether by not implementing a certain action or parts of an action.
- 2. Minimizing impacts by limiting the degree or magnitude of an action and its implementation.
- 3. Rectifying an impact by repairing, rehabilitating, or restoring the affected environment.
- 4. Reducing or eliminating an impact over time through preservation and maintenance operations during the life of the action.
- 5. Compensating for an impact by replacing or providing substitute resources or environments.

Monitoring Biologist – Accredited biologist responsible for periodic monitoring of the status of natural communities and Covered Species within the Preserves (see Chapter 6, "Preserve Management and Monitoring Program," for further details regarding the Monitoring Biologist's responsibilities and roles).

Natural community – A natural community is a distinct and recurring assemblage of populations of plants and animals that are associated with each other, their physical environment, and the natural processes that affect them.

NCCP Administrator – The NCCP Administrator's role is to oversee and coordinate plan implementation (see Chapter 7, "Plan Implementation," for a full discussion of the administrator's responsibilities.

No-take species – Species for which take is not authorized under this NCCP.HCP. In order to comply with the terms of the Plan, applicants for coverage under the Plan must avoid all direct and indirect impacts on no-take species.

Ordinary high water mark – A line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; or the presence of litter and debris.

Out-of-kind/like-value – Establishing a similar, but not identical, vegetative community with some of the same ecological functions and values as the affected vegetative community over time.

Particulate matter – Tiny solid or liquid particles, generally soot and aerosols.

Particulate matter (PM10 and PM2.5) – Refers to a class of air pollutants that consists of solid or liquid airborne particles in a small size range (i.e., PM10 for particles less than 10 micrometers in diameter and PM2.5, for particles less than 2.5 microns in diameter).

Perennial stream – Year-round stream that is supplied by both rainfall runoff and groundwater, as well as by substantial dry-season inputs.

Performance indicator – The environmental variables that are quantitatively measured over time to determine if enhanced/created/restored natural communities have successfully met NCCP/HCP biological goals and objectives.

Performance objective – In monitoring, the optimal desired value for each performance indicator. Performance objectives establish a higher threshold for each indicator than that established for performance standards. Funding, design, and management objectives for enhanced/created/restored natural communities are established at levels that are designed to ensure that the performance objectives are achieved. Failure to meet a performance objective would not constitute a changed circumstance or require remedial measures.

Performance period - In monitoring, the time over which performance standards must be met.

Performance standard – In monitoring, a minimum requirement necessary to achieve biological goals and objectives. Failure to achieve a performance standard could constitute a changed circumstance and require that remedial measures be implemented.

Permanent effects – Permanent effects are direct effects that permanently remove or alter a land cover, or that affect a land cover for more than one year (e.g., road widening into a grassland habitat).

Permit Area – The Permit Area is the area in which the OCTA is requesting authorization from DFG and USFWS for projects and activities that may result in take of Covered Species (i.e., Covered Projects and Activities).

Permittees – Those entities requesting a Section 10(a)(1)(B) incidental take permit from USFWS and a take permit under the NCCPA from DFG for the species and activities covered in the accompanying NCCP/HCP.

Plan Area – The Plan Area is defined as the area in which impacts would be evaluated and conservation would occur. The Plan Area includes the entirety of Orange County, totaling approximately 511,200 acres, located south of Los Angeles County, north of San Diego County, and west of Riverside County to the Pacific Ocean.

Planning surveys – Surveys conducted by applicants for NCCP/HCP coverage and used in the project-planning process to identify constraints and determine which NCCP/HCP conservation measures are applicable. Planning surveys also include surveys conducted by the Implementing Entity on potential preserve lands to evaluate whether these lands will meet Plan requirements.

Population – A group of individuals of the same species inhabiting a given geographic area, among which mature individuals reproduce or are likely to reproduce. Ecological interactions and genetic exchange are more likely among individuals within a population than among individuals of separate populations of the same species.

Porter-Cologne Water Quality Control Act – California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California.

Practicable – Practicable means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose (Federal Register (FR), volume 45, page 85344, December 24, 1980: U.S. Environmental Protection Agency (EPA), Part 40 CFR 230.3, Definitions).

Preconstruction surveys – Surveys conducted by applicants for NCCP/HCP coverage for certain biological resources immediately prior to construction to ensure that species and habitat avoidance and minimization measures can be effectively implemented during construction of covered projects or implementation of covered activities.

Preserves – Preserves are discrete areas of conserved habitats managed as single units under the NCCP/HCP.

Preserve management – This level of management focuses on activities that protect Covered Species and natural communities, and provide compatible recreational opportunities for the public. Preserve management includes all actions established under "property management," as well as monitoring and management of the overall condition of a Preserve, invasive species, erosion, sedimentation, trails and public use facilities, and occasionally restoration.

Preserve System - All NCCP/HCP preserves considered collectively.

Prime Farmland – Prime Farmland is defined by the state as "irrigated land with the best combination of physical and chemical features able to sustain long-term production of agricultural crops." Prime Farmland has the soil quality, growing season, and moisture supply needed to produce sustained high yields. To be designated as Prime Farmland, the land must have been used for production of irrigated crops at some time during the 4 years prior to the mapping date.

Property management – This is the most basic level of management in a Preserve, and includes establishing and maintaining property boundaries with fencing and gates; posting signs that indicate Preserve rules, restrictions, and regulations; and controlling public access, trash collection, and enforcement as-needed.

Protect habitat – To maintain the existing or enhanced extent of species habitat through acquisition, easements, or other practicable processes for bringing unprotected sites under protected status.

Range - The geographic area a species is known or believed to occupy.

Recovery – The process by which the decline of an endangered or threatened species is arrested or reversed or threats to its survival neutralized so that its long-term survival in nature can be ensured. Recovery entails actions to achieve the conservation and survival of a species including actions to prevent any further erosion of a population's viability and genetic integrity, as well as actions to restore or establish environmental conditions that enable a species to persist (i.e., the long-term occurrence of a species through the full range of environmental variation).

Recovery Plan – A document published by USFWS that lists the status of a listed species and the actions necessary to remove the species from the endangered species list.

Regional monitoring – Regional monitoring consists of monitoring vegetation communities, wildlife movement, and species population trends across the Plan Area. OCTA will contribute to regional monitoring by using standardized methods and coordinated scheduling of the collection of data in coordination with other regional entities and the Wildlife Agencies to facilitate the integration and evaluation of data for the region.

Restoration Project Entity – The Restoration Project Entity is responsible for implementing the restoration projects as they are described in the approved restoration plans. The Restoration Project Entity is responsible for completing all appropriate regulatory permitting and environmental documentation required to complete the project and will abide by all required avoidance and minimization requirements and best management practices. The Restoration Project Entity will complete monitoring of the project to ensure performance criteria are met.

Riparian habitat - Vegetation associated with river, stream, or lake banks and floodplains.

Ruderal - A species or plant community that occurs on a highly disturbed site.

Science Advisors – OCTA felt strongly that independent scientific input early in the planning process was critical to the success of the Plan. In early 2011, the Science Advisors were invited to provide independent scientific input for development of the NCCP/HCP. The Science Advisors were chosen based on their knowledge of the county's ecology, including their technical expertise as it relates to the species and habitats addressed in the Plan.

Sedimentation – The deposition of material suspended in a stream system, whether in suspension (suspended load) or on the bottom (bedload).

Seiche – An oscillation of a body of water. Seiches occur most frequently in enclosed or semienclosed basins, such as lakes, bays, or harbors, and may be triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis, or tides. A seiche of approximately 4 inches occurred during the 1906 earthquake, an event of magnitude 8.3 on the Richter scale.

Signature – Characteristic value, color, or texture on an aerial photograph that correlates to a particular land-cover type.

Species distribution model(ing) – Species distribution models are numerical tools that combine observations of species occurrence or abundance with environmental estimates, in order to gain ecological and evolutionary insights and to predict distributions across landscapes.

Species management – This level of management includes all activities identified for "property management" and "preserve management," as well as species-specific and habitat-specific monitoring and management. Examples include focused species surveys, species/habitat-specific protection measures (e.g., fencing and manual weed removal in a rare plant area), and habitat enhancement projects (e.g., restoration of California gnatcatcher habitat).

Stream, ephemeral – A stream that flows only briefly in direct response to precipitation in the immediate vicinity, and that does not receive groundwater input.

Stream, intermittent – A stream that flows only at certain times of the year, generally in response to precipitation runoff or groundwater input.

Stream, perennial - A stream that flows throughout the year.

Succession – The change in the composition and structure of a biological community over time. Successional patterns often shift dramatically following a major disturbance (e.g., fire, flood, anthropogenic clearing of land).

Suitable habitat - Habitat that exhibits the characteristics necessary to support a given species.

Surface water – All water that is naturally open to the atmosphere (i.e., rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries, etc.).

Take – According to the ESA (Section 3[18]), *take* means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. According to the CESA (Section 86 of the California Fish and Game Code), *take* means to hunt, pursue, catch, capture, or kill.

Temporary effects – Temporary effects are direct effects that alter land cover for less than 1 year and that allow the disturbed area to recover to pre-project or ecologically improved conditions within 1 year (e.g., construction staging areas, temporary access roads) of completing construction.

Threatened species - A species that is likely to become "endangered" in the foreseeable future.

Unforeseen Circumstances – Unforeseen Circumstances (defined in 50 CFR 17.3) refers to changes in circumstances affecting a species or geographic area covered by a conservation plan that could not reasonably have been anticipated by plan developers and the USFWS (or DFG) at the time of the conservation plan's negotiation and development and that result in a substantial and adverse change in the status of the Covered Species. Unforeseen Circumstances include future unanticipated conditions, which are either not defined as Changed Circumstances or which exceed the definitions developed for Changed Circumstances particularly in terms or severity or extent (e.g., flood or fire affecting species continued existence).

Unique Farmland – Unique Farmland, consisting of lower quality soils, is used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. To qualify for this designation, land must have been used for crops at some time during the 4 years prior to the mapping date.

Unoccupied habitat – Habitat that exhibits all the constituent elements necessary for a species, but where surveys have determined that the species is not currently present. The lack of individuals or populations in the habitat is assumed to be the result of reduced numbers or distribution of the species such that some habitat areas are unused. It is expected that these areas would be used if species numbers or distribution were greater. See also definition of *suitable habitat*.

Urban-wildland interface – The narrow zone (<100 feet) between dense urban development and natural land cover in which structures can be built to minimize the damaging indirect effects on covered species or habitats of activities within urban areas.

Vegetation community – A natural or artificial terrestrial community defined by the dominant vegetation and the vegetation structure. This term is used synonymously with the regulatory term *natural community* under the Natural Community Conservation Planning Act of 2002.

Waters of the United States – A broad federal definition that describes U.S. Army Corps of Engineers jurisdiction over deep-water habitats and special aquatic sites, including wetlands, as follows:

- 1. The territorial seas, with respect to the discharge of fill material.
- 2. Coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including their adjacent wetlands.
- 3. Tributaries to navigable waters of the United States, including wetlands.
- 4. Interstate waters and their tributaries, including adjacent wetlands.

Wetland – A zone periodically or continuously submerged or having high soil moisture, which has aquatic and/or riparian vegetation components and contains soils suitable of supporting such vegetation.

Wildlife corridor – A wildlife or habitat corridor is a strip of land that aids in the movement of species between disconnected areas of their natural habitat.

Appendix B

Notices of Intent and Preparation, Scoping Summary, and Comment Letters



NCCP/HCP Scoping Period Summary of Public Feedback

Introduction

The Orange County Transportation Authority (OCTA), in coordination with the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG) and the California Department of Transportation (Caltrans), is preparing a Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan/Master Streambed Alteration Agreement (NCCP/HCP/MSAA) (the plan). In addition, a combined Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) will be prepared for the plan pursuant to the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

A scoping meeting was held on Wednesday, December 15, 2010 from 5:00-7:00 p.m. at OCTA offices (550 South Main Street, Orange, CA 92863). The scoping meeting was attended by approximately 11 people. Also in attendance were staff members representing USFWS and CDFG.

Written comments were received by OCTA during the scoping period (December 1, 2010 to January 13, 2011). This summary report reflects the comments received during the scoping period.

NOP/NOI

OCTA released a Notice of Preparation (NOP) on December 3, 2010, initiating the scoping period for the EIR/EIS. A Notice of Intent (NOI) to prepare an EIS was noticed in the federal register on December 1, 2010.

Scoping Meeting Summary

At the scoping meeting, team members were present to provide information to the public on the details of the project, including a background on the environmental mitigation program, program benefits to the county, components of an NCCP/HCP, covered species, location of the plan area and the program's next steps. The meeting also informed the public about the details of the environmental process and served as an opportunity for the community to provide feedback to help guide the development of the project.

The objectives of the meeting were to:

- Communicate details of the project and environmental process to stakeholders
- Gather new information on issue areas and/or impacts from stakeholders as part of the environmental process
- Listen and gather stakeholder feedback

Meeting Noticing

To notify the public, a scoping meeting notice was mailed to more than 1,100 stakeholders with an interest in the project. The meeting was also listed on the OCTA web site. In addition,

scoping meeting notices were published in three Orange County newspapers: the Excelsior (publish date: December 10, 2010), the Ngoui-Viet Daily News (publish date: December 9, 2010) and the Orange County Register (publish date: December 7, 2010).

Meeting Format

The meeting format was an open house approach, with information boards placed at intervals around the room. Project team members were able to answer questions and speak directly with attendees. Although there was not a formal presentation, an informational looping PowerPoint was projected in the room for attendees to gain additional information about the project. A comment station area was provided for stakeholders to provide their feedback in writing. The open house allowed team members to get into more detailed discussions with participants regarding the project that information boards and a PowerPoint may not always convey.

Information Materials

At the sign-in table, attendees were welcomed and provided with a welcome sheet outlining the purpose and format of the meeting and how to submit comments. Stakeholders were encouraged to review the PowerPoint and boards for information about the project and to ask questions and provide feedback to staff members. Copies of the PowerPoint and boards were also posted on the project's web site for stakeholders to review if completing their comments away from the meeting.

Meeting Summary

Eleven community members attended the open house. Attendees represented a variety of community groups, including:

- Residents
- Environmental groups
- Orange County Planning Department

Attendees were encouraged to provide feedback at the meeting. Comments provided directly to project staff during the Open House portion of the meeting were reported to meeting organizers verbally. Attendees could also submit feedback following the meetings by filling out a comment sheet and mailing, e-mailing or faxing the comment to OCTA.

Submitted Scoping Comments

The following summarizes comments received at the scoping meetings and written comments received from regulatory agencies and the public during the scoping comment period. A total of three comment cards were submitted for the project at the scoping meeting from Carl Reinhart, Jennifer Choi, and Ed Amador. In addition, a total of six letters were received during the public scoping period from Rancho Mission Viejo, Puente Hills Landfill Native Habitat Preservation Authority, Native American Heritage Commission, CDFG, Caltrans, and the Environmental Coalition. Comments in their entirety are attached. This summary is not intended as a verbatim or comprehensive list of issues raised in comment, but rather is intended to summarize concerns related to implementation of the NCCP/HCP. Comments in the letters regarding potential impacts of proposed freeway improvements are not summarized below considering the EIR/EIS will address only mitigation for the loss of habitat associated with the proposed freeway improvement projects and impacts of the proposed NCCP/HCP. Specific impacts of the freeway projects on the environment will be addressed in separate CEQA/NEPA documentation that address future more detailed improvement designs. For the detailed concerns, the reader is directed to the comments themselves.

Biological Resources

- Wildlife and endangered species protection must be a priority
- Integrate the January 2011 Department of Interior USFWS Final Critical Habitat for the Arroyo Toad Unit #8 Santa Ana River Basin (Ed Amador)
- Continued acquisition and management of lands within the Puente-Chino Hills Wildlife Corridor would further connectivity between this area and Orange County extending to the Santa Ana Mountains (Puente Hills Landfill)
- Incorporate measures into NCCP/HCP that promote wildlife movement and habitat connectivity within Puente Chino Hills Wildlife Corridor(Puente Hills Landfill)
- DEIR should include complete assessment of sensitive biological resources and discussion of direct, indirect and cumulative impacts to biological resources within and adjacent to the project area (CDFG)
- Development within wetlands is discouraged (CDFG)
- Conservation easements should be placed on all acquisition and restoration properties to ensure proper protection (Environmental Coalition)
- NCCP/HCP should clearly define compatible uses (Environmental Coalition)

Cultural Resources

- Native American Cultural Resources were identified in within Project vicinity as a part of the NAHC Sacred Land File (NAHC)
- Avoidance of cultural resources in accordance with CEQA should be considered (NAHC)
- Consultation with Native American tribes regarding project should be conducted in compliance with federal requirements (NAHC)

Funding

 There is potential lack of funding for execution and maintenance of the project (Jennifer Choi)

Land Use

 Certain areas identified for conservation in the Conservation Assessment completed by Conservation Biology Institute are identified as Planning Areas for future development by Rancho Mission Viejo (Rancho Mission Viejo)

Water Quality

• Runoff from NCCP/HCP must conform with Regional Water Quality Control Board discharge requirements (Caltrans)

CEQA Process

- Each project proposed associated with the NCCP/HCP must have subsequent environmental documentation and associated technical studies must adhere to Caltrans protocol (Caltrans)
- The DEIR should cover mitigation for losses of habitat associated with freeway project, long-term management of the preserve areas and funding mechanisms (CDFG)

Appendix A- NOP/NOI

Appendix B- Scoping Meeting Notice

Appendix C- Scoping Ads in Excelsior, Nguoi Viet and Orange County Register

Appendix D- Scoping Meeting Powerpoint
Appendix E- Scoping Meeting Boards

Appendix F- Comment Letters

Appendix A: NOP/NOI

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613 SCH# For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814 Project Title: Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan Contact Person: Dan Phu Lead Agency: Orange County Transportation Authority Phone: 714-560-5907 Mailing Address: 550 South Main Street County: Orange City; Orange Zip: 92863-1584 Project Location: County: Orange City/Nearest Community: Zip Code: Cross Streets: County-Wide Planning Document Longitude/Latitude (degrees, minutes and seconds): _____° ___' N / ___ " W Total Acres: 510,720 Section: _____ Twp.: ____ Range: _____ Base: _____ Assessor's Parcel No.: State Hwy #: Waterways: Within 2 Miles: Schools: Railways: ____ Document Type: Other: ☐ Joint Document ☐ Draft EIR NEPA: □ NOI CEQA: I NOP ☐ Early Cons ☐ Neg Dec ☐ EA Final Document Supplement/Subsequent EIR ☐ Draft EIS Other: (Prior SCH No.) FONSI Mit Neg Dec Local Action Type: Rezone ☐ Annexation General Plan Update Specific Plan General Plan Amendment Master Plan Prezone ☐ Redevelopment Use Permit ☐ Planned Unit Development ☐ Coastal Permit General Plan Element ☐ Land Division (Subdivision, etc.) ☐ Other: NCCP/HCP ☐ Site Plan Community Plan Development Type: Residential: Units _____ Acres__ Sq.ft. ____ Acres ___ Employees_ Transportation: Type Office: Commercial:Sq.ft. Acres Employees ☐ Mining: Mineral Industrial: Sq.ft. Acres Employees Power: Type _____ $\overline{\text{MGD}}$ ■ Waste Treatment: Type Educational: ☐ Hazardous Waste:Type Recreational: Other: land conservation and restoration Water Facilities: Type ___ Project Issues Discussed in Document: ☐ Fiscal Recreation/Parks ✓ Vegetation Aesthetic/Visual ☐ Schools/Universities ✓ Water Quality Flood Plain/Flooding ✓ Agricultural Land Water Supply/Groundwater Forest Land/Fire Hazard ☐ Septic Systems ✓ Air Quality Sewer Capacity ✓ Wetland/Riparian ✓ Archeological/Historical ✓ Geologic/Seismic ✓ Minerals Soil Erosion/Compaction/Grading Growth Inducement ✓ Biological Resources ✓ Land Use ✓ Coastal Zone ✓ Noise Solid Waste Population/Housing Balance Toxic/Hazardous ✓ Cumulative Effects ✓ Drainage/Absorption Public Services/Facilities Traffic/Circulation Other: Economic/Jobs Present Land Use/Zoning/General Plan Designation: Project Description: (please use a separate page if necessary) The OCTA intends to prepare an NCCP/HCP (the Plan) that will provide for habitat conservation/mitigation strategy to off-set impacts of proposed M2 freeway improvement projects. The purpose of the EIR is to analyze the impacts of the proposed issuance of a CESA incidental take permit based on implementation of the Plan. The Plan will identify the Covered Activities carried out by OCTA that may result in take of Covered Species within the Plan area. Anticipated Covered Activities currently

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

consist of thirteen proposed M2 freeway improvement projects (see attachment).

Reviewing Agencies Checklist		
Lead Agencies may recommend State Clearinghouse dis If you have already sent your document to the agency pl		
Air Resources Board	Office of Emergency Services	
Boating & Waterways, Department of	X Office of Historic Preservation	
California Highway Patrol	Office of Public School Construction	
S Caltrans District #12	X Parks & Recreation, Department of	
Caltrans Division of Aeronautics	Pesticide Regulation, Department of	
X Caltrans Planning	Public Utilities Commission	
Central Valley Flood Protection Board	X Regional WQCB #8 & 9	
Coachella Valley Mtns. Conservancy	X Resources Agency	
Coastal Commission	S.F. Bay Conservation & Development Comm.	
Colorado River Board	San Gabriel & Lower L.A. Rivers & Mtns. Conservancy	
Conservation, Department of	San Joaquin River Conservancy	
Corrections, Department of	Santa Monica Mtns. Conservancy	
Delta Protection Commission	State Lands Commission	
Education, Department of	SWRCB: Clean Water Grants	
Energy Commission	SWRCB: Water Quality	
S Fish & Game Region #5	SWRCB: Water Rights	
Food & Agriculture, Department of	Tahoe Regional Planning Agency	
Forestry and Fire Protection, Department of	Toxic Substances Control, Department of	
General Services, Department of	Water Resources, Department of	
Health Services, Department of		
Housing & Community Development	Other:	
Integrated Waste Management Board	Other:	
X Native American Heritage Commission	AND THE PROPERTY OF THE PROPER	
Local Public Review Period (to be filled in by lead ag		
Starting Date December 3, 2010	Ending Date January 10, 2011	
Lead Agency (Complete if applicable):		
Consulting Firm: ICF International	Applicant: Dan Phu, OCTA	
Address: 9775 Businesspark Avenue Suite 200	Address: 550 South Main Street/P.O. Box 14184	
City/State/Zip: San Diego, CA 92131 City/State/Zip: Orange, CA 92863-1584		
Contact: Jeff Thomas Phone: 714-560-5907		
Phone: 858-578-8964		
Signature of Lead Agency Representative:	Date: 12/2/2010	

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

SCH	NO) .



NOTICE OF PREPARATION (NOP)

TO: The State Clearinghouse 1400 Tenth Street Sacramento, CA 95814 FROM: Orange County Transportation Authority 550 South Main Street Orange, California 92863-1584

SUBJECT: Notice of Preparation to Prepare an Environmental Impact

Report (Reference: California Code of Regulations, Title 14, [CEQA Guidelines]

Sections 15082 (a). 15103, 15375)

Date: December 3, 2010

To: Interested Agencies/Persons

This NOP is to inform you that the Orange County Transportation Authority (OCTA) will act as the Lead Agency and will prepare an Environmental Impact Report (EIR) for the project identified below. The California Department of Fish and Game (CDFG) is a responsible agency and participating agency pursuant to the California Environmental Quality Act (CEQA) and is also an approving agency for the Natural Community Conservation Plan/Master Streambed Alteration Agreement (NCCP/MSAA). Your participation as a responsible agency is requested in the preparation and review of this document.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. We also need to know the views and concerns of interested organizations and persons in order to properly analyze the potential environmental impacts of the proposed project.

The OCTA will be responsible for the scope and content of the document for CEQA purposes, and CDFG will be responsible for the approval of the NCCP/MSAA. The EIR will consider the proposed project (issuance of California Endangered Species Act [CESA] permit) and a reasonable range of alternatives. A detailed description of the proposed project and alternatives will be included in the EIR. It is anticipated that several alternatives will be developed, which may vary by the level of conservation, impacts caused by the proposed activities, covered species, or a combination of these factors. The EIR will also identify potentially significant impacts on the environmental issues identified below. For all potentially significant impacts, the EIR will identify mitigation measures, where feasible, to reduce these impacts to a level below significance.

Project Title:	Measure M2 (M2) Natural Community Conservation Plan/Habitat Conservation				
_	Plan/Master Streambed Alteration Agreement (NCCP/HCP/MSAA)				
Project	The Plan Area encompasses all 798 square miles (approximately 510,720 acres) of				
Location/Plan	Orange County (County), with consideration of adjacent areas outside of the County				
area:	that are appropriate for preserve design purposes, such as habitat connectivity				
	(Figure 1).				
Project	The OCTA intends to prepare an NCCP/HCP/MSAA (the Plan) that will provide for				
Description:	habitat conservation/mitigation strategy to off-set impacts of proposed M2 freeway				
	improvement projects. The purpose of the EIR is to analyze the impacts of the				
	proposed issuance of a CESA incidental take permit based on implementation of the				
	Plan. The Plan will identify the Covered Activities carried out by OCTA that may				

result in take of Covered Species within the Plan area. Anticipated Covered Activities currently consist of thirteen proposed M2 freeway improvement projects (Figure 1).

The Plan area contains valuable biological resources, including native species of fish and wildlife and their habitats. Among the species within the Planning Area are certain species that are protected, or may be protected in the future, under CESA or the Federal Endangered Species Act (FESA). OCTA intends for the Plan to meet the requirements of state and federal fish and wildlife protection laws that apply to Covered Activities and to provide a basis for state and federal authorizations for the take of Covered Species that may be caused by the Covered Activities.

OCTA intends for the Plan to be sufficient to support the issuance of take authorizations for Covered Activities under the NCCP Act and FESA. OCTA acknowledges that the Plan may be used to address other state and federal statutes.

NCCP Process

Under state law, take of species listed pursuant to CESA may be authorized under Fish and Game Code section 2080.1 or section 2081, or section 2835 of the NCCP Act. The NCCP Act provides that after the approval of an NCCP, CDFG may permit the taking of any identified species, listed or non-listed, whose conservation and management is provided for in the NCCP. Take of listed species may also be authorized under CESA. The Plan would allow for the issuance of take authorizations by CDFG for Covered Activities under the NCCP Act by providing a habitat conservation strategy for the impacts associated with proposed freeway projects. The EIR will address potential environmental effects of the CDFG take authorizations associated with the Covered Activities.

Covered Species:

Currently, twenty-two (22) species are proposed for coverage under the Plan. Table 1 lists those species and their current status. Species may be added or deleted during the course of the Plan development based on further analysis, new information, agency consultation, and public comment.

Mitigation:

Under the Plan, the effects of covered activities are expected to be minimized and mitigated through participation in a conservation strategy, and conditions on covered activities, which will be fully described in the Plan. The focus of a conservation strategy is to provide long-term protection of covered species by protecting biological communities in the Plan area. Because the Plan is also a NCCP, it will contribute to the recovery of the listed covered species and to the conservation of non-listed species to try to prevent their listing in the future.

The conservation strategy stems from the biological goals and objectives developed for the Plan. A series of conservation actions are under consideration by the OCTA and the State and Federal Wildlife Agencies (CDFG and United States Fish and Wildlife Service) that will accomplish the following goals and objectives:

- Provide for the conservation and management of Covered Species within the Planning Area;
- Preserve, restore and enhance aquatic, riparian and terrestrial natural communities and ecosystems that support Covered Species within the Planning Area:
- Provide a means to implement Covered Activities in a manner that complies with applicable state and federal fish and wildlife protection laws, including CESA and the FESA;

- Provide a basis for permits necessary to lawfully take Covered Species;
- Provide a comprehensive means to coordinate and standardize mitigation and compensation requirements for Covered Activities within the Planning Area;
- Provide a habitat accounting process that will document net environmental benefit from regional, programmatic mitigation in exchange for net benefit in the delivery of transportation improvements through streamlined and timely approvals and permitting;
- Provide a less costly, more efficient project review process that results in greater habitat based conservation values than project-by-project, species-by-species review; and
- Provide clear expectations and certain regulatory assurances regarding Covered Activities occurring within the Planning Area.

Potential Environmental Effects:

The EIR will examine potential environmental issues of concern arising from project implementation. Potential impacts of the project may include, but are not limited to, impacts on or related to:

- Agricultural Resources
- Air Quality & Climate Change
- Biological Resources
- Cultural Resources
- · Geology, Soils, & Mineral Resources
- Hydrology & Water Quality
- Land Use Planning & Consistency
- Noise
- Population & Housing
- Public Services & Utilities
- Recreation & Open Space
- Transportation

These subject areas, in addition to any other subject areas identified by OCTA and CDFG through the scoping process as areas of potentially significant impacts, will be discussed in the EIR.

As specified by the State CEQA Guidelines, the NOP will be circulated for a 30-day review period. For the purpose of this NOP, an additional seven days will be given for public review. Written comments from interested parties regarding the scope of the EIR are invited to ensure that the full range of environmental issues related to the proposed project are identified and evaluated. All comments received, including names and addresses, will become part of the official administrative record and will be made available to the public. Information, written comments, or questions related to the preparation of the EIR should be sent at the earliest possible date, but received no later than **5 p.m. on January 10, 2011**.

Please send your response to:

Dan Phu, Section Manager Orange County Transportation Authority 550 South Main Street P.O. Box 14184 Orange, CA 92863-1584

or

via email to OCTA_NCCP_HCP_comments@octa.net

A public meeting is scheduled to provide an overview of the proposed project and obtain feedback. The public scoping meeting will be held on:

Wednesday, December 15, 2010 5:00 p.m. – 7:00 p.m.

The public meeting will be held at:

Orange County Transportation Authority 550 South Main Street Conference Room 103/104 Orange, California 92863-1584

If you have any questions, please contact Mr. Dan Phu at (714) 560-5907. We would appreciate the name, telephone number, and e-mail address for the person to contact if we have any questions regarding your comment.

MEASURE M2 FREEWAY PROJECTS

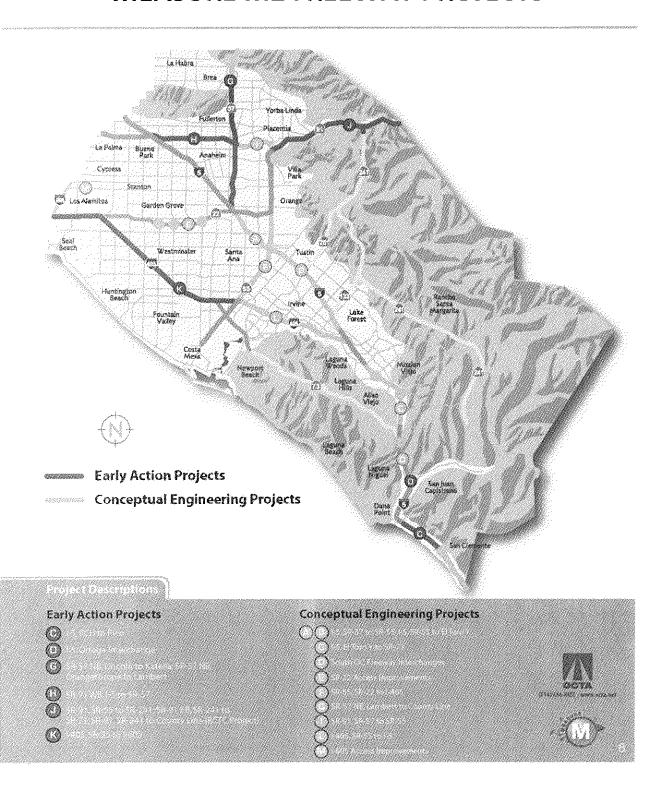


Table 1: Proposed Covered Species in the Measure M2 NCCP/HCP/MSAA

Amphibians & Reptiles					
Common Name Latin Name					
Southern Pacific Pond Turtle Clemmys marmorata		SSC			
San Diego Coast Horned Lizard	Phrynosoma coronatum blainvillii	SSC			
Orange Throated Whiptail Lizard	Cnemidophorus hyperythrus beldingi	SSC			
Red Diamond Rattlesnake	Crotalus exsul	SCC			
	Birds				
Common Name	<u>Latin Name</u>	<u>Coding</u>			
Coastal Cactus Wren	Campylorhynchus brunneicapillus cousei	SSC			
Coastal California Gnatcatcher	Polioptila californica californica	FT/SSC			
Coastal Rufous-Crowned Sparrow	Aimophila ruficeps	SSC			
Southwestern Willow Flycatcher	Empidonax traillii extimus	FE/SE			
Least Bell's Vireo	Vireo bellii pusillus	FE/SE			
	Fish				
Common Name	<u>Latin Name</u>	<u>Coding</u>			
Arroyo Chub	Gila orcuttii	SSC			
Santa Ana Sucker	Catostomus santaanae	FT			
	Mammals				
Common Name	<u>Latin Name</u>	<u>Coding</u>			
Bobcat	Lynx rufus	FGC			
Moutain Lion	Felis concolor	FGC			
Pallid bat	Antrozous pallidus	SSC			
Small-footed myotis	Myotis cilioabrum	SSC			
Long-eared myotis	Myotis evotis	SSC			
Yuma myotis	Myotis ymanensis	SSC			
Plants					
Common Name	<u>Latin Name</u>	Coding			
Braunton's Milk-Vetch	Astragalus brauntonii	FE			
Output Transfer Type		CNPS 4.2			
		CNPS 1B.2			
1:1411)		CNPS 1B			
Southern Tarplant	Southern Tarplant Centromadia parryi ssp. australis CNPS 1B.1				

Coding: Federal (F), State(S), Endangered (E), Threatened (T), Candidate (C), California Native Plant Society Inventory (CNPS), Species of Special Concern (SSC), California Fully Protected Species (FP), Fish and Game Code (FGC)

[Federal Register: December 1, 2010 (Volume 75, Number 230)]
[Notices]
[Page 74740-74741]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr01de10-86]

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS-R8-ES-2010-N224; 80220-1112-0000-F2]

Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan/Master Streambed Alteration Agreement, Orange County, CA

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to prepare an Environmental Impact Statement and conduct public scoping.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), intend to prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA), regarding an expected application from the Orange County Transportation Authority (OCTA), for an incidental take permit (permit) authorizing incidental take of federally threatened and endangered wildlife species under the Endangered Species Act of 1973, as amended (ESA). We and OCTA intend to gather information necessary to prepare a joint Environmental Impact Report (EIR)/EIS for the Measure M2 (M2) Natural Community Conservation Plan/Habitat Conservation Plan/Master Streambed Alteration Agreement (NCCP/HCP/MSAA). We are furnishing this notice to announce the initiation of a public scoping period, during which we invite other agencies, Tribes, and the public to submit written comments providing suggestions and information on the scope of issues and alternatives to be addressed in the EIS.

DATES: Please send written comments on or before January 3, 2011. We will hold a public scoping meeting on Wednesday, December 15, 2010, from 5 p.m. to 7 p.m.

ADDRESSES: Comments: Please send written comments to Mr. James A. Bartel, Field Supervisor, Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service, 6010 Hidden Valley Road, Carlsbad, CA 92011. Alternatively, you may submit comments by fax to (707) 822-8411. Comments we receive will be available for public inspection, by appointment, during normal business hours (Monday through Friday, 8 a.m. to 4:30 p.m.) at the above address.

Meeting: The public scoping meeting will be held at the Orange County Transportation Authority, 550 South Main Street, Conference Room 103/104, Orange, CA 92863.

FOR FURTHER INFORMATION CONTACT: Jonathan Snyder, Division Chief, Carlsbad Fish and Wildlife Office, at the address above; by telephone

at (760) 431-9440 extension 307; or by e-mail at <u>jonathan d</u> snyder@fws.gov.

SUPPLEMENTARY INFORMATION: OCTA is preparing a habitat conservation plan (HCP) and an application for a permit related to freeway improvements in Orange County, California. OCTA is proposing to cover 22 species in the HCP. The purpose of the HCP is to provide protection to natural communities and sensitive species within the jurisdictional boundaries of Orange County, and to mitigation for the impacts on threatened and endangered and other sensitive species for 13 planned freeway improvement projects over 30 years.

Background

Section 9 of the ESA (16 U.S.C. 1531 et seq.) and Federal regulations prohibit the ``take'' of a fish or wildlife species listed as endangered or threatened. Under the ESA, the following activities are defined as take: To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect listed wildlife species, or attempt to engage in such conduct (16 U.S.C. 1532). However, under section 10(a)(1)(B) of the ESA, permits may be issued to authorize ``incidental take'' of listed wildlife species. Incidental take is defined by the ESA as take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Regulations governing permits for endangered and threatened species are at 50 CFR 17.22 and 50 CFR 17.32, respectively.

Section 10 of the ESA specifies the requirements for the issuance of

[[Page 74741]]

incidental take permits to non-Federal entities. Any proposed take must be incidental to otherwise lawful activities and cannot appreciably reduce the likelihood of the survival and recovery of the species in the wild. The impacts of such take must also be minimized and mitigated to the maximum extent practicable. To obtain an incidental take permit, an applicant must prepare an HCP describing the impacts that will likely result from the proposed taking, the measures for minimizing and mitigating the impacts of the take, the funding available to implement such measures, alternatives to the taking, and the reason why such alternatives are not being implemented.

Take of listed plant species is not prohibited under the ESA, and authorization under an ESA section 10 permit is not required. Plant species are proposed to be included on the OCTA permit in recognition of the conservation benefits provided for them under the HCP. All species included on the permit (``Covered Species'') would receive assurances under the Service's ``No Surprises'' regulation (50 CFR 17.22(b)(5) and 17.32(b)(5)).)

The proposed HCP will serve as an application for the issuance of take authorizations by the Service to OCTA pursuant to section 10(a)(1)(B) of the ESA. The HCP will set forth a uniform and systematic conservation strategy that ensures that impacts to Covered Species and their habitats from activities covered by the HCP (``Covered Activities'') are minimized and mitigated to the maximum extent practicable. The plan area for the HCP includes all of Orange County (about 798 square miles, or 510,720 acres), and the permit may allow take of Covered Wildlife Species resulting from Covered Activities anywhere in the plan area.

The HCP will be prepared to conserve the Covered Species and their natural habitats within Orange County for future generations. The HCP

will address Covered Activities throughout Orange County that allow for freeway improvements while at the same time protecting the natural communities within the County.

Covered Activities in the HCP will consist of 13 freeway improvement projects in Orange County, including improvements to portions of I-5, I-405, I-605, SR-22, SR-55, SR-57, and SR-91.

Potential impacts to Covered Species will be addressed through a mitigation program that includes conservation and restoration of habitats for Covered Species in Orange County. Five percent of the Measure M2 revenue collected for the freeway projects will be allocated to the mitigation program. Habitat conservation and restoration projects appropriate to offset project-related impacts will be selected by OCTA in close coordination with the Service, California Department of Fish and Game, and California Department of Transportation.

Currently, OCTA is proposing to cover 17 (4 listed and 13 unlisted) animal species and 5 plant species (1 listed and 4 unlisted) for 30 years, with the opportunity to renew the permit for an additional 30 years. Listed species proposed to be included are: (1) The endangered southwestern willow flycatcher (Empidonax trailii extimus), (2) the threatened coastal California gnatcatcher (Polioptila californica californica), (3) the endangered least Bell's vireo (Vireo bellii pusillus), (4) the threatened Santa Ana sucker (Catostomus santaanae), and (5) the endangered Braunton's milk-vetch (Astragulus brauntonii).

The unlisted species proposed to be included are: (1) Coulter's matilija poppy (Romneya coulteri), (2) intermediate mariposa lily (Calochortus weedii var. intermedius), (3) many stemmed dudleya (Dudleya multicaulis), (4) southern tarplant (Centromadia parryi ssp. australis), (5) southern pacific pond turtle (Clemmys marmorata), (6) San Diego horned lizard (Phrynosoma coronatum blainvillei), (7) orange throated whiptail lizard (Cnemidophorus hyperythrus beldingi), (8) red diamond rattlesnake (Crotalus exsul), (9) coastal cactus wren (Campylorhynchus brunneicapillus cousei), (10) coastal rufous-crowned sparrow (Aimophila ruficeps), (11) arroyo chub (Gila orcuttii), (12) bobcat (Lynx rufus), (13) mountain lion (Felis concolor), (14) pallid bat (Antrozous pallidus), (15) small-footed myotis (Myotis cilioabrum), (16) long-eared myotis (Myotis evotis), and (17) Yuma myotis (Myotis yumanensis).

Environmental Impact Statement

Before deciding whether to issue permit, we will prepare a draft EIS to analyze the environmental impacts associated with the issuance of the requested permit and the implementation of the HCP by OCTA. The EIS will be prepared in compliance with NEPA under the supervision of the Service, which will be responsible for the scope and content of the document. The EIS will consider the proposed action, the issuance of a section 10(a)(1)(B) permit under the ESA, No Action (no permit), and a reasonable range of alternatives. A detailed description of the impacts of the proposed action and each alternative will be included in the EIS.

The proposed action and alternatives will be evaluated against the No Action alternative, which assumes that no permit will be issued. Several alternatives will be considered and analyzed, representing varying levels of conservation and impacts. The alternatives to be considered for analysis in the EIS may include: Variations in the scope of covered activities; variations in the location, amount, and type of conservation; variations in permit duration; or a combination of these elements. The EIS will also identify potentially significant direct, indirect, and cumulative impacts on biological resources, land use, air quality, water quality, water resources, socioeconomics, and other

environmental issues that could occur with the implementation of the proposed action and alternatives. For all potentially significant impacts, the EIS will identify avoidance, minimization, and mitigation measures to reduce these impacts, where feasible, to a level below significance.

Public Comments

Please direct any comments to the Service contact listed above in the ADDRESSES section, and any questions to the Service contact listed in the FOR FURTHER INFORMATION CONTACT section. All comments and materials we receive, including names and addresses, will become part of the administrative record and may be released to the public. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. This notice is provided under section 10(a) of the ESA and Service regulations for implementing NEPA (40 CFR 1506.6).

Dated: November 24, 2010.

Margaret Kolar,
Acting Deputy Regional Director, Pacific Southwest Region, Sacramento,
California.

[FR Doc. 2010-30202 Filed 11-30-10; 8:45 am]
BILLING CODE 4310-55-P

Appendix B: Scoping Meeting Notice

Appendix C: Scoping Ads in Excelsior, Nguoi Viet and Orange County Register

EXPRESSO



Jaby Yergara nos habia de su nueva vida como mamá v de su carrera Pág. 7



Vea las fotos de la nieve y de 15 nieve y de la entrega



Niega 'Chicharito' sentir presión en

ocExcelsion com

El periódico latino del condado de Orange

Semana del 10 el 16 de diciembre de 2010





NOTIFICACIÓN SOBRE DETERMINACIÓN PÚBLICA DE ALCANCE

HCCP/NCP/MSAA Measure M2: abarca a todo el Condado de Orange

La Autoridad de Transporte del Condado de Orange (OCTA), junto con el Servicio de Pesca y Vida Silvestre de Estados Unidos (USFWS), el Departamento de Pesca y Caza de California (CDFG), y el Departamento de Transporte de California (Caltrana), pretenden preparar el Plan de Conservación de las Comunidades Naturales/Plan de Conservación del Habitat/Acuerdo Marco de Alteración de Lechos Fluviales (NCCP/HCP/MSAA) Measure M2 (M2). Este Plan proporcionará una estrategia de mitigación/conservación del Habitat para compensar el impacto de los proyectos M2 de mejoramiento de autopistas a cambio de un permiso simplificado para estos proyectos. Este Proyecto incluye la emissión de un permiso de toma incidental en virtud de la Ley Federal de Especies en Peligro de Extinción (FESA), un permiso de toma incidental en virtud de la Ley de California de Especies en Peligro de Extinción (ESA), un permiso de toma incidental en virtud de la Ley de California de Especies en Peligro de Extinción (ESA), un permiso de toma incidental en virtud de la Ley de California de Especies en Peligro de Extinción (CESA) en función de la implementación del Plan y el otorgamiento de un Acuerdo Marco de Alteración de Lechos Fluviales (MSAA). El Plan identificará las Actividades Cubiertas que realiza OCTA que pueden implicar una toma de Especies Cubiertas dentro del área del Plan, Las Actividades Cubiertas que se prevén actualmente constan de trece proyectos M2 de mejoramiento de autopistas.

Estudio de los erectos ambientales: CCTA es la agencia dirigente de la Ley de Calidad Ambiental de California (CEQA), y USFWS es la agencia dirigente de la Ley Nacional de Políticas Ambientales (NEPA). Asimismo, CDFG es una agencia responsable en virtud de CEQA Para el Plan, se prepararà una combinación de Informe del Impacto Ambiental (ER) y Declaración del Impacto Ambiental (EIS).

Acérquese a la reunión de determinación pública de alcance que se realizará: Miércoles, 15 de diciembre de 2010, de 5:00 a 7:00 p.m. Autoridad de Transporte del Condado de Orange, Salas de conferencia 103/104 550 South Main Street, Orange, CA 92863-1584

- El objetivo de la determinación pública de alcance es el siguiente:

 Informar al público y a las agencias gubernamentales sobre NCCP/HCP/MSAA M2 propuestos en el Condado de Orange.
 Brindar una oportunidad para que el público pueda realizar comentarios sobre el proyecto de manera oficial.

Alternativas: durante la preparación del analísis de impacto para EIR/EIS, se definirá una variedad razonable de Alternativas al Proyecto. Dichas alternativas pueden incluir adiciones o substracciones a la cantidad de especies cubiertas, estrategias afternativas adiciones o substracciones a la cantidad de especies contentas, estrategias arentantes de conservación para especies específicas o variaciones en el método de establicer prioridades para la selección de proyectos de adquisición o restauración de la reserva. De acuerdo con las Directrices estatales de CEOA, se identificarán alternativas que logren los objetivos básicos del Proyecto, pero que eviten o afectuen de maneta considerable los efectos adversos significativos identificados del Proyecto. El análisis de las alternativas de la capacidad de la civilización de la capacidad de la civilización de la capacidad de la civilización de las alternativas de la capacidad de la civilización de la capacidad de la civilización de la capacidad de civilización de civil fomenta la toma de decisiones informadas y la participación del público.

Comentarios: agradecemos su opinión sobre este proyecto. Envienos sus comentarios sobre las alternativas que se analizarán o sobre los posibles efectos sociales, económicos o ambientales que surjan del proyecto. Envie sus comentarios, preguntas e información de contacto antes de las 5:00 p.m. el 10 de enero de 2011 a:

Dan Phu, Section Manager Orange County Transportation Authority Attn: M2 NCCP/HCP/M5AA 550 South Main Street P.O. Box 14184 Orange, CA 92863-1584 Tel: 714.560.5907 Además, puede enviar sus comentarios por correo electrónico a: octa_nccp_hcp_comments@octa.net

Para obtener más información sobre el Proyecto de Autopistas y Área del Plan Measuro M2, y para obtener copias de NOP y NOI, visite, www.cota.net/M2EnvironmentalFreeway.aspx

Văn Khố Đông Nam Átai đại học UC Irvine được xem là một trong những cơ quan văn hóa nổi tiếng toàn quốc, lưu trữ tài liệu về kinh nghiệm của người tị nạn và di dân từ Cambodia, Lào và Việt Nam tại Hoa Kỳ.

THỨ NĂM - SỐ 9133 - 9 tháng 12, 2010 (4 tháng M. Một năm Canh Dần)

THURSDAY, DECEMBER 9, 2010 - NGƯỜI VIỆT B1

THÔNG BÁO CÔNG CỘNG VỀ ĐÁNH GIÁ TÁC ĐỘNG

Biện pháp M2 HCCP/NCP/MSAA: Bao gồm toàn Quân Cam

Cơ quan Vận tải Quân Cam (Orange County Transportation Authority, hay OCTA), phối hợp với Cơ quan Động vật Biển và Động vật Hoang đã Hoa Kỳ (United States Fish and Wildlife Service, bay USFWS), Cuc quan ly Động vật Biển và Thú săn California (California Department of Fish and Game, CDFG) và Cuc Van tải California (California Department of Transportation, hay Caltrans), chủ xướng Biện pháp M2 (M2) Thỏa thuận chính về Biển đổi Lòng sông/Kế hoạch Bảo tổn Sinh cảnh/Kế hoạch Bảo tổn Cộng đông Thiên nhiên (Natural Community Conservation Plan/Habitat Conservation Plan/Master Streambed Alteration Agreement, hay NCCP/HCP/MSAA) (Kế hoạch). Kế hoạch này sẽ đề xuất chiến lược giảm thiểu tác động/bảo tồn sinh cảnh với mục đích điều chính bù lại tác động của các dự án cải thiện xa lộ M2 đã được để nghị để đổi lấy việc cấp giấy phép đầu tư mở rộng đã y chuyển cho các dự án đó. Kể hoạch này bao gồm việc cấp giấy phép lấy thứ yếu ngẫu nhiên theo quy định của Đạo luật liên bang về các loài có nguy cơ diệt chứng (Federal Endangered Species Act, hay FESA), cấp giấy phép lấy thứ yếu ngẫu nhiên theo quy định của Đạo luật California vê các loài có nguy cơ diệt chủng (California Endangered Species Act, CESA) căn cử theo việc thực hiện Kế hoạch, và cung cấp Thỏa thuận chính về Biến đổi Lòng sông (Master Streambed Alteration Agreement, hay MSAA). Kế hoạch sẽ nhận dạng các Hoạt động được yếm trợ do OCTA thực hiện mà hậu quả có thể là việc lấy các Loài được bảo tổn trong khu vực của Kế hoạch. Các hoạt động được yếm trợ đang dự trù trong hiện tại bao gồm 13 dự án cải thiện xa lộ M2 đã được để nghị.

Quy trình xem xét tác động lên mỗi trường: Cơ quan OCTA là Cơ quan chủ quản chấp hành Đạo luật Chất lượng Mỗi trưởng California (California Environmental Quality Act (CEQA) Lead Agency), và cơ quan USFWS là Cơ quan chủ quản chấp hành Đạo luật Chính sách Mỗi tưường Quốc gia (National Environmental Policy Act (NEPA) Lead Agency). Đồng thời, cục CDFG là cơ quan trách nhiệm nằm dưới quyền của CEQA. Bảo cáo về tác động trên mỗi trường (Environmental Impact Report, hay EIR), kết hợp với Tuyên bố về tác đồng trên mỗi trường (Environmental Impact Statement, hay EIS), sẽ được chuẩn bị sắn cho Kể hoạch.

Vui lòng tham gia buổi họp công công về đánh giá tác động vào ngày:

Thứ tư 15 tháng 12, 2010, 5 giờ đến 7 giờ tối

Cơ quan Vận tắi Quận Cam (Orange County Transportation Authority), Phòng họp 103/104 550 South Main Street, Orange, CA 92863-1584

Mục đích của Buổi họp công cộng về Đánh giá tác động là; Cung cấp cho công chúng và cơ quan chính quyền thông tin về M2 NCCP/HCP/MSAA được để nghị tại Quận Cam.

Tạo cơ hội cho công chúng chính thức góp ý vào dự án.

Các biện pháp thay thể: Một số biện pháp thay thể dự án hợp lý sẽ được xác định trong quá trình chuẩn bị báo cáo phân tích tác động để nộp cho EIR/EIS. Các biện pháp thay thế này có thể hao gồm việc thêm vào hoặc bớt đi con số loài vật được bảo tồn, các chiến lược bảo tồn thay thế đối với các loài đặc biệt, hoặc các biến đối trong cách ưu tiên hòa việc mua lại các khu vực bảo tồn hoặc trong cách chọn lọc dự án để khôi phục lại. Tuần theo các Hướng dẫn CEQA của tiểu bang, các biện pháp thay thể sẽ được xác định với mục đích là vẫn tôn trọng các mục tiêu căn bản của Dự án, nhưng không có hoặc giảm thiểu đảng kế mọi tác động bắt lợi nghiệm trọng của Dự án trên môi trường. Việc phân tích các biện pháp thay thể sẽ khuyển khích sự tham gia của công chúng và việc quyết định có hiểu biết thông suốt.

Nhận xét: Chúng tôi hoan nghênh mọi gốp ý của quý vị vào dự án này. Vưi lòng cung cấp mọi ý kiến liên quan đến các biện pháp thay thể sẽ được nghiên cứu hoặc các tác động có thể có trên môi trưởng, kinh tế, xã hội mà dự án này gây ra. Xin nôp mọi ý kiến, thắc mắc và thông tin liên lạc của quý vị, trễ nhất là vào 5 giờ chiếu ngày 10 tháng 1, 2010, đến:

Dan Phu, Quản tri viên Đơn vị Orange County Transportation Authority (Cơ quan Vân tải Quân Cam) Attn: M2 NCCP/HCP/MSAA 550 South Main Street PO. Box 14184 Orange, CA 92863-1584 Điện thoại: 714.560.5907

Ngoài ra, quý vị có thể gửi ý kiến đến: octa_nccp_hcp_comments@octa.net

Để có thêm thông tin về Biện pháp Dự án Xa lộ M2 và Khu vực Kế hoạch, cũng như để có các bản sao NOP và NOI, xin vào xem: www.ocia.net/M2EnvironmentalPreeway.aspx

AFFIDAVIT OF PUBLICATION

STATE OF CALIFORNIA,)) ss. County of Orange

I am a citizen of the United States and a resident of the County aforesaid; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of The Orange County Register, a newspaper of general circulation, published in the city of Santa Ana, County of Orange, and which newspaper has been adjudged to be a newspaper of general circulation by the Superior Court of the County of Orange, State of California, under the date of 1/18/52, Case No. A-21046, that the notice, of which the annexed is a true printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

December 7, 2010

"I certify (or declare) under the penalty of perjury under the laws of the State of California that the foregoing is true and correct":

Executed at Santa Ana, Orange County, California, on

Date: December 7, 2010

The Orange County Register 625 N. Grand Ave. Santa Ana, CA 92701 (714) 796-7000 ext. 2209

PROOF OF PUBLICATION

Proof of Publication of

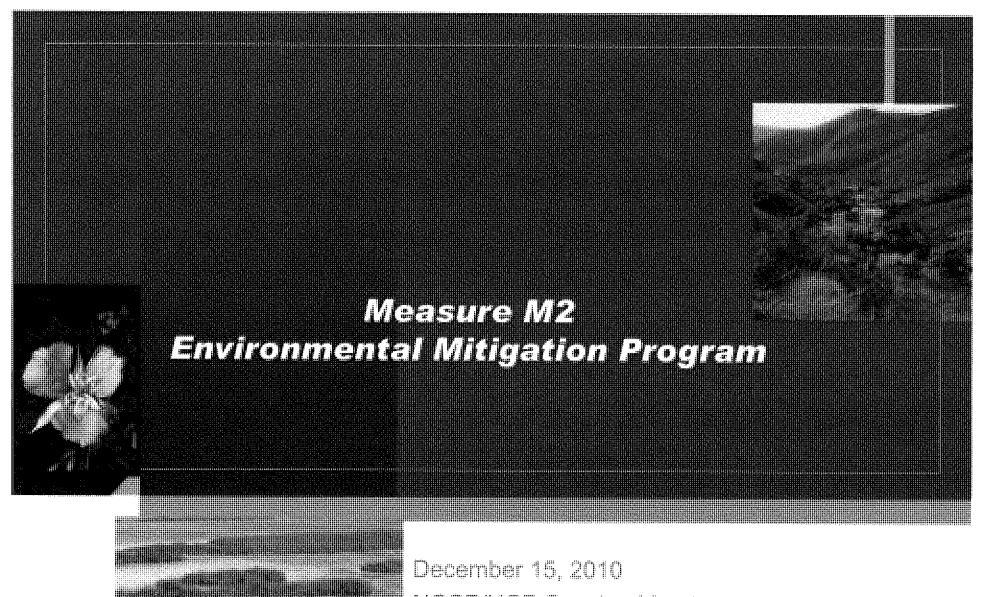
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Appendix D: Scoping Meeting Powerpoint



NCCP/HCP Scoping Meeting

Presentation Overview

- M2 Mitigation Program
 Overview and Structure
- 2. NCCP/HCP Process Overview
- Environmental Review (CEQA/NEPA)
- 4. How to Get Involved





What is the Environmental Mitigation Program?

A minimum of 5% of the M2 freeway program budget will be available, subject to a master agreement, to provide for comprehensive, rather than piecemeal, mitigation of the environmental impacts of freeway improvements.





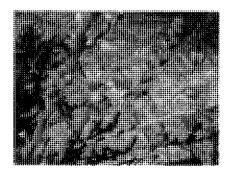


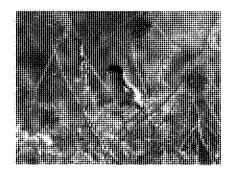
Benefits to Orange County

The Environmental Mitigation Program (Mitigation Program) will:

- Provide habitat protection, wildlife corridors and resource preservation
- Result in streamlined project approvals for the freeway program (endangered species, wetlands, waters, etc.)
- Expedite freeway projects through planning, design and construction phases
 - Considers their aesthetic, historic and environmental impacts on nearby properties and communities









Mitigation Program Process

Mitigation Land Needed for 13 M2 Freeway Projects



Acquire and/or Restore Land for Mitigation



Complete Conservation Plans (NCCP/HCP) to Address Long-term Operations and Management



Build 13 M2 Freeway Projects



M2 Mitigation Program Structure

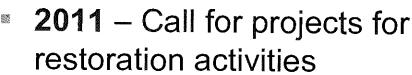
- Measure M2 (M2) approved November 2006
 - ½ cent transportation sales tax
 - Funding for innovative Mitigation Program
- Early Action Plan (EAP) approved August 2007
 - Developed to start implementing Mitigation Program
- Environmental Oversight Committee (EOC)
 - 12 members representing local jurisdictions,
 regional/state/federal agencies, and environmental organizations

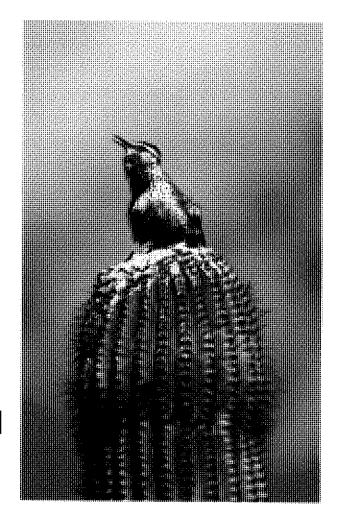




M2 Mitigation Program Activities

- 2008 Public outreach to land owners interested in offering property for potential acquisition and restoration
 - Reviewed and selected properties based on eligibility criteria
 - EAP enabled early acquisition and restoration activities
- 2009 Conservation priorities identified through a Conservation Assessment
- 2010/11 Call for projects for land acquisition

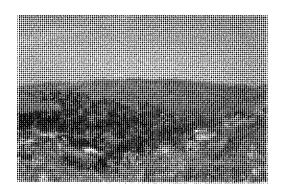






Conservation Assessment for Orange County

- Identified lands that would contribute most to conserving remaining natural resource values
- Conducted a science-based conservation assessment to describe and map selected conservation values across the County
- Provides a tool to assist decision-makers in prioritizing lands for acquisition for Mitigation Program









NCCPIHCP Process

- Mitigation Program uses the biological prioritization from the Conservation Assessment
 - Implemented through the development of a Natural Community Conservation Plan (NCCP) and a Habitat Conservation Plan (HCP)
- What is an NCCP/HCP?
 - A long-term regional species and natural community conservation program approved by state and federal wildlife regulatory agencies CDFG and USFWS*
 - If the NCCP/HCP is successfully and continually implemented, then CDFG and USFWS issue permits to allow limited impacts to protected species for construction projects



*CDFG: California Department of Fish and Game

USFWS: US Fish and Wildlife Service

NCCPIHCP Process (Continued)

An NCCP/HCP is a win-win for OCTA Project Implementation and Environmental Conservation

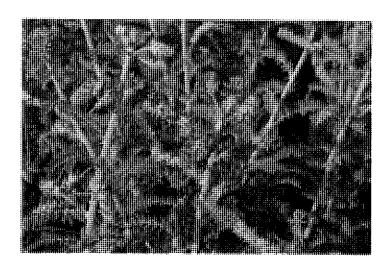


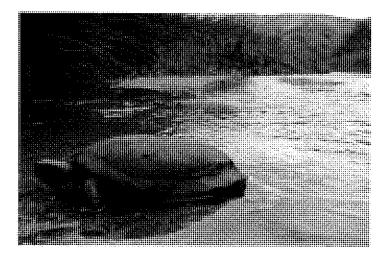
- Streamlines the permitting process under state and federal endangered species acts
- Results in more efficient and effective use of mitigation funding



Elements of an NCCP/HCP

- Program goals
- Geographic coverage
- Species covered
- Biological goals and objectives
- Activities covered
- Permit duration
- Impacts on species







Components of the M2 NCCP/HCP

Program goal

Streamlines permitting processes of M2 freeway projects

Geographic coverage

Orange County - 798 square miles (approx. 510,720 acres)

Species covered

 Approximately 22 endangered, threatened, or otherwise sensitive species

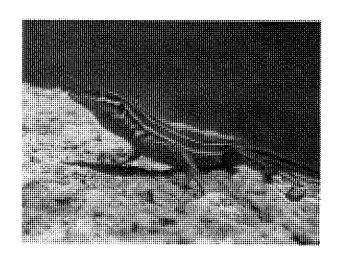
Biological goals and objectives

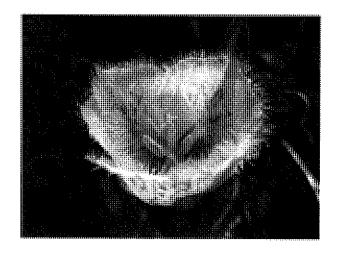
- Conserve, enhance, and/or restore populations and habitat of the 22 covered species
- Adaptively manage species and natural communities in perpetuity



Components of the M2 NCCP|HCP (Continued)

- Activities covered
 - 13 M2 freeway projects
- Permit duration
 - 30 years
- Impacts on species
 - Quantified using freeway project footprints, species distribution models, and known observed locations of species







Covered Species

Currently, 22 species are proposed for coverage under the Plan. Species may be added or deleted during the course of the Plan development based on further analysis, new information, agency consultation, and public comment.

Amphibians and Reptiles

- Southwestern Pond Turtle
- San Diego Coast Horned Lizard
- Orange Throated Whiptail Lizard
- Red Diamond Rattlesnake

Birds

- Coastal Cactus Wren
- Coastal California Gnatcatcher
- Rufous-Crowned Sparrow
- Flycatcher
- Least Bell's Vireo

<u>Fish</u>

- Arroyo Chub
- Santa Ana Sucker

Mammals

- Bobcat
- Mountain Lion
- Pallid bat
- Small-footed myotis
- Long-eared myotis
- Yuma myotis

Plants

- Braunton's Milk-Vetch
- Coulter's Matilija Poppy
- Intermediate Mariposa Lily
- Many Stemmed Dudleya
- Southern Tarplant

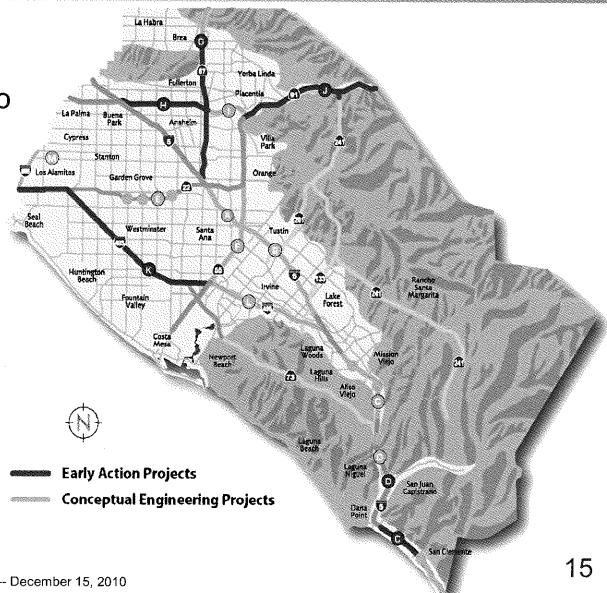


NCCPIHCP Plan Area

Orange County

 Considers linkages to existing preserve areas within the County

Note: letters A-M represent the 13 M2 freeway projects





NCCP/HCP Scoping Meeting -- December 15, 2010

State & Federal Environmental Review Process

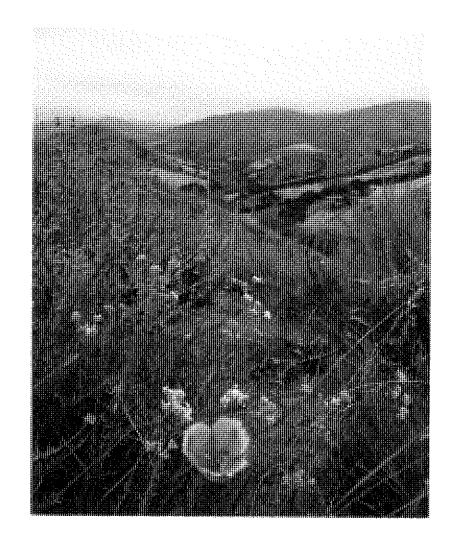
Purpose is to:

- Describe proposed action and alternatives
- Study and evaluate potential environmental impacts resulting from the NCCP/HCP implementation
- Identify mitigation for significant impacts
- Follow state and federal environmental laws
 - California Environmental Quality Act (CEQA)
 - National Environmental Policy Act (NEPA)



Lead Agencies for Environmental Review

- These lead agencies will oversee the preparation of an Environmental Impact Report/Environmental Impact Statement (EIR/EIS):
 - CEQA OCTA in conjunction with CDFG
 - NEPA USFWS





Potential Environmental Effects

- The EIR/EIS will examine potential environmental benefits and impacts of the project resulting from the following environmental factors:
 - Agricultural Resources
 - Air Quality & Climate Change
 - Biological Resources
 - Cultural Resources
 - Geology, Soils, & Mineral Resources
 - Hydrology & Water Quality
 - Land Use Planning & Consistency

- Noise
- Population & Housing
- Public Services & Utilities
- Recreation & Open Space
- Transportation
- Other environmental factors as identified by OCTA, CDFG and USFWS through the scoping process



Scoping Meeting Purpose

- Early opportunity for the public and governmental entities to provide feedback on the scope and content of the EIR/EIS.
- Scoping comments can include information regarding:
 - Scope of important environmental issues
 - Similar studies that are relevant to the proposed project
 - Characterization of the existing environment
 - Resources that may be cumulatively affected
 - Existing and reasonably foreseeable projects that are likely to affect the same resources as the project



Environmental Review Schedule

December 2010 Public Scoping Meeting

Winter 2011 Draft EIR/EIS and NCCP/HCP

circulation and public hearing

Spring 2012 Response to comments/Final

EIR/EIS and NCCP/HCP

Summer 2012

Certification of EIR/EIS and Board approval of NCCP/HCP



Tonight's Scoping Meeting

We want to hear from you!

Public input is valued and important

Comments will be considered throughout the EIR/EIS process

Please fill out comment cards (Return by Monday, January 10, 2011)







Contact Us

- Environmental Mitigation Program Project Manager
 - Dan Phu
- Environmental Mitigation Program Public Outreach Specialist
 - Marissa Espino (mespino@octa.net or 714-560-5607)
- Website: www.octa.net/environmental
- Email: octa_nccp_hcp_comments@octa.net



Appendix E: Scoping Meeting Boards



Environmental Mitigation Program

What is the Environmental Mitigation Program?

A minimum of 5% of the M2 freeway program budget will be available, subject to a master agreement, to provide for comprehensive, rather than piecemeal, mitigation of the environmental impacts of freeway improvements



Benefits to Orange County

Provide habitat protection, wildlife corridors and resource preservation

Result in streamlined project approvals for the freeway program (endangered species, wetlands, waters, etc.)

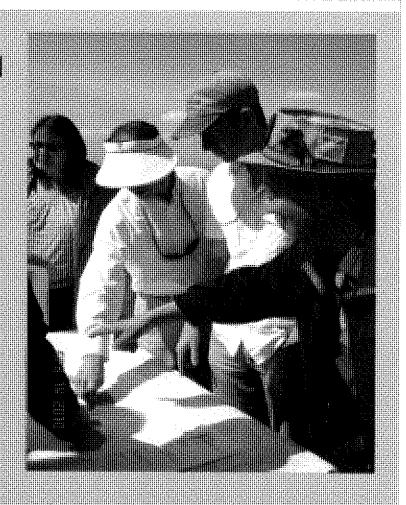
Expedite freeway projects through planning, design and construction phases

Considers aesthetic, historic and environmental impacts on nearby properties and communities



M2 Mitigation Program Activities

- 2008 Public outreach to land owners interested in offering property for potential acquisition and restoration
- Reviewed and selected properties based on eligibility criteria
- EAP enabled early acquisition and restoration activities
- 2009 Conservation Assessment identifies priorities
- 2010/11 Call for projects for land acquisition
- 2011 Call for projects for restoration activities





What is a Natural Community Conservation Plan (NCCP) and a Habitat Conservation Plan (HCP)?

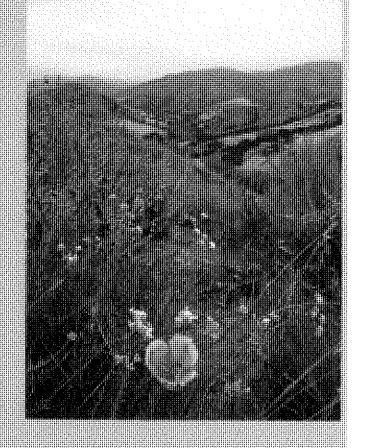
- A long-term regional species and natural community conservation program approved by state and federal wildlife regulatory agencies CDFG and USFWS
- If the NCCP/HCP is successfully and continually implemented, then CDFG and USFWS issue permits to allow limited impacts to protected species for construction projects
- An NCCP/HCP is a win-win for OCTA Project
 Implementation and Environmental Conservation
 - Streamlines the permitting process under state and federal endangered species acts
 - Results in more efficient and effective use of mitigation funding





Components of the NCCP/HCP

- Program epal
 - Streamlines permitting processes of 13 M2 freeway projects for 30-year duration
- Geographic coverage
 - Orange County 798 square miles (approximately 510,720 acres)
- Species covered
 - Approximately 22 endangered, threatened, or otherwise sensitive species
- Biological goals and objectives
 - Conserve, enhance, and/or restore populations and habitat of the 22 covered species
 - Adaptively manage species and natural communities in perpetuity
- ingaestin spawies
 - Quantified using freeway project footprints, species distribution models, and known observed locations of species





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- Santa Ana Sucker

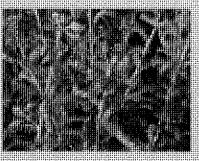
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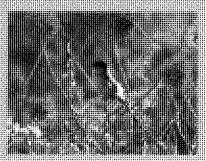
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- Pallel bet
- Small-looted myotis
- Long-tared myots
- Yuria riyola

Plants

- Braumon's Mik-Yetch
- Coulter's Matilia Poppy
- Inter-rediate Manicosa Lity
- Many Stemmed Dudleya
- -Gouthern largart









State & Federal Environmental Review

Purpose:

- Study and evaluate potential
- environmental impacts resulting from
- NCCP/HCP implementation
- Identify mitigation for significant impacts
- Follow state and federal environmental laws
 - California Environmental Quality Act
 - National Environmental Policy Act





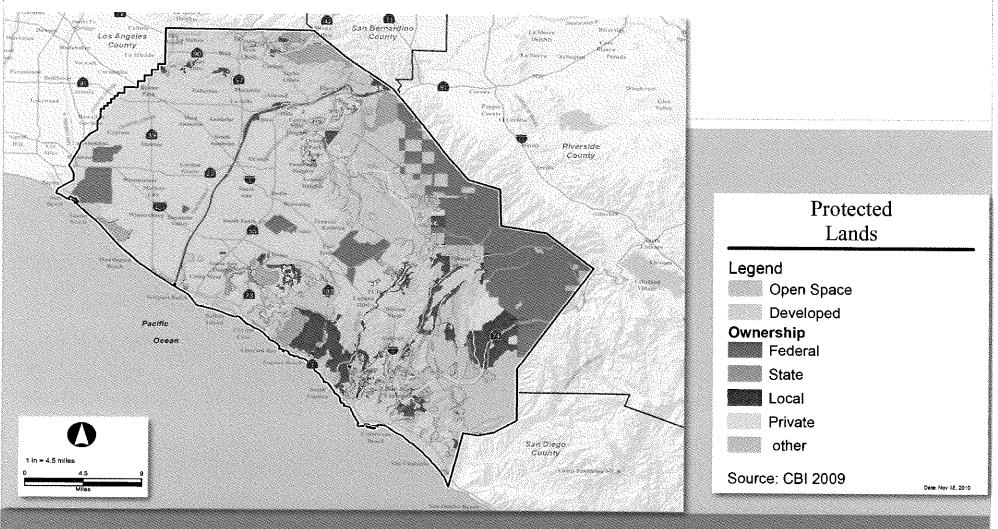
Examine potential environmental benefits and impacts of the project resulting from the following environmental factors:

Agricultural Resources
Air Quality & Climate
Change
Biological Resources
Cultural Resources
Geology, Soils,
& Mineral Resources
Hydrology & Water Quality
Land Use Planning &
Consistency
Noise

Population & Housing
Public Services & Utilities
Recreation & Open
Space
Transportation
Other environmental
factors as identified by
OCTA CDFG and
USFWS through the
scoping process

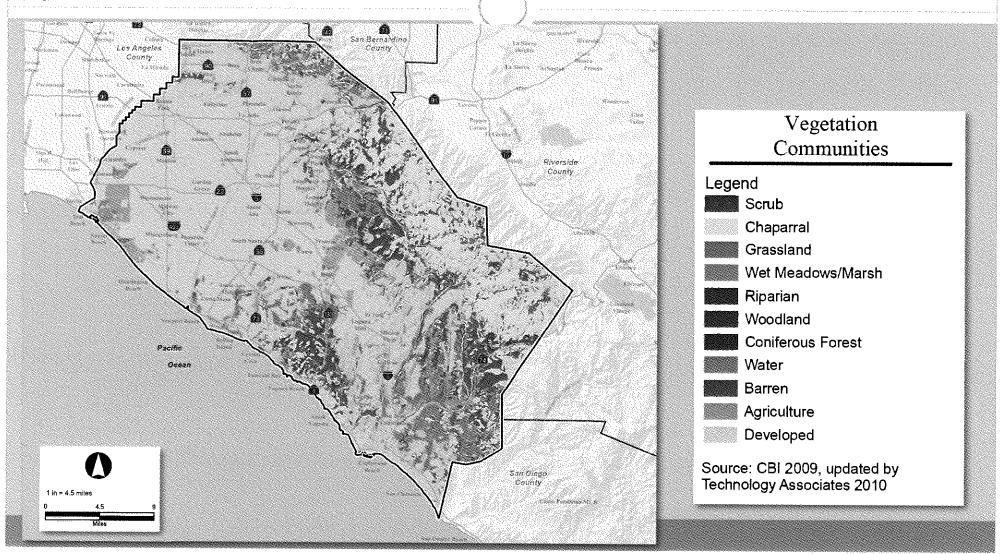


Protected Lands



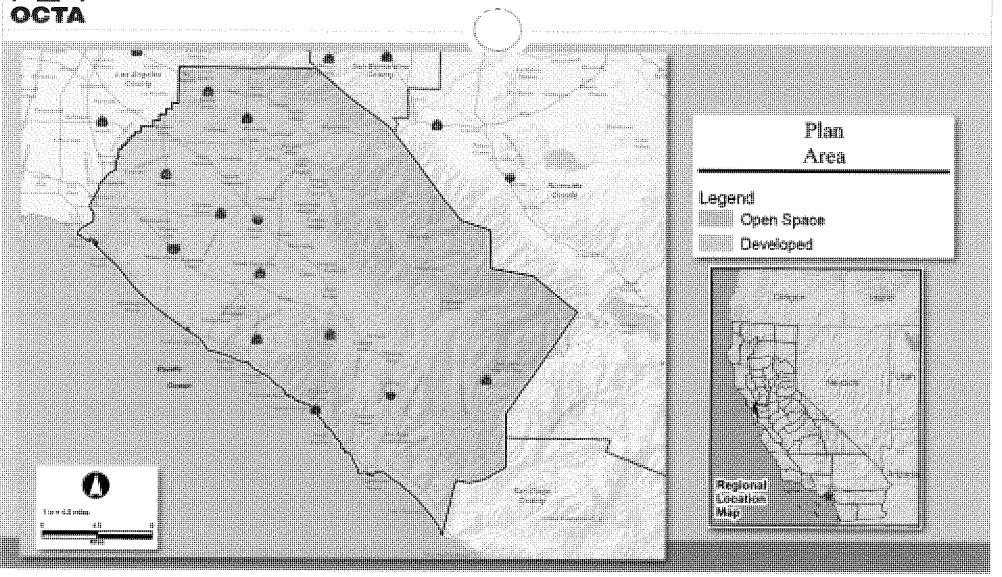


Vegetation Communities





Plan Area





Get Involved!

Tonight's Scoping Meeting is your chance to provide feedback on what should be studied during the environmental review of the project

Please provide comments on the range of issues and type of information that should be considered in the studies

If you have any questions about the project, please refer to the boards or powerpoint or ask any staff member

Please turn in comments no later than January 10, 2011

Your input is very important to us!





Appendix F: Comment Letters



Measure M2 Environmental Mitigation Program Development of a Natural Community Conservation Plan (NCCP), a Habitat Conservation Plan (HCP) and a Master Streambed Alteration Agreement (MSAA)

COMMENT CARD

Comments will be accepted through close of business on Monday, January 10, 2011

Privacy Notice: Before including your name, address, phone number, e-mail address, or other personal identifying information on this comment card, you should be aware that your entire comment – including your personal identifying information – will be included in the administrative record for the proposed project, and may be made publicly available.

Please Print

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CARE REDUTATIO
Name Title
Organization or business (if applicable)
10 50X (S)
SINERADO (A 92676
City, State, Zip
Phone Fax
rentoit Epeninsulairels. com
E-Mail
This is your chance to comment on what will be studied during environmental review of the development of a NCCP/HCP/MSAA for Orange County. Please provide comment on the range of issues and type of information that should be considered in the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) being prepared. Your input is greatly appreciated. Please write legibly.
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Measure M2 Environmental Mitigation Program Development of a Natural Community Conservation Plan (NCCP), a Habitat Conservation Plan (HCP) and a Master Streambed Alteration Agreement (MSAA)

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Please Print Preside
Name Can Cands Conservator Fur L Organization or Business (if applicable)
Organization or Musiness (if applicable)
Address Silverato GA92676
714-649-3038
Phone Par Par Par Par Par Par Par Pa
This is your chance to comment on what will be studied during environmental review of the development of a NCCP/HCP/MSAA for Orange County. Please provide comment on the range of issues and type of information that should be considered in the Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) being prepared. Your input is greatly appreciated. Please write legibly.
Specific land purchase in question: Holfz Ranch
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Jan 2011 Dept of laterion USFWS Final Crititical
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take tromps a 15A incidental
take action in FWS Unit#8 Santa Ana River Basin
Santa Ana River Basin
Carypulands has previously handed
into Octa's FOC documentation on
Tolthe funde and the Atty for
Thank you for your comments. If you need more space, please feel free to attach additional sheets as necessary. Please leave this form in the designated comment box or return it by one of the following means. Comments must be received by close of business on Monday, January 10, 2011.
US Mail: E-Mail: Fax:
Dan Phu, Section Manager octa_nccp_hcp_comments@octa.net (714) 560-5795
OCTA Attn: M2 NCCP/HCP/MSAA
550 South Main Street
P.O. Box 14184 Orange, CA 93863, 1584
Orange, CA 92863-1584



Measure M2 Environmental Mitigation Program Development of a Natural Community Conservation Plan (NCCP), a Habitat Conservation Plan (HCP) and a Master Streambed Alteration Agreement (MSAA)

COMMENT CARD

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Please Print

Jennifer Choi	lntern
Name	Title
OC Planning Organization or business (if applicable)	
Organization or business (if applicable)	
Address	
City, State, Zip	
714) 345-2605	
Phone Fax Phone Choijh @ Usc. edu E-Mail	
iencaire choine uscedu	
E-Mail	
This is your chance to comment on what will be studied dur	ing environmental review of the
development of a NCCP/HCP/MSAA for Orange County. Ple	ase provide comment on the range of
issues and type of information that should be considered in	the Environmental Impact Report
(EIR)/Environmental Impact Statement (EIS) being prepared write legibly.	. Your input is greatly appreciated. Please
write legibly.	
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•	
in understanding the process. (funding will be an issue for	oncerned the lack of
tunding will be an issue for	execution and most
Importantly mailtenance.	

RANCHO MISSION VIEJO

January 10, 2011

Dan Phu, Section Manager
Orange County Transportation Authority
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584

Reference: Notice of Preparation for Measure M2 (M2) NCCP/HCP/MSAA

Subject: Rancho Mission Viejo Comments

Dear Dan,

Thank you for providing Rancho Mission Viejo (RMV) with the opportunity to provide input into the NCCP/HCP and CEQA/NEPA process OCTA has recently initiated for the M2 Mitigation Program. RMV has reviewed the materials provided at the December 15, 2010 scoping meeting and provides the following comments for your consideration.

Background

RMV is one of three Permittees/participants in the Southern Subregion Habitat Conservation Plan (SSHCP) approved by the U.S. Fish and Wildlife Service (USFWS) in January 2007. This plan in conjunction with a General Plan Amendment/Zone Change approved by the County of Orange in 2006, a Special Area Management Plan (SAMP) approved by the U.S. Army Corps of Engineers (ACOE) in March 2007 and a Master Streambed Alteration Agreement (MSAA) approved by the California Department of Fish and Game (CDFG) in September 2009 have determined the future land uses for RMV, including 20,868 acres that will be permanently protected as a Habitat Reserve for 32 Covered Species and will be managed according to an approved Adaptive Management and Monitoring Program.



Comments

1. RMV understands that the NCCP/HCP/MSAA being prepared by OCTA for the M2 Mitigation Program will use the Conservation Assessment prepared by CBI (December 2009) as a base reference document, particularly regarding biological prioritization. RMV has previously indicated to OCTA that it does not agree with the biological priorities identified in the Conservation Assessment. The Conservation Assessment identifies five areas of RMV as "Southern Foothills" conservation priorities (see for example Figure ES-1, Figure 7). In the RMV documents listed above these areas are identified as development Planning Areas 1, 3, 5, 4 and 8 (or portions thereof). In fact the only RMV development planning area not identified as a conservation priority is Planning Area 2. Development Planning Areas 1-5 and 8 have already been approved for future development by the County of Orange, USFWS, ACOE and CDFG. We therefore object to any identification or prioritization of these development planning areas as conservation areas.

Furthermore, the CBI assessment contains several other errors regarding the status of both RMV and County lands. For example in Figure 10. Southern Foothills Core Habitat Area: Priority Conservation Areas (A, B, C, D) the area marked A is labeled as "unprotected native vegetation". This is not correct, portions of the area marked A are scheduled to be included in the Southern Subregion Habitat Reserve and in fact a portion of this area is already subject to permanent protection via the SSHCP conservation easement. Similarly Area G on Figure 23. Trabuco Creek and San Juan Creek Linkages is also scheduled to be included in the Southern Subregion Habitat Reserve. Also on the same figure, Area F is partly open space already protected by the SSHCP conservation easement and partly development Planning Area 1 which has been approved as noted above and has grading permits issued by the County of Orange.

Based on the inaccuracies contained in the CBI Conservation Assessment, RMV requests that OCTA refer to, and use the approved SSHCP, SAMP, MSAA and GPA/ZC as the base reference documents when discussing RMV lands.

2. RMV understands that the proposed NCCP/HCP/MSAA will be partly a hard line plan and partly a criteria based plan due to the current information regarding project impacts and mitigation (either acquisition or restoration). We also understand that although the entire County is identified as the study area,

Notice of Preparation for Measure M2 (M2) NCCP/HCP/MSAA January 10, 2011 Page 3 of 3

regulatory coverage and management and monitoring will only apply to the areas where impacts occur and/or mitigated is proposed. If our understanding is not correct or the approach changes please let us know.

Thank you for the opportunity to provide these comments, should you need to discuss them further I can be reached at (949) 240-3363 Ext 297.

Sincerely,

Laura Coley Eisenberg

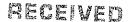
Vice President, Open Space & Resource Management

Cc: Pat Bates, OC Supervisor

Jonathan Snyder, USFWS

Dan Silver, EHL

Don Hughes, Supervisor Bates' Office



DEC 17 2010

PLANNING & PROGRAMMING

Puente Hills Landfill Native Habitat Preservation Authority

December 16, 2010

Dan Phu
Section Manager
Orange County Transportation Authority
Attn: M₂ NCCP/HCP/MSAA
550 South Main Street
P.O. Box 14184
Orange, CA 92863-1584

Re: Notice of Preparation (NOP) and for the Orange County Transportation Authority Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP)/Master Streambed Alteration Agreement (MSAA)

Dear Mr. Phu:

The Puente Hills Landfill Native Habitat Preservation Authority (Habitat Authority) is a joint powers authority established pursuant to California Government Code Section 6500 et seq. with a Board of Directors consisting of the City of Whittier, County of Los Angeles, Sanitation Districts of Los Angeles County, and the Hacienda Heights Improvement Association. According to our mission, the Habitat Authority is dedicated to the acquisition, restoration, and management of open space in the Puente Hills for preservation of the land in perpetuity, with the primary purpose to protect the biological diversity. The Habitat Authority's jurisdiction extends within eastern Los Angeles County.

The Habitat Authority appreciates the opportunity to comment on the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the Orange County Transportation Authority Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP)/Master Streambed Alteration Agreement (MSAA). The Habitat Authority strongly endorses the NCCP process as a habitat-based, regional approach to land conservation that transcends jurisdictional boundaries. As a primary land owner and manager within the Puente-Chino Hills Wildlife Corridor, the Habitat Authority understands the need to conserve and manage lands for the benefit of multiple species and entire ecosystems, despite the challenges posed by complex ownership and jurisdictional issues.

The Habitat Authority provided comments on the proposed Planning Agreement for the NCCP/HCP in a letter to the California Department of Fish and Game dated April 23,



2009. In this letter, we stated that we were encouraged by the language in the proposed agreement which stated that "regardless of the scope of the Planning Area [Orange County], nothing in this Planning Agreement shall be construed to limit the consideration of adjacent areas outside of the County that are appropriate to take into account for preserve design purposes." Lands owned or managed by the Habitat Authority are located in close proximity to the northwestern Orange County line near Brea, and the continued acquisition and management of lands within the Puente-Chino Hills in Los Angeles County would further connectivity between this area and Orange County extending to the Santa Ana Mountains, helping to meet the Preliminary Conservation Objectives of the NCCP by "providing for habitat connectivity to ensure reserves maintain their biological functions and values."

The Conservation Assessment of Orange County, prepared for this NCCP process by the Conservation Biology Institute (CBI) in December 2009, identified 39 Priority Conservation Areas (PCAs) which should be the focus for initial conservation efforts and land acquisition due to their contribution to the regional reserve system. One of the three PCAs identified in the Chino Hills Core Habitat Area (PCA A) is located immediately adjacent to the Los Angeles County line, and is contiguous with a much larger undeveloped parcel, the Shell-Aera property. Although much of this property is located within Los Angeles County, its size and location within a key portion of the Puente-Chino Hills Wildlife Corridor makes its conservation critical to maintaining wildlife movement and biological diversity in both the Puente Hills and Chino Hills located largely in Los Angeles and Orange Counties.

The Shell-Aera property was part of Group 1 (Property Number 75) of the Acquisition Properties Evaluation conducted by the Measure M2 Freeway Mitigation Program Oversight Committee in February 2010. Group 1 properties are defined as those having the following attributes: high quality habitat, heterogeneous habitat, larger sized properties, aligns with impacted habitats, and contains covered species. The Shell-Aera property was also recommended for proceeding with appraisal process and/or for acquisition consideration. As such, the Habitat Authority recommends future reconsideration the Shell-Aera property for acquisition and conservation, as it was determined as high priority for conservation, it would help conserve proposed NCCP/HCP/MSAA target species, and it would help maintain the Puente-Chino Hills Wildlife Corridor including Chino Hills State Park and all conserved habitat within the Puente Hills Preserve west of the Shell-Aera property, most of which is owned and/or managed by the Habitat Authority.

Finally, the Habitat Authority also encourages the inclusion of any mitigation measures in the EIR for the NCCP/HCP/MSAA that would promote wildlife movement and habitat connectivity within the larger Puente-Chino Hills Wildlife Corridor, such as maintenance or construction of wildlife underpasses or overpasses, restoration of natural movement pathways such as riparian corridors, restoration of native habitats that connect separated

¹ Acquisition Properties Evaluation (PCA and Non-PCA - Biological Criteria). February 24, 2010. Downloaded from http://www.octa.net/pdf/eoc44.pdf

areas of existing native habitat, and methods to reduce edge effects (such as noise, light, domestic animals) to wildlife from adjacent development.

The Habitat Authority is available to provide any information or data necessary during preparation of the NCCP/HCP/MSAA and EIR. Please do not hesitate to contact me or Andrea Gullo, Executive Director for discussion at (562) 945-9003.

Sincerely,

Bob Henderson

Chairman

C: Board of Directors and Advisory Committee

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364 SACRAMENTO, CA 95814 (916) 653-6251 Fax (916) 657-5390 Web Site www.nahc.ca.gov e-mail: de_nahc@pacbell.net



RECEIVED

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December 7, 2010

Mr. Dan Phu, Section Manager

Orange County Transportation Authority

550 South Main Street P.O. Box 14184 Orange, CA 92863-1584 PLANNING & PROGRAMMING

nfr 1 0 2010

Re: SCH#2010121008 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Measure M2 Natural Community Conservation Plan / Habitat Conservation Plan Project located in Orange County, California

Dear Mr. Phu:

The Native American Heritage Commission (NAHC) is the state 'trustee agency' pursuant to Public Resources Code §21070 for the protection and preservation of California's Native American Cultural Resources. (Also see <u>Environmental Protection Information Center v. Johnson</u> (1985) 170 Cal App. 3'd 604). The California Environmental Quality Act (CEQA - CA Public Resources Code §21000-21177, amendment effective 3/18/2010) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per the California Code of Regulations §15064.5(b)(c)(f) CEQA guidelines). Section 15382 of the CEQA Guidelines defines a significant impact on the environment as "a substantial, or potentially substantial, adverse change in any of physical conditions within an area affected by the proposed project, including ... objects of historic or aesthetic significance. The lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE), and if so, to mitigate that effect. State law also addresses Native American Religious Expression in Public Resources Code §5097.9.

The Native American Heritage Commission did perform a Sacred Lands File (SLF) search in the NAHC SLF Inventory, established by the Legislature pursuant to Public Resources Code §5097.94(a) and Native American Cultural Resources were identified within one-half mile of several of the Areas of Potential Effect (APEs). Also, it is important to understand that the absence of archaeological, Native American cultural resources in an area does not indicate that they are not present, or will be present once ground-breaking activity begins. The NAHC recommends early consultation with Native American tribes in your area as the best way to avoid unanticipated discoveries once a project is underway and to learn of any sensitive cultural areas. Enclosed are the names of the culturally affiliated tribes and interested Native American individuals that the NAHC recommends as 'consulting parties,' for this purpose, that may have knowledge of the religious and cultural significance of the historic properties in the project area (e.g. APE). A Native American Tribe or Tribal Elder may be the only source of information about a cultural resource.. Also, the NAHC recommends that a Native American Monitor or Native American culturally knowledgeable person be employed whenever a professional archaeologist is employed during the 'Initial Study' and in other phases of the environmental planning processes.

NATIVE AMERICAN HERITAGE COMMISSION

915 CAPITOL MALL, ROOM 364 SACRAMENTO, CA 95814 (916) 653-6251 Fex (916) 657-5390 Web Site www.nshc.ca.gov e-mail: de_nanc@pacbell.net



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DFC 1 0 2010

December 7, 2010

Mr. Dan Phu, Section Manager

Orange County Transportation Authority

550 South Main Street P.O. Box 14184 Orange, CA 92863-1584 PLANNING & PROGRAMMING

Re: SCH#2010121008 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Measure M2 Natural Community Conservation Plan / Habitat Conservation Plan Project located in Orange County, California

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Furthermore the NAHC recommends that you contact the California Historic Resources Information System (CHRIS) of the Office of Historic Preservation (OHP), for information on recorded archaeological data. This information is available at the OHP Office in Sacramento (916) 445-7000.

Consultation with tribes and interested Native American tribes and interested Native American individuals, as consulting parties, on the attached NAHC list, should be conducted in compliance with the requirements of federal NEPA (42 U.S.C. 4321-43351) and Section 106 and 4(f) of federal NHPA (16 U.S.C. 470 [f)]et seq.), 36 CFR Part 800.3, the President's Council on Environmental Quality (CSQ; 42 U.S.C. 4371 et seq.) and NAGPRA (25 U.S.C. 3001-3013), as appropriate. The 1992 Secretary of the Interior's Standards for the Treatment of Historic Properties were revised so that they could be applied to all historic resource types included in the National Register of Historic Places and including cultural landscapes. Consultation with Native American communities is also a matter of environmental justice as defined by California Government Code §65040.12(e).

Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery'. Discussion of these should be included in your environmental documents, as appropriate.

The authority for the SLF record search of the NAHC Sacred Lands Inventory, established by the California Legislature, is California Public Resources Code §5097.94(a) and is exempt from the CA Public Records Act (c.f. California Government Code §6254.10). The results of the SLF search are confidential. However, Native Americans on the attached contact list are not prohibited from and may wish to reveal the nature of identified cultural resources/historic properties. Confidentiality of "historic properties of religious and cultural significance' may also be protected the under Section 304 of the NHPA or at the Secretary of the Interior' discretion if not eligible for listing on the National Register of Historic Places. The Secretary may also be advised by the federal Indian Religious Freedom Act (cf. 42 U.S.C, 1996) in issuing a decision on whether or not to disclose items of religious and/or cultural significance identified in or near the APE and possibly threatened by proposed project activity.

CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens. Although tribal consultation under the California Environmental Quality Act (CEQA; CA Public Resources Code Section 21000 – 21177) is 'advisory' rather than mandated, the NAHC does request 'lead agencies' to work with tribes and interested Native American individuals as 'consulting parties,' on the list provided by the NAHC in order that cultural resources will be protected. However, the 2006 SB 1059 the state enabling legislation to the Federal Energy Policy Act of 2005, does mandate tribal consultation for the 'electric transmission corridors. This is codified in the California Public Resources Code, Chapter 4.3, and §25330 to Division 15, requires consultation with California Native American tribes, and identifies both federally recognized and non-federally recognized on a list maintained by the NAHC

Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that construction or excavation be stopped in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery until the county coroner or medical examiner can determine whether the remains are those of a Native American. Note that §7052 of the Health & Safety Code states that disturbance of Native American cemeteries is a felony.

Please féel free to contact me at (916) 653-6251 if you have any questions.

Sincerely,

Deve Singletch Program Analyst

Attachment: List of Culturally Affiliated Native American Contacts

Cc: State Clearinghouse

Native American Contacts Orange County December 7, 2010

Ti'At Society/Inter-Tribal Council of Pimu Cindi M. Alvitre, Chairwoman-Manisar 6515 E. Seaside Walk, #C Gabrielino Long Beach , CA 90803 calvitre@yahoo.com (714) 504-2468 Cell Gabrielino Tongva Nation Sam Dunlap, Chairperson P.O. Box 86908 Los Angeles , CA 90086 samdunlap@earthlink.net

Gabrielino Tongva

(909) 262-9351 - cell

Juaneno Band of Mission Indians Acjachemen Nation David Belardes, Chairperson 32161 Avenida Los Amigos Juaneno San Juan Capistrano CA 92675 (949) 493-4933 - home chiefdavidbelardes@yahoo. com (949) 293-8522

Tongva Ancestral Territorial Tribal Nation John Tommy Rosas, Tribal Admin.

Gabrielino Tongva

tattnlaw@gmail.com

(626) 286-1262 -FAX

310-570-6567

Juaneno Band of Mission Indians Acjachemen Nation Anthony Rivera, Chairman 31411-A La Matanza Street Juaneno San Juan Capistrano CA 92675-2674 arivera@juaneno.com (949) 488-3484

(530) 354-5876 - cell

714-321-1944 - cell

Gabrielino Tongva Indians of California Tribal Council
Robert F. Doramae, Tribal Chair/Cultural
P.O. Box 490 Gabrielino Tongva
Bellflower CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-925-7989 - fax

Gabrieleno/Tongva San Gabriel Band of Mission Anthony Morales, Chairperson PO Box 693 Gabrielino Tongva San Gabriel , CA 91778 GTTribalcouncil@aol.com (626) 286-1632 (626) 286-1758 - Home

Juaneno Band of Mission Indians
Alfred Cruz, Culural Resources Coordinator
P.O. Box 25628 Juaneno
Santa Ana CA 92799
alfredgcruz@sbcglobal.net
714-998-0721
714-998-0721 - FAX

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050,5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and federal NAGPRA. And 36 CFR Part 800.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed SCH#2010121008; CEQA Notice of Preparation (NOP); draft Environmental impact (DEIR) for Measure M2 Natural Community Conservation Plan / Habitat Conservation Plan; located in Orange County, California.

Native American Contacts Orange County December 7, 2010

Juaneno Band of Mission Indians
Adolph 'Bud' Sepulveda, Vice Chairperson
P.O. Box 25828 Juaneno
Santa Ana , CA 92799
bssepul@yahoo.net
714-838-3270
714-914-1812 - CELL
bsepul@yahoo.net

Gabrielino-Tongva Tribe Bernie Acuna 1875 Century Pk East #1500 Gabrielino Los Angeles , CA 90067 (310) 428-7720 - cell (310) 587-2281

Juaneño Band of Mission Indians Sonia Johnston, Tribal Chairperson P.O. Box 25628 Juaneno Santa Ana , CA 92799 sonia.johnston@sbcglobal. net (714) 323-8312 Juaneno Band of Mission Indians Acjachemen Nation
Joyce Perry; Representing Tribal Chairperson
4955 Paseo Segovia Juaneno
Irvine , CA 92612
949-293-8522

Juaneno Band of Mission Indians Anita Espinoza 1740 Concerto Drive Juaneno Anaheim , CA 92807 (714) 779-8832

Gabrielino-Tongva Tribe
Linda Candelaria, Chairwoman
1875 Century Park East, Suite 1500
Los Angeles, CA 90067 Gabrielino
lcandelaria1@gabrielinoTribe.org
310-428-5767- cell
(310) 587-2281

United Coalition to Protect Panhe (UCPP) Rebecca Robles 119 Avenida San Fernando Juaneno San Clemente CA 92672 rebrobles1@gmail.com (949) 573-3138

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code. Also, federal National Environmental Policy Act (NEPA), National Historic Preservation Act, Section 106 and fed eral NAGPRA. And 36 CFR Part 800.

This list is only applicable for contacting local Native Americans for consultation purposes with regard to cultural resources impact by the proposed SCH#2010121008; CEQA Notice of Preparation (NOP); draft Environmental Impact (DEIR) for Measure M2 Natural Community Conservation Plan / Habitat Conservation Plan; located in Orange County, California.



State of California -The Natural Resources Agency DEPARTMENT OF FISH AND GAME South Coast Region 4949 Viewridge Avenue San Diego, CA 92123

JOHN McCAMMAN, Director

EDMUND G. BROWN, JR., Governor

January 13, 2011

(858) 467-4201 www.dfg.ca.gov

Mr. Dan Phu, Section Manager Orange County Transportation Authority 550 South Main Street P.O. Box 14184 Orange, CA 92863-1584

Subject:

Comments on the Notice of Preparation of an Environmental Impact

Report for the Measure M2 Natural Community Conservation Plan/ Habitat

Conservation Plan (SCH #2010121008)

Dear Mr. Phu:

The California Department of Fish and Game (Department) has reviewed the abovereferenced Notice of Preparation (NOP) dated December 3, 2010. The Department has identified potential effects of this project on wildlife and sensitive habitats. The project details provided herein are based on the information provided in the NOP. On January 10, 2011, you granted the Department an extension by electronic mail of the public comment period until January 13, 2011. We appreciate the extension.

The Department is a Trustee Agency and a Responsible Agency pursuant to the California Environmental Quality Act (CEQA; §§ 15386 and 15381, respectively) and is responsible for ensuring appropriate conservation of the State's biological resources. including rare, threatened, and endangered plant and animal species, pursuant to the California Endangered Species Act (CESA) and other sections of the Fish and Game Code. The Department also administers the Natural Community Conservation Planning (NCCP) Program, which the Orange County Transportation Authority (OCTA) is currently participating in through the preparation of a NCCP/Habitat Conservation Plan (NCCP/HCP).

The NCCP/HCP that OCTA is preparing would be accompanied by a Master Streambed Alteration Agreement (MSAA) (collectively, we refer to both as the Plan): the Plan would provide for a habitat conservation/mitigation strategy to offset the biological impacts from several proposed M2 freeway improvement projects. The Plan will identify the Covered Activities to be conducted by OCTA that may result in take of Covered Species within the Plan area. Anticipated Covered Activities currently consist of thirteen proposed M2 freeway improvement projects. The Department also anticipates that the Plan will provide coverage for monitoring and management activities associated with the in-perpetuity protection of lands conserved pursuant to the NCCP/HCP.

Mr. Dan Phu January 13, 2011 page 2 of 3

The Department appreciates the work that the OCTA has put into the preparation of the Plan to date. OCTA's continuing efforts and coordination with the Department and U.S. Fish and Wildlife Service (Service) (collectively, "Wildlife Agencies") reflect your interest and commitment in protecting and preserving Orange County's (County) natural and biological resources. The preparation and implementation of the NCCP/HCP would contribute to state-wide efforts in regional habitat conservation that benefit sensitive and non-sensitive species and their habitats.

The Plan area encompasses all 798 square miles (approximately 510,720 acres) of the County, and the Plan considers adjacent areas outside of the County that are appropriate for preserve design purposes, such as habitat connectivity. The Plan area contains valuable biological resources, including native species of fish and wildlife and their habitats. Among the species within the Planning Area are certain species that are protected, or may be protected in the future, under CESA or the Federal Endangered Species Act (FESA). OCTA intends for the Plan to meet the requirements of state and federal fish and wildlife protection laws that apply to Covered Activities and to provide a basis for state and federal authorizations for the take of Covered Species that may be caused by the Covered Activities.

Currently, the twenty-two (22) species identified in the NOP are proposed for coverage under the Plan. Species may be added or deleted during the preparation of the Plan based on further analysis, new information, agency consultation, and public comment.

We offer our comments and recommendations in the attached enclosure to assist OCTA in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources, and to ensure that the project is consistent with ongoing regional habitat conservation planning efforts.

We appreciate the opportunity to comment on this NOP. The comments and recommendations provided are based on our knowledge of sensitive and declining vegetation communities in the County and our participation in regional conservation planning efforts. We are hopeful that further consultation between OCTA and the Wildlife Agencies will ensure the protection we find necessary for the biological resources addressed by the NCCP/HCP. If you have questions or comments regarding this letter, please contact Cara Allen of the Department at (858) 637-7188.

Sincerely,

Edmund Pert Regional Manager

California Department of Fish and Game

Mr. Dan Phu January 13, 2011 page 3 of 3

Enclosure: Department's Comments and Recommendations

Attachment: Sensitivity of Top Priority Rare Natural Communities in Southern

California

cc: Marilyn Fluharty, California Department of Fish and Game

Jonathan Snyder, U.S. Fish and Wildlife Service

Erinn Wilson, California Department of Fish and Game

State Clearinghouse

Department's Comments and Recommendations on the Notice of Preparation of a Draft Environmental Impact Report for the Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan

- In order for the reviewing agencies to provide adequate comments on this project, OCTA should explain in the beginning of the draft Environmental Impact Report (EIR) the type of EIR prepared and the method of "tiering" that will be used (CEQA; §§ 15160 and 15152, respectively).
- 2. The DEIR should provide a full discussion of the:
 - a) proposed NCCP/HCP's preserve areas;
 - b) how these areas will mitigate for the losses of habitat associated with the proposed freeway improvement projects;
 - c) long-term monitoring and management of the preserve areas;
 - d) funding mechanism(s) for the long-term monitoring and management; and
 - e) accounting process proposed to be used to track the debits of acreage from the preserve for use as mitigation for project impacts.
- 3. It is anticipated that the proposed project would result in increased traffic volumes within their area of effect. The DEIR should discuss the need for any of the road improvements to offset increased traffic volumes resulting from the proposed project. Furthermore, the DEIR should identify any on- and/or off-site impacts to sensitive species or habitats, including wildlife movement corridors, that would result from any proposed road improvements. For example, the DEIR should identify opportunities to improve existing or create wildlife crossings concurrently with the proposed freeway improvement projects.
- 4. To facilitate wildlife movement through the project site and minimize effects to on-site wetland function and quality after project construction, we recommend that bridges be used for all proposed riparian crossings.

Some of our subsequent comments are general in nature. They further address the implementation of NCCP/HCP/MSAA (the Plan), with an emphasis on the contents that the DEIR should provide for the biological and hydrological analyses of and mitigation for OCTA's freeway improvement projects proposed to be covered by the Plan.

- 5. The DEIR should provide a complete discussion of the purpose and need for, and description of, the proposed project, including all staging areas and access routes to the construction and staging areas to the extent they are currently known.
- 6. The DEIR should provide analyses of a range of feasible alternatives to ensure that alternatives to the proposed project are fully considered and evaluated. The

analyses must include alternatives that avoid or otherwise minimize impacts to sensitive biological resources, particularly wetlands. Specific alternative locations should be evaluated in areas with lower resource sensitivity, where appropriate.

Biological Resources within the Project's Area of Potential Effect

- 7. The DEIR should provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying state and federally listed endangered, threatened, rare, or proposed candidate species, California Species of Special Concern and/or Protected or Fully Protected species, and locally unique species and sensitive habitats. Specifically, the DEIR should include:
 - a) Discussions regarding the regional setting, pursuant to CEQA Guidelines, Section 15125(c), with special emphasis on resources that are rare or unique to the region that would be affected by the project. This discussion is critical to an assessment of environmental impacts.
 - b) A thorough assessment of rare plants and rare natural communities, following the Department's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (see: http://www.dfg.ca.gov/habcon/plant/) (hard copy available on request).
 - c) A current inventory of the biological resources (to include rare, threatened, and endangered, and other sensitive species) associated with each habitat type on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, §15380). This should include sensitive fish, wildlife, reptile, and amphibian species. The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 322-2493 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.
 - d) Discussions regarding seasonal variations in use of the project area and vicinity by sensitive species, and acceptable species-specific survey procedures as determined through consultation with the Wildlife Agencies. Focused species-specific surveys, conducted in conformance with established protocols at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Wildlife Agencies.

Analyses of the Potential Project-Related Impacts on the Biological Resources

8. The Department has the responsibility for the conservation of wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether intermittent or perennial, should be retained and provided with substantial setbacks to preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife and plant populations. Mitigation measures to compensate for impacts to mature riparian corridors should be included in the DEIR and must compensate for the loss of functions and values as a wildlife corridor.

The project area supports aquatic, riparian, and wetland habitats; therefore, the DEIR should include a jurisdictional delineation of the creeks/drainages and their associated riparian habitats. The delineation should be conducted pursuant to the Service wetland definition adopted by the Department. Please note that some wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

- 9. The DEIR should include a thorough discussion of direct, indirect, and cumulative project-related impacts expected to adversely affect biological resources. All facets of the project should be included in this assessment. Specifically, the DEIR should include in narrative and tabular format for each proposed project:
 - a) Specific acreages and descriptions of the types of wetlands, coastal sage scrub, and other habitats that would potentially be affected by the proposed project or project alternatives. Narrative descriptions, maps and individual tables should be used to summarize such information for each of the thirteen Measure M2 freeway projects.
 - b) Detailed discussions, including both qualitative and quantitative analyses, of potential direct effects on listed and other sensitive species (fish, wildlife, plants) and their habitats within the area of impact of the proposed and alternative projects, for each of the thirteen Measure M2 freeway projects.
 - c) Discussions regarding indirect project impacts on biological resources, including

Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with a NCCP), for each of the thirteen Measure M2 freeway projects.

- i) Impacts to wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated.
- ii) Discussions of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage. The latter subject should address: project-related changes on drainage patterns on and downstream of the project site; the volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project site.
- iii) If applicable, a discussion of the effects of any project-related dewatering or ground water extraction activities to the water table and the potential resulting impacts on the wetland/riparian habitat, if any, supported by the surface and groundwater.
- d) Discussions regarding possible conflicts resulting from wildlife-human interactions at the interface between the development project and natural habitats.
- e) An analysis of the effect that the project may have on completion and/or implementation of other regional or subregional conservation programs (e.g., the County of Orange Central and Coastal Subregion NCCP/HCP and the Orange County Southern Subregion HCP).
- f) A cumulative effects analysis as described under CEQA Guidelines, Section 15130, assessing the impacts of the proposed project in conjunction with past, present, and anticipated future projects, relative to their impacts on native plant communities and wildlife.

Mitigation for the Project-related Biological Impacts

- 10. The DEIR should include a thorough discussion of mitigation measures for adverse project-related impacts on sensitive plants, animals, and habitats. Specifically, the DEIR should include/address:
 - a) Measures to fully avoid and otherwise protect Rare Natural Communities (see Attachment) from project-related impacts. The Department considers these communities as threatened habitats having both regional and local significance.

- b) Where avoidance is infeasible, mitigation measures that emphasize minimization of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable (e.g., it would not adequately mitigate the loss of biological functions and values), off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Specifically, the DEIR should include the following mitigation-related information in tabular format:
 - i. Specific acreages of habitat types;
 - ii. Habitat quality before any proposed restoration/enhancement/creation;
 - iii. Habitat quality proposed after the restoration/enhancement/creation;
 - iv. Inventory of biological resources on the mitigation sites;
 - v. Status of the adjoining natural lands (including but not limited to land owner, land manager, use activities, conservation easement/deeds on property).
- c) The Department generally does not encourage the use of relocation, salvage, and/or transplantation as mitigation for impacts on rare, threatened, or endangered species. Studies have shown these efforts are experimental in nature and do not provide for the long-term viability of the target species.
- d) Mitigation measures to alleviate indirect project-related impacts on biological resources, including measures to minimize changes in the hydrologic regimes on site, and means to convey runoff without damaging biological resources, including the morphology of on-site and downstream habitats.
- e) Where proposed grading or clearing is within 100 feet of proposed biological open space, or otherwise preserved sensitive habitats, a requirement for temporary fencing. Fencing should be placed on the impact side and should result in no vegetation loss within open space. All temporary fencing should be removed only after the conclusion of all grading, clearing, and construction activities.
- f) A requirement that a Department-approved biological monitor to be present during initial clearing, grading, and construction in sensitive habitat areas and/or in the vicinity of biological open space areas to ensure that conservation measures associated with resource agency permits and construction documents are performed. The biological monitor should have the authority to halt construction to prevent or avoid take of any listed species and/or to ensure compliance with all avoidance, minimization, and mitigation measures. Any unauthorized impacts or actions not in compliance with the permits and

Mr. Dan Phu January 13, 2011

construction documents should be immediately brought to the attention of the Lead Agency and the Department.

- g) Plans for restoration and revegetation, to be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria (e.g., percent cover of native and non-native species; species richness); (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.
- h) Measures to protect, in perpetuity, the targeted habitat values of proposed preservation and/or restoration areas from direct and indirect negative impacts. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Permanent fencing should be installed between the impact area and biological open space and be designed to minimize intrusion into the sensitive habitats from humans and domestic animals, particularly cats. There should be no gates that would allow access between the development and biological open space. Additional issues that should be addressed include proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, etc.
- Development and implementation of a management and monitoring plan (MMP), including a funding commitment, for any on- and/or off-site biological open space easements, if applicable. An appropriate natural lands management organization, subject to approval by the Department, should be identified. The MMP should outline biological resources on the site, provide for monitoring of biological resources, address potential impacts to biological resources, and identify actions to be taken to eliminate or minimize those impacts. A Property Analysis Record (PAR) should be completed to determine the amount of funding needed for the perpetual management, maintenance, and monitoring of the biological conservation easement areas by the natural lands management organization. It should be demonstrated that the proposed funding mechanism would ensure that adequate funds would be available on an annual basis to implement the MMP. The natural lands management organization should submit a draft MMP, PAR results, and proposed funding mechanism to the Department for review and approval prior to initiating construction activities; the final plan should be submitted to the Department and the funds for implementing the MMP transferred within 90 days of receiving approval of the draft plan.

ENCLOSURE page 7 of 8

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j) To avoid impacts to nesting birds, the DEIR should require that all clearing and grubbing occur outside the avian breeding season. The breeding season for nesting birds occurs approximately February 1 through September 1; however, raptors may begin breeding as early as January. If project construction is necessary during the avian breeding season, a qualified biologist should conduct a survey for nesting birds within three days prior to the work in the area to ensure that no nesting birds in the project area would be impacted by the project. If an active nest is identified, a buffer shall be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer shall be a minimum width of 300 feet (500 feet for raptors), shall be delineated by temporary fencing, and shall remain in effect as long as construction is occurring or until the nest is no longer active. No project construction shall occur within the fenced nest zone until the young have fledged, are no longer being fed by the parents, have left the nest, and will no longer be affected by the construction.

Other Comments

- 11. All construction and post-construction best management practices (BMPs) should be located within the development footprint (*i.e.*, included in the impact analysis as loss of habitat). The DEIR should include a figure depicting the location of BMPs in relation to the development footprint.
- 12. To guide project planning to avoid/minimize impacts to listed species, such as the coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher) and least Bell's vireo (*Vireo bellii pusillus*; vireo), we recommend that protocol-level surveys be conducted for any listed species with the potential to occur within the project site. Surveys should be performed no more than one year prior to an application for a permit from the Wildlife Agencies, and the DEIR should include the survey results.
- 13. Take authorization pursuant to CESA and FESA Act must be obtained if the project has the potential to result in "take" of state and/or federally listed species of plants or animals not fully covered by the Plan.
- 14. Native plants should be used to the greatest extent feasible in landscaped areas adjacent to and/or near mitigation/open space areas and/or wetland/riparian areas. The applicant should not plant, seed, or otherwise introduce invasive exotic plant species to landscaped areas adjacent and/or near native habitat areas. Exotic plant species not to be used include those species listed on the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory. This list includes such species as: pepper trees, pampas grass, fountain grass, ice plant, myoporum, black

Mr. Dan Phu January 13, 2011

locust, capeweed, tree of heaven, periwinkle, sweet alyssum, English ivy, French broom, Scotch broom, and Spanish broom. In addition, landscaping adjacent to native habitat areas should not use plants that require intensive irrigation, fertilizers, or pesticides. Water runoff from landscaped areas should be directed away from mitigation/open space and/or wetland/riparian areas and contained and/or treated within the development footprint.

A copy of the complete list can be obtained by contacting the California Invasive Plant Council at 1442-A Walnut Street, Suite #462, Berkeley, California 94709, or by accessing their web site at http://www.cal-ipc.org.

Sensitivity of Top Priority Rare Natural Communities in Southern California

Sensitivity rankings are determined by the Department of Fish and Game, California Natural Diversity Data Base and based on either number of known occurrences (locations) and/or amount of habitat remaining (acreage). The three rankings used for these top priority rare natural communities are as follows:

- S1.# Fewer than 6 known locations and/or on fewer than 2,000 acres of habitat remaining.
- S2.# Occurs in 6-20 known locations and/or 2,000-10,000 acres of habitat remaining.
- S3.# Occurs in 21-100-known locations and/or 10,000-50,000 acres of habitat remaining.

The number to the right of the decimal point after the ranking refers to the degree of threat posed to that natural community regardless of the ranking. For example:

 $S1.1 = \underline{\text{very threatened}}$

 $S2.2 = \underline{\text{threatened}}$

S3.3 = no current threats known

Sensitivity Rankings (February 1992)

Rank	Community Name
S1.1	Mojave Riparian Forest
	Sonoran Cottonwood Willow Riparian
•	Mesquite Bosque
	Elephant Tree Woodland
•	Crucifixion Thorn Woodland
•	Allthorn Woodland
•	Arizonan Woodland
	Southern California Walnut Forest
•	Mainland Cherry Forest
	Southern Bishop Pine Forest
	Torrey Pine Forest
	Desert Mountain White Fir Forest
•	Southern Dune Scrub
	Southern Coastal Bluff Scrub
	Maritime Succulent Scrub
	Riversidean Alluvial Fan Sage Scrub
,	Southern Maritime Chaparral
	Valley Needlegrass Grassland
	Great Basin Grassland
	Mojave Desert Grassland
•	Pebble Plains
	Southern Sedge Bog
	Cismontane Alkali Marsh

S1.2

Southern Foredunes Mono Pumice Flat Southern Interior Basalt Flow Vernal Pool S2.1

Venturan Coastal Sage Scrub Diegan Coastal Sage Scrub Riversidean Upland Coastal Sage Scrub Riversidean Desert Sage Scrub Sagebrush Steppe Desert Sink Scrub Mafic Southern Mixed Chaparral San Diego Mesa Hardpan Vernal Pool San Diego Mesa Claypan Vernal Pool Alkali Meadow Southern Coastal Salt Marsh Coastal Brackish Marsh Transmontane Alkali Marsh Coastal and Valley Freshwater Marsh Southern Arroyo Willow Riparian Forest Southern Willow Scrub Modoc-Great Basin Cottonwood Willow Riparian Modoc-Great Basin Riparian Scrub Mojave Desert Wash Scrub Engelmann Oak Woodland Open Engelmann Oak Woodland Closed Engelmann Oak Woodland Island Oak Woodland California Walnut Woodland Island Ironwood Forest Island Cherry Forest Southern Interior Cypress Forest Bigcone Spruce-Canyon Oak Forest

S2.2

Active Coastal Dunes
Active Desert Dunes
Stabilized and Partially Stabilized Desert Dunes
Stabilized and Partially Stabilized Desert Sandfield
Mojave Mixed Steppe
Transmontane Freshwater Marsh
Coulter Pine Forest
Southern California Fellfield
White Mountains Fellfield

92.3

Bristlecone Pine Forest Limber Pine Forest

Environmental Coalition Supports NCCP/HCP as Conservation Mechanism for Natural Resource Protection.

January 10, 2011

Dan Phu, Section Manager Orange County Transportation Authority P.O. Box 14184 550 S. Main Street Orange, CA 92863

RE: Notice of Preparation to Prepare an Environmental Impact Report / Statement

Dear Mr. Phu,

The Environmental Coalition that Supported Renewed Measure M is pleased to have an opportunity to comment on the Orange County Transportation Authority's (OCTA) Notice of Preparation for the creation of an Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) for its Natural Community Conservation Plan (NCCP) / Habitat Conservation Plan (HCP) / Master Streambed Alteration Agreement (MSAA). These comments are submitted on behalf of the Coalition within the scoping period, which ends January 10, 2011.

The project will entail the creation of an NCCP/HCP as the mechanism by which the Authority will permanently acquire, restore, and manage conservation lands for mitigation purposes due to habitat, species, and streambed impacts from Renewed Measure M's 13 freeway projects. The Coalition negotiated with the Authority in 2005 to include funding in Renewed Measure M to comprehensively mitigate for transportation project impacts. Since the Measure's passage in November 2006, the Coalition has participated in public hearings, testified at board meetings, and is represented on the Environmental Oversight Committee. For the last five years, the Coalition has publicly supported OCTA's conservation efforts within this habitat mitigation program.

The Coalition continues to support OCTA's mitigation program and the creation of an NCCP/HCP that allows for the permanent protection of biologically important lands throughout Orange County. Based on the county-wide distribution of freeway projects, the Coalition also supports county-wide distribution of acquisition and restoration projects.

We believe that the creation of an NCCP/HCP will provide suitable protection for listed and non-listed species now and in the future. We request that as a part of the conservation strategy and management requirements within the NCCP/HCP, conservation easements (or other suitable and legally enforceable conservation mechanism) be placed on all acquisition and restoration properties to ensure proper protection of the land and its natural resources in perpetuity. In addition, the NCCP/HCP documents should clearly define compatible uses, and enforcement of those uses which do not fall within the pre-defined compatible uses.

Thank you for the opportunity to comment and we look forward to reviewing the draft EIR/EIS.

Sincerely,

cc:

Amigos de Bolsa Chica · California Oaks Foundation · California Cultural Resource Preservation Alliance · Canyon Land Conservation Fund · Chino Hills State Park Interpretive Association · Earth Resource Foundation · Endangered Habitats League · Friends of Coyote Hills · Friends of Harbors, Beaches and Parks · Friends of Newport Coast · Hills For Everyone · Inter Canyon League · Inland Empire Waterkeeper · Laguna Greenbelt, Inc. · Latino Health Access · Newport Bay Naturalists & Friends* · Orange County Interfaith Coalition for the Environment · Orange County Coastkeeper · Planning and Conservation League · Saddleback Canyons Conservancy · Silverado-Modjeska Recreation and Park District · Stop Pollution Our Newport · The Conservation Fund · The Nature Conservancy · The Trust for Public Land · Wild Heritage Planners · Women For

Supervisor Pat Bates, EOC Chair Department of Fish and Game United States Fish and Wildlife Service Caltrans

^{*} Newport Bay Naturalists & Friends is now known as the Newport Bay Conservancy.

DEPARTMENT OF TRANSPORTATION

District 12 3347 Michelson Drive, Suite 100 Irvine, CA 92612-8894 Tel: (949) 724-2241

Fax: (949) 724-2592



Flex your power! Be energy efficient!

January 10, 2011

Dan Phu
Orange County Transportation Authority
550 S. Main Street
Orange, California 92863

File: IGR/CEQA SCH#: 2010121008

Log #: 2628 All

Subject: Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan

Dear Mr. Phu,

Thank you for the opportunity to review and comment on the Notice of Preparation (NOP) for the Measure M2 Natural Community Conservation Plan/Habitat Conservation Plan. The proposal is to prepare an NCCP/HCP (the Plan) that will provide for habitat conservation/mitigation strategy to offset impacts of the proposed issuance of a CESA incidental take permit based on implementation of the Plan. The Plan will identify the Covered Activities carried out by OCTA that may result in take of covered species within the Plan area. Anticipated Covered Activities currently consist of thirteen proposed M2 freeway improvement projects. The planning area is countywide.

The Department of Transportation (Department) is a responsible agency on this project and we have the following comments:

- 1. Clarification is requested in the Environmental Impact Report (EIR) for the specific role of Caltrans as a participating agency in the NCCP/HCP.
- 2. Please clarify the thresholds of significance that will be utilized in the EIR, as well as any additional species identified as being impacted by the NCCP/HCP.
- 3. All work within the Department's Right of Way must conform to Caltrans Standard Plans and Standard Specifications for Water Pollution Control, including production of a Water Pollution Control Program (WPCP) or Storm Water Pollution Prevention Plan (SWPPP) as required. Any runoff draining into the Department's Right of Way from construction operations, or from implementation of the NCCP/HCP, must fully conform to the current discharge requirements of the Regional Water Quality Control Board to avoid impacting water quality. Measures must be incorporated to contain all vehicle loads and avoid any tracking of materials, which may fall or blow onto Caltrans roadways or facilities. (See Attachment: Water Pollution Control Provisions)
- 4. Any major oversight project work proposed for Caltrans facilities in conjunction with the NCCP/HCP would also require coordination with Caltrans and may require an encroachment permit. For specific details on Caltrans Encroachment Permits procedure, please refer to Caltrans Encroachment Permits Manual, Seventh Edition. This Manual is available on the

web site: http://www.dot.ca.gov/hq/traffops/developserv/permits. (See Attachment: Environmental Review Requirements for Encroachment Permit)

- 5. If an encroachment permit is required, all environmental concerns must be adequately addressed. Please coordinate with Caltrans to meet requirements for any work within or near the Department's Right of Way. For Projects on our Right of Way, Caltrans has the authority to maintain or delegate Lead Agency status for CEQA.
- 6. Each proposed project associated with the NCCP/HCP must have subsequent environmental documentation prior to implementation that addresses any direct or indirect impacts to Caltrans Right-of-Way. The environmental documentation and associated technical studies must adhere to Caltrans protocol.

Please continue to keep us informed of this project and any future developments, which could potentially impact the State Transportation Facilities. If you have any questions or need to contact us, please do not hesitate to call Marlon Regisford at (949) 724-2241.

Sincerely,

Christopher Herre, Branch Chief

Local Development/Intergovernmental Review

C: Terry Roberts, Office of Planning and Research

ENVIRONMENTAL REVIEW REQUIREMENTS FOR ENCROACHMENT PERMITS

Any Party, outside of Caltrans, that does work on a State Highway or Interstate Highway in California needs to apply for an encroachment permit. To acquire any encroachment permit, environmental concerns must be addressed. Environmental review of encroachment permit applications may take 3 weeks if the application is complete or longer if the application is incomplete. For soil disturbing activities (e.g. geotechnical borings, grading, usage of unpaved roads from which dirt and other materials may be tracked onto the State/Interstate highways, etc.), compliance with Water Quality and Cultural Resources Provisions are emphasized. Surveys may/ may not be soil-disturbing activities, depending on the site and survey method.

A complete application for environmental review includes the following:

- 1. If an environmental document (CE, EIR/EIS, ND, etc.) has been completed for the project, copy of the final, approved document must be submitted with the application.
- 2. Water Quality Provision: All work within the State Right of Way must conform to Caltrans Standard Plans and Standard Specifications for Water Pollution Control including production of a Water Pollution Control Program or Storm Water Pollution Prevention Plan as required. The applicant must provide Encroachments with a copy of the Storm Water Pollution Prevention Plan (SWPPP) including Best Management Practices (BMPs) to be implemented for construction activities impacting Caltrans Right of Way, prepared for this as required by the NPDES Statewide Storm Water Permit for General Construction Activities. If no SWPPP has been prepared for this project, then the applicant must follow the requirements described in the attached Water Pollution Control Provisions (please see attachment).
- 3. <u>Cultural Resouces Provisions:</u> If not included in the environmental document, before permit approval and project construction, the encroachment permit applicant must complete a <u>Cultural Resource Assessment</u> pursuant to Caltrans Environmental Handbook, Volume 2, Appendix B-1, and Exhibit 1, as amended. The Cultural Resources Assessment ascertains the presence or absence of cultural resources within a one-mile radius of the project area and evaluates the impact to any historical/cultural resource. Cultural Resources include "those resources significant in American history, architecture, archaeology, and culture, including Native American Resources" (Caltrans Environmental Handbook, Volume 2, Chapter1, as amended)]. The Cultural Resource Assessment must include:
 - a clear project description and map indicating project work, staging areas, site access, etc.;
 - a Record Search conducted at the South Central Coastal Information Center (SCCIC) located at California State University, Fullerton. For information call (714) 278-5395;
 - c) proof of Native American consultation. Consultation involves contacting the Native American Heritage Commission (NAHC), requesting a search of their Sacred Lands File, and following the recommendations provided by the NAHC. For information call (916) 653-4082;
 - d) documentation of any historic properties-(e.g. prehistoric and historic sites, buildings, structures, objects, or districts listed on, eligible for, or potentially eligible for listing on the National Register of Historic Places) within a one mile radius of the project area;
 - and a survey by qualified archaeologist for all areas that have not been previously researched.

The SCCIC and NAHC have an approximate turn around time of 2 weeks.

- 4. <u>Biological Resources Provisions:</u> Work conducted within Caltrans Right of Way should have the appropriate plant and wildlife surveys completed by a qualified biologist. If the information is not included in the environmental document, Environmental Planning requests that the applicant submit a copy of the biological study, survey, or technical report by a qualified biologist that provides details on the existing vegetation and wildlife at the project site and any vegetation that is to be removed during project activities. Official lists and databases should also be consulted for sensitive species such as the California Natural Diversity Database and lists provided by the U.S. Fish and Wildlife Service and the California Department of Fish and Game. Any impacts that affect waterways and drainages and/or open space during construction, or that occur indirectly as a result of the project must be coordinated with the appropriate resource agencies. As guidance, we ask that the applicant include:
 - a) clear description of project activities and the project site
 - b) completed environmental significance checklist (not just yes and no answers, but a description should be given as to the reason for the response),
 - c) staging/storage areas noted on project plans,
 - d) proposed time of year for work and duration of activities (with information available),
 - e) any proposed mitigation (if applicable to the project),
 - f) and a record of any prior resource agency correspondence (if applicable to the project).

EXAMPLE WPCP CONTRACT LANGUAGE

The CONTRACTOR shall be responsible for complying with all requirements of Caltrans Standard Specifications Section 7-1.01G, "Water Pollution," and the "Caltrans Storm Water Quality Handbook, Construction Contractor's Guide and Specifications," effective November 2000 and subsequent revisions, for development and implementation of the Water Pollution Control Program (WPCP).

The Contractor is hereby notified that specific construction practices in the Caltrans Standard Specifications, Section 7, "Responsibilities of the Contractor," are considered to be the Best Management Practices. Applicable construction practices in the Standard Specifications shall be incorporated into the WPCP. Additionally, the Contractor's work will be in compliance with the National Pollution Discharge Elimination System (NPDES) Permit for Storm Water Discharges for the State of California Department of Transportation (Caltrans) Properties, Facilities, and Activities, Order No.99-06-DWQ, CASO00003.

Included within these specifications, for the CONTRACTOR's information, is a copy of the attachment to the Encroachment Permit (Water Pollution Control Provisions) and Caltrans Storm Water Quality Handbook, Construction Contractor's Guide and Specifications Section 2, "Specifications for Preparing a WPCP."

The lead agency will obtain a Caltrans Encroachment Permit for work in the State right-of-way. The CONTRACTOR, within seven (7) days of award of the contract, must submit to Caltrans a WPCP for review and approval, along with the application for a rider to the Encroachment Permit.

At the time of the pre-construction meeting the CONTRACTOR must have the WPCP completed and approved by Caltrans.

The CONTRACTOR shall be responsible for conducting all required monitoring inspections and shall file copies of the inspections and all other reports, certifications or records as required by the WPCP with the lead agency. All fines levied as a result of the CONTRACTOR's failure to comply with the requirements of the Permit Rider and the WPCP, shall be the CONTRACTOR's responsibility.

Time extensions will not be allowed for any suspension of work as a result of the CONTRACTOR's noncompliance with the Permit Rider or WPCP.

Payment for complying with the Permit Rider, completing the WPCP, and implementation of the WPCP shall be deemed to be included in the lump sum price bid for the WPCP. Payment during the contract period shall be made as follows:

- a). 25% (less retention) on the 1st monthly progress payment.
- b). The remainder (less retention) shall be paid in equal amounts based upon the length of the contract.

Failure to comply with the Permit Rider, completing the WPCP, and implementing and maintaining the WPCP may cause a reduction in amounts paid for Items a & b.

Appendix C

Notices of Completion and Availability, Distribution List

To Come

Appendix D Air Quality and Greenhouse Gas Calculations

Table 1. Off-road Equipment Calculations

Preserve Management	F!			D				Emissio	n Facto	ors (grai	ms/breal	k-horsepo	wer-hoเ	ur)			Emis	sions (p	ounds pe	r day)					Emiss	ions (to	ns per	project)				Emiss	ions (MT)
Activity	Equipment	Ħ	Hours	Days	нР	LF	ROG	NO _x	СО	SO ₂	PM10	PM2.5	CO ₂	CH₄	ROG	NO _x	со	SO ₂	PM10	PM2.5	CO ₂	CH₄	ROG	NO _x	со	SO ₂	PM10	PM2.5	CO2	CH₄	CO2	CH₄	N ₂ O	CO ₂ e
Invasive species removal	dozer-backhoe	1	4	3	255	0.395	0.74	8.58	6.62	0.00	0.40	0.37	531	0.16	0.66	7.64	5.90	0.00	0.36	0.33	473	0.14	0.00	0.01	0.01	0.00	0.00	0.00	1	0.00	1	0.00	0.00	1
Herbicide/Pesticide		0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0
Treatment	-	U	U	U	U	U	0.00	0.00	0.00	0.00	0.00	0.00	U	0.00	0.00	0.00	0.00	0.00	0.00	0.00	U	0.00	0.00	0.00	0.00	0.00	0.00	0.00	U	0.00	U	0.00	0.00	U
Habitat Restoration	dozer-backhoe	1	5	5	255	0.395	0.74	8.58	6.62	0.00	0.40	0.37	531	0.16	0.83	9.55	7.37	0.01	0.45	0.41	591	0.17	0.00	0.02	0.02	0.00	0.00	0.00	1	0.00	1	0.00	0.00	1
	dozer-backhoe	1	5	5	255	0.395	0.74	8.58	6.62	0.00	0.40	0.37	531	0.16	0.83	9.55	7.37	0.01	0.45	0.41	591	0.17	0.00	0.02	0.02	0.00	0.00	0.00	1	0.00	1	0.00	0.00	1
Trail Improvements	grader	1	5	5	175	0.409	0.86	8.90	3.94	0.00	0.50	0.46	534	0.16	0.68	7.00	3.10	0.00	0.39	0.36	420	0.12	0.00	0.02	0.01	0.00	0.00	0.00	1	0.00	1	0.00	0.00	1
	backhoe	1	5	5	97.9	0.369	0.64	6.08	3.86	0.00	0.49	0.45	530	0.15	0.26	2.42	1.53	0.00	0.19	0.18	211	0.06	0.00	0.01	0.00	0.00	0.00	0.00	1	0.00	0	0.00	0.00	0
New Structures	-	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0
Monitoring/Data Collection	-	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0	0.00	0.00	0

Table 2. Dust Calculations

Preserve Management	Daile Asses	Project	Efs	(lbs/acre)	Emissions	s (lbs/day)	Emissions	(tons/project)
Activity	Daily Acres	Acres	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Invasive species removal	0.1	0.2	1.5	0.17	0.10284	0.01110	0.00015	0.00015
Herbicide/Pesticide Treatment	0.0	0.0	1.5	0.17	0.00000	0.00000	0.00000	0.00000
Habitat Restoration	0.1	0.6	1.5	0.17	0.19282	0.02082	0.00048	0.00048
Trail Improvements	0.1	0.4	1.5	0.17	0.11569	0.01249	0.00029	0.00029
New Structures	0.1	0.3	1.5	0.17	0.07713	0.00833	0.00019	0.00019
Monitoring/Data Collection	0.0	0.0	1.5	0.17	0.00000	0.00000	0.00000	0.00000

Table 3. Onroad Emissions Data

Preserve					(Onsite Act	ivity	(Offsite Act	ivity		Onsite	Emissic	n Facto	rs (gram	s/mile)		0	ffsite E	missio	n Facto	rs (gran	s/mile	<u>.</u>)
Management Activity	Vehicle	#	Hour	s Days	МРН	Mi/day	Mi/phase	Trips	Mi/day	Mi/phase	ROG	NO _x	со	SO ₂	PM10	PM2.5	CO ₂	ROG	NO _x	со	SO ₂	PM10 F	M2.5	CO ₂
Invasive species	Heavy-duty pick-up	2	4	3	5	40	120	0	0	0	0.56	2.68	6.59	0.00	0.05	0.05	1772	0.15	1.83	1.60	0.00	0.02	0.02	581
	Worker vehicles	3	2	3	5	30	90	0	0	0	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
removal	Commute trips	8	2	3	0	0	0	15	191	572	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
Herbicide/Pesticide	Light-duty truck	1	4	2	5	20	40	0	0	0	0.52	0.60	7.35	0.00	0.03	0.02	1260	0.12	0.33	3.67	0.00	0.01	0.00	412
Treatment	Commute trips	1	4	2	0	0	0	2.5	32	64	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
	Heavy-duty pick-up	2	4	5	5	40	200	0	0	0	0.56	2.68	6.59	0.00	0.05	0.05	1772	0.15	1.83	1.60	0.00	0.02	0.02	581
Habitat Restoration	Worker vehicles	3	2	5	5	30	150	0	0	0	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
	Commute trips	8	2	5	0	0	0	15	191	953	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
	Heavy-duty pick-up	2	4	5	5	40	200	0	0	0	0.56	2.68	6.59	0.00	0.05	0.05	1772	0.15	1.83	1.60	0.00	0.02	0.02	581
Trail Improvements	Worker vehicles	4	2	5	5	40	200	0	0	0	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
	Commute trips	11	2	5	0	0	0	23	286	1429	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
Nav. Characturas	Heavy-duty pick-up	2	3	5	5	30	150	0	0	0	0.56	2.68	6.59	0.00	0.05	0.05	1772	0.15	1.83	1.60	0.00	0.02	0.02	581
New Structures	Commute trips	3	3	5	0	0	0	5	64	318	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
Monitoring/Data	Worker vehicles	3	4	15	5	60	900	0	0	0	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363
Collection	Commute trips	4	4	15	0	0	0	8	95	1429	0.27	0.27	3.61	0.00	0.01	0.01	1109	0.06	0.16	1.90	0.00	0.00	0.00	363

Table 4. Onroad Emissions Calculations

Dunnamus Managamant Astinitus	C	nsite	Emissio	ns (pound	ls/day)			Offsite	e Emissio	ons (po	unds/da	у)			Tota	Emissi	ons (po	ounds/c	lay)			Total	Emiss	ions (t	ons/pr	oject)		М	T
Preserve Management Activity	ROG NO _X	СО	SO ₂	PM10	PM2.5	CO ₂	ROG	NO _x	СО	SO ₂	PM10	PM2.5	CO2	ROG	NO _x	СО	SO ₂	PM10	PM2.5	CO ₂	ROG	NO _x	СО	SO ₂	PM10	PM2.5	CO ₂	CO ₂	Other
	0.05 0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0.05	0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Invasive species removal	0.02 0.02	0.24	0.00	0.00	0.00	73	0.00	0.00	0.00	0.00	0.00	0.00	0	0.02	0.02	0.24	0.00	0.00	0.00	73	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
	0.00 0.00	0.00	0.00	0.00	0.00	0	0.02	0.07	0.80	0.00	0.00	0.00	152	0.02	0.07	0.80	0.00	0.00	0.00	152	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Herbicide/Pesticide Treatment	0.02 0.03	0.32	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0	0.02	0.03	0.32	0.00	0.00	0.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Therbicide/ restricted Treatment	0.00 0.00	0.00	0.00	0.00	0.00	0	0.00	0.01	0.13	0.00	0.00	0.00	25	0.00	0.01	0.13	0.00	0.00	0.00	25	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
	0.05 0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0.05	0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Habitat Restoration	0.02 0.02	0.24	0.00	0.00	0.00	73	0.00	0.00	0.00	0.00	0.00	0.00	0	0.02	0.02	0.24	0.00	0.00	0.00	73	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
	0.00 0.00	0.00	0.00	0.00	0.00	0	0.02	0.07	0.80	0.00	0.00	0.00	152	0.02	0.07	0.80	0.00	0.00	0.00	152	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
	0.05 0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0.05	0.24	0.58	0.00	0.00	0.00	156	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Trail Improvements	0.02 0.02	0.32	0.00	0.00	0.00	98	0.00	0.00	0.00	0.00	0.00	0.00	0	0.02	0.02	0.32	0.00	0.00	0.00	98	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
	0.00 0.00	0.00	0.00	0.00	0.00	0	0.04	0.10	1.20	0.00	0.00	0.00	229	0.04	0.10	1.20	0.00	0.00	0.00	229	0.00	0.00	0.00	0.00	0.00	0.00	1	1	0
New Structures	0.04 0.18	0.44	0.00	0.00	0.00	117	0.00	0.00	0.00	0.00	0.00	0.00	0	0.04	0.18	0.44	0.00	0.00	0.00	117	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
New Structures	0.00 0.00	0.00	0.00	0.00	0.00	0	0.01	0.02	0.27	0.00	0.00	0.00	51	0.01	0.02	0.27	0.00	0.00	0.00	51	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
Monitoring/Data Collection	0.04 0.04	0.48	0.00	0.00	0.00	147	0.00	0.00	0.00	0.00	0.00	0.00	0	0.04	0.04	0.48	0.00	0.00	0.00	147	0.00	0.00	0.00	0.00	0.00	0.00	1	1	0
World of the Concetton	0.00 0.00	0.00	0.00	0.00	0.00	0	0.01	0.03	0.40	0.00	0.00	0.00	76	0.01	0.03	0.40	0.00	0.00	0.00	76	0.00	0.00	0.00	0.00	0.00	0.00	1	1	0

Туре	ROG	TOG	СО	NOX	CO2	CO2 Pavley	PM10	PM2.5	SOX
Worker_offsite	0.057	0.077	1.899	0.162	362.834	344.081	0.003	0.003	0.000
Heavy_offsite	0.152	0.178	1.599	1.833	580.719	577.816	0.021	0.019	0.000
Worker_onsite	0.268	0.378	3.612	0.273	1109.238	1051.924	0.015	0.013	0.000
Heavy_onsite	0.561	0.663	6.593	2.677	1771.832	1762.973	0.050	0.046	0.000

^{*}Efs are grams per mile

EMFAC 2011
2012 Estimated Annual Emission Rates
EMFAC 2011 Vehicle Categories
Orange COUNTY
South Coast AIR BASIN
South Coast AQMD

Area	CalYr Season	Veh	Fuel	Speed	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOX_RUNE	CO2_RUNEX	CO2_RUNEX	FPM10_RUNE	X PM2_5_RUN	E SOX_RUNEX	
				(Miles/hr)	(Miles/day)	(gms/mile)	(gms/mile)								
Orange (SC)	2012 Annual	LDA	GAS	30	7507651	0.050	0.069	1.704	0.142	357.493	338.725	0.002	0.002	0.000	total ldv/ldt
Orange (SC)	2012 Annual	LDA	DSL	30	23752	0.074	0.084	0.339	0.551	311.922	290.398	0.056	0.052	0.000	8376132
					7531403	0.050	0.069	1.700	0.143	357.349	338.573	0.003	0.002	0.000	
Orange (SC)	2012 Annual	LDT1	GAS	30	843674	0.116	0.151	3.674	0.330	411.828	393.288	0.005	0.005	0.000	
Orange (SC)	2012 Annual	LDT1	DSL	30	1055	0.126	0.143	0.514	0.745	334.418	315.018	0.106	0.097	0.000	
					844729	0.116	0.151	3.670	0.331	411.731	393.191	0.005	0.005	0.000	
Orange (SC)	2012 Annual	LHD2	GAS	30	29665	0.127	0.154	2.136	0.532	619.434	616.336	0.002	0.002	0.000	
Orange (SC)	2012 Annual	LHD2	DSL	30	20863	0.187	0.213	0.836	3.683	525.672	523.044	0.047	0.043	0.000	
					50529	0.152	0.178	1.599	1.833	580.719	577.816	0.021	0.019	0.000	

EMFAC 2011
2012 Estimated Annual Emission Rates
EMFAC 2011 Vehicle Categories
Orange COUNTY
South Coast AIR BASIN
South Coast AQMD

Journ Coust / (QIVID																
Area	CalYr	Season	Veh	Fuel	Speed	VMT	ROG_RUNE	TOG_RUNE	CO_RUNEX	NOX_RUNE	CO2_RUNEX	CO2_RUNEX(FPM10_RUNE	X PM2_5_RUN	E SOX_RUNEX	
					(Miles/hr)	(Miles/day)	(gms/mile)	(gms/mile)								
Orange (SC)	201	.2 Annual	LDA	GAS	5	118559	0.240	0.343	3.199	0.234	1094.373	1036.932	0.013	0.012	0.000	total ldv/ldt
Orange (SC)	201	.2 Annual	LDA	DSL	5	375	0.185	0.211	1.195	0.930	447.788	409.672	0.141	0.129	0.000	132274
						118934	0.240	0.342	3.193	0.236	1092.334	1034.954	0.013	0.012	0.000	
Orange (SC)	201	.2 Annual	LDT1	GAS	5	13323	0.524	0.700	7.356	0.598	1260.987	1204.239	0.026	0.024	0.000	
Orange (SC)	201	.2 Annual	LDT1	DSL	5	17	0.314	0.358	1.861	1.276	427.978	393.982	0.265	0.243	0.000	
						13340	0.524	0.699	7.349	0.599	1259.947	1203.227	0.026	0.024	0.000	
Orange (SC)	201	.2 Annual	LHD2	GAS	5	701	0.617	0.742	8.665	0.433	2513.498	2500.930	0.011	0.010	0.000	
Orange (SC)	201	.2 Annual	LHD2	DSL	5	417	0.466	0.531	3.112	6.447	525.672	523.044	0.116	0.107	0.000	
						1119	0.561	0.663	6.593	2.677	1771.832	1762.973	0.050	0.046	0.000	

Fugitive Dust Emission Factors, from Grading Emission Calculations within CaleeMod methods

1)	Emission Fac	tor Calcs				
			lbs/VMT			
	EF PM15		2.57			
	EF PM10		1.54			
	EF tsp		5.37			
	EF pm2.5		0.17			
		0.051 0.04	multiplier multiplier			
		7.1	5	mean speed, default		
		0.031		Fpm2.5, scaling factor		
		0.6		Fpm10 scaling		
2)	Emissions Ca	lcs		-		
	$E = EF \times VMT$. and				
	VMT = As / W	/b x 43560 / 52	280			
				PM10	PM2.5	
	E (lbs)	ι	incontrolled	1.06	0.11	
		cont	rolled (Rule 40	0.41	0.04	
	EF (lbs/VMT)	from above)		1.54	0.17	
	VMT			0.68750	0.6875	
	As, total acre	age of grading	,	1	1	
	W blade widt	th (ft), use defa	ult	12	12	
				43560		
				5280		
	EF (in lbs per	acre)		1.542546		0.16655879

Appendix E OCTA 2006 LRTP Draft Program EIR

Orange County Transportation Authority 2006 Long-Range Transportation Plan Draft Program Environmental Impact Report





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PROPOSED DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

2006 ORANGE COUNTY TRANSPORTATION AUTHORITY LONG RANGE TRANSPORTATION PLAN

ORANGE COUNTY, CALIFORNIA

SCH NO. 2005041038

Prepared for:

Orange County Transportation Authority 550 South Main Street P.O. Box 14184 Orange, California 92863-1584 (714) 560-OCTA (6282)

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January 2006

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EXECUTIVE SUMMARY

This Executive Summary has been prepared for the Program Environmental Impact Report (PEIR) for the proposed 2006 Long Range Transportation Plan (LRTP; Proposed Plan) located in Orange County (County). This PEIR has been prepared by Orange County Transportation Authority (OCTA) to analyze the LRTP potential impacts on the environment; to discuss alternatives; and to propose mitigation measures that will offset, lessen, or avoid significant environmental impacts. (Prior to consideration of the 2006 PEIR, OCTA will consider this PEIR for certification.) For a detailed description of the LRTP, the Proposed Plan, its impacts, recommended mitigation, alternatives, and the its long-term implications, the reader is referred to Chapters 2.0, 4.0, 5.0, and 6.0 of this PEIR.

A Notice of Preparation (NOP), which described the LRTP and alternatives under evaluation and the purpose of the PEIR, was distributed for public review in April 2005. Three scoping meetings were held during the public review period for the NOP to solicit public input regarding potential environmental effects that should be considered in the PEIR.

PURPOSE OF THE PEIR

This PEIR has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Public Resources Code Section 21000 et seq.), and the State CEQA Guidelines for Implementation of CEQA (California Code of Regulations, Title 14, Section 15000 et seq.). Under the requirements of CEQA and the CEQA Guidelines, OCTA is the Lead Agency for environmental review and must evaluate the environmental effects of the LRTP. The intent of this PEIR is to inform the OCTA Board of Directors, local agencies, and the general public of any significant adverse environmental impacts that may be associated with the planning, construction, or operation of the improvements and programs identified in the LRTP and to identify appropriate feasible mitigation measures that may be adopted to reduce or eliminate these impacts. This PEIR also includes evaluation of reasonable alternatives to the Proposed Plan, including the No Project (Baseline) Alternative, Constrained Alternative, Balanced II Alternative, and Unconstrained Alternative. Each of these alternatives is described below and in Chapter 5.0 of this PEIR.

PROJECT LOCATION

Orange County boundaries defined the entirety of the project location for the LRTP. Orange County is located along Pacific Ocean between Los Angeles County to the north and northwest, San Bernardino County to the northeast, Riverside County to the east, and San Diego County to the southeast. Orange County stretches approximately 40 miles along the coast and extends inland approximately 20 miles, covering 798 square miles.¹

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Orange County General Plan, 2004.

PROJECT DESCRIPTION

The Proposed Plan is made up of four components: freeways, roadways, transit, and environmental programs. The Proposed Plan includes significant transportation improvements that would partially address future congestion and mobility needs but would require supplemental local funding such as continuation of Orange County's transportation sales tax beyond its current expiration in 2011 in addition to the traditional annual revenues from State and federal transportation funding. The Proposed Plan includes improvements to existing freeways, tollways, roadways, and transit (bus and rail) systems as well as an environmental program aimed at offsetting the water quality impacts of existing and proposed transportation facilities.

PROJECT OBJECTIVES

The goals of the LRTP include improving mobility, protecting transportation resources, and enhancing the quality of life in the County. Each goal and its corresponding objectives are described below:

• **Improve mobility** by

- Offering safe and reliable transportation choices;
- Providing an accessible transportation network;
- o Minimizing increases in congestion; and
- o Developing an integrated transportation network.

• **Protect transportation resources** by

- o Using the existing transportation network efficiently;
- Maintaining infrastructure;
- o Promoting cost-effective and multimodal solutions; and
- Exploring creative solutions.

• Enhance the quality of life by

- o Promoting coordinated planning;
- Minimizing community impacts;
- Supporting economic growth; and
- o Protecting the environment.

ALTERNATIVES

The following alternatives to the Proposed Plan are analyzed in Chapter 5.0 of this PEIR.

• **No Project (Baseline) Alternative.** The No Project (Baseline) Alternative includes projects and programs that have secured funding, have been assessed for their environmental impacts, and have been approved to be implemented.

- Constrained Alternative. The Constrained Alternative is a set of projects and services that can be completed within the County's traditional revenue sources for transportation improvements. It assumes that the current Measure M one-half-cent sales tax is not extended beyond 2011.
- **Balanced II Alternative.** The Balanced II Alternative includes all of the projects from the Proposed Plan with the exception of the high-occupancy toll (HOT) projects proposed along State Route (SR) 91.
- Unconstrained Alternative. The highest level of investment in the transportation system includes projects and services that could be implemented to meet Orange County's travel demand if funding was not an issue.

AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Section 15123 of the CEQA Guidelines requires that areas of controversy, including issues raised by other agencies and the public, be identified in the Executive Summary. No areas of controversy were identified through the NOP/scoping process.

Issues to be resolved include the following discretionary actions to be taken by the OCTA Board of Directors:

- Certification of the PEIR
- Selection of the Proposed Plan as the Preferred Plan
- Adoption of the LRTP

ENVIRONMENTAL IMPACTS

Table ES.1 located at the end of this Executive Summary summarizes the potential environmental impacts of the Proposed Plan, mitigation measures, and any remaining unavoidable adverse impacts identified in the PEIR.

In accordance with Section 15128 of the CEQA Guidelines, the following topics were deemed to have less than significant impacts and are not discussed separately in the PEIR:

- Agricultural Resources
- Mineral Resources
- Recreation Resources

The improvements identified in the Proposed Plan are located within urban areas and/or adjacent to existing facilities and would not likely result in effects to mineral resources. Impacts to agricultural and recreational resources are discussed in Chapter 4.8, Land Use.

For each potentially significant impact, at least one mitigation measure has been proposed to reduce the significance of the environmental impact. These mitigation measures would reduce the extent of the impact to below a level of significance for some environmental impacts, except for the following:

- Short-term construction-related emissions that exceed the SCAQMD thresholds
- Short-term construction-related health risks associated with diesel exhaust
- Loss of special-interest species and sensitive natural communities
- Displacement of riparian habitat, federally protected wetlands, and waters of the U.S.
- Habitat fragmentation and increased roadkill
- Substantial adverse change to the significance of a known cultural resource
- Direct or indirect destruction of a unique cultural resource
- Disturbance of archaeological human remains
- Damage to transportation infrastructure through surface rupture, ground shaking, liquefaction, and landslides
- Long-term erosion and slope failure
- Residual geologic and soil cumulative impacts in localized areas such as near Alquist-Priolo Earthquake Fault Zones and locations within Seismic Hazards Mapping Zones
- Water quality impacts during construction and operation of projects
- Water quality impacts caused by erosion and sedimentation
- Community impacts (indirect air quality, noise, and aesthetics impacts) to land uses and sensitive receptors adjacent to some projects within the Proposed Plan
- Cumulative community impacts (indirect air quality, noise, and aesthetics impacts) to land uses and sensitive receptors adjacent to some projects within the Proposed Plan
- Long-term noise levels in excess of local noise standards or substantially increased over ambient levels
- Long-term vibration impacts adjacent to expanded rail lines
- Short-term construction noise levels in excess of local standards
- Short-term vibration levels in excess of the annoyance threshold
- Disruption or division of existing communities by separating community facilities, restricting community access, and eliminating community amenities
- Visual impacts to important visual resources within designated Scenic Highways
- Effects to scenic resources visible from public vantage points

Table ES-1: 2006 LRTP Impacts and Mitigation Measures

Potential Environmental Impacts	Mitigation Measure	Level of Significance
4.1 Air Quality		
Impact 4.1-1. Short-Term	MM 4.1-A. Prior to approval of individual projects, the Lead Agency shall evaluate	Significant residual impacts could
(Construction) Regional Impacts.	potential short-term air quality impacts as part of the project's environmental review. This	remain after mitigation for some
	review shall identify the existing air quality condition, evaluate potential project impacts,	improvements included in the
Short-term construction-related	and identify appropriate measures to be implemented during construction. These measures	Proposed Plan.
emissions that exceed the SCAQMD	include compliance with SCAQMD Rule 403. The following additional air quality	
thresholds.	mitigation measures should be considered as part of the project-level environmental review:	
	Revegetate exposed earth surfaces following construction.	
	• Apply water or dust suppressants to exposed earth surfaces to control emissions.	
	Cessation of all excavating and grading activities during second stage smog alerts and	
	periods of high winds.	
	• Cover all trucks hauling dirt, sand, soil, or other loose materials off-site or wetted or shall	
	maintain at least two feet of freeboard (i.e., minimum vertical distance between the top of	
	the load and the top of the trailer).	
	• Treat the surface of all construction roads that have high traffic volumes with base	
	material or decomposed granite, or pavement or otherwise stabilizing technique.	
	• Clean public streets at frequent intervals or at least three times a week if visible soil	
	material has been carried onto adjacent public roads.	
	• Visually inspect of construction equipment prior to leaving the site and loose dirt shall be	
	washed off with wheel washers as necessary.	
	• Apply water or non-toxic soil stabilizers as needed to reduce off-site transport of fugitive	
	dust from all unpaved staging areas and other unpaved surfaces.	
	• Maintain traffic speeds on all unpaved surfaces below 25 mph.	
	• Implement all feasible energy-saving measures, such as the use of low sulfur or other	
	alternative fuels in construction equipment, utilizing electricity from power poles rather	
	than temporary diesel power generators and/or gasoline power generators.	
	• Schedule all deliveries related to construction activities that affect traffic flow to occur	
	during off-peak hours (e.g., 10:00 a.m. and 3:00 p.m.) and coordinate them to achieve	
	consolidated truck trips. When the movement of construction materials and/or equipment	
	impacts traffic flow, temporary traffic control shall be provided to improve traffic flow	
Import 4.1.2 Chart Town Lagging	(e.g., flag person). MM 4.1 P. Dright to project approval for all project individual frequency projects, the Lead	Cignificant regiduel imme et1
Impact 4.1-2. Short-Term Localized	MM 4.1-B. Prior to project approval, for all major individual freeway projects, the Lead	Significant residual impacts could remain after mitigation.
Impacts.	Agency shall evaluate short-term TAC/health risks as part of the project's environmental review. The evaluation shall assess the exposure of sensitive receptors near each project to	remain after mitigation.
Short-term construction-related health	TACs and determine the resulting health risks. Measures shall be considered, such as	
Short-term construction-related health	TACS and determine the resulting health fisks. Measures shall be considered, such as	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
risks associated with diesel exhaust.	equipping construction equipment with diesel particulate traps and the use of low-sulfur or	
4.2 Biological Resources	other alternative fuels in construction equipment to mitigate potential impacts.	
Impact 4.2-1: Surface disturbance	MM 4.2-A. Special-Interest Species and Sensitive Natural Communities. During the	Significant residual impacts could
could directly affect threatened, endangered, and/or special-interest species and sensitive natural communities outside of designated NCCP/HCP areas.	planning process and environmental review for individual projects in the Proposed Plan, the Lead Agency for the project shall conduct comprehensive biological resources assessment to evaluate and mitigate direct and indirect impacts to sensitive natural communities and special-interest species. The assessment would include consideration of avoidance or redesign to minimize impacts through project design. Additionally, mitigation measures shall be identified to mitigate remaining impacts to these resources. The types of mitigation to be considered for each project are discussed below.	remain after mitigation for some improvements included in the Proposed Plan.
	Compensation for Loss of Habitat. A mitigation plan identifying specific measures to compensate for permanent habitat loss due to project implementation shall be developed. The mitigation plan will consider in-kind habitat acquisition, habitat enhancement and long-term monitoring, or participation in regional conservation programs such as the Central/Coastal NCCP/HCP and the Southern Subregion NCCP.	
	Construction Minimization Measures. Implement measures during construction, such as: • When possible, vegetation removal and loud construction activities (greater than 60 dBA) will be scheduled outside of the breeding season for special-interest animal species known to occur in the area • Night time lighting shall be directed away from areas known to support special-interest animal species • Field surveys will be conducted immediately prior to vegetation removal. If special-interest species are found to be present, then construction should be delayed in that area until breeding activity is completed or the species can be relocated. • During construction, sensitive habitat areas should be clearly marked and monitored by qualified biologists • Construction crews will be educated regarding the sensitive nature of the work area and the importance of avoiding disturbance of sensitive habitat areas.	
	Invasive Species. Prior to approval of individual Proposed Plan projects, the lead agency for that project shall ensure that project landscaping complies with applicable guidelines and requirements regarding plant materials. Measures shall be taken during construction to reduce the transport of invasive species into and out of construction sites.	
Impact 4.2-2: Potential direct impacts	MM 4.2-B. Riparian habitat, federally protected wetlands, and jurisdictional waters	Significant residual impacts could
to riparian habitat, wetlands, and	of the U.S. During the planning process and environmental review for individual projects	remain after mitigation for some
jurisdictional waters by individual	in the proposed plan, the Lead Agency for the project shall conduct a wetlands and	improvements included in the

Potential Environmental Impacts	Mitigation Measure	Level of Significance
projects in the Proposed Plan may	jurisdictional waters determination and assessment of direct and indirect impacts to waters	Proposed Plan.
occur due to temporary disturbance	of the U.S. The assessment would include consideration of avoidance or redesign to	
during construction, permanent	minimize impacts through project design. Additionally, mitigation measures shall be	
disturbance, or loss due to discharge of	identified to mitigate the remaining impacts to these resources. Types of mitigation to be	
fill material. Indirect impacts may	considered for each project include the following.	
occur due to contamination by	Avoidance and Minimization during Design. Measures should be taken to limit	
nonpoint source pollutants, alteration	temporary disturbance to minimum areas necessary for construction. The project design	
of hydrologic regime, increased	should carefully consider the placement of haul roads, storage yards, and staging areas with	
erosion, and siltation caused by vegetation removal.	respect to jurisdictional waters and associated habitats. Culverts, drainage systems, and	
vegetation femoval.	bridges should be designed to avoid increasing or decreasing peak flow, to maintain	
	hydrologic continuity within drainage systems, and to avoid permanent diversion of natural	
	flows. Compensation for Loss of Riparian Habitat. Develop a Habitat Mitigation and	
	Monitoring Plan (HMMP) that ensures no net loss of riparian habitat value or acreage. The	
	HMMP will include compensation for permanent disturbance or loss by providing alternate	
	or substitute resources, construction minimization measures, and identify a success	
	criterion for percent cover of native wetland vegetation, an establishment period for the	
	replacement habitat, as well as regular maintenance and monitoring activities to ensure the	
	success of the mitigation plan.	
	Regulatory Permitting. Mitigation may require the following permits from the respective	
	resource agencies: (1) Section 404 Permit, Corps; (2) Section 401 Water Quality	
	Certification, RWQCB; (3) Section 1602 Streambed Alteration Agreement, CDFG, and (4)	
	authorization for impacts to endangered species either through provisions in an	
	NCCP/HCP, SAMP HCP, or through formal Section 7 consultation between USFWS and	
	the Corps. These permits will require, at a minimum, the preparation of a mitigation plan	
	and the provisions for the protection of special-interest species as described above. The	
	proposed project will comply with all terms and conditions set forth in the permits issued	
	by the resource agencies.	
Impact 4.2-3. Wildlife movement and	MM 4.2-C. During the planning process and environmental review for individual projects	Significant residual impacts could
habitat linkage values could be limited	in the Proposed Plan, the lead agency for the project shall conduct site-specific analyses of	remain after mitigation for some
by severing, constricting, or increasing	opportunities to preserve or improve habitat linkages with areas on and off site. Measures	improvements included in the
fragmentation of linkages, which could	include providing wildlife crossings/access at appropriate locations and providing fencing	Proposed Plan.
contribute to increased incidence of	to minimize the probability of road-related injury to wildlife.	
roadkill.		
Impact 4.2-4. Migratory birds may be	MM 4.2-D. To the extent feasible and practical, vegetation removal shall be conducted	Less than significant after
affected by removing or disturbing	outside the active nesting season for migratory birds anticipated to be present in the study	mitigation.
active nests during construction	area. If vegetation clearing must be scheduled during the acting nesting season for	
activities.	migratory birds, a qualified biologist will conduct surveys for active bird nesting no more	
	than 10 days prior to any clearing of vegetation. The location of any active migratory bird	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	nests will be mapped by the biologist. All construction activities in close proximity to active nests shall be delayed or otherwise modified as necessary to prevent nest failure caused by construction activities.	
Impact 4.2-5. Local Plans and Policies: Projects in the Proposed Plan have the potential to conflict with local plans and policies, including local tree ordinances.	MM 4.2-E. Prior to environmental approval of projects identified in the Proposed Plan, the lead agency shall evaluate potential conflicts and ensure compliance with all local tree protection ordinances, general plans, and other local policies.	Less than significant after mitigation.
Cumulative Impact. The individual projects within the Proposed Plan that affect natural areas have the potential to create significant cumulative impacts to special-interest species, sensitive natural communities, riparian habitat, federally protected wetlands, waters of the U.S., wildlife movement, and migratory birds.	MM 4.2.A-4.2.E would be applied to mitigate the cumulative impact.	Cumulatively significant residual impacts could remain for some projects included in the Proposed Plan.
4.3 Cultural Resources		
Impact 4.3-1. Transportation improvements and programs included in the Proposed Plan may affect historic resources.	MM 4.3-A. For all projects requiring ground disturbance, the lead agency shall evaluate historic resources impacts as part of the project's environmental review. A records search at the SCCIC of the California Historical Resources Information System (CHRIS) shall be conducted during environmental review pursuant to CEQA or NEPA to identify previously recorded resources that may be impacted by the project and to determine if the project area has been adequately surveyed. In the event that no previous surveys have been conducted, a recommendation will be made by the SCCIC as to whether a survey is warranted based on the sensitivity of the project area for historic resources. If there are historic resources that may be directly or indirectly impacted, a qualified architectural historian shall evaluate the impact of undertakings on resources included in or eligible for listing in the NRHP and CRHR registers in accordance with State and federal regulations. The evaluation of the direct and indirect impacts to historic resources should extend at least 1,000 feet from new construction, as appropriate to the surrounding setting. A structure whose historic value has not been previously assessed but is within the impact area of a project shall be evaluated for listing in the National and California Registers. MM 4.3-B. Construction activities should be conducted to avoid impacts to significant historic resources. If this is not possible, a qualified architectural historian shall be retained to document and evaluate these resources. This documentation may include but is not limited to interviews, photographs, architectural drawings, and additional research. Monitoring during construction may also be recommended depending on the sensitivity of the area.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.

3-C. Prior to construction activities, the project implementation agencies shall the Native American Heritage Commission (NAHC) to determine whether known onal Cultural Properties (TCPs) and/or sacred sites are in the project area. The will then identify specific Native American groups or individuals to be contacted y have concerns or additional information. A records search shall be conducted by a darchaeologist at the SCCIC to identify archaeological sites and previous surveys ned within the project area. A qualified archaeologist shall be retained to conduct ological surveys if necessary, depending on the resource sensitivity of the area. If es are determined to be present, the archaeologist will make recommendations	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
ng what work is required to determine their significance.	
action activities shall be conducted to avoid archaeological resources. If this is not a, impacts on the resources will have to be assessed and mitigated prior to ction. Mitigation measures could include intensive documentation, subsurface and construction monitoring by a qualified archaeologist of all earthmoving es. 3.D. Project implementation agencies shall stop construction activities and tion if cultural resources are encountered until a qualified archaeologist can assess	
and determine its significance. If required, salvage operations shall be conducted. 3-E. As part of the environmental review for each individual project, a qualified ologist shall be retained by the lead agencies to conduct a locality search and to and evaluate areas with the potential to yield paleontological resources. A field shall also be conducted in these areas if appropriate. The findings of the ological assessment shall be incorporated into the environmental document.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
ossible, a management plan outlining how resources will be salvaged shall be d for areas of high sensitivity. These areas shall be monitored by a qualified ologist during construction activities. Any fossil remains encountered shall be at an appropriate institution where they can be studied and/or displayed. 3-G. If unknown paleontological resources are encountered, all construction	
d determine its significance. If required, salvage operations shall be conducted.	
states that no further disturbance shall occur until the County Coroner has made a nation of origin and disposition pursuant to State Public Resources Code Section	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
3 ii 1 3 0 7 S 0 3 0 C 0 3 S ii	g what work is required to determine their significance. ction activities shall be conducted to avoid archaeological resources. If this is not a impacts on the resources will have to be assessed and mitigated prior to stion. Mitigation measures could include intensive documentation, subsurface and construction monitoring by a qualified archaeologist of all earthmoving s. 6.D. Project implementation agencies shall stop construction activities and ion if cultural resources are encountered until a qualified archaeologist can assess and determine its significance. If required, salvage operations shall be conducted. 6.E. As part of the environmental review for each individual project, a qualified ologist shall be retained by the lead agencies to conduct a locality search and to and evaluate areas with the potential to yield paleontological resources. A field shall also be conducted in these areas if appropriate. The findings of the ological assessment shall be incorporated into the environmental document. 6.F. Construction activities shall avoid any known paleontological resources. If this possible, a management plan outlining how resources will be salvaged shall be dologist during construction activities. Any fossil remains encountered shall be at an appropriate institution where they can be studied and/or displayed. 6.G. If unknown paleontological resources are encountered, all construction is shall be halted and the area avoided until a qualified paleontologist can assess the determine its significance. If required, salvage operations shall be conducted. 6.H. If human remains are encountered, State Health and Safety Code Section states that no further disturbance shall occur until the County Coroner has made a

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	determined to be prehistoric, the Coroner will notify the NAHC, which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the descendant may inspect the site of the discovery. The descendant shall complete the inspection within 24 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. If cultural materials are discovered during any excavation, a qualified archaeologist must be notified to assess the significance of such material.	
Cumulative Impact. The Proposed Plan has the potential to create significant impacts to historic resources, archaeological resources, paleontological resources, and archaeological human remains. Projects along existing highway facilities would likely have less impact on cultural resources than new projects in previously undisturbed soil. Future development within Orange County also has the potential to result in similar significant impacts to these resources.	MM 4.3-A-4.3-H would be applied to mitigate the cumulative impact.	Significant residual cumulative impacts could remain after mitigation for some projects included in the Proposed Plan.
4.4 Geological Resources		
Impact 4.4-1. Seismic events can damage transportation infrastructure through surface rupture, ground shaking, liquefaction, and landslides.	MM 4.4-A. As part of environmental review and approval of individual projects and programs, the Lead Agency shall evaluate project geologic and seismic conditions and potential impacts. As part of this evaluation, projects shall be reviewed for compliance with Caltrans, County, and City code requirements for seismic ground shaking, as appropriate. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code standards for construction in or near fault zones. Projects located within or across Alquist-Priolo Zones Earthquake Fault Zones must comply with design requirements provided in Special Publication 117, published by the CGS13, as well as relevant local, regional, State, and federal design criteria for construction in seismic areas. Appropriate mitigation measures shall be identified as part of this evaluation.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
Impact 4.4-2. Grading and earth modifications could increase long-term erosion potential and slope failure.	MM 4.4-B. As part of environmental review and approval of individual projects and programs, the Lead Agency shall evaluate project geologic conditions for unstable slopes and potential landslide hazards. As part of this evaluation, projects shall be reviewed for compliance with Caltrans, County, and City code requirements for construction on slopes, as appropriate. Project design shall avoid potential landslide areas and unstable slopes.	Significant residual impacts will remain after mitigation for some improvements included in the Proposed Plan.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
Impact 4.4-3. Expansive or unstable	Appropriate mitigation measures shall be identified as part of this evaluation. MM 4.4-C. As part of environmental review and approval of individual projects and programs, the Lead Agency shall evaluate potential slope instability and erosion impacts of the project. Project design shall provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion. Appropriate mitigation measures shall be identified as part of this evaluation. MM 4.4-D. Prior to individual project approvals, the Lead Agency for projects within the	Less than significant levels after
soils could lead to subsidence, damage to property, and risks to public safety.	Proposed Plan shall ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils and evaluated in the environmental documentation prepared for the project. Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, shall be implemented in project designs. MM 4.4-E. Prior to individual project approvals, the Lead Agencies shall ensure that, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils. Environmental documentation prepared for any project shall evaluate the	mitigation.
	potential for subsidence due to prior extraction activities, either petroleum or water, and incorporate mitigation measures.	
Cumulative Impacts. The actions considered by the Proposed Plan have the potential to cause cumulatively considerable adverse effects on human beings when considered at the regional scale.	MM 4.4-A-4.4-E are generally expected to minimize or avoid potential hazards due to geologic and seismic factors. Additionally, appropriate use of engineering technologies, when coupled with siting considerations, would substantially lessen the potential geology and soil impacts of cumulative development.	Significant residual cumulative impacts could remain after mitigation for some projects included in the Proposed Plan.
4.5 Energy		
Impact 4.5.1. Operational Energy Consumption.	 MM 4.5-A. During the design and approval of structures, such as transit stations and bus stops, the incorporation of energy-efficient measures beyond Title 24 of the Uniform Building Code (UBC) shall be considered by the Lead Agencies. Implementation of LEEDS standards shall also be considered. Types of energy efficiency measures could include: Use of solar panels for lighting of all bus stops Incorporating LEEDS standards such as: Verify that the building's energy related systems are installed, calibrated and perform according to the owner's project requirements, basis of design, and construction documents. 	Less than significant impact after mitigation.
	o Design the building envelope, HVAC, lighting, and other systems to maximize energy performance. o When reusing existing HVAC systems, conduct an inventory to identify equipment	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	that uses CFC refrigerants and provide a replacement schedule for these refrigerants.	
	For new buildings, specify new HVAC equipment in the base building that uses no CFC	
	refrigerants.	
	o Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with	
	excessive energy use.	
	o Assess the project for non-polluting and renewable energy potential including solar,	
	wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying	
	these strategies, take advantage of net metering with the local utility.	
4.6 Hazards and Hazardous Materials		
Impact 4.6-2. Accidental releases of	MM 4.6-A. The Orange County Transportation Authority (OCTA), through ongoing	Less than significant impact after
hazardous materials into the	intergovernmental coordination efforts, shall encourage USDOT, the Office of Emergency	mitigation.
environment.	Services, and Caltrans to continue to conduct driver safety training programs and encourage	
	the private sector to continue conducting driver safety training.	
	MM 4.6-B. OCTA, through ongoing intergovernmental coordination efforts, shall	
	encourage the USDOT and the California Highway Patrol (CHP) to continue to enforce	
	speed limits and existing regulations governing goods movement and hazardous materials	
	transportation.	
Impact 4.6-3. Disturbance of	MM 4.6-C. Prior to approval of any project in the Proposed Plan, the Lead Agency shall	Less than significant impact after
contaminated property during the	conduct an assessment of any potential recognized environmental conditions related to	mitigation.
construction of new or the expansion	hazardous waste that includes a database of contaminated sites in close proximity to the	
of existing transportation facilities.	project. As part of the planning and environmental clearance process, where contaminated	
	sites are identified, the Lead Agency shall develop appropriate mitigation measures to	
	assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.	
Cumulative Impacts. The Proposed	Compliance with federal, State, and local regulations concerning the storage and handling	Less than significant impact after
Plan would cumulatively contribute to	of hazardous materials and/or waste, as well as MM 4.6-A through 4.6-C , would reduce the	mitigation.
the intensity of development in Orange	potential for significant public health and safety impacts from hazardous materials to occur.	intigution.
County.		
4.7 Hydrology and Water Quality		
Impact 4.7-1. Operation of projects	MM 4.7-A. Water Quality During Operation. Prior to the approval of individual projects	Significant residual impacts could
identified in the Proposed Plan could	within the Proposed Plan, the Lead Agency shall evaluate potential long-term water quality	remain after mitigation for some
adversely impact water quality.	impacts of the project and identify specific postconstruction water quality BMPs as part of	improvements included in the
	the environmental review for the project. These measures shall include preparation of a	proposed plan.
	Water Quality Management Plan (WQMP) or Standard Urban Stormwater Management Plan (SUSMP) (if the project is within the San Diego Region of the SWRCB). The WQMP	
	or SUSMP shall be prepared in accordance with the OCDAMP, and other water quality	
	regulations in effect at the time of authorization.	
	regulations in crieet at the time of authorization.	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	The WQMP or SUSMP shall contain, at a minimum, the following elements:	
	 Determination of the pollutants of concern Incorporation of Site Design, Source Control, and Treatment Control BMPs into the development plans for the project. 	
	• Operation and maintenance requirements for the project drainage system and structural BMPs	
Impact 4.7-2. Discharge of pollutants such as sediment, oil, and grease to the municipal storm drain system and downstream waters may occur during construction activities.	MM 4.7-B. Water Quality During Construction. Prior to the approval of individual projects within the Proposed Plan, the Lead Agency shall evaluate potential short-term water quality impacts of the project and incorporate appropriate mitigation that includes applicable construction activity BMPs and erosion and sediment control BMPs in compliance with the State General Construction Activity Storm Water Permit. The mitigation shall be specified in a SWPPP prepared by a Registered Civil Engineer. A copy of the SWPPP shall be kept at the project site during all construction activities. Prior to the beginning of construction, the lead agency shall file a Notice of Intent (NOI) with the appropriate RWQCB for the project to be covered under the NPDES General Permit. The lead agency shall ensure that the construction site is inspected prior to an anticipated storm, during extended storm events, and after actual storm events to ensure that BMPs are functioning properly.	Less than significant impact after mitigation.
Impact 4.7-3. Loss of groundwater recharge and supply by reducing infiltration rates.	MM 4.7-C. Groundwater Supply and Recharge. During design and environmental review of projects within the Proposed Plan, the Lead Agency shall evaluate potential impacts to groundwater supply and recharge and incorporate appropriate mitigation. Mitigation may include infiltration basins, vegetated swales, and other methods to control surface runoff and facilitate groundwater recharge.	Less than significant impact after mitigation.
Impact 4.7-4. Alter the existing drainage patterns leading to erosion and siltation in downstream waters.	MM 4.7-D. Erosion and Siltation. During design and environmental review of projects within the Proposed Plan, the Lead Agency shall evaluate potential erosion and siltation impacts and incorporate appropriate mitigation. Mitigation may include sediment control measures, including an erosion control and revegetation program in accordance with the County NPDES Permit and other water quality regulations in effect at the time of construction. These measures may be specified in a WQMP (or SUSMP) and SWPPP.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
Impact 4.7-5. Flooding due to increased surface runoff.	MM 4.7-E. 100-Year Flood Hazard Area. During project planning and environmental evaluation of the project, the Lead Agency for projects identified in the Proposed Plan shall prepare a hydrology study in conformance with local, State, and federal guidelines and flood control requirements. The design shall be submitted to the local flood control agency for review and approval. The hydrology study shall include all on-site structures and drainage facilities necessary to accommodate increased runoff resulting from the proposed project, and it shall indicate project contribution to the regional storm water drainage system.	Less than significant impact after mitigation.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
rotentiai Environmentai impacts	MM 4.7-F. 100-year Flood Hazard Area. Environmental documentation for projects requiring federal approval or funding must demonstrate that the project complies with Executive Order 11988 on Floodplain Management, which requires avoidance of incompatible floodplain development, restoration and preservation of the natural and beneficial floodplain values, and maintenance of consistency with the standards and criteria of the National Flood Insurance Program. All roadbeds for new highway and rail facilities should be elevated at least one foot above the 100-year base flood elevation, as delineated on the FIRM for the area. No project shall increase the base flood elevation within regulated floodways as delineated by the FIRM for the area. MM 4.7-G. 100-Year Flood Hazard Area. If a project in the Proposed Plan is determined to alter a mapped floodplain or established base flood elevation, the Lead Agency shall submit the appropriate hydrologic and hydraulic data to FEMA for a FIRM revision as soon as practicable, but not later than six months after such data become available. No map revision shall cause houses not previously in the 100-year floodplain to be placed within	Level of Significance
Impact 4.7-6. Flooding Caused by Failure of Levee or Dam.	the revised 100-year floodplain. MM 4.7-H. Flooding Caused by Failure of Levee or Dam. Prior to individual project approval, the Lead Agency shall evaluate the potential for dam inundation as part of its environmental review and shall identify mitigation measures as appropriate.	Less than significant impact after mitigation.
Impact 4.7-7. Inundation by seiche, tsunami, or mudflow.	MM 4.7-I. Inundation by seiche, tsunami, or mudflow. Prior to individual project approval, the Lead Agency shall evaluate the potential for mudflows as part of its environmental review and shall identify mitigation measures as appropriate.	Less than significant impact after mitigation.
Cumulative Impacts. Cumulative hydrology and water quality impacts are caused by projects throughout the Orange County watersheds that increase impervious area, add additional sources of pollutants, alter existing hydrology, and affect floodplains. These watersheds are subject to intense urban development, and many projects are being implemented and planned within the watersheds that could incrementally degrade water quality and affect hydrology and flood protection.	Each proposed project in the cumulative impact area must comply with applicable municipal NPDES permitting requirements and the respective municipal code and include BMPs to prevent degradation of water quality. A comprehensive WQMP or SUSMP will be prepared for each project that incorporates treatment BMPs to reduce impacts to downstream water quality. Each proposed project must also evaluate potential impacts to watercourses, hydrology, and floodplains; must comply with local, State, and federal guidelines to provide adequate flood protection; and must consider the project's contribution to reduced groundwater infiltration. Projects in the Proposed Plan will mitigate their individual contribution to cumulative water quality and hydrology impacts by incorporating site design elements that manage surface runoff and allow for filtration or removal of pollutants prior to entering downstream waters.	Residual water quality impacts could occur, resulting in cumulatively significant water quality impacts.
4.8 Land Use Impact 4.8-1. Direct and indirect community impacts.	MM 4.8-A. Environmental review of each proposed project under the Proposed Plan will be required to assess community effects and identify appropriate mitigation. Mitigation may include the following:	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	 Project implementation agencies shall consider corridor realignment, buffer zones and setbacks, and berms and fencing where feasible to avoid sensitive land uses and to reduce conflicts between transportation land uses and other types of land uses. Project implementation agencies shall implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions. The environmental documents for all major individual freeway projects shall evaluate short-term TAC/health risks. The evaluation shall assess the exposure of sensitive receptors near each project to TACs and determine the resulting health risks. Measures shall be considered, such as equipping construction equipment with diesel particulate traps and the use of low-sulfur or other alternative fuels in construction equipment to mitigate potential impacts. 	
	MM 4.8-B. Potential long-term noise impacts and mitigation measures shall be evaluated and identified during the environmental review for each of the improvements identified in the Proposed Plan by the lead agency.	
	MM 4.8-C. Individual projects must be consistent with federal, State, and local policies that preserve lands, as well as policies that provide compensation for property owners if preservation is not feasible.	
Cumulative Impacts. Implementation of these strategies under the Proposed Plan could result in changes in land uses by changing concentrations of development throughout the County.	The Proposed Plan is intended to mitigate the transportation impacts of future growth identified in General Plans and current forecasts. Land use changes beyond current General Plan levels will be addressed through separate General Plan environmental reviews.	Significant residual cumulative impacts could remain after mitigation for some projects included in the Proposed Plan.
4.9 Noise and Vibration		
Impact 4.9-1. Long-term noise levels could exceed the local noise standards or result in a significant noise level increase at adjacent sensitive receptor locations.	MM 4.9-A. Potential long-term noise impacts and mitigation measures shall be evaluated and identified by the lead agency during the environmental review for each of the improvements identified in the Proposed Plan. The following would be included in these analyses:	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
	 Identifying sensitive receptor locations within the vicinity of the proposed improvement Establishing the existing ambient noise levels at the sensitive receptor locations Determining future noise levels with the proposed transportation improvement Identifying sensitive receptors exposed to noise levels in excess of the noise standard or exposed to a significant increase in noise level increase Evaluating potential mitigation measures at the impacted receptor locations Identifying impacted receptor locations were feasible mitigation cannot be implemented. The following would be included as potential project-level mitigation measures:	

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	 Sound barriers for outdoor active use areas, such as backyards, patios, or balconies. Sound berms should be provided instead of walls whenever possible. Building façade upgrades should be considered for noise-sensitive uses, such as bedrooms, classrooms, or churches, that are located within the vicinity of the proposed transportation improvements where sound barriers are not feasible. Mechanical ventilation, such as air-conditioning systems, should be considered as part of noise abatement measures for structures within the noise impact areas that require windows to be closed for noise attenuation purposes. 	
Impact 4.9-2. Implementation of the proposed transit improvements would potentially result in long-term vibration levels that would exceed the local standards.	MM 4.9-B. Potential long-term vibration impacts and mitigation measures shall be evaluated and identified during the environmental review conducted by OCTA or SCRRA for each of the rail transit improvements identified in the Proposed Plan. A vibration analysis would be conducted that identifies sensitive receptor locations within the potential impact area and evaluates potential mitigation measures to reduce the impacts. The following would be included in potential mitigation measures.	Significant residual impacts could remain after mitigation for some improvements included in the Proposed Plan.
	 Locating transit improvements outside of the potential vibration impact area for sensitive land uses All construction vehicles or equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers As part of the proposed project, all operations would comply with the noise ordinance standards, and stockpiling and/or vehicle staging areas would be located as far as practicable from dwellings Construction activities shall be restricted to between 7:00 a.m. and 8:00 p.m., Monday through Saturday, with no construction activity permitted on Sundays or federal holidays, or other noise restrictions set forth by the Lead Agency 	
Impact 4.9-3. Construction activities could result in short-term noise levels that would potentially exceed the local significance criteria.	MM 4.9-C. Potential short-term noise impacts and potential mitigation measures shall be evaluated and identified during environmental review for each of the improvements identified in the Proposed Plan. The construction noise impact will be evaluated in terms of maximum levels (Lmax) and/or hourly equivalent continuous noise levels (Leq) and their frequency of occurrence. Analysis requirements will be based on the sensitivity of the area and local noise regulations. The following would be included in potential mitigation measures: • All construction vehicles or equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers • As part of the proposed project, all operations would comply with the noise ordinance standards, and stockpiling and/or vehicle staging areas would be located as far as practicable from dwellings • Construction activities shall be restricted to between 7:00 a.m. and 8:00 p.m., Monday	Significant residual impacts could remain after mitigation for some improvements included in the Proposed Plan.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	through Saturday, with no construction activity permitted on Sundays or federal holidays,	
	or other noise restrictions set forth by the Lead Agency	
Impact 4.9-4. Construction activities could result in short-term vibration levels that would potentially exceed the local significance criteria.	Potential short-term vibration impacts shall be evaluated during the review for each of the improvements in the Proposed Plan. However, due to the short-term nature of the construction impacts and the difficulties associated with reducing groundborne vibration, no mitigation measures are recommended. Implementation of Mitigation Measure 4.9-C would reduce the potential annoyance associated with groundborne vibration to the extent feasible.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
Cumulative Impacts. In conjunction with future development within Orange County, future cumulative noise levels are expected to increase and potentially exceed local noise standards, even with implementation of feasible mitigation measures.	Implementation of MM 4.9-A through MM 4.9-C would reduce the noise impacts of each transportation project and program in the Proposed Plan.	Significant residual cumulative impacts could remain after mitigation for some projects included in the Proposed Plan.
4.10 Public Services and Utilities		
Impact 4.10-1. Potential effects to police and fire/emergency personnel or other public facilities in Orange County.	MM 4.10-A. Prior to any individual project approval; the Lead Agency shall evaluate the improvement potential effects on police and fire protection and emergency medical services as part of its review. As part of this review, the local fire and police departments shall be contacted to ensure that the existing public services and utilities would be able to handle the increase in demand for their services. If the current levels of services at the project site are found to be inadequate, infrastructure improvements and/or personnel requirements for the appropriate public service shall be identified in each project's CEQA documentation.	Less than significant impact after mitigation.
Impact 4.10-2. Relocation of aboveground and underground utility lines.	MM 4.10-B. Prior to any individual project approval, the Lead Agency shall evaluate the potential effects of the improvements on domestic water, wastewater, electricity, natural gas, cable television, and other utility lines as part of the environmental review process. As part of this review, service providers shall be contacted to ensure that existing utility lines can be relocated and that any service interruptions (if any) will be minimal.	Less than significant impact after mitigation.
Impact 4.10-3. Activities could affect the demand for solid waste services in Orange County.	MM 4.10-C. Prior to any individual project approval, the Lead Agency shall assess potential solid waste generation during construction and determine if available landfill capacity exists to accept this solid waste. As part of this evaluation, potential mitigation to reduce construction debris entering the landfills include compliance with applicable local regulations related to solid waste disposal and recycling or reusing debris where feasible.	Less than significant impact after mitigation.
Cumulative Impacts. Implementation of certain projects of the Proposed Plan in combination with increases in population, households, and employment and other transportation projects in the County and the region	Implementation of MM 4.10-A through 4.10-C would address potential cumulative impacts of the Proposed Plan.	Less than significant impact after mitigation.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
would result in the increased need for		
various public services, including		
police and fire protection, emergency		
services, solid waste disposal, and		
public utilities. Projected urban		
development and redevelopment within		
Orange County will also generate		
additional demand from public services		
and utilities. However, transportation		
projects under the Proposed Plan		
would improve access for police, fire,		
and emergency services and would		
result in improved response times.		
4.11 Population and Housing		
Impact 4.11-1. Implementation of the	MM 4.11-A. OCTA shall continue to work with other jurisdictions in the County as part of	Less than significant impact after
Proposed Plan would facilitate	the Growth Management Plan (GMP) process to implement growth strategies in order to	mitigation.
substantial population growth to	create an urban form designed to utilize the existing transportation networks and the	
certain vacant areas of the region.	transportation improvements contained in the Proposed Plan, thus enhancing mobility and	
	reducing land consumption.	
Impact 4.11-2. Acquisition of rights-	MM 4.11-B. For projects with the potential to displace homes and/or businesses, project	Less than significant impact after
of-way would displace existing homes	implementation agencies shall evaluate alternate route alignments and transportation	mitigation.
and businesses.	facilities that minimize the displacement of homes and businesses. An iterative design and	
	impact analysis would help in cases where impacts to homes or businesses are involved.	
	Potential impacts shall be minimized to the extent feasible. Existing rights-of-way should	
	be used to the furthest extent possible.	
	MM 4.11-C. Project implementation agencies shall identify businesses and residences to be	
	displaced. As required by law, relocation assistance shall be provided to displaced residents	
	and businesses in accordance with the federal Uniform Relocation and Real Property	
	Acquisition Policies Act of 1970 and the State of California Relocation Assistance Act, as	
	well as any applicable City, County, and port policies.	
	MM 4.11-D. Project implementation agencies shall develop a construction schedule that	
	minimizes potential neighborhood deterioration from protracted waiting periods between	
	right-of-way acquisition and construction.	
Impact 4.11-3. Disrupt or divide a	MM 4.11-E. Project implementation agencies shall design, as feasible, new transportation	Significant residual impacts could
community by separating community	facilities that maintain or enhance access to existing community facilities. Access to	remain after mitigation for some
facilities, restricting community access,	community amenities and facilities shall be identified and considered during the design	improvements included in the
and eliminating community amenities.	phase of the project.	Proposed Plan.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	MM 4.11-F. Project implementation agencies shall design, as feasible, roadway improvements that minimize barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes shall be considered that permit connections to nearby community facilities.	
Cumulative Impacts. The Proposed Plan's influence on growth contributes to regional cumulative growth impacts to currently undeveloped land.	Implementation of MM 4.11-A through 4.11-F would address potential cumulative impacts of the Proposed Plan.	Significant residual impacts could remain after mitigation for some improvements included in the proposed plan.
4.12 Transportation and Circulation		• •
Impact 4.12-1. Short-term construction impacts.	MM 4.12-A. Prior to approval of individual projects, the Lead Agency shall evaluate short-term traffic impacts as part of the project's environmental review. This review shall identify the existing traffic conditions, evaluate potential short-term construction impacts, and identify appropriate measures to be implemented during construction, including a Traffic Management Plan (TMP), if needed. The TMP shall be prepared by a registered Traffic Engineer and shall address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes. The TMP shall identify the routes that construction vehicles use to access the site, the hours of construction traffic, traffic controls and detours, off-site vehicle staging areas, and parking areas for the project.	Less than significant impact after mitigation.
4.13 Visual Resources		
Impact 4.13-1. Obstruct views of scenic resources.	MM 4.13-A. Prior to any individual project approval, the Lead Agency shall evaluate the potential effects of the improvements on scenic resources as part of the environmental review process. As part of this review, lead agencies shall require environmental review that requires assessment of visual impacts pursuant to appropriate federal, State, and local standards and identifies appropriate mitigation such as: design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions.	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.
	MM 4.13-B. Prior to any individual project approval, the Lead Agency shall evaluate the potential to construct visually neutral noise barriers and retaining walls of materials with color and texture that complement the surrounding landscape and development. Noise barriers and retaining walls shall be graffiti-resistant and landscaped with plants that screen the barrier, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.	
Impact 4.13-2. Affect scenic resources along or near designated State Scenic Highways and vista points.	MM 4.13-C. Prior to any individual project approval, the Lead Agency shall evaluate the potential effects of the improvements on scenic highways and vista points as part of the environmental review process. As part of this review, the lead agency Project implementation agencies shall require evaluation of impacts on scenic resources as part of the environmental review prior to project implementation. Lead agencies shall complete design studies for projects in designated or eligible Scenic Highway corridors and develop	Significant residual impacts could remain after mitigation for some projects included in the Proposed Plan.

Potential Environmental Impacts	Mitigation Measure	Level of Significance
	site-specific mitigation measures to minimize impacts on the quality of the views or visual experience that originally qualified the highway for Scenic designation. Design, construction, and operation of the transportation facility shall be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated Scenic Highway.	
Impact 4.13-3. Substantially degrade the existing visual character or quality of the site and its surroundings.	MM 4.13-D. Prior to any individual project approval, the Lead Agency shall evaluate the potential effects of the improvements on scenic highways and vista points as part of the environmental review process. As part of this review, the Lead Agency shall evaluate the project for visual effects and identify appropriate mitigation. Projects along Scenic Highways or eligible Scenic Highways will require special provisions to minimize any visual quality or character degradation. The Lead Agency shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. The Lead Agency shall use natural landscaping to minimize contrasts between the project and surrounding areas. Project implementation agencies shall, wherever possible, develop interchanges and transit lines at the grade of the surrounding land to limit view blockage and contour the edges of major cut and fill slopes to provide a more natural-looking, finished profile.	Significant residual impacts could remain after mitigation for some improvements included in the Proposed Plan.
Cumulative Impacts. The urban development and growth that would be supported by the transportation investments in the Proposed Plan combined with other development and redevelopment projects would have permanent impacts on the existing visual resources of the County.	Implementation of MM 4.13-A through MM 4.13-D would address potential cumulative impacts of the Proposed Plan.	Significant residual cumulative impacts could remain after mitigation for some projects included in the Proposed Plan.